Package 2 - Addendum No. 6
March 13, 2015
Mahlum Project No. 2013912
RSA Project No. 1314

Eugene School District 4J
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ADDENDUM NO. 6

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated February 18, 2015 and subsequent addenda as noted below. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

A D D E N D U M N O. 5

1. ITEM - 17 SECTION 31 62 16 19 - DRIVEN STEEL PIPE PILES

   A. Replace Section with attached revised Section 31 62 16 19: Change ASTM reference from ASTM A950 to ASTM A972 which is for pipe piles. Note that ASTM 972 requires a minimum of 12 mil epoxy thickness. Note also that ASTM A123 requires grade 75 coating with a thickness of 3.0 mils for structural pipe.

S P E C I F I C A T I O N S

2. DOCUMENT 00 41 13 – BID FORM

   A. Replace Section with attached revised Section 00 41 13 Add to list of Alternates for pricing the following: Alternate No A6: Ceiling Tile AP-1 as a deductive alternate.

3. DOCUMENT 00 73 00 – SUPPLEMENTARY CONDITIONS

   A. Article 1.13: Add the following new Paragraph 5:

   "5. 13.5 TESTS AND INSPECTIONS
   Revise 13.5.1 to read:
   13.5.1 The Owner shall hire and pay for an independent testing and inspection agency to perform all tests and inspections required by Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. The Contractor shall make arrangements for such tests, inspections and approvals with Owner selected independent testing agency. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures."

4. DOCUMENT 01 10 00 – SUMMARY

   A. Paragraph 1.03.A: Change the last sentence to read: "The subcontractor noted below and their cost of $350,000 for the owner negotiated HVAC controls work is assigned to this contract and shall be included in the general contractor's bid.

   B. Article 1.04.C: Add the following paragraphs listing Owner Furnished Owner Installed (OFOI) items:
      1. Refrigerators
      2. Microwave Ovens
      3. Performance sound system for gym, commons, drama/platform and media room.

   C. Article 1.04D.1: Add the following paragraphs listing Owner Furnished Contractor Installed (OFCI) items:

      f. Ranges and ovens
      g. Dishwashers
      i. Kitchen cooking exhaust hoods

5. SECTION 01 23 00 ALTERNATES

   A. Article 1.05: Add Alternate A6 as follows:
      "E, Alternate A6 - Ceiling tile AP-1 (refer to 09 51 00 Acoustic Ceilings and Addendum #3 Item 5)

      1. Base Bid Item: Ultima Lay-In Square edge lay in acoustic ceiling tile by Armstrong
      2. Alternate Bid Item: Radar Clima Plus High-NRC Square edge, lay-in acoustic ceiling tile by USG

6. SECTION 05 51 00 METAL STAIRS AND HANDRAILS

   A. Add new Article 3.05 Item A as follow: .

      "A. Design Build: Portions of the work has been engineered and portions are to be design built as follows:
      Stair 1
      Concrete plinth engineered
      Landing engineered
      Metal treads and risers design build
      Structural estimated the size the stringers, but the connections etc need to calculated
      Stair 2
      Metal treads and risers design build
      Structural estimated the size the stringers, but the connections etc need to calculated
      Landing and support design build
      Forum stair
      Engineered
      Handrails and guardrails
      Design build"

7. SECTION 08 71 01 DOOR HARDWARE SCHEDULE

   A. HW SET 01: Add doors 181E, 181B, 181C, M301A, M301B, M301C, M301D, M301E, M301F and M301G to group. Delete doors 150A-2, 150A.1, 180F, 180G, 180H, 281B-B and M301M from group.
   B. HW SET 12: Delete door 123A-A from group.
   C. HW SET 32: Delete door 166B-A from group.
   D. HW SET 33: Delete door 168C-A from group.
   E. HW SET 66: Add door 202B-B to group. Delete door M265A.1 from group.
   F. HW SET 69: Delete door 166E from group.
   G. HW SET 71: Add door 181A to group.
   H. HW SET 78: Delete Hardware Group 78.

8. SECTION 10 21 13 16 – SOLID PHENOLIC TOILET AND SHOWER COMPARTMENTS

   A. Article 202D. Change: Item 2 to read: "2. Height; field verify."

9. SECTION 10 26 00 – WALL AND CORNER GUARDS

   A. Article 2.02: Add Paragraph B: "B. Quantity: Provide and install 35 corner guards at corners where directed by architect."

10. SECTION 11 52 13 – PROJECTION SCREENS

    A. Article 3.05: Add Item E as follows: "E. Note that dimensions on drawings indicate projected size of image and not size of screen. Final location of Screens in Choral Rm186 and Drama/Platform to be determined."

11. SECTION 12 93 00 – SITE FURNISHINGS

    A. Replace Section with attached revised Section 12 93 00. Add Article 1.01E PICNIC TABLE. Add Article 2.06 PICNIC TABLE.

12. SECTION 22 35 15 SOLAR WATER HEATING SYSTEM

    A. Replace Section with attached revised Section 22 35 15 Clarification: Specification number corrected from 23 35 15 to 22 35 15.

13. SECTION 22 40 00 PLUMBING FIXTURES

    A. Replace Section with attached revised Section 22 40 00.

14. SECTION 23 05 14 VARIABLE FREQUENCY DRIVES FOR HVAC EQUIPMENT

    A. Replace Section with attached revised Section 23 05 14. Clarification: See attached for select revisions.

15. SECTION 23 05 48 VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT

    A. Replace Section with attached revised Section 23 05 48. Clarification: See attached for select revisions.

16. SECTION 23 07 00 INSULATION FOR HVAC

    A. Replace Section with attached revised Section 23 07 00. Clarification: See attached for select revisions.

17. SECTION 23 20 14 PREFABRICATED PIPING SYSTEMS FOR HVAC

    A. Replace Section with attached revised Section 23 20 14. Clarification: See attached for select revisions.

18. SECTION 23 33 00 AIR DUCT ACCESSORIES

    A. Replace Section with attached revised Section 23 33 00. Clarification: See attached for select revisions.

19. SECTION 26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

    A. Replace Section with attached revised Section 26 05 19. Clarification: See attached for select revisions.

20. SECTION 32 90 00 – PLANTING

    A. Replace Section with attached revised Section 32 90 00. Article 2.05, Paragraph C: Change Item 2a to PT 705 Xeriscape by Hobbs and Hopkins, Portland, Oregon. _Article 3.11, Paragraph A.1.a: Change to 87 lbs. per acre. Refer to attached updated Section._Article 3.11, Paragraph A.1.a: Change to 87 lbs. per acre. Refer to attached updated Section.

PACKAGE 1 - DRAWING SHEETS

21. SHEET C-201 – UTILITY PLAN

    A. Replace Sheet with revised Sheet C-201: Change landscape area

22. SHEET C203 – UTILITY PLAN

    A. Replace Sheet with revised Sheet C-203: Change invert elevations

23. SHEET L101.0 – OVERALL SITE PLAN

    A. Replace Sheet with revised Sheet L101.0: Adjust grassy swale and area drain north of bus drop off area. Add concrete mowstrip at grassy swale north of bus drop off area. Add trees along north edge of parking lot per the City of Eugene Land Use Review Comments.

24. SHEET L101.1 – WEST SITE PLAN

    A. Replace Sheet with revised Sheet L101.1: Adjust grassy swale and area drain north of bus drop off area. Add concrete mowstrip at grassy swale north of bus drop off area. Change Eco Lawn legend item to be Non-irrigated.

25. SHEET L101.2 – CENTRAL SITE PLAN

    A. Replace Sheet with revised Sheet L101.2: Change Eco Lawn legend item to be Non-irrigated. Add trees along north edge of parking lot per the City of Eugene Land Use Review Comments.

26. SHEET L102.1 – WEST LAYOUT PLAN

    A. Replace Sheet with revised Sheet L102.1: Change northing and easting point of Area Drain Rim at grassy swale north of bus drop off area. Add northing and easting points to concrete mowstrip at grassy swale north of bus drop off area.

27. SHEET L103.1 – WEST GRADING PLAN

    A. Replace Sheet with revised Sheet L103.1: Change elevation of Area Drain Rim at grassy swale north of bus drop off area. Add elevations to concrete mowstrip at grassy swale north of bus drop off area.

28. SHEET L104.0 – MAINLINE & IRRIGATION NOTES

    A. Replace Sheet with revised Sheet L104.0: Adjust irrigation heads and change zone calculations at zones #3, #4 and #7. Upsize zone #15 valve to a 1 ½" valve from a 1" valve. Add tree bubblers to zone #56 and update zone calculation. Update zone calculations for zone #59. Update zone #3 and zone #7 in Special Note.

29. SHEET L104.1 – WEST IRRIGATION PLAN

    A. Replace Sheet with revised Sheet L104.1: Adjust irrigation heads and change zone calculations at zones #3, #4 and #7. Update zone #15 zone calculations and upsize zone valve to a 1 ½" valve from a 1" valve. Update zone calculation for zone #59.

30. SHEET L104.2 – CENTRAL IRRIGATION PLAN

    A. Replace Sheet with revised Sheet L104.2: Add tree bubblers to zone #56 and update zone calculation.

31. SHEET L105.0 – GENERAL NOTES & PLANT LIST

    A. Replace Sheet with revised Sheet L-105.0: Add Cercidiphyllum japonicum and Cercis Canadensis 'Merlot' tree species.

32. SHEET L105.1 – WEST LANDSCAPE PLAN

    A. Replace Sheet with revised Sheet L105.1: Adjust grassy swale area north of bus drop off area. Add landscape plantings between the entrance and exit of the bus drive per the City of Eugene Land Use Review Comments.

33. SHEET L105.2 – CENTRAL LANDSCAPE PLAN

    A. Replace Sheet with revised Sheet L-105.2: Add landscape plantings at the landscape area between the street and the parking lot per the City of Eugene Land Use Review Comments.

34. SHEET S-001 – DRAWING INDEX AND LIST OF ABBREVIATIONS

    A. Replace Sheet with revised Sheet S-001: Add Addendum 6 to Drawing Index

35. SHEET S- S-002 – GENERAL STRUCTURAL NOTES

    A. Replace Sheet with revised Sheet S-002: Add note regarding non-contact lap splices under MASONRY REINFORCING STEEL

36. SHEET S-121E – FIRST FLOOR PLAN – ZONE E

    A. Replace Sheet with revised Sheet S-121E: Change the Addendum 3 bubbles by adding the correct deltas.

37. SHEET S-123A – EQUIPMENT PLATFORM PLAN – ZONE A

    A. Replace Sheet with revised Sheet S-123A: Delete the roof tie offs.

38. SHEET S-123B – EQUIPMENT PLATFORM PLAN – ZONE B

    A. Replace Sheet with revised Sheet S-123B: Delete the roof tie offs.

39. SHEET S-123C – MID-ROOF PLAN – ZONE C

    A. Replace Sheet with revised Sheet S-123C: Delete the roof tie offs.

40. SHEET S--124A – HIGH ROOF PLAN – ZONE A

    A. Replace Sheet with revised Sheet S-124A: Delete the roof tie offs.

41. SHEET S-124B – HIGH ROOF PLAN – ZONE B

    A. Replace Sheet with revised Sheet S-124B: Delete the roof tie offs. Delete roof access hatch associated framing.

42. SHEET S-124C – HIGH ROOF PLAN – ZONE C

    A. Replace Sheet with revised Sheet S-124C: Delete the roof tie offs.

43. SHEET S-401 – CMU DETAILS

    A. Replace Sheet with revised Sheet S-401: Revise horizontal bar hooks from vertical to horizontal around jamb bar in Detail 3

44. SHEET S-402 – CMU DETAILS

    A. Replace Sheet with revised Sheet S-402: Revise Detail 4

45. SHEET S-403 – CMU DETAILS

    A. Replace Sheet with revised Sheet S-403: Add note to Detail 5 regarding non-contact lap splice. Revise Detail 12

46. SHEET S-603 – STEEL DETAILS

    A. Replace Sheet with revised Sheet S-603: Add vertical truss members in Elevation 1. Add thru-bolts at truss bottom chord in Elevation 1. Revise truss diagonal member sizes in Elevation 2.

47. SHEET S-604 – STEEL DETAILS

    A. Replace Sheet with revised Sheet S-604: Delete steel roof tie-off Details 11 and 12

48. SHEET S-605 – STEEL DETAILS

    A. Replace Sheet with revised Sheet S-605: Add new sheet.

49. SHEET S-802 - PRIMARY LIGHT GAUGE METAL FRAMING DETAILS

    A. Replace Sheet with revised Sheet S-802: Revise holdown schedule in Detail 3. Revise holdown schedule in Detail 4. Revise end stud size in Detail 8. Add Detail 9.

50. SHEET P-120D - UNDERGROUND PLAN - ZONE D - PLUMBING

    A. Replace Sheet with revised Sheet P-120D: Add below grade stormwater piping, which connects to Civil on both sides of the building. Note this piping was previously shown on Civil plans.

51. SHEET P-120E - UNDERGROUND PLAN - ZONE E - PLUMBING

    A. Replace Sheet with revised Sheet P-120E: Revise below grade stormwater piping, which connects to Civil on both sides of the building.

52. SHEET E-110 - UNDERGROUND OVERALL - ELECTRICAL

    A. Replace Sheet with revised Sheet E-110: Relocate electrical panels at Kitchen

PACKAGE 2 - DRAWING SHEETS

53. SHEET S-223– ENLARGED EXTERIOR CLADDING ELEVATIONS

    A. Replace Sheet with revised Sheet S-223: Add framing callouts on Elevation 1 between grids 2 and 3 and 6 and 7. Add framing callouts for header and jamb at opening near grid 5 on Elevation 1. Revise section callout for jambs on Elevation 2

54. SHEET S-903 – EXTERIOR CLADDING DETAILS

    A. Replace Sheet with revised Sheet S-903: Add Detail 1. Add note in Detail 2. Revise connections in Detail 3. Revise connections in Detail 4. Add note in Detail 5. Revise connections and framing in Detail 6. Revise connections and framing in Detail 6

55. SHEET A-121C FIRST FLOOR PLAN - ZONE C

    A. Replace Sheet with revised Sheet A-121C: A1/A-121C: Add wall tags to existing wall and add detail bugs.

56. SHEET A-121D FIRST FLOOR PLAN - ZONE D

    A. Replace Sheet with revised Sheet A-121D: A1/A-121E: Change wall type of west wall of Chair/Table Storage 169. Add floor drains and slope to drain note in Kitchen 180

57. SHEET A-121E FIRST FLOOR PLAN ZONE E

    A. Replace Sheet with revised Sheet A-121E: A1/A-121E: Change wall type of west wall of costume Storage 180. Relocated shaft in SE corner of Drama/Platform 184. Change width of east concrete stairs into the Drama/Platform. Add door 1888B-A to Practice 1888B

58. SHEET A-122B FIRST FLOOR PLAN ZONE B

    A. Replace Sheet with revised Sheet A-122B: A1/A-122B: Change west wall type of Text Book Work Room 202B

59. SHEET A-141 – ROOF PLAN

    A. Replace Sheet with attached revised Sheet A-141. Clarification: The fall protection anchors are removed from roofs at Zones A, B, and C. The layout of roof equipment in Zone D was revised.

60. SHEET A221 – ENLARGED EXTERIOR ELEVATIONS

    A. B1/A221 Enlarged North elevation – West End (Zone A): Delete Door M301H between Grids 4.5 and 5.

61. SHEET A222 – ENLARGED EXTERIOR ELEVATIONS

    A. D1/A222 Enlarge Courtyard elevation Looking North (Zone A): Delete Door M301J between Grids 1.5 and 2. Delete Door M301I between Grids 3 and 3.5.

62. SHEET A161-B – FIRST FLOOR REFLECTED CEILING PLAN – ZONE B

    A. RCP General Notes: Add General Note F to read as follows:
       "F. Provide a gypsum board enclosure around all exterior soffit light fixtures to allow for 3" clearance between the batt insulation and the top and sides of the light fixture."

63. SHEET A161-C – FIRST FLOOR REFLECTED CEILING PLAN – ZONE C

    A. RCP General Notes: Add General Note F to read as follows:
       "F. Provide a gypsum board enclosure around all exterior soffit light fixtures to allow for 3" clearance between the batt insulation and the top and sides of the light fixture."

64. SHEET A161-D – FIRST FLOOR REFLECTED CEILING PLAN – ZONE D

    A. RCP General Notes: Add General Note F to read as follows:
       "F. Provide a gypsum board enclosure around all exterior soffit light fixtures to allow for 3" clearance between the batt insulation and the top and sides of the light fixture."

65. SHEET A-325 – WALL SECTIONS

    A. Revise Wall Section A1/A325 with attached Drawing ADD-A-325-01. Clarification: Added wall tag for the gypsum board finish furred over CMU wall in Vestibule 165A.

66. SHEET 421 STAIR 1 – ENLARGED PLANS

    A. Replace Sheet with attached revised Sheet A-421: B6/ A-421 Add description to stringer.

67. SHEET A-422 STAIR 1 –SECTIONS

    A. Replace Sheet with attached revised Sheet A-422: C1, C4, A2,A4/ A-422: Add description to stringer. Add additional information to concrete landing

68. SHEET A-423 STAIR 2 –ENLARGED PLANS & SECTIONS

    A. Replace Sheet with attached revised Sheet A-423: C5 / A-423: Add description to stringer. A1, A3/ A-423: Add description to stringer. Add additional information to concrete landing support

69. SHEET A-424 STAIR 2 –SECTIONS

    A. Replace Sheet with attached revised Sheet A-424: A2, A4 / A-424: Add description to stringer. Add additional information for landing support

70. SHEET A- A-430 STAIR DETAILS

    A. Replace Sheet with attached revised Sheet A-430: D2/A-424, B2/A-424 and B3/A-424: Add tread reinforcement information

71. SHEET A-511 – EXTERIOR DETAILS – FOUNDATION

    A. Replace Sheet with attached revised Sheet A-511. Clarification: Deletes the landscape concrete header at base of wall along concrete bench and revised notes as shown on Detail A2/A511. Clarified description of concrete masonry unit at Detail D5/A-511. Revised sheet metal flashing and weather barrier assemblies at Details A4/A-511, A4/A-511, B4/A-511, and B5/A-511.

72. SHEET A-540 – EXTERIOR WINDOW DETAILS

    A. Details C1/A540: Add storefront deflection framing at storefront window head.

    B. Details C3/A540 and C5/A540: Add general note to read as follows: “Note: Provide storefront deflection head at storefront windows at load bearing walls where occurs.”

73. SHEET A-541 – EXTERIOR DOOR AND LOUVER DETAILS

    A. Replace Sheet with attached revised Sheet A-541. Clarification: Added Detail B1/A-541. Deleted Details B4/A-541 and B5/A-541. Revised all other details.

74. SHEET A-547 – EXTERIOR ENTRY DOOR AND WINDOW DETAILS

    A. Replace Sheet with attached Sheet A-547. Clarification: Revised window anchorage at Details A3/A-547 and A5/A-547. Removed concrete header at Detail A5/A-547. Revised membrane flashing configurations at Details B1/A-547, C1/A-547, and C3/A-547.

75. SHEET A-555 INTERIOR DOOR DETAILS

    A. A6/A-555: Added outlet location Clarified location of column per attached Drawing ADD-A555-01

76. SHEET A-558 INTERIOR 3 HOUR DOOR DETAILS

    A. Replace Sheet with revised Sheet A-558: A3/A-558: Add dimension to centerline of column. Add corner guards. Modify wall alignment

77. SHEET A- A-559 INTERIOR WALL DETAILS

    A. C4/A-559 and C5/A-599: Added retro plate finish on bench per attached Drawing ADD-A559-01

78. SHEET A-582 CASEWORK DETAILS

    A. C4/A-582: Clarified height and depth of microwave opening per attached Drawing ADD-A582-01

79. SHEET A-602 INTERIOR WALL ASSEMBLY TYPES

    A. Add wall type 17-9-0 per attached Drawing ADD-A602-01

80. SHEET A-611 – DOOR SCHEDULE & TYPES

    A. Delete Doors M301H, M301J, and M301I. Clarification: The doors providing access to the low classroom roofs have been removed.

    B. Door A173A: Change door type from "D-F" to "D-N"

    C. Door L001: Change hardware group from 01 to 79

81. SHEET P-001 -SYMBOLS LEDGEND AND ABBREVIATIONS - PLUMBING

    A. Replace Sheet with revised Sheet P-001: Add "CTG" to plumbing abbreviations..

82. SHEET P-002 - EQUIPMENT SCHEDULE - PLUMBING

    A. Replace Sheet with revised Sheet P-002: Revise Plumbing Fixture Schedule and Plumbing Equipment Schedule.

83. SHEET P-121A FIRST FLOOR PLAN - ZONE A - PLUMBING

    A. Replace Sheet with revised Sheet P-121A: Add isolation valves and balancing valves

84. SHEET P-121B FIRST FLOOR PLAN - ZONE B - PLUMBING

    A. Replace Sheet with revised Sheet P-121B: Add isolation valves and balancing valves

85. SHEET P-121C FIRST FLOOR PLAN - ZONE C - PLUMBING

    A. Replace Sheet with revised Sheet P-121C: Add isolation valves and balancing valves

86. SHEET P-121D FIRST FLOOR PLAN - ZONE D - PLUMBING

    A. Replace Sheet with revised Sheet P-121D: Add isolation valves and balancing valves. Add capped connection for emergency propane tank.

87. SHEET P-121E FIRST FLOOR PLAN - ZONE E - PLUMBING

    A. Replace Sheet with revised Sheet P-121E: Add isolation valves and balancing valves. Add notes clarifying pipe locations. Add vent piping to band room and hallway 182 sinks.

88. SHEET P-122A SECOND FLOOR PLAN - ZONE A - PLUMBING

    A. Replace Sheet with revised Sheet P-122A: Add dishwasher connection at Lounge 209

89. SHEET P-131 - ROOF PLAN - PLUMBING

    A. Replace Sheet with revised Sheet P-131: Revise VTRs. Clarifyies solar thermal water heating panel size as 48"x98" per panel, in key note #1

90. SHEET P-401A MECHANICAL EQUIPMENT PLATFORM - ZONE A - PLUMBING

    A. Replace Sheet with revised Sheet P-401A: Update tag on floor sinks.

91. SHEET P-401C MECHANICAL EQUIPMENT PLATFORM - ZONE C - PLUMBING

    A. Replace Sheet with revised Sheet P-401C: Update tag on floor sinks.

92. SHEET P-401D MECHANICAL EQUIPMENT PLATFORM - ZONE D - PLUMBING

    A. Replace Sheet with revised Sheet P-401D: Update tag on floor sinks Add floor sinks. Add vent piping Add vent and waste piping in kitchen ceiling

93. SHEET P-401E MECHANICAL EQUIPMENT PLATFORM - ZONE E - PLUMBING

    A. Replace Sheet with revised Sheet P-401E: Update tag on floor sinks. Tag piping

94. SHEET P-601 FLOW DIAGRAMS - PLUMBING

    A. Replace Sheet with revised Sheet P-601: Update solar thermal drainback diagram. Update rainwater harvesting system diagram.

95. SHEET P-606 RISER DIAGRAM - GAS

    A. Replace Sheet with revised Sheet P-606: Update gas piping diagram to include emergency propone connections.

96. SHEET M-001 -SYMBOLS LEDGEND AND ABBREVIATIONS - MECHANICAL

    A. Replace Sheet with revised Sheet M-001: Revise legend. Add controls clarification note.

97. SHEET M-002 EQUIPMENT SCHEDULE - MECHANICAL

    A. Replace Sheet with revised Sheet M-002: Boiler schedule: Revise minimum flowrate, change one to dual fuel (gas/propane)

98. SHEET M-003 EQUIPMENT SCHEDULE - MECHANICAL

    A. Replace Sheet with revised Sheet M-003: Clarify fan type. Clarify VFD and EC motor connections.

99. SHEET M-004 EQUIPMENT SCHEDULE - MECHANICAL

    A. Replace Sheet with revised Sheet M-004: Roof Ventilator schedule: Delete damper requirement at intake ventilators. Fan schedule: Add EF-PREP. Add VFD to EF-HALL-E.

100. SHEET M-121A FIRST FLOOR PLAN - ZONE A - MECHANCIAL

A. Replace Sheet with revised Sheet M-121A: Add radiation damper to exhaust grille serving janitor's room. Add smoke detector to AH-HALL1-A return duct.

101. SHEET M-121B FIRST FLOOR PLAN - ZONE B - MECHANCIAL

A. Replace Sheet with revised Sheet M-121B: Add radiation damper to exhaust grille serving janitor's room. Note location of seismic joint Revise fire/smoke dampers to fire dampers at 3 hour fire walls.

102. SHEET M-121C FIRST FLOOR PLAN - ZONE C - MECHANCIAL

A. Replace Sheet with revised Sheet M-121C: Add radiation damper to exhaust grille serving janitor's room. Revise fire/smoke dampers to fire dampers at 3 hour fire walls.

103. SHEET M-121D FIRST FLOOR PLAN - ZONE D - MECHANCIAL

A. Replace Sheet with revised Sheet M-121D: Delete sizes shown on DTS and DTR (see hydronic diagram for sizes). Revise supply and return at Electrical Room 179A to include ceiling mount grilles with radiation dampers.

104. SHEET M-121E FIRST FLOOR PLAN - ZONE E - MECHANCIAL

A. Replace Sheet with revised Sheet M-121E: Add EF-PREP. Clarify Science Room return grille cfm. Delete requirement for undercut doors at Prep Rooms. Add smoke detector to Choral Room relief duct.

105. SHEET M-122A FIRST FLOOR PLAN - ZONE A - MECHANCIAL

A. Replace Sheet with revised Sheet M-122A: Add smoke detector to AH-HALL2-A return duct.

106. SHEET M-401A1 MECHANICAL EQUIPMENT PLATFORM PLAN- ZONE A WEST - MECHANCIAL

A. Replace Sheet with revised Sheet M-401A1: Delete osa intake plenum and ductwork at west and north walls. Clarify relief damper requirements at RF-A. Add auto damper to exhaust plenum at south wall. Revise exhaust duct routing from IDF room. Add relief dampers to AH-HALL1-A. Revise osa duct size and add smoke detector at AH-HALL2-A Add general note regarding walking path width and head room requirement.

107. SHEET M-401A2 MECHANICAL EQUIPMENT PLATFORM PLAN- ZONE A EAST - MECHANCIAL

A. Replace Sheet with revised Sheet M-401A2: Revise osa duct size. Add general note regarding walking path width and head room requirement.

108. SHEET M-401C MECHANICAL EQUIPMENT PLATFORM PLAN- ZONE C - MECHANCIAL

A. Replace Sheet with revised Sheet M-401C: Add general note regarding walking path width and head room requirement. Add smoke detector to AH-GYM-N return duct. Clarify clothes dryer duct and add roof jack. Add roof jack for EF-KILN Revise damper sizing.

109. SHEET M-401D MECHANICAL EQUIPMENT PLATFORM PLAN- ZONE D - MECHANCIAL

A. Replace Sheet with revised Sheet M-401D: Add general note regarding walking path width and head room requirement. Add smoke detector to AH-BAND return duct. Revise floor drain locations. Delete auto damper at AH-COMM relief duct. Delete auto dampers at intake roof ventilators.

110. SHEET M-401E1 MECHANICAL EQUIPMENT PLATFORM PLAN- ZONE E NORTH-MECHANCIAL

A. Replace Sheet with revised Sheet M-401E1: Add general note regarding walking path width and head room requirement. Delete general note regarding relief dampers.

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111. SHEET M-401E2 MECHANICAL EQUIPMENT PLATFORM PLAN- ZONE E SOUTH-MECHANCIAL

A. Replace Sheet with revised Sheet M-401E2: Delete general note regarding relief dampers. Add general note regarding walking path width and head room requirement. Add smoke detector to AH-BAND relief duct.

112. SHEET M-501 DETAILS - MECHANCIAL

A. Replace Sheet with revised Sheet M-501: Delete reference to OFCI

113. SHEET M-502 DETAILS - MECHANCIAL

A. Replace Sheet with revised Sheet M-502: Delete reference to OFCI Correct detail reference at Detail C1

114. SHEET M-601 DIAGRAMS - MECHANCIAL

A. Replace Sheet with revised Sheet M-601: Revise location of units and pipe sizes.

115. SHEET E-002 LUMINAIRE SCHEDULE

A. Replace Sheet with revised Sheet E-002: Revise luminaire types.

116. SHEET E-101 SITE PLAN – ELECTRICAL

A. Replace Sheet with revised Sheet E-101: Relocate exit signs in gated plaza. Relocate luminaires, type S6 as shown. Add Keyed notes 20 and 21. Add spare conduit for future car charger power.

117. SHEET E-121A FIRST FLOOR PLAN - ZONE A - LIGHTING

A. Replace Sheet with revised Sheet E-121A: Remove relays for interior lighting loads tied to the DDC. Circuitry indicated. Provide UL 924 shunt relay for egress lighting in these locations as shown.

118. SHEET E-121B FIRST FLOOR PLAN - ZONE B - LIGHTING

A. Replace Sheet with revised Sheet E-121B: Remove relays for interior lighting loads tied to the DDC. Circuitry indicated. Provide UL 924 shunt relay for egress lighting in these locations as shown.

119. SHEET E-121C FIRST FLOOR PLAN ZONE C - LIGHTING

A. Replace Sheet with revised Sheet E-121C: Remove relays for interior lighting loads tied to the DDC. Circuitry indicated. Provide UL 924 shunt relay for egress lighting in these locations as shown.

120. SHEET E-121D FIRST FLOOR PLAN - ZONE D - LIGHTING

A. Replace Sheet with revised Sheet E-121D: Remove relays for interior lighting loads tied to the DDC. Circuitry indicated. Provide UL 924 shunt relay for egress lighting in these locations as shown.

121. SHEET E-121E FIRST FLOOR PLAN - ZONE E - LIGHTING

A. Replace Sheet with revised Sheet E-121E: Remove relays for interior lighting loads tied to the DDC. Circuitry indicated. Provide UL 924 shunt relay for egress lighting in these locations as shown.

122. SHEET E-122A SECOND FLOOR PLAN - ZONE A - LIGHTING

A. Replace Sheet with revised Sheet E-122A: Remove relays for interior lighting loads tied to the DDC. Circuitry indicated. Provide UL 924 shunt relay for egress lighting in these locations as shown. Revise lighting in Hallways 182 and 187

123. SHEET E-122B SECOND FLOOR PLAN - ZONE B - LIGHTING

A. Replace Sheet with revised Sheet E-122B: Remove relays for interior lighting loads tied to the DDC. Circuitry indicated. Provide UL 924 shunt relay for egress lighting in these locations as shown. Control Media stacks via occupancy sensors and local wall switches. Provide local control for color changing RGB luminaire, type L9A.

124. SHEET E-222A SECOND FLOOR PLAN - ZONE A - POWER

A. Replace Sheet with revised Sheet E-222A: Add power for microwaves and dishwasher at Lounge.

125. SHEET E-502 ENLARGED KITCHEN PLANS - ELECTRICAL

A. Replace Sheet with revised Sheet E-502: Relocate outlets and panels. Add aluminum pedestal requirements for select outlets.

126. SHEET E-602 DETAILS LIGHTING CONTROLS

A. Replace Sheet with revised Sheet E-602 Add control detail.

B. Revise Detail C4

127. SHEET E-701 DIAGRAMS - ELECTRICAL ONE-LINE DIGRAM - NORMAL POWER

A. Replace Sheet with revised Sheet E-701: Revise MDP rating 1200A and related feeder/spares.

128. SHEET E-801 MECHANICAL COORDINATION SCHEDULE

A. Replace Sheet with revised Sheet E-801: Revise and add circuiting and starter requirement for select units.

129. SHEET E-802 MECHANICAL COORDINATION SCHEDULE

A. Replace Sheet with revised Sheet E-802: Revise and add circuiting and starter requirement for select units.

130. SHEET E-900 PANEL SCHEDULES

A. Replace Sheet with revised Sheet E-900: Revise ratings in MDP schedule, added revised load calculation. Add circuiting for select mechanical units.

131. SHEET E-901 PANEL SCHEDULES

A. Replace Sheet with revised Sheet E-901: Add circuiting for select mechanical units.

132. SHEET E-902 PANEL SCHEDULES

A. Replace Sheet with revised Sheet E-902: Add circuiting for select mechanical units.

133. SHEET E-903 PANEL SCHEDULES

A. Replace Sheet with revised Sheet E-903: Revise branch circuit loads for microwaves and dishwasher at Lounge. Add circuiting for select mechanical units.

134. SHEET E-905 LIGHTING RELAY SCHEDULES

A. Replace Sheet with revised Sheet E-905: Remove panels and associated schedules

A P P R O V A L S

The following are approved based on information submitted to the Architect. Approval does not alter requirements of the Contract Documents. Contractor shall coordinate installation of approved products which the Contractor elects to use, making such changes as may be required for the Work to be complete in all respects.

SECTION	ITEM	MANUFACTURERS/PRODUCT
07 41 13	Metal Roof Panel	MS200 Metal Roof Panel by Taylor Metal Prod
08 71 00	Ball Bearing and Continuous Hinges	Ives
09 51 00	Acoustical Panel, Type A	Symphony M by CertainTeed
	Acoustical Panel, Type B	Vinyl Shield A by CertainTeed
09 83 11	Tackable Acoustic Wall Panels	Conweb
	Non-tackable Wall Panels	Conweb
23 33 00	Automatic Damper	Nailor Industries Model 1010 Nailor Industries Model 1020
23 70 00	Indoor Air Handler	Dalkin Applied Model LAH
23 81 00	Split System Air Conditioning	Fujitsu
24 40 00	Mop Sink, MS-1	Acorn Terrazzo TCR-28

26 50 00 Light Fixture Manufacturers: The following manufacturers are approved for the fixtures noted. Fixture performance shall meet specified/scheduled requirements and will be reviewed upon award of contract and as noted below. Fixtures not meeting performance requirements will be rejected:

- L2 Lightolier
- L2A Lightolier
- L3 Metalux 22GR LED series
- L6 Nulite
- L7 Focal Point Seem 2 FSM2L series
- L8 Nulite
- L9 Lumenpulse
- L9 Focal Point Seem 2 FSM2LS series
- L11 Lithonia Lighting
- L12 Nulite
- L12 Prudential Bionic LED Wall Wash
- L14 Mark Lighting
- L17 V2 Lighting
- L17A V2 Lighting
    - LED driver must meet dimming performance criteria, as specified.
- L18 Focal Point Seem 2 FSM2LS series
- L22 Insight Lighting
- L20 LF Illumination
    - Provide sample to evaluate lighting quality.

- L22 Elliptipar
    - Note, specified lumen output and wattage performance to be met.
- S1 McGraw-Edison Galleon Series
- S2 McGraw-Edison Galleon Series
- S4 Louis Poulsen
    - Contractor to verify egress lighting levels in plaza, and architect to approve aesthetics prior to final approval.
- S5 Ligman Legend U40020 series
- S5A Ligman Legend U40020 series
- S6 Winona Lighting
- S7 Bega
- S9 Lithonia Lighting
- S10 WE-EF Lighting USA

END OF ADDENDUM NO. 5

BID FORM

BID FOR: Roosevelt Middle School Replacement CIP Number: 410.566.001

Submitted to: Facilities Management
Eugene School District 4J
715 West Fourth Avenue3
Eugene, Oregon 97402

Bid Deadline: 2:00 PM, March 19, 2015

Submitted by: _____
(Company Name)

BASE BID

The undersigned proposes to furnish all material, equipment, and labor required for the complete project, and to perform all work in strict accordance with the Contract Documents for the lump sum prices indicated below with completion occurring on or prior to the dates indicated:

BASE BID:

Bid: _____ $ _____
(Words) (Figures)

ALTERNATES

The undersigned proposes to furnish all material, equipment, and labor required for the following alternates as described in Section 01 23 00 - Alternates:

Alternate No. A1: Standing Seam Metal Roofing	Add	$ _____
Alternate No. A2: Sports Field Upgrade	Add	$ _____
Alternate No. A3: Covered Bike Storage	Add	$ _____
Alternate No. A4: Multi-Modal Sidewalk at 24th Avenue	Add	$ _____
Alternate No. A5: Rainwater Harvesting System	Add	$ _____
Alternate No. A6: Ceiling Tile AP-1	Deduct	$ _____

The Owner reserves the right to exercise any or all alternates as its sole discretion within 60 days of the date of receipt of bids.

UNIT PRICES

The following Unit Prices as described in Section 01 22 00 are submitted by the Undersigned as a proposed basis for additive or deductive adjustments to the Bid Amount in the event quantity changes are required for the items listed. It is understood and agreed that these Unit Prices are separately subject to acceptance by the Owner and will thereafter be entered into the Agreement. The Unit Prices are to include all labor, travel and material costs.

Item 1: Over-Excavation and Back-Fill	$ _____ / Cubic Yard
Item 2: Additional Length of Piles	$ _____ / Foot of Pile Length

The Unit Prices are submitted as a proposed basis for additive or deductive adjustments to the Bid Amount in the event quantity changes are required for the items listed. It is understood and agreed that these Unit Prices are separately subject to acceptance by the Owner and may thereafter be entered into the Agreement.

TIME
The undersigned agrees, if awarded the Contract, to substantially complete all Base Bid work and accepted Alternates on or before the dates specified in Section 01 10 00.

BID SECURITY
Accompanying herewith is Bid Security, which is not less than ten percent (10%) of the total amount of the Base Bid.

STIPULATIONS
The undersigned acknowledges the liquidated damages provision included in the Supplementary Conditions.

The undersigned agrees, if awarded the contract, to comply with the provisions of Oregon Revised Statutes 279C.800 through 279C.870 pertaining to the payment of prevailing rates of wage

The undersigned agrees, if awarded the Contract, to execute and deliver to the Owner within ten (10) working days after receiving contract forms, an Agreement and a satisfactory Performance Bond and Payment Bond each in an amount equal to 100 percent (100%) of the Contract Sum.

For every bid $100,000 or greater, all Contractors and Subcontractors shall have a public works bond, in the amount of $30,000, filed with the Construction Contractors' Board (CCB), before starting work on the project, unless exempt. Contractor agrees to provide a copy of the Contractor's BOLI Public Works bond with the signed Agreement as Specified in the Supplementary Conditions.

The undersigned agrees that the Bid Security accompanying this proposal is the measure of liquidated damages which the Owner will sustain by the failure of the undersigned to execute and deliver the above named agreement and bonds; and that if the undersigned defaults in executing that agreement within ten (10) days after forms are provided or providing the bonds, then the Bid Security shall become the property of the Owner; but if this proposal is not accepted within sixty (60) days of the time set for the opening of bids, or if the undersigned executes and delivers said agreement and bonds, the Bid Security shall be returned.

By submitting this Bid, the Bidder certifies that the Bidder:
a) has available the appropriate financial, material, equipment, facility and personnel resources and expertise, or the ability to obtain the resources and expertise, necessary to meet all contractual responsibilities;
b) has a satisfactory record of past performance;
c) has a satisfactory record of integrity, and is not disqualified under ORS 279C.440;
d) is qualified legally to contract with the Owner; and
e) will promptly supply all necessary information in connection with any inquiry the Owner may make concerning the responsibility of the Bidder.

Prior to award of a Contract, the Bidder shall submit appropriate documentation to allow the Owner to determine whether or not the Bidder is "responsible" according to the above criteria.

The contractor agrees with the provisions of Oregon Revised Statutes 279C.505, which requires that the contractor shall demonstrate it has established a drug-testing program for employees and will require each subcontractor providing labor for the Project to do the same.

The undersigned has received addenda numbers _____ to _____ inclusive and has included their provisions in the above Bid amounts.

The undersigned has visited the site to become familiar with conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

The undersigned certifies that the Bidder is a _____ Bidder under ORS. ("Resident" or "Non-resident", to be filled in by Bidder)

Names of Firm:
_____

Street Address:
_____
(City) (State) (Zip)

Telephone Number: _____FAX Number: _____

Email Address: _____

Signed By: _____
(Signature of Authorized Official. If bid is from a partnership, one of the partners must sign bid).

Printed Name: _____

Date Signed: _____

Official Capacity: _____

If corporation, attest: _____ Date: _____
(Secretary of Corporation)

SEAL (If Corporate)

_____ Corporation
_____ Partnership
_____ Individual

Enclosed: Bid Security, Non-Discrimination Requirement, Non-Collusion Affidavit, First-Tier Subcontractor Disclosure Form

NON-DISCRIMINATION REQUIREMENT

Contractor certifies that the Contractor has not discriminated against minorities, women or emerging small business enterprises in obtaining any required subcontracts.

The Contractor agrees not to discriminate against any client, employee, or applicant for employment or for services, because of race, color, religion, sex, national origin, physical or mental handicap, sexual orientation or age, unless based upon bona fide occupational qualifications, and that they are otherwise in compliance with all federal, state and local laws prohibiting discrimination, with regard to, but not limited to, the following: Employment upgrading, demotion or transfer; Recruitment or recruitment advertising; Layoffs or termination; Rates of pay or other forms of compensation; Selection for training; Rendition of services. It is further understood that any vendor who is in violation of this clause shall be barred forthwith from receiving awards of any purchase order from the School District, unless a satisfactory showing is made that discriminatory practices have terminated and that a recurrence of such acts is unlikely.

FIRM NAME_____

ADDRESS_____

TELEPHONE_____

BY_____
(Company or Firm Officer)

BY _____
(Type or Print Name)

NON-COLLUSION AFFIDAVIT

STATE OF _____)

County of _____)

I state that I am _____of _____
(Title) (Name of Firm)
and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the price(s) and the amount of this bid.

I 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, expect as disclosed on the attached appendix.

(2) That 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 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 of my firm 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 noncompetitive bid.

(5) _____, its affiliates, subsidiaries, officers, directors and
(Name of my Firm)
employees are not currently under investigation by any governmental agency and have not in the last four years been convicted of 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 described on the attached appendix.

I state that _____ understands and acknowledges that the above
(Name of my Firm)
representations are material and important, and will be relied on by School District 4J 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 School District 4J of the true facts relating to the submission of bids for this contract.

_____
(Authorized Signature)

Sworn to and subscribed before me this _____ day of _____, 2015

_____
(Notary Public for Oregon)

My Commission Expires: _____

END OF BID FORM

DRIVEN STEEL PIPE PILES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Steel pipe piles driven by both hammering and vibration.
   1. Drive piles in accordance with the Geotechnical Report to provide the required pile capacity.
   2. Piles shall be driven to bedrock using impact systems or by vibration method at the option of the Contractor.
   3. Drive and seat all piles into bedrock using an impact hammer. The final set of the piles (used to calculate pile capacity) shall be based on an impact hammer.
   4. “Driving Piles” refers to both installation by vibratory hammers and traditional methods using impact hammers. “Driving Piles” as used in this Section refers to both methods unless the context clearly refers to one method only.

1.02 SUBMITTALS

A. At least two weeks prior to mobilization at the site, submit data fully describing all proposed pile installation equipment including hammers, rams, driving cushions, pile caps and cap blocks to Engineer.

B. Provide certification of yield strength and weldability of steel products by process acceptable to Engineer; mill certificates of chemical and physical properties, or equivalent.

C. Installation Records:

   1. Prepare and submit to the Architect full-length installation records for each pile installed. The records shall be submitted within 2 days after installation is completed for the pile. The records shall include the following minimum information:
      a. Project name and number.
      b. Name of Contractor.
      c. Pile location in pile group and designation of pile group.
      d. Sequence of driving in pile group.
      e. Pile dimensions.
      f. Ground elevation.
      g. Elevation of tip after driving.
      h. Final tip and cutoff elevations of pile after driving pile group.
      i. Records of redriving.
      j. Elevation of splices.
      k. Type, make, model, and rated energy of hammer.
      l. Weight and stroke of hammer.
      m. Type of pile-driving cap used.
      n. Cushion material and thickness.
      o. Actual stroke and blow rate of hammer.
      p. Pile-driving start and finish time; and total driving time.
      q. Time, pile-tip elevation, and reason for interruptions.
      r. Record of number of blows for each 12 inches of penetration, and number of blows per 1 inch for the last 6 inches of driving.
      s. Pile deviations from location and plumb.
      t. Record any special procedures used or occurrences during pile driving.

D. Welding Certificates: Copies of certificates for welding procedures and personnel.

E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of seven (minimum) completed projects within the last five years with project names and addresses, names and addresses of architects and owners, and other information specified.

F. Mill test reports signed by manufacturer certifying that each of the following complies with requirements:
   1. Steel pipe piles.
   2. Steel castings.
   3. Steel plate.

G. Pile-Driving Equipment: Include type, make, maximum rated energy, and rated energy per blow of hammer; weight of striking part of hammer; weight of drive cap; details, type, and structural properties of hammer cushion; and details of follower and jetting equipment.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has specialized in installing piling similar in material, design, and extent to that indicated for this Project.

B. Survey Work: Surveys, layouts, and measurements related to pile driving shall be prepared by a surveyor or professional engineer who is legally qualified in jurisdiction where Project is located to perform these kinds of services.

C. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the State of Oregon and who is experienced in providing engineering services for piles that are similar to those indicated for this Project in material, design, and extent.

D. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.

E. Comply with requirements of the following publications:
   1. AISC's "Load and Resistance Factor Design (LRFD) Specification for Structural Steel Buildings."
   2. AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."

F. Welding Standards: Qualify welding procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel."

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the project site in such quantities and at such times to assure the continuity of pile driving operations to the project schedule.

B. Store piles in orderly groups above group and blocked during storage to minimize possible distortion of members. Piles exhibiting variations beyond tolerance limits will be considered distorted and may not be used in the work.

1.05 PROJECT CONDITIONS

A. Protect structures, underground utilities and other construction from damage caused by pile driving operations. Pre-excavate for piles as required and as specified.

PART 2 PRODUCTS

2.01 STEEL PIPE PILES

A. Steel Piling: Provide Corrosion Resistant or Non-corrosion Resistant Steel Piling as follows:
   1. Corrosion Resistant Steel Piling: Reference General Structural Notes.
      a. Provide painted, ASTM A123 galvanized or ASTM A972 epoxy coated.
      b. Paint, galvanization and epoxy not required at head of piling where embedded in pile caps.
   2. Non-corrosion Resistant Steel Piling: Reference General Structural Notes and provide wall thickness 1/8" greater than specified.
      a. Provide plain.

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B. Fabrication: Provide splice plates, pile cap plates of the same steel as piling. Fasten to piles with welded connections as shown on drawings.
   1. Piles: Open ended.

2.02 PAINT

A. Paint: SSPC-Paint 16; self-priming, two-component, coal-tar epoxy polyamide.
   1. Color: Black or red.

2.03 DRIVING EQUIPMENT

A. General: Furnish pile driving equipment of a type generally used in standard pile driving practice, operate equipment at manufacturer's specified rate to develop the required rated energy. Drop hammers will not be allowed.

B. Equipment:
   1. Provide equipment of adequate size and capacity to handle, place and hold the piles to the designed alignment. This equipment shall be able to maintain the alignment of pile with driving equipment, without damage to either.
   2. Maintain all pile driving equipment in safe operating condition at all times.
   3. Driving equipment shall be in good repair and operating condition and shall be capable of being operated as recommended by the manufacturer.
   4. Any equipment or methods which result in regular or repeated damage to the piles during driving, or is detrimental to the bearing capacity of piling already driven, will be rejected by the Engineer.
   5. Impact hammers shall be steam, air, or diesel driven that develop a rated energy of at least 5,000 ft-lbs per blow and no more than 17,000 ft-lbs per blow or as required to achieve the required pile tip penetration without overstressing the pile. Contractor is responsible for selecting driving equipment that will not cause damage to the piling or adjacent structures during driving.
   6. Vibratory hammers (if used) shall be of sufficient size and energy to install piles to the bedrock surface.

C. Driving Caps: Provide driving caps capable of protecting pile head and providing uniform distribution of energy to pile head.

D. Leads: Use fixed rigid type pile driver leads that will hold the pile firmly in position and alignment, and in axial alignment with the driving equipment. Free-swinging leads will not be permitted. Extend leads to within 2 feet of the elevation at which the pile enters the ground.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions under which piles are to be installed, and correct conditions detrimental to the proper and timely completion of the work. Proceed with work only after unsatisfactory conditions have been corrected in a manner acceptable to the installer.

3.02 PRE-DRIVING WORK

A. Site Conditions: Do not drive piles until the earthwork in the area which piles are to occupy has been completed, as follows:
   1. Excavations: Earth excavation will be stopped at an elevation of 6 inches to 12 inches above the bottom of the footing before piles are driven. Final excavation of the required elevation of footing bottoms will be done as part of the earthwork, after the piles have been driven.
   2. Fills: Fills will be constructed and compacted to the elevation of the grade indicated.
   3. Mobility of the Contractor's equipment in the excavation is the Contractor's responsibility.

B. Pile Length Markings: Mark each pile with horizontal lines at 1'-0" intervals, and the number of feet from pile point at 5'-0" intervals. In order to be able to measure the driving resistance, mark the last 60 inches at one-inch intervals.

C. Welding:
   1. Perform manual arc-welding using shielded metal arc or submerged arc method, complying with AWS Standards and requirements of the City.
   2. Use oxygen-gas or oxygen arc methods for field cutting of steel, complying with AWS recommendations.

D. Welded Splices: Clean surfaces to be welded of rust, scale, oil, paint, and foreign material. Use only pile members with identical cross-sections for splicing.
   1. Only one splice per pile will be permitted, unless otherwise authorized by the Engineer. Make splices before starting driving operations wherever possible. If a welded splice is required during driving operation, make splice when top of drive pile portion is at least 3'-0" above ground, to permit inspection of welded connection during welding and during subsequent driving.
   2. Splices shall be 100% butt welded, producing straight pile alignment through splice and developing full strength of pile in both bearing and bending.

3.03 DRIVING PILES

A. General:
   1. Drive each pile at the locations indicated, to satisfactory embedment and driving resistance directed by the Geotechnical Engineer.
      a. Pile Lengths: Conform to recommendations of Geotechnical Report as stated on Drawings to provide piles of sufficient length to embed into bedrock and develop the capacity indicated on the Drawings.
      b. Engineer reserves the right to modify driving criteria depending on the equipment used, field conditions encountered and observations made during pile installation.
   2. Carefully maintain the center of gravity for each group or cluster of piles to conform to the locations shown on the drawings.
   3. Carefully plumb the leads and the pile before driving. Take care during driving to prevent and toe correct any tendency of piles to twist or rotate.
   4. Avoid excessive driving as established by the Geotechnical Engineer.

B. Driving Tolerances: Drive piles within the following maximum tolerances:
   1. Location: 3 inches from location indicated for center of gravity of each single pile or pile groups; 2 inches for piles under walls.
   2. Plumbness: Maintain 1 inch in 10'-0" from the vertical, or a maximum of 4 inches, measured when the pile is above ground, in the leads.
   3. Batter Angle: Maximum 1 inch in 10 feet from required angle, measured when pile is above ground in leads.

C. Heaved Piles: Compile recorded instrument observations made during pile driving to determine whether a driven pile has lifted from its original seat during the driving of adjacent piles. If uplift occurs, redrive the affected piles to a point elevation at least as deep as the original point elevation with a driving resistance at least as great as the original driving resistance.

D. Damaged or Misdriven Piles:
   1. Damaged piles, and piles driven outside the required driving tolerances, will not be accepted.
   2. Withdraw piles rejected after driving, and replace with new piles.
   3. Drive additional pile or piles where the centerline deviation exceeds 3 inches and an analytical determination indicates a load on any pile exceeding 110% of the design load. Modify to suit project or choose 4 or 5.
   4. Fill holes left by withdrawn piles that will not be filled by new piles using flowable cementitious fill.

E. Cutting-Off:
   1. Cut-off tops of driven piles, square with pile axis and at elevations indicated.

F. Pile Caps: After pile is cut-off, weld steel plates in place, square and level on top of pile as shown on the structural drawings. Provide steel reinforcing on top of piles as shown on the structural drawings.

3.04 FIELD QUALITY CONTROL

A. Install a minimum of four indicator piles as directed by the Geotechnical Engineer, in order to verify design pile lengths.

B. Indicator piles, furnished and driven by Contractor to determine lengths of piles, may become part of foundation system provided they conform to the contract requirements.

C. Driving Indicator Piles:
   1. Use piles of the same diameters and lengths as those to be used in the work and drive with the appropriate pile driving equipment operating at the rated driving energy proposed to be used for the balance of the work.
   2. Drive indicator piles at locations selected by the Geotechnical Engineer to the specified driving resistance and capacity.

D. Survey: Employ independent Professional Land Surveyor or Registered Civil Engineer to make field survey of completed piling. Show actual pile locations with respect to planned pile locations; and plumbness.

E. Weld Testing: In addition to visual inspection, welds will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing agency's option. Correct deficiencies in and retest welds to determine compliance with requirements.
   1. Liquid Penetrant Inspection: ASTM E 165.
   2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
   3. Radiographic Inspection: ASTM E 94 and ASTM E 142; minimum quality level "2-2T."
   4. Ultrasonic Inspection: ASTM E 164.

3.05 TOUCHUP PAINTING

A. Clean field welds, splices, and abraded painted areas and field-apply paint according to SSPC-PA 1. Use same paint and apply same number of coats as specified for shop painting.
   1. Apply touchup paint before driving piles to surfaces that will be immersed or inaccessible after driving.

3.06 DISPOSAL

A. Remove withdrawn piles and cutoff sections of piles from site and legally dispose of them off Owner's property.

END OF SECTION

SECTION 12 93 00
SITE FURNISHINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Benches.
B. Trash and Recycling Receptacles.
C. Bollards.
D. Bike/Skate Deterrent.
E. Picnic Table.

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete:
B. Section 05 50 00 - Metal Fabrications: Custom metal outdoor furnishings.

1.03 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2008.
B. ASTM A269 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2008.
C. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2010.
D. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; 2009b.
E. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2003.
F. ASTM C33 - Standard Specification for Concrete Aggregates; 2008.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
B. Product Data: Manufacturer's data sheets on each product to be used, including:
    1. Preparation instructions and recommendations.
    2. Storage and handling requirements and recommendations.
    3. Installation methods and details.
    4. Maintenance and cleaning recommendations.
    5. Warranty information.
C. Shop Drawings: Indicate size, shape, and dimensions, including clearances from adjacent obstructions.
D. Selection Samples: For each finish product specified, submit color chips for review and approval.

1.05 COORDINATION

A. Coordinate with other trades affecting and affected by work of this Section.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging with legible manufacturer's identification until ready for installation.
B. Use all means necessary to protect materials of this Section before, during and after installation and to protect installed work and materials of other trades.

C. In event of damage, immediately make all repairs and replacements necessary to approval of Owner's Representative.

D. Store and handle materials in accordance with manufacturer's recommendations.

PART 2 PRODUCTS

2.01 BENCH

A. Steel Bench: Install per manufacturer's recommendations.
   1. Material/Size: Solid steel rod and tubular steel, 6 foot length.
   2. Make/Model: Victor Stanley Model FS-53, Streesites Collection, or approved.
   3. Finish: Metal components powder coated silver from manufacturer's standard finishes.
   4. Mounting: Surface mounted.

B. Substitutions: Refer to Section 01 60 00 - Product Requirements.

2.02 TRASH AND RECYCLING RECEPTACLE

A. Steel Receptacles: Install per manufacturer's recommendation.
   1. Material/Size: Recycled solid steel bar, 36-gal.
   2. Make/Model: Victor Stanley Model T-32, Streetsites Collection, or approved.
   3. Lid: Domed Lid
   4. Finish: Powder coated silver from manufacturer's standard finishes.

B. Substitutions: Refer to Section 01 60 00 - Product Requirements.

2.03 BUILDING PROTECTION BOLLARD

A. Steel Mechanical Square Tublar Steel Bollard.
   1. Make/Model: CBSQ-44-E-P-D by Creative Pipe, Inc. Rancho Mirage, CA, Tel. (800) 644-8467, or approved.
   2. Height: 36-inches
   3. Finish: Powder coat silver
   4. Mounting: Embedded 24-inches
   5. Cap: Domed Top Cap

B. Substitutions: Refer to Section 01 60 00 - Product Requirements.

2.04 REMOVABLE BOLLARD

A. Powder coated steel pipe bollard with cap and ground sleeve to allow for removing.
   1. Make/Model: CBSQ-44-RE-P-D by Creative Pipe, Inc. Rancho Mirage, CA, Tel. (800) 644-8467, or approved.
   2. Height: 36-inches
   3. Finish: Powder coat silver
   4. Mounting: Removable Embedded, Pad lockable.
   5. Cap: Domed Steel Top Cap
   6. Accessories: Pad lockable hole cover

B. Substitutions: See Section 01 60 00 - Product Requirements.

2.05 BIKE/SKATE DETERRENT

A. Material: 6061-T6 Aluminum
   1. Make/Model: FR 012-SS by Skatestoppers, El Cajon, CA (619) 447-6374, or approved.
   2. Finish: Type II Clear Anodize
   3. Mounting: Follow Manufacturer's recommendations.

B. Substitutions: See Section 01 60 00 - Product Requirements.

2.06 PICNIC TABLE

A. Picnic Table: Install per manufacturer's recommendations.
   1. Material: Solid steel rod and tublar steel, standard 6 foot length.
   2. Make/Model: Victor Stanley Model FBF-56, Streetsites Collection, or approved.
   3. Finish: Metal components powder coated silver from manufacturer's standard finishes.
   4. Mounting: Surface mounted.

B. Substitutions: Refer to Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that mounting surfaces, preinstalled anchor bolts, or other mounting devices are properly installed; and ready to recieve site furnishing items.

B. Do not begin installation until unsatisfactory substrates have been properly repaired.

3.02 PREPARATION

A. Ensure surfaces to receive site furnishings are clean, flat, and level.

B. Notify Owner' Representative for approval of Site Furnishing location prior to installation.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install furnishings level, plumb, square, and correctly located as indicated on the drawings.

C. Layout site furnishings for Owner's Representative to review location prior to installation.

3.04 CLEANING

A. Clean installed work to like-new condition. Do not use cleaning materials or methods that could damage finish.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SOLAR WATER HEATING SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The provisions of Section 22 05 00, Common Work Results for Plumbing apply to work specified in this Section.

1.2 SUMMARY

A. This Section includes: Solar heating water system equipment including solar collector panels and mounting, flow meter, heat exchanger, and storage tank.

B. Related Sections include:
1. Section 22 05 23 General Duty Valves and Specialties for Plumbing.
2. Section 22 05 29 Hangers, Supports and Anchors for Plumbing.
3. Section 22 05 53 Identification for Plumbing Piping and Equipment.
4. Section 22 07 00 Insulation for Plumbing.
5. Section 22 21 13 Pipe and Pipe Fittings Plumbing.
6. Section 22 21 23 Pumps for Plumbing.
7. Section 22 25 00 Plumbing Water Treatment.

1.3 SUBMITTALS

A. Shop Drawings:
1. Solar Collector Mounting Details: Provide layout and details of the solar collector mounting brackets and the connections to the roof system. Coordinate mounting bracket connections with roof system manufacturer. Provide certification from the roof system manufacturer that the solar collector mounting system is compatible with the roof system and will not affect the roof system warranty.

B. Product Data:
1. Solar Collectors.
2. Storage Tank.
3. Drainback Tank.
4. Heat Exchangers.
5. Flow Meter.
6. Controller.
7. Solar Collector Mounting Brackets.

C. Operation and Maintenance Data.

1.4 INCENTIVES

A. Qualifications:
1. The installing contractor shall be an approved Solar Trade Ally with the Energy Trust of Oregon.

B. Incentive Documentation:
1. The installing contractor shall assist the owner in obtaining financial incentives by performing the calculations and the paperwork required for the following programs.
   a. Energy Trust of Oregon (ETO) solar incentives program.
   b. Oregon Business Energy Tax Credit (BETC) solar thermal program.
   c. Federal Incentives will be obtained by pass thru documentation due to Non Profit Status of Building.

2. Application paperwork shall be prepared and submittal with adequate time for project incentive approval prior to purchasing any solar equipment.

PART 2 - PRODUCTS

2.1 SOLAR COLLECTOR PANEL

A. Acceptable Manufacturers:
   1. Radco, Heliodyne, and SunEarth
   2. Other Manufacturers: Submit Substitution Request.

B. Description: Solar collectors with extruded aluminum frame with bronze anodized finish .008" roll formed copper sheet absorber plate, absorber with black chrome selective coating over nickel plate or 3/4-inch internal copper manifolds with 1/2-inch waterway tubes, EPDM inserts at manifold seals, 1/8-inch low iron tempered glass glazing, foil faced insulation board and fiberglass blanket, bronze painted and embossed 0.014-inch minimum aluminum backing sheet. Collector shall have IAMPO listing and be SRCC certified.

2.2 STORAGE TANK

A. Acceptable Manufacturers:
   1. Niles, Lochinvar, A.O. Smith, PVI, Roy E. Hanson Jr. Mfg.
   2. Other Manufacturers: Submit Substitution Request.

B. Description:
   1. Construct tank of heavy gauge steel with glass lining, , and 150 psi working pressure
   2. Equip tank with sacrificial magnesium anodes and brass drain valve.
   3. Pre-Insulated tank with 2-inch minimum foam insulation that meets or exceeds ASHRAE 90.1b (current standard), with a baked enamel steel jacket.
   4. Temperature and pressure relief valve and drain valve.
   5. See Drawings for size, capacities and other details.

2.3 SOLAR DRAINBACK RESERVOIR

A. Acceptable Manufacturers:
   1. SunEarth, A.O. Smith.
   2. Other Manufacturers: Submit Substitution Request.

B. Description
   1. Construct tank of type 304 0.047 minimum gauge stainless steel, and 50 psi maximum working pressure.
   2. Pre-Insulated tank with foam insulation, 1" minimum on sides and 1-1/2" minimum on ends, with ABS plastic or heavy gauge jacket and end caps.
   3. Tank shall have a convenient filling access with location for pressure relief valve, a return line dip tube for question operation, and a sight glass. Dip tube shall have at least one hole towards the top to allow air to return to collectors with solar loop pump(s) off.
   4. See Drawings for size, capacities, and other details.

2.4 BRAZED PLATE TYPE WATER-TO-WATER HEAT EXCHANGER

A. Acceptable Manufacturers:
   1. Alpha-Laval, Mueller, APV, Bell & Gosset.
   2. Other Manufacturers: Submit Substitution Request.

B. Copper brazed plate single wall heat exchanger (suitable for use in domestic water system) shall consist of the specific number of Type 316 L stainless steel heat transfer plates as required to provide the total square footage of effective heat transfer area to meet the operating conditions specified.

C. Each heat transfer plate shall be of "M" and "W" shaped herring boned corrugations to optimize heat transfer with nominal pressure losses.

D. The complete assembly shall be factory assembled and tested in accordance with the ASME Code, Section VIII, Division 1, and furnished with ASME Code certification (U-1 Form) and stamp for a design pressure of 435 psig at 450°F for both circuits.

2.5 FLOW METER

A. Acceptable Manufacturers: Bell & Gossett, Caleffi Blue-White, Letro or approved.

B. Solar Loop Model Description: Visual flow meter and non-ferrous balance valve, cast iron or brass body, 125psi operating pressure, 240°F operating temperature, PSU or stainless steel indicating device, 2-5 GPM.

C. Potable Loop Model Description: Visual flow meter, balance and check valve, low-lead brass body, 125 psi operating pressure, 230°F operating temperature, PSU or stainless steel indicating device, 2-5 GPM.

2.6 SOLAR COLLECTOR PANEL MOUNTING SYSTEM

A. Acceptable Manufacturers:
   1. SunEarth Solar Strut, Heliodyne.
   2. Other Manufacturers: Submit Substitution Request.

B. Mounting hardware:
   1. Collector mounting shall be achieved without roof penetrations.
   2. Collector mounting hardware shall be comprised of a collector manufacturer supplied aluminum clip system attached directly to the collector's mounting flange.
   3. Collector racks used to raise collectors tilt shall be fastened to structural members provided on the roof and able to sustain a wind load of not less than site loading requirements.
   4. Solar collector rack kits shall include:
      a. Extruded aluminum channeled rails.
      b. Front and back mount legs.
      c. Mounting feet or other hanger bolt connection configuration.
      d. Mounting clips, stainless steel 304 bolts, nuts and washers to assemble and attach to the collector mounting flange.

C. Mounting Approval.
   1. Structural and wind loading calculations shall be stamped and signed by a licensed engineer in the state of site construction for the collector metal framing supports and collector anchorage.

PART 3 - EXECUTION

3.1 GENERAL:

A. Install work in strict accordance with applicable codes, regulatory agencies, approved layout, and the Contract Documents, and in such a manner as to achieve required design criteria with components accurately placed and operating correctly.

B. All work shall comply with requirements for available incentive programs such as BETC and ETO.

3.2 SOLAR COLLECTOR PANEL AND MOUNTING SYSTEM

A. Install per manufacturer's instructions.

B. Connect to structural locations indicated on the drawings.

C. Each group of panels shall have its own support structure.

3.3 STORAGE TANK

A. Install per manufacturer's instructions.

B. Support on 4-inch housekeeping pad.

C. Connect piping as indicated on the Drawings.

3.4 SOLAR DRAINBACK RESERVOIR

A. Install per manufacturer's instructions.

B. Support on 4-inch housekeeping pad.

C. Connect piping as indicated on the Drawings.

3.5 BRAZED PLATE TYPE WATER-TO-WATER HEAT EXCHANGER

A. Install per manufacturer's instructions.

B. Connect piping as indicated on the Drawings.

3.6 FLOW METER

A. Install according to manufacturer's instructions.

B. Connect piping as indicated on the Drawings.

C. Locate to ensure that the meter is visually accessible from a permanent walking surface.

END OF SECTION

PLUMBING FIXTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The provisions of Section 22 05 00, Common Work Results for Plumbing HVAC apply to work specified in this Section.

1.2 SUMMARY

A. This Section includes:
   1. Plumbing fixtures.
   2. Fixture trim.
   3. Drainage products.
   4. Miscellaneous plumbing items.

1.3 QUALITY ASSURANCE

A. Water closets shall have Maximum Performance (MaP) score of no less than 800.

B. Faucets shall be certified to NSF/ANSI 61.

1.4 SUBMITTALS

A. Submit the following:
   1. Product data for each item specified.
   2. Operating and Maintenance Data:
      a. Sensor operated flush valves.
   3. Mounting heights for all fixtures.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturers are stated for each fixture specified. The following manufacturers are also acceptable, except when indicated "only".

B. Drainage Products and Carrier Products: J.R. Smith, Josam, Sioux Chief, Zurn, Wade, Watts Drainage, Woodford, Mifab.

C. Fixtures: American Standard, Kohler, Sloan, Toto.

D. Seats: Olsonite, Church, Beneke, Bemis.

E. Mixing Valves: Powers, Leonard, Symmons, Chicago, Acorn SV16.

F. Stainless Steel Products: Elkay, Just, Franke.

G. Mop Sinks: Fiat, Williams, Mustee.

H. Wash Stations: Bradley, SloanStone.

I. Drinking Fountains: Elkay, Acorn.

J. Showers: Moen, Delta.

K. Faucets: Chicago, Elkay, Delta Commercial, Kohler, Moen Commercial, Sloan.

L. Shock Arrestors: PPP, J.R. Smith.

M. Trap Primer Stations: PPP, J.R. Smith.

N. Exposed Waste and Supply Piping Insulation Kits: Truebro, McGuire.

O. Other Manufacturers: Submit Substitution Request.

2.2 FIXTURE TRIM

A. Supply Stops: Chicago cast brass rigid riser supplies with loose key angle stops, wall flanges, NPT female inlet, all chrome plate finish; equivalent NPT McGuire (LK series), Brasscraft (SCR series) or NPT stops by fixture supplier.

B. Traps:
1. For floor drains, provide coated cast iron P-trap; recessed, screw jointed or bell and spigot.
2. For other fixtures, provide 17 gauge, chrome plated cast brass P-Traps with solder bushings, and clean-out.

C. Support Rims: Hudee stainless steel rims, if sink not furnished with integral rim.

D. Vacuum Breakers: Chicago Faucet, A.W. Cash or Febco chrome plated.

2.3 PLUMBING FIXTURES

A. WC-1 Water Closet:
1. Kohler “Kingston”, vitreous china, wall hung, elongated bowl, siphon jet action, 1-1/2-inch top spud, white color finish. Complete with Sloan Regal 111-1.28 battery powered sensor flushometer, with vandal-proof cap.
2. Bemis 1600 series white open-front seat, less cover with external check hinge including 300 series stainless steel post and pintles to stop seat at 11 degrees beyond vertical.
3. J.R. Smith Series 200 chair carrier.

B. WC-2 Water Closet(Adult ADA):
1. Kohler “Kingston”, vitreous china, wall hung, elongated bowl, siphon jet action, 1-1/2-inch top spud, white color finish. Complete with Sloan Regal 111-1.28 battery powered sensor flushometer with vandal-proof cap.
2. Bemis 1600 series white open-front seat, less cover with external check hinge including 300 series stainless steel post and pintles to stop seat at 11 degrees beyond vertical.
3. J.R. Smith Series 200 chair carrier.

C. U-1 Urinal:
1. Kohler Bardon, vitreous china, wall mounted wash down urinal with 3/4-inch top spud, white color finish. Complete with Sloan Optima 186-0.5 XL SMO sensor activated valve with dual filtered fixed bypass diaphragm, battery powered, with vandal proof cap (0.5 GPF).
2. J. R. Smith Series 600 floor mounted urinal support.

D. L-1 Lavatory :
1. Kohler Kingston K-2005 21-1/4 x 18-1/8-inch, vitreous china, self-draining deck, backsplash, 4-inch centers, wall hung, concealed arm support, grid drain, white color finish.
2. Chicago 802 series faucet with polished chrome plated solid brass body construction, 4-inch spout, vandal proof metering push handle, 1/2 GPM pressure compensating aerator, adjustable cycle time closure cartridge, vandal resistant complete.

E. WS-1 Wash Station (ADA):
1. Bradley, model LVRD2 series, wall hung, Mojave finish, equipped with Chicago MVP 3500 faucet, 0.5 gpm, manual push button metering faucet with single supply for tempered water service, and Chicago ECAST thermostatic mixing valve.

F. WS-2 Wash Station (ADA):
1. Bradley, model EXD-3N and EDN-2N series wall-hung, Mojave finish with grey trap cover, equipped with Chicago MVP 3500 faucet, 0.5 gpm, manual push button metering faucet with single supply for tempered water service, and Chicago ECAST thermostatic mixing valve.

G. S-1 Sink:
1. Elkay model ELUHAD series A.D.A. compliant, 21.5"x18.5"x5", gourmet undermount sink. ADA compliant, single compartment, 18 gauge, Type 304, ~~1-hole center~~ **2 hole configuration for single hole faucet with side valve.**, self-rimming, stainless steel sink; LK-18 grid strainer.
2. Chicago 748 series deck mounted, single hole drinking fountain chrome plated solid brass body construction, vandal proof metering push handle, anti-microbial flexible mouth guard.
~~3. Elkay model LKDVR (208513C), single hole mixing sink faucet, 12-1/2" rigid solid brass spout, single handle, 2.2 GPM pressure compensating laminar flow outlet, vandal resistant complete.~~
3. Chicago Mechanical Faucet 2302 series gooseneck faucet, single hole with side valve. 5-1/4" Rigid / Swing Gooseneck Spout. 1.5 GPM. 4-5/8" Lever Handle. Ceramic Volume Control and Hot Water Limit Stop Cartridge. 3/8" Compression Flexible Stainless Steel Hoses. ADA compliant. Vandal resistant complete.

H. S-2 Sink:
1. Elkay **Lustertone** model LRAD series, 25"x21.25"x6", A.D.A. compliant gourmet drop in sink. ADA compliant, single compartment, 18 gauge, Type 304, ~~1-hole center~~ **2 hole configuration for single hole faucet with side valve.**, self-rimming, stainless steel sink; LK-18 grid strainer.
~~2. Elkay model LKDVR (208513C), single hole mixing sink faucet, 12-1/2" rigid solid brass spout, single handle, 2.2 GPM pressure compensating laminar flow outlet, vandal resistant complete.~~
2. Chicago Mechanical Faucet 2302 series gooseneck faucet, single hole with side valve. 5-1/4" Rigid / Swing Gooseneck Spout. 1.5 GPM. 4-5/8" Lever Handle. Ceramic Volume Control and Hot Water Limit Stop Cartridge. 3/8" Compression Flexible Stainless Steel Hoses. ADA compliant. Vandal resistant complete.

I. S-3 Sink:
1. Elkay model SE Super Economy Series Sink (SE2C18x18-2-18X) free standing sink. Two compartments, two drain boards, backsplash, 18 gauge, Type 300, 1-hole center (each compartment), self-rimming, stainless steel sink; LK-99 grid strainer .
2. Chicago 640-L8E1-317YAB series, ceramic wall mount 8-inch center commercial faucet, two hole dual handle wall mount faucet with 4-inch wrist blades, 1/2" rigid solid brass spout, single handle, 2.2 GPM pressure compensating laminar flow outlet, vandal resistant complete.

J. S-4 Sink:
1. Elkay **Gourmet Undermount Single Bowl Sink** model ELUH2816 series, 30.5"x18.5"x11.5" undermount sink. Single compartment, 18 gauge, Type 304, ~~1-hole center~~ **2 hole configuration for single hole faucet with side valve.**, self-rimming, stainless steel sink; LK-99 grid strainer.
~~2. Elkay model LKDVR (208513C), single hole mixing sink faucet, 12-1/2" rigid solid brass spout, single handle, 2.2 GPM pressure compensating laminar flow outlet, vandal resistant complete.~~
2. Chicago Mechanical Faucet 2302 series gooseneck faucet, single hole with side valve. 5-1/4" Rigid / Swing Gooseneck Spout. 1.5 GPM. 4-5/8" Lever Handle. Ceramic Volume Control and Hot Water Limit Stop Cartridge. 3/8" Compression Flexible Stainless Steel Hoses. ADA compliant. Vandal resistant complete.

K. S-5 Sink:
1. Elkay **Lustertone** model LRAD series, 25”x21.25”x6”, A.D.A. compliant gourmet drop in sink. ADA compliant, single compartment, 18 gauge, Type 304, ~~1-hole center~~ **2 hole configuration for single hole faucet with side valve.**, self-rimming, stainless steel sink; LK-18 grid strainer.
~~2. Elkay model LKDVR (208513C), single hole mixing sink faucet, 12-1/2” rigid solid brass spout, single handle, 2.2 GPM pressure compensating laminar flow outlet, vandal resistant complete.~~
2. Chicago Mechanical Faucet 2302 series gooseneck faucet, single hole with side valve. 5-1/4” Rigid / Swing Gooseneck Spout. 1.5 GPM. 4-5/8” Lever Handle. Ceramic Volume Control and Hot Water Limit Stop Cartridge. 3/8” Compression Flexible Stainless Steel Hoses. ADA compliant. Vandal resistant complete.
3. Speakman SE-572 series integral countertop mounted emergency eyewash, aerated with flip-top dust caps, stainless steel push handle activation, ½” inlet, 3 GPM @ 30 psi.

L. MS-1 Mop Sink:
1. Fiat TSB series, 28x28x12-inch molded stone mop basin, wall bracket, 5-foot hose, bumper guards & wall guards (two sides).
2. Chicago 540 series ceramic wall mounted service faucet with polished chrome plated solid brass body construction, lever handles, pail hook, wall brace, vacuum breaker, check stops and hose thread outlet.

M. SH-1 Shower (ADA):
1. Moen Commercial Shower, Model 8342EP15 assembly with polished chrome finish, pressure balance mixing valve (Acorn SV16), high temperature limit stop, lever handle, 1.5 GPM hand held shower with 2 integral check valves and 69-inch hose and slide bar, 24-inch ADA wall/grab bar and rough in kit.
2. J.R. Smith 200 series floor drain with nickel bronze grate.

N. Master Mixing Valve Assembly: Leonard Type TM New Generation High Low, exposed, factory tested and assembled mixing valve assembly consisting of but not limited to: large and small rough bronze finish thermostatic mixing valves, high temperature limit stops, angle checkstops, outlet ball valve shutoffs, built-in spring check valve with pressure gauges, thermometer, inlet piping manifolds with unions. Unit to control discharge temperature to ±1%. Unit shall be mounted in locking stainless steel cabinet. See schedule on drawings for capacities.

O. DF-1 Drinking Fountain (ADA): Elkay LZWS-EDFPBM117K series dual height wall hung drinking fountain with integral bottle filler.
1. Surface mounted fountain.
2. Contoured basins.
3. Push pad operated bubblers.
4. Vandal resistant bubbler guards.
5. Surface mounting plate.
6. 1.5 GPM Bottle Filler.

P. Exposed Waste and Supply Piping Insulation Kits: McGuire Prowrap insulation kit for exposed supplies and waste piping below ADA lavatories and ADA sinks.

2.4 DRAINAGE PRODUCTS

A. HB-1 Hose Bibb: Chicago 952 series, chrome-plated, removable key, 3/4-inch hose thread, integral vacuum breaker.

B. WH-1 Wall Hydrant: J.R. Smith Fig. 5609QT, bronze finish, loose key, 3/4-inch hose thread, integral vacuum breaker, freeze proof.

C. WSCB-1 Water Supply Control Box (for Garbage Can Wash): J.R. Smith 3380 series, recessed water supply control box in type 304 stainless steel with a No. 4 satin finish, cylinder type key lock, cold and hot water screwdriver stops, flow control valve, and atmospheric vacuum breaker.

D. RD-1 Roof Drain (Small Area): J.R. Smith1330 series, 8-1/2-inch low profile diameter dome, cast iron body with combined flashing clamp and gravel stop, no-hub outlet and under deck clamp.

E. OD-1 Overflow Roof Drain (Small Area Overflow): J.R. Smith 1330 series, 8-1/2-inch low profile diameter dome, 2-inch high solid water dam, cast iron body with combined flashing clamp and gravel stop, no-hub outlet and under deck clamp.

F. FD-1 Floor Drain: J.R. Smith 2005 series, round nickel bronze vandal resistant grate, cast iron body with flashing collar and adjustable strainer head and no-hub outlet.

G. FD-2 Floor Drain (Unfinished Areas): J.R. Smith 2110 series, round cast iron grate, cast iron body, no-hub outlet, sediment bucket.

H. FD-3 Floor Drain (Finished Areas - Kitchens): J.R. Smith 2010 series, vandal-proof, square nickel bronze hinged grate, sediment bucket, cast iron body with flashing collar, adjustable strainer head and no-hub outlet

I. FD-4 Floor Drain (Garbage Can Wash Drain): J.R. Smith 3370 series, acid resisting coated interior, nickel bronze grate, free standing sediment bucket lined with 1/4-inch stainless steel mesh screen, no-hub outlet and bronze adjustable nozzle assembly. FS-1 Floor Sink (Finished Areas - Kitchens): J.R. Smith 3101-12 series, acid resistant coated floor sink, vandal-proof 8-1/2 x 8-1/2-inch nickel bronze 1/2 grate and sediment bucket, no-hub outlet and flashing collar.

J. FS-1 Floor Sink (Finished Areas - Kitchens): J.R. Smith 3101-12 series, acid resistant coated floor sink, vandal-proof 8-1/2 x 8-1/2-inch nickel bronze 1/2 grate and sediment bucket, no-hub outlet and flashing collar.

K. FS-2 Floor Sink (Finished Areas - Kitchens): Same as FS-1, except with 3/4 grate.

L. FS-3 Floor Sink (Finished Areas - Kitchens): Same as FS-1, except no grate.

M. FS-4Floor Sink (mechanical room indirect waste): J.R. Smith3041series floor sink with 8-inch deep receptor, basket strainer, 1/2 cast iron grate, no-hub outlet and flashing collar..

N. WCO Wall Cleanout: J.R. Smith 4530 series, round stainless steel vandal resistant cover and screw.

O. FCO Floor Cleanout: J.R. Smith 4020 series, round vandal resistant, nickel bronze top.

P. CTG Cleanout to Grade: J.R. Smith 4220 series, round, extra heavy duty cast iron top set in 12x12x4-inch deep concrete pad, vandal resistant.

Q. DSB-1 Downspout Boot: J.R. Smith 1787 series, 4-inch round downspout connection.

R. DSB-2 Downspout Boot: J.R. Smith 1785 series, 4x3-inch rectangular downspout connection.

S. Trap Priming Valves: Precision Plumbing Products Prime-time electronic trap priming manifold including but not limited to: atmospheric vacuum breaker, pre-set 24 hour clock, manual over ride, 120V solenoid valve, calibrated manifold for equal water distribution, 3/4-inch water hammer arrestor. Components pre-installed in recessed steel cabinet with SS access door.

T. Water Hammer Arrester: J.R. Smith 5005 – 5050 series, Precision Plumbing Products Model SC (Maintenance-Free).

PART 3 - EXECUTION

3.1 FIXTURE TRIM

A. Provide plumbing fixture trim where applicable on fixtures, including but not limited to supply stops, traps, support rims, flush valve, and vacuum breakers.

B. Provide rough-in and final piping connection to fixtures. Carefully review all construction documents to assure that all fixtures are provided with necessary services for a complete operating system.

C. Rigidly secure rough-in piping, carriers and supports, and other service piping to structure.

3.2 PLUMBING FIXTURES

A. Americans with Disabilities Act:
   1. Those fixtures indicated by “ADA” shall comply with and be installed in accordance with Americans with Disabilities Act Guidelines (ADAAG). Where applicable building code requirements are more stringent than ADAAG guidelines, building code requirements shall be followed.
   2. Water Closets:
      a. Mounting height of ADA water closet shall be 17 to 19 inches from floor to top of the toilet seat.
      b. Mount flush valve for ADA water closets on wide side of enclosure.
   3. Lavatories:
      a. Mounting height of ADA lavatories shall be at a maximum height of 34 inches from floor to rim.
      b. Provide insulation kits on exposed hot water and waste piping beneath ADA lavatories.
   4. Sinks: Provide insulation kits on exposed hot water and waste piping beneath ADA sinks.
   5. Urinals:
      a. Mounting height of ADA water closet shall be at a maximum height of 17 inches from floor to rim.

B. Fixture Mounting Heights: All fixtures standard rough-in catalogued heights unless shown otherwise on the Architectural Drawings.

C. Showers:
   1. Piping from shower mixing valve to shower head shall be rigid pipe. PEX piping not allowed.
   2. Shower Head Mounting Heights: Mount so that face of head is at 6’-6” above finished floor and shall not conflict with shower enclosure.

D. Water Supplies: When both hot and cold water to a fixture is required, connect the hot on the left and the cold on the right.

E. Lavatories:
   1. Public toilet room lavatories shall have grid strainers.
   2. Those lavatories indicated as “ADA” are ADA compatible. Coordinate with Architect to verify if all wall hung lavatories are to be installed at ADA height.

F. Floor Drain and Floor Sinks:
   1. Set top flush with finished floor.
   2. Provide flashing clamp for all drain bodies installed in floors provided with waterproof membranes.

G. Cleanout:
   1. Where shown or required.
   2. Cover set flush with finished surface.

H. Roof and Area Drains: Provide sump receivers for all drains except poured in place installations. Provide extension section as required to compensate for the specified insulation thickness above the roof slab or deck.

I. Water Hammer Arresters: Provide where shown and where recommended by Plumbing Drainage Institute (PDI).

J. Drinking Fountains:

1. All water-bearing materials shall comply with the Safe Drinking Water Act of 1986 and the Lead Contamination Control Act of 1988. The waterway system of the unit shall be manufactured of copper components and other completely lead-free materials.
2. Provide fixture manufacturer's wall mounting plate or floor mounted support for all wall-hung drinking fountains.

K. Mixing Valves: Provide piping connections per manufacturer's installation instructions.

L. Wall hung lavatories with pop-up waste assemblies: Contractor shall verify there is no vertical pull rod assembly conflict with lavatory backsplash prior to submitting product data.

3.3 PRIMING VALVES

A. All floor drains, floor sinks and similar traps shall be primed. Use minimum 3/8-inch type K annealed copper tubing. Primer line to be continuous and without joints.

B. Where priming valves are installed in finished rooms, conceal in wall and provide access panel.

C. Coordinate locations of electronic trap primer stations with electrical contractor for 120V service.

3.4 KITCHEN EQUIPMENT

A. General: Kitchen equipment is supplied and set in place by Kitchen Supplier, installed in construction contract. Obtain drawings before any rough-in is started. Complete installation and furnish all equipment required or scheduled below to give complete working installation. Symbol numbers are indicated by oval symbol with number inside. See "PLUMBING FIXTURES" for supply types and traps.

END OF SECTION

VARIABLE FREQUENCY DRIVES FOR HVAC EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The provisions of Section 23 05 00, Common Work Results for HVAC apply to work specified in this Section.

1.2 SUMMARY

A. This Section includes: Variable frequency drives.

1.3 SUBMITTALS

A. Submit the following:
   1. Product data on variable frequency drives and related components.
   2. Start up log/check list showing successful operation.
   3. Operation and maintenance data.

PART 2 - PRODUCTS

2.1 VARIABLE FREQUENCY DRIVES

A. Acceptable Manufacturers:
   1. Reliance, Toshiba, ABB, Cirrus, Emerson, Yaskawa, Square D, Siemens, Saftronics, Allen-Bradley, Danfoss.
   2. Other Manufacturers: Submit substitution request.

B. General Description:
   1. Variable frequency AC motor drive (VFD) to be of pulse width modulated (PWM) inverter type. The VFD designed to convert 60 Hz input power to adjustable frequency output power to provide positive speed control to standard induction motors. The VFD to be dedicated variable torque design for specific use with centrifugal loads.
   2. Provide completely solid state variable frequency power and logic unit.
   3. Speed control to be stepless throughout the range under variable torque load on continuous basis. Speed controlled by remote building energy management system providing 4-20MA input signal to drive and remote start/stop signal. Coordinate with Section 23 09 00.
   4. Provide adjustable frequency control with diode bridge/capacity input designed to provide high, constant power factor of 0.95 regardless of load or speed and eliminate SCR line noise.
   5. Equipment will be designed and manufactured in accordance with applicable current NEMA and IEEE recommendations and be designed for installation per NEC. Equipment will be UL listed and bear the UL label.
   6. Control shall be suitable for operation in ambient temperatures of 0 to 40°C.
   7. Every VFD shall be factory tested with an AC induction motor 100% loaded and temperature cycled within an environmental chamber at 104°F.

C. Self Protection and Reliability Features:
   1. Adjustable current limit to 60 to 110% of drive rating.
   2. Adjustable instantaneous overcurrent trip.
   3. Under voltage trip.
   4. Over temperature trip.
   5. Short circuit protection phase to phase and phase to ground faults phase rotation insensitive.
   6. Momentary power loss, more than 17 milliseconds.
   7. Transient protection against all normal transients and surges in incoming power line.

8. Orderly shutdown in event of any of above conditions, drive shall be designed to shut down safely without component failure.
9. Provide visual indication and manual reset.

D. Standard Features:
1. Drive logic shall be microprocessor based. Control logic shall be isolated from power circuitry.
2. Stand alone operation to facilitate start up and troubleshooting procedures.
3. VFD shall be UL 508C listed for drives serving a single motor or UL 508A listed for drives serving multiple motors, for use on distribution systems with 22,000 AIC.
4. Output voltages shall be equal to applied input voltage.
5. Isolated signal inputs.
6. Frequency Stability. Output frequency will be held to +0.1% of maximum frequency regardless of load, +10% input voltage change or temperature changes within ambient specification.
7. Built-in digital display shall indicate output frequency, voltage and current and shall provide indication of over current, over voltage, current limit, ground fault, over temperature, input power on, minimum or maximum speed adjustment, power on, fault condition. Display shall be on panel face.
8. Start/Stop Control - Controlled decelerated stop.
9. Primary and secondary fused for a control circuit transformer.
10. Minimum and maximum speed control.
11. Adjustable Accel/Decel - independently adjustable 10-100 second.
12. Hand-Off auto switches.
13. Programmable Auto Restart - after power outage.
14. Provide fused **safety** disconnect **switch and NEMA enclosure suitable for installed location and environment.** ~~,~~**Disconnect shall include** ~~including~~ auxiliary contacts to isolate control circuit when disconnect is in “off” position**.** ~~, except f~~ **F**used disconnects **shall** not **be** required where packaged equipment is provided with a single point connection with single point **integral** disconnect and internal overcurrent protection for VFD and motors. **Refer to Section 26 29 00 Motor Controllers for additional requirements pertaining to safety disconnect switches.**
15. Remote contacts for fault, and on/off status.
16. Adjustable motor output voltage.
17. Analog output voltage of 0-10 VDC, -20 MA proportional to control output frequency.
18. Provide a NEMA 1 enclosure for indoor applications and NEMA 3R enclosure for outdoor applications to isolate each motor starter and control section with its associated disconnect switch.
19. Manual speed control for each motor.
20. Manual bypass (3 contactor) to provide ability to service control while motor is operational.
21. Provide RF, and EMI, noise suppression network to limit RF and EM interference.
22. Provide isolated analog output signals for volts, amps, and frequency, from each VFD for connection to the building energy management system.
23. Provide line (input) reactors.
24. Provide output filters for all VFD’s located more than 25 conductor feet from the motor they serve. Output reactors shall permit VFD’s to be located up to 350’ from the motors they serve.
25. VFD shall be designed to catch a spinning load in forward and reverse direction.
26. Harmonic calculations shall be performed on a manufacturer supplied Harmonic Analysis program to provide conformance with IEEE 519-1992.
27. Automatic Bypass option.

E. Communications:
1. Provide factory installed communication chip for direct network connection to DDC Control System specified in Section 23 09 93. Interface shall allow for all control and interface functions specified herein and in Section 23 09 93. Interface control functions and information shall include, but not be limited to the following:
   a. Start/Stop

b. Change Directions
c. Drive Fault
d. Drive Fault Codes
e. Reset Drive
f. Percent Output
g. Speed
h. Power
i. Drive Temp
j. KWH
k. Run Time

2. Provide isolated analog output signals for volts, amps and frequency from each VFD for connection to the DDC Control System specified in Section 23 09 93.
3. Provide RS485 communications port and programming software capability.

PART 3 - EXECUTION

3.1 VARIABLE FREQUENCY DRIVE INSTALLATION

A. Install VFD in accordance with manufacturer's written installation instructions.

B. Install on strut support stand.

C. Provide one drive for each motor as scheduled.

3.2 START UP

A. General: Comply with manufacturer's instructions for startup.

B. Startup shall be provided under the direct supervision of the manufacturer's representative with factory trained personnel.

3.3 FIELD QUALITY CONTROL

A. Prior to installation, manufacturer's representative shall coordinate variable speed drive control interface with the controls contractor and verify that intended installation (controls, wiring, etc.) complies with the manufacturer's recommendations.

B. Field Test: Except where initial variable speed drive operation clearly shows the performance meets or exceeds the requirements, test to show compliance. Tests performed by the manufacturer's representative in the presence of the Engineer.

END OF SECTION

VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The provisions of Section 23 05 00, Common Work Results for HVAC apply to work specified in this Section.

1.2 SUMMARY

A. This Section includes:
   1. Isolation of mechanical equipment as indicated on the Drawings and specified herein.
   2. Seismic restraint of equipment, piping and ductwork.

B. Related Sections include:
   1. Section 23 05 18 HVAC Expansion Compensation.
   2. Section 23 05 29 Hangers, Supports and Anchors for HVAC.
   3. Section 23 31 01 HVAC Ducts and Casing-Low Pressure.

1.3 QUALITY ASSURANCE

A. A single manufacturer shall select and furnish all isolation required, except packaged equipment with integral isolators meeting all the isolation and seismic requirements of this specification.

B. The system of vibration isolators and seismic controls shall be designed, detailed, and bear the seal of a professional engineer registered in the State having jurisdiction.

C. Isolation performance requirements are indicated in the specifications. All deflections indicated are nominal static deflections for specific equipment supported.

D. Isolator Stability and Rated Capacity:
   1. Spring diameters not less than 0.8 of the compressed height of the spring at rated load.
   2. Springs shall have a minimum additional travel to solid equal to 50% of the rated deflection.

E. Seismic Restraints:
   1. Restraint of equipment, piping and ductwork to be in accordance with the current state and local Building Code.
   2. All calculations shall be in accordance with current state and local Building Code.

1.4 SUBMITTALS

A. Submit the following:
   1. Submit Shop Drawings showing complete details of construction for steel and concrete bases including:
      a. Equipment mounting holes.
      b. Dimensions.
      c. Isolation selected for each support point.
      d. Details of mounting brackets for isolator.
      e. Weight distribution for each isolator.
      f. Code number assigned to each isolator.
   2. Submit product data and calculation sheets for isolators, showing:
      a. Size, type, load rating and rated deflection of each required isolator.
      b. Percent of vibration transmitted based on the lowest disturbing frequency of the equipment.
   3. Structural Details and Calculations: Submit structural details and calculations substantiating that building structure, anchorages, and fabricated steel braces can safely withstand maximum calculated loads.

B. Installation report as specified in Part 3 of this section.

C. Operation and maintenance data.

1.5 EQUIPMENT VIBRATION ISOLATION

A. Provide a balanced set of vibration isolators for each piece of equipment listed in the Equipment Schedules.

B. Isolation work to include, but not necessarily be limited to, the following:
   1. Isolation support of motor-driven equipment.
   2. Inertia base frames in conjunction with isolation.
   3. Isolation support of air-handling housings.
   4. Isolation support of piping, piping risers, and ductwork.
   5. Penetration isolation of pipework, ductwork, and conduits through walls, floors or ceilings.
   6. Flexible connections of ductwork and piping to equipment.

C. Each piece of rotating equipment must meet a reasonable criterion for maximum vibration levels at each bearing, while in operation. The criteria for varying operating speeds are given as follows:
   1. Rotating equipment operating peak vibration velocities must not exceed 0.08 in./sec.
   2. If it is discovered that the operating vibration velocities exceed this criteria, the equipment shall be repaired or replaced at no expense to the owner until approval of the equipment is given by the engineer.

D. Any components or materials not specially mentioned herein, but necessary to the proper vibration isolation of the equipment, shall be provided.

1.6 ACCEPTABLE MANUFACTURERS

A. Amber Booth.

B. Mason Industries, Inc.

C. Kinetics Corporation.

D. Vibrex.

E. Vibro-Acoustics

F. Approved equal, meeting all of the conditions and requirements specified herein.

1.7 CONTRACTOR RESPONSIBILITY

A. All vibration isolation devices, including auxiliary steel bases and pouring forms, shall be designed and furnished by a single manufacturer or suppliers.

B. Adequately restrain all equipment, piping, and ductwork to resist seismic forces. Design and select restraint devices to meet seismic requirements as defined in the latest issue of the International Building Code under Earthquake Design and applicable state and local codes.

C. In addition, the contractor shall have the following responsibilities:
   1. Selection, installation, adjustment and performance of vibration isolators which will meet the requirements given on the plans or in the specifications.
   2. Provide Engineering drawings, details, supervision, and instruction to assure proper installation and performance.
   3. Provide whatever assistance necessary to ensure correct installation and adjustment of the isolators.

PART 2 - PRODUCTS

2.1 TYPE 1 - NEOPRENE WAFFLE PAD

A. 3/4-inch thick neoprene waffle pads with pattern repeating on 1/2-inch centers.

B. Select Duro rating for maximum deflection at average load rating.

C. Include load distribution steel plate as required.

D. Include anchor bolt grommet as required.

E. Acceptable Manufacturer: Mason Type “Super W” or “Super WM” and “HG Grommet”; Similar Amber-Booth, Kinetics Corporation.

2.2 TYPE 2 - RESTRAINED NEOPRENE MOUNT

A. Bridge-bearing neoprene mountings shall have all directional seismic capability.

B. Provide minimum deflection of 0.2-inch.

C. The mount shall consist of a ductile iron casting containing two separated and opposing molded neoprene elements.

D. The elements shall prevent the central threaded sleeve and attachment bolt from contacting the casting during normal operation.

E. The shock absorbing neoprene materials shall be compounded to bridge-bearing specifications.

F. Manufacturer: Mason type BR.

2.3 TYPE 3 - SPRINGS

A. Free standing springs without housings.

B. 1/4-inch thick molded neoprene cup with steel reinforcement washer or neoprene acoustical friction pads between base plate and support.

C. All mounting shall have leveling bolts with height saving brackets.

D. Springs mounted outboard of channels.

E. Attach baseplate screws using neoprene bushings and washers.

F. Spring diameters not less than 0.8 of the compressed height of the spring at rated load.

G. Manufacturer: Mason type SLF, Amber-Booth type SW, Kinetics Corporation, Vibrex.

2.4 TYPE 4 - SPRINGS WITH RESTRAINTS

A. Same as springs except housing with seismic restraints to be added.

B. Seismic restraint with molded all directional neoprene bushings an integral part of isolator.

C. Seismic restraint selected for minimum safety factor of 2 from ultimate seismic capacity.

D. Spring mount must have neoprene cup or pad inside the seismic housing to allow anchoring of the housing baseplate without short circuiting pad.

E. Manufacturer: Mason type SSLR or SLRS with seismic restraints; similar Amber-Booth, Kinetics Corporation Model FYS, Vibrex.

2.5 TYPE 5 - BASE WITH SPRINGS

A. Steel Isolating Frame: Mason WFSL with WF steel beams with a minimum depth of 10% of the span between supports. Provide external height saving brackets.

B. Manufacturer: Mason as indicated, similar Amber-Booth, Kinetics Corporation, Vibrex.

2.6 TYPE 6 – INERTIA BASE WITH SPRINGS

A. Inertia Bases: Mason BMK or KSL with 1/2-inch square bar reinforcing, integral height saving brackets and steel templates with anchor bolts sleeves. Bases must be sized to fit stanchions for pump elbows or suction diffusers. Depth of base equal to 8% of the span between supports, 6-inch minimum.

B. Manufacturer: Mason as indicated, similar Amber-Booth, Kinetics Corporation, Vibrex.

2.7 TYPE 7 - ISOLATING SPRING HANGERS

A. Combination rubber-in shear and steel spring isolators installed on the hanger rods.

B. Isolators shall have the proper deflection to allow the piping to deflect as a unit with the pump isolators.

C. Hangers designed for 30 degree angular movement.

D. Minimum deflection shall be one inch.

E. Manufacturer: Mason 30N, similar Amber-Booth, Consolidated Kinetics, Vibrex.

2.8 TYPE 8 – ISOLATING NEOPRENE HANGERS

A. Double deflection neoprene hangers.

B. Provide minimum static deflection of 0.5-inches.

C. Provide projecting bushing to prevent steel to steel contact.

D. Manufacturer: Mason HD, similar Amber-Booth, Consolidated Kinetics, Vibrex.

2.9 ISOLATING SLEEVES

A. Provided for all piping through walls and floors of penthouses and chiller room. Size for piping as required.

B. Manufacturers: Potter-Roemer PR isolators or Grinnell Semco Trisolators.

2.10 SEISMIC RESTRAINTS

A. General Requirements:
   1. Seismic restraints shall be provided for all equipment, piping and ductwork, both supported and suspended.
   2. Bracing of piping and ductwork shall be in accordance with the code and with the provisions set forth in the SMACNA seismic restraint manual.
   3. The structural requirements for the restraints, including their attachment to the building structure, shall be reviewed and approved by the structural engineer.
   4. Attachments to supported or suspended equipment must be coordinated with the equipment manufacturer.

B. Supported Equipment:
   1. All-directional seismic snubbers shall consist of interlocking steel members restrained by a one-piece molded neoprene bushing of bridge bearing neoprene.
   2. Bushing shall be replaceable and a minimum of 1/4-inch thick. Rated loadings shall not exceed 1000 psi.
   3. An air gap of 1/4-inch shall be incorporated in the snubber design in all directions before contact is made between the rigid and resilient surfaces.
   4. Snubber end caps shall be removable to allow inspection of internal clearances. Neoprene bushings shall be rotated to ensure no short circuits exist before systems are activated.
   5. Snubber shall be type Z-1225 as manufactured by Mason Industries, Inc.

C. Bracing of Pipes:
   1. Provide seismic bracing of all piping as detailed below to meet the building code requirements:
      a. Exception: Piping suspended by individual hanger's 12-inches or less in length, as measured from the top of the pipe to the bottom of the support where the hanger is attached, need not be braced where the following criteria are met.
         1) Seismic braces are not required on high deformability piping when the Ip=1.0 and provisions are made to avoid impact with larger pipe or mechanical components or to protect the pipe in the event of such impact and the nominal pipe size is 3-inches diameter or less.
         2) Seismic braces are not required on high deformability piping when the Ip=1.5 and provisions are made to avoid impact with larger pipe or mechanical components or to protect the pipe in the event of such impact and the nominal pipe size is 1-inch diameter or less.
   2. Seismic braces for pipes on trapeze hangers may be used.
   3. Provide flexibility in joints where pipes pass through building seismic joints or expansion joints, or where pipes connect to equipment.
   4. Cast iron pipe of all types, glass pipe, and any other pipe jointed with a shield and clamp assembly, where the top of the pipe is 12-inches or more from the supporting structure, shall be braced on each side of a change in direction of 90 degrees or more. Riser joints on unsupported sections of piping shall be braced or stabilized between floors.
   5. Vertical risers shall be laterally supported with a riser clamp at each floor. For buildings greater than six stories high or for piping subject to thermal change all risers shall be engineered individually.

D. Bracing of Ductwork:
   1. Brace rectangular ducts with cross sectional areas of 6 square feet and larger. Brace flat oval ducts in the same manner as rectangular ducts. Brace round ducts with diameters of 28 inches and larger. Brace flat oval ducts the same as rectangular ducts of the same nominal size.
   2. Exception: No bracing is required if the duct is suspended by hangers 12 inches or less in length, as measured from the top of the duct to the bottom of the support where the hanger is attached, and the Ip=1.0.
   3. Transverse bracing shall occur at the interval specified in the SMACNA tables or at both ends if the duct run is less than the specified interval. Transverse bracing shall be installed at each duct turn and at each end of a duct run, with a minimum of one brace at each end.
   4. Longitudinal bracing shall occur at the interval specified in the SMACNA tables with at least one brace per duct run. Transverse bracing for one duct section may also act as longitudinal bracing for a duct section connected perpendicular to it if the bracing is installed within four feet of the intersection of the ducts and if the bracing is sized for the larger duct. Duct joints shall conform to SMACNA duct construction standards.
   5. Install duct flex connections at equipment connections to accept expected differential displacement and protect the equipment connection from damage.

E. Suspended Equipment and Piping and Ductwork:
   1. Seismic cable restraints shall consist of galvanized steel aircraft cables sized to resist seismic loads with a minimum safety factor of two and arranged to provide all-directional restraint.
   2. Cable must be pre-stretched to achieve a certified minimum modulus of elasticity. Cable end connections shall be steel assemblies that swivel to final installation angle and utilize two clamping bolts to provide proper cable engagement.
   3. Cable assemblies shall be type SCB at the ceiling and at the clevis bolt, SCBH between the hanger rod and the clevis or SCBV if clamped to a beam, all as manufactured by Mason Industries, Inc.

4. Steel angles, sized to prevent buckling, shall be clamped to pipe or equipment rods utilizing a minimum of three ductile iron clamps at each restraint location when required. Welding of a minimum of three ductile iron clamps at each restraint location when required. Welding of support rods is not acceptable. Rod clamp assemblies shall be type SRC or UC as manufactured by Mason Industries, Inc.
5. Pipe clevis cross-bolt braces are required in all restraint locations. They shall be special purpose preformed channels deep enough to be held in place by bolts passing over the cross bolt. Clevis cross brace shall be type CCB as manufactured by Mason Industries, Inc.

2.11 FLEXIBLE SPHERE CONNECTOR

A. Flexible EPDM pipe connectors shall be manufactured of multiple plies of Kevlar tire cord fabric and EPDM; both molded and cured in hydraulic rubber presses. No steel wire or rings shall be used as pressure reinforcement.

B. Connectors up to and including 2-inch diameter may have a single sphere and threaded ends. Connectors 2-1/2-inch and larger shall be manufactured with twin spheres up to 12-inches and a single sphere on larger sizes and floating steel flanges recessed to lock the connectors raised face EPDM flanges.

C. All connectors shall be rated a minimum of 150 psi at 220°F. All connections shall be pre-extended as recommended by the manufacturer to prevent additional elongation under pressure.

D. Mason type SFU, SFDEJ or SFEJ.

2.12 FLEXIBLE HOSE CONNECTOR

A. Flexible stainless steel hoses shall be manufactured using type 304 stainless steel hose and braid with one fixed and one floating raised face carbon steel plate flange.

B. Sizes 2-1/2-inch (65mm) and smaller may have threaded male nipples or copper sweat ends. Grooved ends are acceptable in all sizes in grooved piping systems. Weld ends are not acceptable. Copper sweat end hoses for water service shall be all copper or bronze construction.

C. Hose shall have close pitch annular corrugations for maximum flexibility and low stiffness. Tested hose stiffness at various pressures must be included in the submittals.

D. Hose shall be capable of continuous operation at 150 psi and system test pressure when installed in piping systems.

E. Hose shall be the same size as the pipe it connects and have pipe thread connectors on both ends with male or female end adapters as required.

F. Mason type BSS, FFL, MN, CPS or CPSB, similar HCi, Metraflex.

PART 3 - EXECUTION

3.1 GENERAL

A. Do not install any equipment or pipe which makes rigid contact with the building. "Building" includes slabs, beams, studs, walls, etc.

B. The installation or use of vibration isolators must not cause any change of position of equipment or piping which would result in stresses in piping connections or misalignment of shafts or bearings. In order to meet this objective, equipment and piping shall be maintained in a rigid position during installation. The load shall not be transferred to the isolator until the installation is complete and under full operational load.

C. Correct, at no additional cost, all installations which are defective in workmanship or materials.

3.2 PREPARATION

A. Treat all isolators, including springs, hardware and housing, with a corrosion protective coating of epoxy powder or electro galvanizing.

B. Coat steel frames exposed to weather with a rustproof metal primer.

C. Provide hot dipped galvanizing on steel frames as indicated on the plans for corrosion protection in severe conditions.

3.3 INSTALLATION

A. General:
   1. Install isolation where indicated on the Drawings by type and location and where indicated below.
   2. The assigned code number shall be marked on the isolators and bases to assure placement in the proper location.
   3. Anchor isolator seismic housing baseplate to floor.
   4. Rubber grommets and washers shall be provided to isolate the bolt from the building structure. Under no circumstances shall the isolation efficiency be destroyed when bolting the isolators to the building structure.

B. Type 1 – Neoprene Waffle Pad
   1. Service:
      a. Roof-mounted exhaust fans
      b. Air Handlers and Fan Coil Units with Motors two horsepower and less.
      ~~. Condensing units~~

C. Type 2 – Restrained Neoprene Mount
   1. Service:
      a. Condensing units

D. Type 4 – Springs with Restraints
   1. Service:
      a. Exhaust fans where floor mounted **– ½" deflection.**
      b. Air Handlers fans with Motors greater than 2 horsepower – one inch static deflection

E. Type 6 – Inertia Base with Springs
   1. Service:
      a. Centrifugal Pumps
         1) Fill with concrete to provide base weight equal to 2 times supported weight, including equipment, piping, and fluid.
         2) Support heels of pump suction and discharge elbows from base.
         3) Secure pump and heel supports with inserts and grout.
         4) Springs to have min 1" deflection

F. Type 7 – Isolating Spring Hangers
   1. Service:
      a. Propeller Fans **– 2 inch deflection.**
      b. Exhaust fans with motors larger than ½ horsepower **- ~~-~~1/2" deflection.**

G. Type 8 – Isolating Neoprene Hanger
   1. Service:
      a. In-Line Circulating Pumps
      b. Split-System Air Conditioning Units
      c. Exhaust fans with motors ½ horsepower and smaller **– 0.2" deflection**~~-~~

H. Flexible Connectors:
   1. Mechanical Couplings: Provide three or more flexible couplings as vibration isolation as indicated on the drawings and for the following services:
   2. Flexible Sphere Connectors: Provide as indicated on the drawings and for the following services**:** Base-mounted pumps, deflection as scheduled.

3. Flexible Hose Connectors: Provide as indicated on the drawings and for the following services: Air handling unit coil connections.

3.4 SEISMIC RESTRAINTS

A. General:
   1. Install and adjust seismic restraints so that the equipment, piping, and ductwork support is not degraded by the restraints.
   2. Restraints must not short circuit vibration isolation systems or transmit objectionable vibration or noise.

B. Supported Equipment:
   1. Each vibration isolation frame for supported equipment shall have a minimum of four seismic snubbers mounted as close as possible to the vibration isolators and/or the frame extremities.
   2. Care must be taken so that the 1/4-inch air gap in the seismic restraint snubber is preserved on all sides in order that the vibration isolation potential of the isolator is not compromised. This requires that the final snubber adjustment be completed after the vibration isolators are properly installed and the installation approved.

C. Bracing of Pipes:
   1. Branch lines may not be used to brace main lines.
   2. Transverse bracing shall be at 40 feet maximum, except where a lesser spacing is indicated in the SMACNA tables for bracing of pipes
   3. Longitudinal bracing shall be at 80 feet maximum except where a lesser spacing is indicated in the tables. In pipes where thermal expansion is a consideration, an anchor point may be used as the specified longitudinal brace provided that it has a capacity to resist both the seismic load and the additional force induced by expansion and contraction.
   4. A rigid piping system shall not be braced to dissimilar parts of the building or to two dissimilar building systems that may respond differently during an earthquake.
   5. Transverse bracing for one pipe section may also act as longitudinal bracing for a pipe section of the same size connected perpendicular to it if the bracing is installed within 24 inches of the elbow or tee.
   6. Subject to confirmation by field inspection, seismic bracing is not required on piping when the piping is supported by rod hangers and the hangers in the entire run are 12-inches or less in length from the top of the pipe to the supporting structure, hangers are detailed to avoid bending of the hangers and their attachments and provisions are made for piping to accommodate expected deflections.

D. Bracing of Ductwork:
   1. Hanger straps must be positively attached to the duct within 2 inches of the top of the duct with a minimum of two #10 sheetmetal screws.
   2. A group of ducts may be combined in a larger frame so that the combined weights and dimensions of the ducts are less than or equal to the maximum weight and dimensions of the duct for which bracing details are selected.
   3. Walls, including gypsum board nonbearing partitions, which have ducts running through them, may replace a typical transverse brace. Provide solid blocking around duct penetrations at stud wall construction.
   4. Unbraced ducts shall be installed with a 6-inch minimum clearance to vertical ceiling hanger wires.

E. Suspended Equipment, Piping, and Ductwork Cable Method:
   1. The cables shall be adjusted to a degree of slackness approved by the Structural Engineer.
   2. The uplift and downward restraint nuts and Mason type RW neoprene covered steel rebound washers for the Type 6 hangers shall be adjusted so that there is a maximum 1/4-inch clearance.

3.5 FIELD QUALITY CONTROL

A. Installation Report: Isolation manufacturer's representative shall confirm that all isolation is installed correctly and submit report stating that isolators are installed as shown on Shop Drawings, isolators are free to work properly, and that installed deflections are as scheduled and as specified.

END OF SECTION

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INSULATION FOR HVAC

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The provisions of Section 23 05 00, Common Work Results for HVAC apply to work specified in this Section.

1.2 SUMMARY

A. This Section includes: Insulation for piping, ductwork (external), ductwork (internal), and equipment.

B. Related Sections include:
   1. Section 23 05 29 Hangers, Supports and Anchors for HVAC.
   2. Section 23 31 01 HVAC Ducts and Casing – Low Pressure.

1.3 QUALITY ASSURANCE

A. Regulatory Requirements:
   1. All insulating products shall comply with the Oregon Revised Statute (ORS) 453.005(7)(e) prohibiting pentabrominated, octabrominated and decabrominated diphenyl ethers. Where products within this specification contain these banned substances, provide complying products from approved manufacturers with equal performance characteristics.
   2. Flame and Smoke Ratings: Installed composite flame spread not to exceed 25 and smoke developed not to exceed 50 as tested by UL 723.
   3. Energy Codes: Local Building and Energy Codes shall govern where insulation performance requirements for thickness exceeds thickness specified.

B. Protection: Protect against dirt, water, chemical, or mechanical damage before, during, and after installation. Repair or replace damaged insulation at no additional cost.

C. Source Quality Control:
   1. Service: Use insulation specifically manufactured for service specified.
   2. Labeling: Insulation labeled or stamped with brand name and number.
   3. Insulation and accessories shall not provide any nutritional or bodily use to fungi, bacteria, insects, rats, mice, or other vermin, shall not react corrosively with equipment, piping, or ductwork, and shall be asbestos free.

1.4 SUBMITTALS

A. Submit the following.
   1. Product Data: For each type including density, conductivity, thickness, jacket, vapor barrier, and flame spread and smoke developed indices.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Equivalent products by Johns Manville, Knauf, Owens Corning, and CertainTeed are acceptable.

B. All such insulation shall be of one manufacturer.

C. Other Manufacturers: Submit Substitution Request.

2.2 PIPE INSULATION

A. Fiberglass: Split sectional or snap-on type with 0.23 per inch maximum thermal conductivity (K-factor) at 75°F mean temperature, 850°F maximum service rating and white, vapor barrier jacket with pressure sensitive closure system. Johns Manville Microlok HP.

B. Elastomeric: Expanded closed cell, 0.27 per inch maximum K-factor at 75°F mean temperature, 220°F maximum service rating with fitting covers and paintable surface. ArmacellAP Armaflex, Rubatex.

C. Polyolefin: Semi-rigid polyolefin form snap-on or slip over type with 0.24 per inch maximum thermal conductivity (K-factor) at 75°F mean temperature -165°F to 210°F service factor and paintable surface. End joints in insulation on piping with fluid temperatures normally below 65°F fuse sealed in accordance with the manufacturer's instructions. Joints longitudinal joints and other end joints made with manufacturer's approval contact adhesive in accordance with the manufacturer's instructions. Joints may be pre-glued or pre-coated with adhesive where applicable.

2.3 BLOCK INSULATION

A. Fiberglass: 1-1/2-inch thick unless specified or shown otherwise with 3 pcf nominal density, 0.23 per inch maximum K-factor at 75°F mean temperature and 450°F minimum operating temperature limit. Johns Manville 1000 Series.

2.4 DUCTWORK BLANKET INSULATION

A. Fiberglass: 1.0 pcf nominal density, 0.25 per inch maximum K-factor at 75°F mean temperature, 250°F minimum operating temperature limit. Johns Manville Microlite Type 100 with facing as follows:
   1. Exposed: FSK facing (foil scrim Kraft) or vinyl - white appearance.
   2. Concealed with Vapor Barrier: FSK reinforced foil and paper.
   3. Concealed without Vapor Barrier: Facing not required.

B. Semi-Rigid Fiberglass: 2.5 pcf nominal density, 0.24 per inch maximum K-factor, at 75°F mean temperature, 250°F minimum operating temperature limit. Johns Manville Micro-Flex with facing as follows:
   1. Exposed: FSK facing (foil scrim kraft) or vinyl-white appearance.
   2. Concealed with Vapor Barrier: FSK reinforced foil and paper.
   3. Concealed without Vapor Barrier: Facing not required.

C. Elastomeric: Expanded closed cell sheets, 0.27 per inch maximum K-factor at 75°F mean temperature and 220°F minimum operating temperature limit. ArmacellArmaflex.

2.5 DUCTWORK BOARD INSULATION

A. Semi-Rigid Fiberglass: 0.23 per inch maximum K-factor at 75°F mean temperature, 250°F minimum operating temperature limit and all-purpose vapor barrier facing with white Kraft paper finish. Micro-Aire Duct Board Type LP.

B. Rigid Fiberglass: Same as semi-rigid except with 4.0 pcf density and 0.23 per inch maximum K-factor. Johns Manville Diffuser Board.

2.6 DUCT INSULATION, INTERNAL

A. Description: Fiberglass with airstream surface protected with a glass mat facing that contains an EPA registered anti-microbial agent proven to resist microbial growth as determined by ASTM G21 and G22, 1-inch thick unless indicated otherwise. 2-inch thick insulation shall have 0.24 per inch maximum K-Factor at 75°F mean temperature. Johns Manville Duct Liner PM for rectangular ductwork.

B. Acoustical Absorption Coefficients: With minimum NRC of 0.70 for 1-inch and 0.90 for 2-inch as tested in accordance with ASTM C-423-90, type A mounting.

C. Liner must meet ASTM C1071.

2.7 DUCT ENCLOSURE, FIRE RATED

A. Johns Manville:
   1. Material:
      a. 2-hour Rated: Johns Manville “Super Firetemp M”, minimum 3-inch thickness, ASTME2336, 2-hour rated assembly.
      b. 1-hour Rated: Johns Manville "Super Firetemp L", minimum 2-1/4-inch thickness, ASTM E2336, 1-hour rated assembly.
   2. Joint: Johns Manville “Super Calstik” adhesive, modified sodium silicate adhesive.

B. Firemaster:
   1. Material: Thermal Ceramics “Firemaster” duct wrap ceramic fiber blanket, minimum 3-inch total thickness, ASTM E2336, 2-hour rated assembly.

C. Fyrewrap:
   1. Material: Unifrax “Fyrewrap” duct wrap fiberglass blanket, 1.5-inch thickness for 1-hour rated assembly, 3-inch thickness for 2-hour rated assembly. ASTM E2336.

2.8 ACCESSORIES PIPING

A. Adhesives:
   1. Fiberglass: Zeston Z-Glu.
   2. Elastomeric: Armacell 520.
   3. Polyolefin: As approved by the insulation manufacturer.

B. Cements:
   1. Insulating: Ryder.
   2. Heat Transfer: Zeston Z-20.

C. Wire Mesh: 1-inch mesh with 20 gauge annealed steel wire.

D. Pipe Fitting Covers: One piece PVC insulated pipe fitting covers. Zeston, Ceel-Co.

E. Grooved Coupling Insulation: One piece PVC insulated fitting cover. Zeston, Ceel-Co.

F. Metal Pipe Jacket: 0.016-inch thick aluminum jacket with formed fitting covers, aluminum snap straps and sealant.

G. Cloth Facing: Presized fiberglass cloth.

H. Tapes: Pressure sensitive, weather resistant, and for temperatures up to 150°F. Zeston Z-tape.

I. Paint: Ultraviolet resistant latex paint with special adherence capabilities to the PVC fitting covers, elastomeric, aluminum facing, Kraft paper, tapes and adhesives.

2.9 ACCESSORIES DUCTWORK

A. Adhesives:
   1. Fiberglass: Zeston Z-Glu.
   2. Duct Insulation, Internal: Benjamin Foster 85-20.

B. Weld Pins: Duro-Dyne with NC-1 nylon stop clips.

C. Cements:
   1. Insulating: Ryder.
   2. Heat Transfer: Zeston Z-20.

D. Wire Mesh: 1-inch mesh with 20 gauge annealed steel wire.

E. Mastic: Chicago Mastic:
   1. Vapor Barrier: 17-475.
   2. Outdoor Mastic: 16-110 white.

F. Cloth Facing: Presized fiberglass cloth.

G. Tapes: Pressure sensitive, weather resistant, and for temperatures up to 150°F. Zeston Z-tape.

H. Paint: Ultraviolet resistant latex paint with special adherence capabilities to the PVC fitting covers, elastomeric, aluminum facing, Kraft paper, tapes and adhesives.

PART 3 - EXECUTION

3.1 GENERAL

A. Workmanship:
   1. Installation: Insulation installed in first class, neat professional manner.
   2. Applicators: Applicators shall be employed by firm that specializes in insulation work.

B. Preparation: Surfaces of piping, ductwork and equipment clean, free of oil or dirt, and dry before insulation is applied.

C. Stamps: ASME stamps, UL labels, and similar stamps and labels shall not be covered.

3.2 HVAC PIPE AND EQUIPMENT INSULATION APPLIED LOCATIONS

A. Insulation Applied Locations – HVAC Piping:

System	Pipe Size	Insulation Type	Insulation Thickness	Notes
Heating Water (to 250°F)	1 1/4-inch and smaller	Fiberglass	2-inch	Note 1
	1 1/2-inch to 6-inch	Fiberglass	2 1/2-inch	Note 1
Chilled Water	1 1/4-inch to 6-inch	Fiberglass	1 1/2-inch	Note 1
Pre-Insulated Chilled Water	All	Polyurethane foam	1 1/2-inch	Note 2
Dual Temp Water	1 ¼-inch and smaller	Fiberglass	2-inch	Note 1
	1 1/2-inch to 6-inch.	Fiberglass	2 ½-inch	Note 1
Refrigerant Suction, Hot Gas	All	Elastomeric or Polyolefin	1 1/2-inch	Note 3
Air Separators and Storage Tanks	All	Fiberglass	3 1/2-inch	
		Elastomeric or Polyolefin	3 1/2-inch	Note 3
Note 1: Cover with metal pipe jacket where exposed to weather and overheat trace cable. Note 2: Refer to specification 23 20 14 for additional pre-insulated piping systems requirements. Note 3: Elastomeric or Polyolefin insulation not allowed over heat trace cable.				

B. The following piping is not insulated:
   1. Refrigerant relief valve discharge.

C. Insulation shall include all fittings, unions, flanges, mechanical couplings, valve bodies, valve bonnets, piping through sleeves.
   1. Hot water heating inside building.

D. Piping insulation is not required between the control valve and coil on run-outs when the control valve is located within 4 feet of the coils and the pipe size is 1-inch or less.

E. Valves and irregular fittings shall be insulated with section of pipe insulation and insulating cement, securely fastened, and finished with 6 oz. canvas and Foster 30-36 lagging adhesive. The contractor shall have the option on all flanges, valves, strainers, not requiring a vapor barrier to insulate with removable replaceable pads fabricated of 1-inch layer of Pittsburgh Corning Temp Mat sandwiched between inner and outer layer of 8 oz. glass cloth held together with stainless staples with sufficient stainless lacing hooks to hold pad firmly to flange or valve with minimum 3-inch overlap onto adjacent pipe insulation using 18 gauge S.S. lacing wire.

F. Expansion Joints and Flexible Connectors: Pipe insulation or block of same material and thickness as adjacent piping.

3.3 PIPING INSTALLATION

A. General:
   1. Joints: Coat both sides of complete joining area with applicable adhesive.
      a. Longitudinal Joints: Make joints on top or back of pipe to minimize visibility. Except foam plastic, seal with closure system or 3-inch wide tape.
      b. Butt Joints: Butt lightly together and, except for foam plastic, seal with 3-inch wide tape or butt straps.
      c. Multiple Layered Insulation: Joints staggered.
   2. Access: Strainer and other items requiring service or maintenance with easily removable and replaceable section of insulation to provide access.
   3. Voids: Fill all voids, chipped corners and other openings with insulating cement or material compatible with insulating material. In insulation with Heat Tracing: Where piping is shown or specified to be heat traced, bed heat tape into heat transfer cement with insulation over heat tape and cement.
   4. Seal joints, seams and fittings of metal watertight jackets at exterior locations.

B. Fiberglass Insulation: Exterior insulation encased in metal jacket.

C. Elastomeric and Polyolefin Insulation:
   1. Slit full length and snap around pipe.
   2. Make cuts perpendicular to insulating surface leaving no cut section exposed.
   3. Do not stretch insulation to cover joints or fittings.
   4. Seal joints in elastomeric insulation with adhesive.
   5. Seal joints in polyolefin as specified hereinbefore.
   6. Exterior insulation painted with two coats of specified paint in accordance with the manufacturer's instructions and encase in metal jacket.
   7. Sealing joints with tape will not be allowed.

D. Fittings: Insulation specified with continuous vapor barrier, the vapor barrier must not be violated.
   1. On Elastomeric and Polyolefin Insulation: Fittings covered with covers made up of mitered sections of insulation or with formed pipe fitting covers.
   2. In Other Insulation: Fittings covered with insulation to the same level of the adjoining insulation or fill with insulating cement. Finish with pipe fitting covers or cloth facing and tape.

E. Unions, Mechanical Joints, Valves, Etc.:
   1. General:
      a. As specified for fittings.
      b. Minimum thickness same as specified for piping.
   2. Unions: Build up insulation at least 1/2-inch beyond adjoining insulation.
   3. Flanges: With square corners. Where flanges are not insulated, terminate adjacent insulation so flange bolts can be removed.
   4. Flanged Valves: Insulation with square corners.

F. Vapor Barrier Insulation:
   1. Refer to Section 23 05 29 for support requirements.
   2. Piping which requires vapor barrier protection shall have a continuous vapor barrier, which may not be pierced or broken. The following piping systems require vapor barrier protection:
      a. Chilled water.
      b. Refrigerant suction.
      c. All other piping systems with a nominal operating temperature below 65°F, including dual temperature piping.
   3. Vapor Barrier Insulation.
      a. Insulation for pipe requiring vapor barrier protection 1-1/4-inch or smaller, insulation continuous through pipe hangers and rollers.
      b. For pipe 1-1/2-inch and larger, 18-inch section of calcium silicate, same thickness as pipe insulation with continuous vapor barrier jacket at each hanger or roller. Provide pipe shield specified in Section 23 05 29.

G. Non-Vapor Barrier Insulation:
   1. Refer to Section 23 05 29 for support requirements.
   2. At contractor's option, insulation may be interrupted at supports. Butt insulation tight to support.
   3. If contractor elects to continue insulation at supports, installation as specified for piping systems with vapor barrier installation.
   4. Void between saddle and pipe filled with insulation.

3.4 EQUIPMENT INSTALLATION

A. General: Install true and smooth. Insulation over curved surfaces shall conform to curves of surface.
   1. Access: Insulated removable heads, water boxes, pump casings, access, etc., that require service, inspection or maintenance shall be provided with covers or section that are easily removable and replaceable. Reinforce openings in adjacent insulation with metal beading. In vapor barriered insulation, coat joints with vapor barrier mastic.
   2. Voids, Depressions and Cavities: All voids, chipped corners and other openings shall be filled with insulating cement or material compatible with insulating material.
   3. Vapor Barriered Insulation: Where insulation is specified to have a vapor barrier, the barrier shall not be pierced or broken.
      a. Tears, etc., shall be coated with vapor barrier mastic and patched with insulation facing or tape.
      b. Staples brush coated with vapor barrier coating.
      c. All raw edges coated with vapor barrier mastic shall be covered and cover shall be sealed to equipment surface.
   4. Non-Vapor Barriered Insulation:
      a. Tears, etc., shall be patched with insulation facing or tape.
      b. All raw edges shall be covered and neatly beveled to the equipment surface.
   5. Multilayered Insulation: With staggered joints.

B. Calcium Silicate and Fiberglass Block:
   1. Anchors: Lug nuts 10 gauge black annealed iron wire welded to metal surfaces.
   2. Banding: Block secured to surface with 1/2-inch wide stainless steel bands maximum 18-inches on center and secured to anchors.
   3. Insulating Cement: Block covered with insulating cement minimum thickness of 1/2-inch with smooth finish.
   4. Vapor Barriered System: On vapor barriered system, apply continuous coat of vapor barrier mastic.
   5. Finish: Finish with cloth facing secured with adhesive and lapped a minimum of 2 inches. Defects touched up with finishing cement.

C. Elastomeric Blanket: Cut insulation to size, make corners with mitering cuts to preclude raw edges, continuously cement insulation to equipment with adhesive. Cement both surfaces of joints and butt tightly together and cover raw edges with two coats of adhesive.

D. Expansion Joints: Covered with larger size pipe insulation to allow full movement and be removable, ends turned back to pipe, coat with vapor barrier mastic on joints in vapor barriered system and finished with cloth facing cemented to insulation with adhesive.

3.5 DUCT INSULATION APPLIED LOCATIONS

A. General:
1. All external insulation with continuous vapor barriers unless specifically noted otherwise.
2. Internally lined shall be lined completely to grille or diffuser or to indicated terminal points. Dimension shown are net inside of liner.
3. Internally lined ductwork need not be externally insulated.
4. In addition to locations described in specification, internally line supply, return and exhaust air ductwork where shown on drawings.

B. Insulation Applied Location – HVAC Ductwork, per table below and as follows where more stringent:
1.
2. Commons Air Handler AH-COMMONS: Line all return air duct. Line all supply air duct located in mechanical platform.
3. Gym Air Handlers: Line all return air duct. Line all supply air duct located in mechanical platform.
4. Conf Room 119: Line entire return air branch duct.
5. Conf Room 121: Line entire return air branch duct.
6. AH-PRACT: Line all supply and return duct including branches to inlets and outlets.
7. AH-BAND: Line supply ducts 15 feet both sides of east wall of room. Line return duct behind return grill and 30 feet upstream.
8. AH-CHORAL: Line supply and return duct 10 feet both sides of east wall.
9. AH-DRAMA: Line supply duct 10 feet both sides of east wall. Line return duct behind return grille and 20 feet upstream.
10. AH-ENSEMB: Line all supply and return duct except branches to Storage and Hallway.
11. TU-PRIN: Line main supply duct downstream of duct coil all the way to Room 110.
12. TU-VP: Line all supply duct downstream of duct coil.
13. TU-COUN: Line supply duct between Room 112 supply diffuser flex duct and Room 114 flex duct.
14. Remaining Terminal Units: Line a minimum of five feet downstream of duct coil
15. **AH-8, AH-28, AH-9, AH-29, AH-7, AH-27, AH-6, AH-26, AH-5, AH-25, AH-HALL2A: Line all return air duct.**
~~14.~~**16. Remaining air handlers in Zone A Platform: Line return air duct a minimum of 10 feet from the relief air damper toward the space served by the unit. Liner required in table below may be shifted upstream to satisfy this requirement.**

System	Location	Duct Type	Insulation Type	Thickness	Notes
Low Pressure Supply*	Exposed or Visible (Including above a cloud ceiling)	Rectangular	Internally Lined	1 1/2-inch	
		Round	Internally Lined	1 1/2-inch	~~Note 5~~
	Concealed or in mechanical rooms	All	Fiberglass Blanket	1 1/2-inch	
	15 ft downstream of fans	All	Internally Lined	1-inch unless otherwise indicated	~~Note 5~~ Note 7
Return Air* (Not insulated except:)	Concealed Outside Building Envelope	All	Externally insulated without vapor barrier	2-inch	

System	Location	Duct Type	Insulation Type	Thickness	Notes
	Exposed Outside Building Envelope	All	Internally Lined	2-inch	~~Note 5~~
	15 ft upstream and downstream of fans	All	Internally Lined	1-inch unless otherwise indicated	~~Note 5~~
Exhaust Air* (Not insulated except:)	15 ft upstream and downstream of fans	All	Internally Lined	1-inch unless otherwise indicated	~~Note 5~~
	In Toilet Rooms, 10 ft downstream of exhaust grilles	All	Internally Lined	1-inch	~~Note 5~~
Outside Air (Untempered)	Exposed or Visible (Including above a cloud ceiling)	Rectangular	Internally Lined	2-inch	
		Round	Internally Lined	2-inch	~~Note 5~~
	Concealed or in mechanical rooms	All	Fiberglass Blanket	2-inch	
Supply and Return Plenums	All	All	Internally Lined	2-inch	Note 2
Grease Hood Exhaust	All	All	Duct Enclosure, Fire Rated	As Indicated	
Transfer Air	All	All	Internally Lined	1-inch	~~Note 5~~
OSA and Relief Plenums at Louvers	All	All	Fiberglass Blanket or Board	R-20 Equiv	Note 6

* In addition to applied locations listed in this table, provide internally lined ductwork where indicated on drawings.
Note 2: Insulation not required on factory fabricated insulated housings and plenums (AHP).
Note 3: Where round or oval ductwork is indicated, provide double walled as specified in 23 31 02.
Note 4: Use semi-rigid blanket for galvanized sheet metal duct and use semi-rigid board for stainless steel duct.
~~Note 5: Where round or oval ductwork is indicated, provide double walled round/oval ductwork as specified in 23 31 02, or provide internally lined rectangular ductwork with equivalent free area.~~
Note 6: Plenums at louvers shall be insulated where extending beyond control damper.
Note 7: Where liner is used to meet Energy Code, thickness shall be 1-1/2-inches.

3.6 DUCTWORK INSTALLATION

A. General:
   1. Install in accordance with manufacturer's instruction.
   2. The vapor barrier shall be continuous. Tears, holes, staples, etc. shall be coated with vapor barrier mastic and patch with facing or tape. Joints between insulation and access with vapor barrier mastic.
   3. Insulation at access panels to be removable or attached to panel with edges of panel and opening reinforced with metal beading.

B. External Blanket Insulation:
   1. Insulation secured to ductwork with 20-gauge snap wires 24 inches on center and at all joints.
   2. Joints and seams lapped a minimum of 3 inches and sealed with jacket tape.

C. Board Insulation:
   1. Rectangular ducts with weld pins spaced a maximum of 18 inches on center in both directions.
   2. All corners made with joints, bending insulation around corners not allowed.
   3. All joints and seams butted tight together.
   4. Butt joints with 3-inch wide tape.
   5. Corners finished with 3-inch wide tape.

D. Internal Duct Liner:
   1. The coated surface shall face air stream.
   2. Weld pins spaced maximum of 15-inch on center in both directions and within 2 inches of all corners and joints. Weld pins flush with liner surface.
   3. Complete duct surface coated with adhesive and insulation pressed tightly thereto.
   4. Edges at terminal points shall be provided with metal beading and heavily coated with adhesive.
   5. All joints and corners shall be heavily coated with adhesive.
   6. Damaged areas replaced or heavily coated with adhesive.

E. Duct Enclosure - Fire Rated:
   1. Installation: Per manufacturer's instructions.
   2. Joints:
      a. Attached boards shall be cemented and attached to one another. Mating surfaces shall be "buttered" with a 1/8-inch layer adhesive.
      b. Secure fiberglass type material with stainless steel banding (type 304).
   3. Support: The duct enclosure may be hung from a conventional "trapeze" arrangement. Adequate support shall be provided at the bottom of vertical runs. On multi-story vertical runs, the Firetemp enclosure shall be supported at each story penetration with an angle iron collar attached to the Firetemp.
   4. Expansion: Adequate clearance shall be provided at the end of all straight runs to allow for expansion of the metal duct inside the enclosure.

F. Plenums: Insulation on floors protected by wire mesh.

G. Blank Off Panels: Insulation, enclosed with sheet metal on all sides. All joints with vapor barrier mastic and taped.

H. Volume Dampers: Where volume dampers do not allow for continuous insulation, terminate insulation clear of handle sweep and finish edges to maintain vapor barrier and to prevent damage to the insulation.

3.7 DUCT, PIPE AND TERMINAL UNIT ACOUSTICAL WRAP

A. Installed in accordance with the manufacturer's instructions.

B. Applied locations for piping and duct systems:
   1. Where specified or indicated on drawings.

3.8 DUCT ENCLOSURE - FIRE RATED:
   1. Installation: Per manufacturer's instructions.
   2. Joints:
      a. Attached boards shall be cemented and attached to one another. Mating surfaces shall be "buttered" with a 1/8-inch layer adhesive.
      b. Secure fiberglass type material with stainless steel banding (type 304).

3. Support: The duct enclosure may be hung from a conventional “trapeze” arrangement. Adequate support shall be provided at the bottom of vertical runs. On multi-story vertical runs, the Firetemp enclosure shall be supported at each story penetration with an angle iron collar attached to the Firetemp.
4. Expansion: Adequate clearance shall be provided at the end of all straight runs to allow for expansion of the metal duct inside the enclosure.
5. Provide continuous duct enclosure from point of ceiling penetration to termination per OMSC 506.3.10.2.

3.9 FIELD QUALITY CONTROL

A. Field Test: All systems shall be tested and approved prior to installation of insulation.

END OF SECTION

PREFABRICATED PIPING SYSTEMS FOR HVAC

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The provisions of Section 23 05 00, Common Work Results for HVAC apply to work specified in this Section.

1.2 SUMMARY

A. This Section includes: Direct buried prefabricated piping systems for chilled water.

B. Related Sections include:
1. Section 23 05 90 Pressure Testing for HVAC Systems.
2. Section 23 07 00 Insulation for HVAC.
3. Section 23 21 13 Pipe and Pipe Fittings HVAC.

1.3 SUBMITTALS

A. Submit the following:
1. Product Data.
2. Installation Manuals.
3. Complete shop drawings for piping systems including elbows, tees, flanges, coupling locations, and anchors. Include cutting lengths and thrust block sizes.
4. Report on field piping tests with signatures of Architect and manufacturer's representative witnessing.

1.4 QUALITY ASSURANCE

A. Provide the services of a qualified manufacturer's representative to instruct the contractor on the installation procedures for piping, and to be present on site to assist during critical stages of installation and testing.

B. Include a report consisting of the installation log indicating actual installed conditions and test certification signed by the manufacturer's representative above, the contractor, and the Architect's representative. Include certification by manufacturer's representative that the installation is in conformance with the manufacturer's recommendations.

PART 2 - PRODUCTS

2.1 PREFABRICATED PEX OR HDPE CHILLED AND HEATING WATER PIPING

A. Acceptable Manufacturers:
1. Rovanco, Thermacore, Perma-Pipe, Thermal Pipe, and Insul-pipe.
2. Other Manufacturers: Submit Substitution Request.

B. General: Provide complete prefabricated underground chilled water piping system suitable for direct burial as indicated on Drawings and as specified herein. Factory prefabricated HDPE jacketed system of factory pre-insulated pipe with all necessary fittings, seals, and accessories.

C. Pipe: Carrier pipe shall be Cross-linked PEX pipe 100 psi minimum working pressure for temperatures up to 180ºF and or High Density Polyethylene pipe DR-17, 100 psiminimum working pressure for temperatures up to 110ºF.

D. Expansion: All components of carrier pipe, insulation, and jacket must be able to expand and contract as a unit without overstressing or adversely affecting any of the materials. The piping system supplier shall be responsible for the overall design of the expansion and contraction compensation.

E. End Seals: All direct-buried ends of insulated pipe with exposed insulation will be sealed with polyethylene end seals.

F. Insulation: Insulation shall be as specified in Section 23 07 00 Insulation for HVAC.

G. Jacket: The outer protective jacket shall be corrugated seamless polyethylene completely encompassing and protecting the insulation from moisture and damage, designed for H-20 loading at a burial depth of 2-ft minimum.

H. Joints: Straight run joints shall be field-insulated per the manufacturer's instructions, using polyurethane foam poured in an HDPE sleeve and sealed with a heat shrink sleeve. All joint closures and insulation shall occur at straight sections of pipe. All insulation and jacketing materials shall be furnished by piping system supplier.

I. Fittings: Fittings shall be standard component factory prefabricated and pre-insulated to the thickness specified.

J. Accessories: Provide all required accessories including wall sleeves, and miscellaneous materials as required for attachment to steel or copper pipe at ends and as required and detailed to a complete and total installation.

K. Service:
1. Chilled Water **and heating water below grade**.

PART 3 - EXECUTION

3.1 PREPARATION

A. Measurements, Lines and Levels:
1. Check dimension at the building site and establish lines and levels for the work specified in this Section.
2. Establish all inverts, slopes, and manhole elevations by instrument, working from an established datum point. Provide elevation markers for use in determining slopes and elevations in accordance with Drawings and Specifications.
3. Use established grid and area lines for locating trenches in relation to building and boundaries.

3.2 EXCAVATION AND BACKFILL

A. General: Perform all necessary excavation and backfill required for the installation of mechanical work in accord with Division 2. Repair pipelines or other work damaged during excavation and backfilling.

B. Excavation: Excavate trenches to the necessary depth and width, removing rocks, roots, and stumps. Include additional excavation to facilitate utility crossovers, additional offsets, etc. Excavation material is unclassified. Width of trench shall be adequate for proper installation of piping. The trench shall be widened if not wide enough for a proper installation.

C. Bedding: All piping shall be full bedded on sand. Place a minimum 4-inch deep layer on the leveled trench bottom for this purpose.

D. Backfill:
1. Immediately after all piping is installed in the ditch, make a partial backfill in the middle of each pipe length leaving the joints exposed for inspection prior to the hydrostatic tests.
2. Place in layers not exceeding 8 inches deep and compact to 95% of standard proctor maximum density at optimum moisture content. Earth backfill shall be free of rocks over 2 inches in diameter and foreign matter. Disposal of excess material as directed.
3. Interior: All backfill under interior slabs shall be bank sand or pea gravel.
4. Exterior: Excavated material may be used outside of buildings at the contractor's option. The first 4 inches shall be sand, and final 12-inch layer course shall be soil in any event.

3.3 ADJUSTING AND CLEANING

A. General:
   1. Clean interior of all piping before installation.
   2. Flush sediment out of all installed piping systems.

3.4 INSTALLATION OF PEX AND HDPE CHILLED AND HEATING WATER PIPING

A. Install piping in accordance with the Manufacturer's recommendations and installation Drawings.

B. Install all piping as to vent and drain to building.

C. The system shall be installed in a manner that will not require expansion loops or compensators of any type.

D. The system shall be installed with the fewest number of underground joints possible.

E. Make connection between PEX or HDPE and Copper or Steel pipe according to manufacturer's recommendations.

F. Slope piping uniformly. Record exact location and depth with respect to established datum points.

G. Test piping prior to sealing of conduits and before backfilling. Seal all leaks and retest until tight.

H. Utility Marking: Installed over the entire length of the underground piping utilities. Install plastic tape along both sides and the center line of the trenches at the elevation of approximately 12 inches above the top of utility.

I. Trace Wire: Install 16 gauge insulated copper tracer wire (green in color) above all buried nonmetallic piping. Tracer wire to run entire length of pipe.

END OF SECTION

AIR DUCT ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The provisions of Section 23 05 00, Common Work Results for HVAC apply to work specified in this Section.

1.2 SUMMARY

A. This Section includes: Low pressure duct accessories, sealants and tapes, flexible connectors, fire dampers, combination smoke and fire dampers, access doors, spin-in, extractors, automatic dampers, drain pans, back draft dampers.

B. Related Sections include:
   1. Section 23 31 01 HVAC Ducts and Casing-Low Pressure.
   2. Section 23 09 00 Instrumentation and Controls for HVAC.

1.3 QUALITY ASSURANCE

A. Work performed by qualified, experienced mechanics in accordance with the manual of Duct and Sheet Metal Construction of the National Association of Sheet Metal and Air Conditioning Contractors and these Specifications.

B. Install entire ductwork system, including materials and installation, in accordance with NFPA 90A.

C. Flexible connectors, flexible equipment connections, tapes and sealants listed as UL 181, Class I air duct. Flame spread rating not to exceed 25 and smoke developed rating not to exceed 50.

1.4 SUBMITTALS

A. Submit the following: Product data for Duct Accessories.
   1. Low Pressure Duct Accessories:
      a. Access Doors
      b. Backdraft Dampers
      c. Roof Jack
      d. Automatic Dampers
      e. Duct Sealer
   2. Fire and Smoke Dampers:
      a. Fire Dampers
      b. Combination Smoke and Fire Dampers

B. Operation and Maintenance Data: Automatic dampers, fire dampers. Combination smoke and fire dampers.

PART 2 - PRODUCTS

2.1 LOW PRESSURE DUCT ACCESSORIES

A. Acceptable Manufacturers:
   1. As indicated.
   2. Other Manufacturers: Submit Substitution Request.

B. Damper Regulators:
   1. Ventlok model numbers used, similar products by Young, Durodyne or approved equal are acceptable.
   2. Dial Regulator: Concealed or exposed duct in unfinished spaces, blade lengths 18-inch and less, 3/8-inch, Ventlok 635 or 638 for insulated duct. For blade lengths, 19 inches and above, similar except 1/2-inch shafts.
   3. Dial Regulator: Exposed duct finished space, 3/8-inch, Ventlok 640.
   4. Dial Regulator: Concealed, not accessible, blade lengths 18-inch and less, 3/8-inch Ventlok 666 regulator with 680 mitered gear assembly where right angle turn is necessary. Blade lengths 19 inches and above, similar except 1/2-inch shafts.
   5. End Bearings: For ducts rated to 1 inch WG, open end, Ventlok 607. For ducts rated above 1 inch WG, closed end, Ventlok 609. Exposed ductwork, finished spaces, Ventlock 609. Spring end bearings not allowed.

C. Volume Damper Fabrication:
   1. Single blade dampers reinforced or crimped for rigidity, with pivot rod extending through duct. Dampers over 12 inches high use multiple opposed blade damper. Single blade damper no larger than 12 inches x 48 inches. Multiple blade damper factory fabricated, Ruskin MD-35 or equal.
   2. Minimum gauge and duct construction in accordance with SMACNA “HVAC Duct Construction Standards”, latest edition.
   3. Splitter and butterfly dampers fabricated of 18 gauge galvanized steel.
   4. Dampers of length suitable to close branch ducts without damper flutter.
   5. Damper blade must be aligned with handle and index pointer.

D. Flexible Equipment Connections: 30 oz. Ventfabrics Ventglas or Duro Dyne neoprene coated fire retardant glass fabric or approved equal.

E. Duct Sealer:
   1. Based On: McGill Airseal Zero.
   2. Description: Suitable for indoor/outdoor use, rated to 10-inch WG, Maximum Flame Spread/Smoke Developed Rating of 25/50, maximum VOC of 30 g/L less water. SCAQMD Rule 1158 compliant.

F. Duct Tape for Sheet Metal: ARNO C520 duct tape similar United, Duro Dyne, Nashua, Polymer Adhesive.

G. Tape and Adhesive/Activator System for Sheet Metal: Hardcast, Polymer Adhesive.

H. Turning Vane Assemblies:
   1. Sheet Metal Vanes: Multiple radius hollow vane air foil type 2-inch (small vane) or 4-1/2-inch (large vane) inside radius, galvanized steel construction.
   2. Runners: Push-on type.
   3. Acoustical Vanes: Multiple radius air foil type, perforated steel construction with fiberglass fill. AirSan Acoustiturn or as approved.

I. Access Doors:
   1. Manufacturer: Air Balance, Ruskin, Metco, Durodyne, Cesco, Nailor-Hart or approved equal.
   2. Doors complete with steel frame, steel door with backing plate, cam latches (two on units 14-inch x 14-inch and larger), hinge and gasketing. Doors on insulated or lined ducts shall be insulated.
   3. Grease Duct Access Door: Construct of metal thickness equal to metal duct, doors air and grease tight with hinge and hand operable latches. Ductmate.

4. Size:

Duct Width or Duct Diameter	Net Access Door Opening
Up to 8"	6" x 6"
9" to 12"	8" x 8"
13" to 20"	12" x 12"
21" to 30"	16" x 14"
31" to 42"	18" x 14"
Over 42"	Two 16" x 14"

J. Backdraft Dampers:
1. Manufacturer: Air Balance, Ruskin, Cesco, Advanced Air, Nailor-Hart, Pottorff, or approved equal.
2. Description: Gravity operated, vinyl edged, metal bladed backdraft dampers.

K. Drip Pans: Provide Type 304 stainless steel drip pans for cooling coils and exhaust heat recovery coils on built-up units as indicated.

L. Louver Blank-off Panels: At air intake or exhaust louvers which are only partially active area, blank off inactive area with sheet metal closure panels caulked airtight, secured to louver frame and insulated with 2" rigid fiberglass insulation per Section 23 07 00 Insulation for HVAC.

M. Roof Jack: Enamel finish steel with back draft damper and bird screen. Broan 636, or equal.

N. Automatic Dampers:
1. Description: Multi-blade air foil type, except where either dimension is less than 10 inches a single blade may be used. Maximum blade length to be 48 inches. Provide parallel blades for positive or modulating mixing service and opposed blades for throttling service. Blades to be interlocking, minimum 16 gauge galvanized steel.
2. Dampers shall have compression type edge seals and side seating stops. Damper blades shall be reinforced, have continuous full length axle shafts, axle to axle linkage and/or operating "jackshafts" as required to provide coordinated tracking of all blades. Dampers over 25 square feet in area to be in two or more sections, with interconnected blades. Dampers shall have a maximum air leakage of 3 cfm per square foot at 1 inch wg pressure. Provide all automatic dampers except those specified to be provided with units. Tested in accordance with AMCA Standard No. 500. Based on Ruskin CD-60.
3. Damper Operators: ~~Refer to Section 23 09 00~~**By controls contractor, except where furnished with air handlers and fans**.
4. Manufacturers: Ruskin, Air Balance, Cesco, Pottorff or equal.

2.2 FIRE AND SMOKE DAMPERS

A. Acceptable Manufacturers: Where Ruskin is the only manufacturer indicated, equivalent products may be furnished.

B. Static Fire Dampers:
1. Code Compliance: Provide static fire dampers with a U.L. 555 label for fire rating indicated and in conformance with NFPA 90A.
2. Dampers shall be integrally hinged, folding blade curtain type, for installation in ductwork complete with 160°F fire link and retainer.
3. Dampers shall be suitable for horizontal or vertical installation as required. Furnish stainless steel closure springs and cam lock for complete damper closure on dampers to be installed in vertical air flow positions.
4. Low pressure, 1-1/2-hour: For use in partitions up to 2-hour rating with damper out of air stream for supply.
   a. Ruskin Model IBD2 Style B for supply.
   b. Ruskin Model IBD2 Style A for return or exhaust.

5. Low pressure, 3-hour: for use in partitions over 2-hour rating with damper out of air stream for supply.
   a. Ruskin Model IBD23 Style B for supply.
   b. Ruskin Model IBD23 Style A for return or exhaust.

6. Transfer grilles, 1-1/2-hour: 7/8-inch deep for use in partitions up to 2-hour rating. Ruskin Model IBDT "Thinline".

7. Ceiling fire dampers with 20 gauge galvanized steel blades, 212°F fusible link, U.L. listed, Ruskin CFD (R) 2 or CFD (2) 3. Provide thermal blanket.

~~6.~~

~~C. Combination Fire and Smoke Dampers:~~

~~1. Multiblade damper with linkage, extended control rod and damper operator with UL Fire Damper Label. Provide round or oval duct connections where required. Operator to be factory-installed, electric type, 120V with spring return to closed position. Stall type motors are not acceptable.~~

~~2. Low pressure, 1-1/2 hour: for use in partitions up to 2-hour rating. Ruskin Model FSD36.~~

~~3. Low pressure, 3-hour: for use in partitions over 2-hour rating. Ruskin Model FSD60-3.~~

~~4. Provide factory installed and wired U.L. Listed duct smoke detector for 0-3000 fpm flow, Ruskin Model DSDN as part of assembly. Provide contactor from smoke detector to fire alarm system.~~

~~5. Actuator: Belimo or approved.~~

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install all devices as shown on the Contract Drawings and per manufacturer's recommendations.

B. Low Pressure Duct Accessory installation specified under Section 23 33 01.

C. Fire Dampers:
1. Install dampers in accordance with NFPA 90A and manufacturer's written recommendations.
2. Size and locate dampers as shown on Drawings.
3. Install dynamic fire dampers in correct position with regards to direction of air.
4. Where dampers are not accessible for servicing by removing an outlet, provide access doors for servicing. Doors shall be compatible with the duct in which they are installed.

D. Ceiling Fire Dampers:

1. Install dampers in accordance with NFPA 90A and manufacturer's written recommendations.

2. Size and locate dampers as shown on Drawings.

~~D. Combination Fire and Smoke Dampers:~~

~~1. Install dampers in accordance with NFPA 90A and manufacturer's written recommendations.~~

~~2. Size and locate dampers as shown on Drawings.~~

~~3. Where dampers are not accessible for servicing by removing an outlet, provide access doors for servicing. Doors shall be compatible with the duct in which they are installed.~~

E. Access Doors: Install where indicated and at all duct mounted coils, automatic control dampers, fire dampers, to provide access for cleaning and maintenance.

F. Kitchen Grease Duct Access Doors: Install every 10 feet and at each change in direction of kitchen exhaust duct per code.

G. Back Draft Dampers: Install where indicated and at the discharge (or inlet) of exhaust fans where automatic dampers are not indicated.

H. Automatic Dampers: Install where indicated and are not specified with equipment. Coordinate damper operators with controls subcontractor.

I. Drip Pans: Install under each cooling coil as indicated. Provide drain connection from each drip pan and pipe to nearest floor drain through trap. Drip pans over 6 feet in length require drain connections from both ends. Pitch drip pans in direction of air flow and to drain.

J. Louver Blank-off Panels: Install blank-off panels on unused portions of louvers.

END OF SECTION

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. The provisions of Division 26 Section, Common Work Results for Electrical apply to this section.

1.2 SUMMARY

A. This Section includes:
   1. Copper conductors. Indicated sizes shall be considered minimum for ampacities and voltage drop requirements.
   2. Conductors for special systems shall be as recommended by the equipment manufacturer except as noted.
   3. Deliver conductors to the job site in cartons, protective covers, or on reels.

B. Related Sections include:
   1. Section 26 05 26 Grounding and Bonding for Electrical Systems.
   2. Section 26 05 33 Raceways and Boxes for Electrical Systems.
   3. Section 26 05 53 Identification for Electrical Systems.
   4. Section 26 05 80 Electrical Testing.

1.3 REFERENCED STANDARDS

A. ASTM: American Society For Testing and Materials:
   1. ASTM B 3 – Soft or Annealed Copper Wire.
   2. ASTM B 8 – Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.
   3. ASTM B 33 – Tinned Soft or Annealed Copper Wire for Electrical Purposes.

B. ICEA: Insulated Cable Engineers Association:
   1. S-95-658 – Non-shielded 0-2 kV Cables

C. IEEE: Institute of Electrical and Electronic Engineers:
   1. IEEE 383 – Type Test of Class IE Electric Cables, Field Splices, and Connections.

D. UL: Underwriters Laboratories:
   1. UL 44 – Rubber-Insulated Wires and Cables.
   2. UL 83 – Thermoplastic-Insulated Wires and Cables.
   3. UL 1277 – Type TC Power and Control Tray Cable.

1.4 SUBMITTALS

A. Submit product data for the following materials:
   1. Single conductor 600-volt power and control conductors.
   2. MC cable.

B. Submittals of the following materials shall consist only of a listing of the manufacturer’s name and the applicable catalog numbers of the items to be utilized.
   1. Connectors.
   2. Branch circuit conductor splices.
   3. Splices with compression fitting and heat-shrinkable insulator.

C. Submit cable test data per testing requirements of Part 3.

PART 2 - PRODUCTS

2.1 CONDUCTORS – 600V

A. Type:
   1. Copper: No. 12 AWG minimum size unless noted otherwise. No. 12 and No. 10, stranded, No. 8 or larger, Class B concentric or compressed stranded.
   2. Aluminum is not permitted and shall not be utilized.

B. Insulation:
   1. THHN/THWN-2 for conductors 6 AWG and smaller.
   2. XHHW-2 for conductors 4 AWG and larger.

C. Thru wiring in fluorescent luminaires shall be rated for 90 degree C minimum.

D. Manufacturers: General, Essex, Southwire, or equivalent.

2.2 POWER LIMITED WIRING

A. Copper, stranded or solid as recommended by the system manufacturer.

B. Insulation shall be appropriate for the system and location used.

2.3 MC CABLE

A. Sheath: Steel, of the interlocking metal type, continuous and close fitting. The sheath shall not be considered a current carrying or grounding conductor.

B. Conductors: Solid copper, of the same ampacity as the conduit/wire system indicated for the specific location. Provide separate green insulated grounding conductors in circuits where an isolated ground is called for.

2.4 CONNECTORS – 600V AND BELOW

A. Branch Circuit Conductor Splices:
   1. Live spring type, Scotchlok, Ideal Wire Nut, Buchanan B-Cap, or 3M Series 560 self-stripping type.

B. Cable Splices: Compression tool applied sleeves, Kearney, Burndy, or equivalent with 600V heat shrink insulation. Except where specifically indicated on the plans, all proposed splice locations shall be submitted for review by the Engineer.

C. Terminator Lugs for Stranded Wire:
   1. 10 AWG Wire and Smaller: Spade flared, tool applied.
   2. 8 AWG Wire and Larger: Compression tool applied, Burndy, Anderson, or equivalent.
   3. Setscrew type terminator lugs furnished as an integral part of switches and circuit breakers will be acceptable.

PART 3 - EXECUTION

3.1 CONDUCTORS

A. Pulling compounds may be used for pulling all conductors. Clean residue from the conductors and raceway entrances after the pull is made.

B. Pulleys or blocks shall be used for alignment of the conductors when pulling. Pulling shall be in accordance with manufacturer's specifications regarding pulling tensions, bending radii of the cable, and compounds.

C. Make up and insulate wiring promptly after installation of conductors. Wire shall not be pulled in until all bushings are installed and raceways terminations are completed. Wire shall not be pulled into conduit embedded in concrete until after the concrete is poured and forms are stripped.

D. Provide a dedicated neutral conductor with each branch circuit, do not use a shared neutral conductor between phases unless specifically requested or directed.

3.2 MC CABLE

A. MC cable is allowed only for lighting fixture whips, maximum 6-ft length.

B. MC cable shall not be used for branch circuit homeruns to branch panelboards. EMT or RMC conduit shall be utilized for all branch circuit homeruns to branch panelboards.

C. MC cable routing shall be coordinated with other trades and kept clear of and utilities to avoid exposure to damage. MC cable shall be properly supported per NEC Article 330 requirements.

3.3 CONNECTORS

A. Control and special systems wires shall be terminated with a tool applied spade flared lug when terminating at a screw connection.

B. All screw and bolt type connectors shall be made up tight and retightened after an eight hour period.

C. All tool applied compression connectors shall be applied per manufacturer's recommendations and physically checked for tightness.

3.4 COLOR CODING

~~A.~~ Secondary service, feeders, and branch circuit conductors shall be color coded. Phase color code to be consistent at all feeder terminations, A-B-C left-to-right, A-B-C top-to-bottom, or A-B-C front-to-back. ~~Color code shall be as follows:~~

~~120/240 volt 208Y/120 volt~~	~~Phase~~	~~480 volt 480Y/277 volt~~
~~Black~~	~~A~~	~~Brown~~
~~Red~~	~~B~~	~~Orange~~
~~Blue~~	~~C~~	~~Yellow~~
~~White~~	~~Neutral~~	~~Gray*~~
~~Green~~	~~Ground**~~	~~Green~~

~~* or white with colored (other than green) tracer~~
~~**Ground for isolated ground receptacles shall be green with yellow tracer.~~

B. Color code conductors to designate neutral, phase, and ground as follows:

CONDUCTOR	120/208	277/480
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	Gray
Ground	Green	Green
Switchlegs	Pink or Tan	Pink or Tan
Travelers	Purple	Purple
Fire Alarm	Red	

C. Wires shall be factory color coded by intergral pigmentation. Colored plastic tape permitted on No. 6 and larger where intergral pigmentation impractical. Apply tape in spiral half-lap over exposed portions in manholes, boxes, panels, switchboards and other enclosures.

D. All circuit conductors shall be identified with circuit number at all terminals, intermediate outlets, disconnect switches, circuit breakers, motor control centers, etc. Both ends of a given conductor shall be indentified alike.

E. DO NOT install wires of different voltage systems in same raceway, box, gutter of other enclosure.

F. Radius of cable bends shall not be less than 10 times the outer diameter of the cable.

~~B.~~**G.** Use solid color compound or solid color coating for No. 12 and No. 10 branch circuit conductors and neutral sizes.

~~C. Phase conductors No. 8 and larger color code using one of the following:~~
~~0. Solid color compound or solid color coating.~~
~~0. Stripes, bands, or hash marks of color specified above.~~
~~0. Colored as specified using 3/4 inch wide tape. Apply tape in half overlapping turns for a minimum of three inches for terminal points and in junction boxes, pull boxes, troughs, manholes, and handholes. Apply the last two laps of tape with no tension to prevent possible unwinding. Where cable markings are covered by tape, apply tags to cable stating size and insulation type.~~

~~G. Switchlegs, travelers, etc., to be consistent with the phases to which connected or a color distinctive from that listed.~~

~~H.~~ Color-coding of the flexible wiring system conductors and connectors shall be the manufacturer's standard.

~~I.~~**H.** ~~For modifications and additions to existing wiring systems, color-coding shall conform to the existing wiring system.~~

3.5 FIELD TESTING

A. All 600-volt rated conductors shall be tested by the Contractor for continuity. Conductors 100A and over in size shall be meggered after installation and prior to termination. Provide the megger, rated 1,000 volts d.c., and record and maintain the results, in tabular form, clearly identifying each conductor being tested.
   1. Replace cables when test value is less than 15 megohms.
   2. Cable test submittal shall include results, equipment used, and date.

END OF SECTION

SECTION 32 90 00

PLANTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparation of subsoil.
B. Soil Material placement.
C. Accent Stones.
D. Drain rock placement.
E. New trees, plants, and ground cover.
F. Mulch and Fertilizer.
G. Maintenance.

1.02 RELATED REQUIREMENTS

A. Section 01 56 39 - Temporary Tree and Plant Protection.
B. Section 01 60 00 - Product Requirements.
C. Section 01 70 00 - Execution and Closeout Requirements.
D. Section 31 20 00 - Earth Moving.
E. Section 32 80 00 - Irrigation.

1.03 DEFINITIONS

A. Weeds: Any plant life not specified or scheduled. Includes seeds and roots.
B. Plants: Living trees, plants, and ground cover specified in this Section, and described in ANSI Z60.1.

1.04 REFERENCE STANDARDS

A. Quality definitions, grading tolerances, root system condition, caliper height, branching, budding: ANSI/ANLA Z60.1 - American Standard for Nursery Stock, latest edition.
B. ANSI A300 Part 1 - American National Standard for Tree Care Operations -- Tree, Shrub and Other Woody Plant Maintenance -- Standard Practices; 2001.
C. Nomenclature conforms to "Standardized Plant Names," 1942 Edition, published by J. Horace McFarland Co., or "New Sunset Western Garden Book," listed in these references are those used most commonly in the nursery trade.

1.05 PROTECTION

A. Protect existing improvements and growth in areas to remain undisturbed until completion of project. Leave in similar condition as found.
B. Maintain benchmarks, monuments, and other reference points. Replace if disturbed or destroyed.
C. Contact local utility companies for verification of the location of underground utilities within the project area prior to starting excavation. Protect utilities and maintain in continuous operation or in operational condition during work. Repair damage to known utilities or related facilities in an approved manner at Contractor's expense.
D. Protect drainage inlets and underground drain lines from infiltration or clogging by soils and mulch during construction until Final Completion.
E. Protect materials of this Section before, during, and after installation. Protect installed work and materials of other trades. In the event of damage immediately make repairs or replacements as directed by Owner's Representative.

1.06 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Maintenance Data: Include written instructions covering yearly recommended maintenance and care of plantings including fertilization, pest and disease control, weed control, mulching, and pruning.

C. Quality Assurance Data: Submit license information and project references including name and location of previous projects, date of installation, square footage of areas with planting work, and Owner's contact information.

D. Submit list of plant life sources within 14 calendar days of Agreement Date.

1. Submit confirmation from supplier(s) that specified plant materials, meeting the specifications, have been secured.
2. Include plant name, quantity, size, condition, and name of supplier.
3. Submit certification letter from the sod supplier(s) stating the sod has been secured or contracted for delivery. Include the quantity, grass mix, and description.

E. Product Data: Submit manufacturer's printed data for products and a list of suppliers.

F. Invoices: Within 2 days of delivery submit invoices, load tickets, and truck measures for Organic Material and Mulch.

1.07 QUALITY ASSURANCE

A. Valid Oregon Landscape Contractor's license.

B. Valid Oregon Landscape Business license.

C. Installer Qualifications: Company specializing in installing and planting the plants with 5 projects of comparable scale successfully completed.

1. Submit names, addresses, and dates of previous projects, owners.

1.08 COORDINATION

A. Coordinate with other trades affecting and affected by Work of this Section.

B. Pre-Installation Conference: Attend conference to coordinate Work of this Section and other related Sections.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

B. Protect and maintain plant life until planted.

C. Deliver plant life materials immediately prior to placement. Keep plants moist.

D. Deliver products in original unopened packaging with legible manufacturer's identification.

E. Seed containers shall show manufacturer's guaranteed analysis of seed mixture, percentage of purity, year of production, date and location of packaging, name and trademark, and conformance with governing regulations.

F. Plants may be rejected if:

1. Ball of earth surrounding roots has been dried out, cracked, or broken.
2. Burlap, staves, wire baskets, or ropes required in connection with transplanting have been displaced.
3. Grower or nursery identification labels have been displaced prior to acceptance.

1.10 ENVIRONMENTAL CONDITIONS

A. Do not install plant life and seed when ambient temperatures is below 32 degrees F or above 90 degrees F.

B. Do not install plant life when wind velocity exceeds 30 mph.

C. Do not install plant life when soil becomes saturated.

D. Install plant materials and seed during periods which are normal for such work as determined by the following:
   1. Biological season
   2. Specified environmental conditions
   3. Accepted practice
   4. After all major construction work has been completed

E. Planting Seasons:
   1. Trees: Bare root trees may be planted only between January 15th and March 15th unless otherwise approved.
   2. Seeding: Permitted between April 15 and October 15 unless otherwise approved.
   3. Other: Permitted during any period, except when prohibited by other portions of this Section.

1.11 REVIEWS

A. Request the following reviews by the Owner's Representative 2 days in advance:
   1. Subgrade preparation
   2. Soil Material placement
   3. Organic Material placement
   4. Finish grading
   5. Accent stone mock-up
   6. Accent stone placement review
   7. Plant materials
   8. Plant material layout
   9. Planting mock-up
   10. Completion

B. See Part 3 - Execution for review requirements.

C. Coordinate all reviews to coincide with regular progress meetings where possible.

1.12 RECORD DOCUMENTS

A. See Section 01 78 00 - Closeout Submittals

B. Produce, keep current, and submit legible record documents on a clean set of plans and details supplied by the Owner's Representative. Use white-out and red ink to legibly re-draft actual locations of installed work.

1.13 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Provide one year warranty following Final Completion or one full growing season following Final Completion, whichever is later.

C. Replacements: Plants of same size and species as specified, planted in the next growing season, with a new warranty commencing on date of replacement.

D. Inspection: Visit work at least once a month during warranty period. Notify Owner's Representative and Owner in writing of any observed conditions requiring attention. Failure to provide such notification renders any deficiencies the Contractor's responsibility to rectify.

E. At the end of the warranty period, as directed by Owner's Representative and at no additional cost to the Owner:
   1. Replace work not surviving, in poor condition, or not exhibiting satisfactory growth.
   2. Lawns must be healthy, dense, uniform, well sodded, and reasonably weed free as judged by the Owner's Representative.

3. Reset plant materials and stones which have settled or become un-set
4. Replace plant materials which appear to be a different species or variety than specified.
5. Provide noxious weed eradication from imported Soil Material, if required and as specified herein.
6. Complete warranty work within 30 days of warranty review.

F. Contractor is not responsible for plant loss or damage to work during warranty period which is caused by unusually extreme weather, vandalism, or Owner's lack of maintenance.

PART 2 PRODUCTS

2.01 PLANTS

A. Plants: Species and size identified in plant schedule, grown in climatic conditions similar to those in locality of the work.

B. General:

1. Sizes, grades, and conditions are listed on Plant List. Quantities are shown for Contractor's convenience. Contract is responsible for providing plants drawn on drawings.
2. Cold storage stock unacceptable.
3. Free of disease, decay, injury, insects, or indication of strawberry root weevil.
4. Full foliaged when in leaf.
5. Furnish balled and burlapped (B&B) stock with solid, properly wrapped and secured, natural ball. Stock 2 inch caliper and up to be transported and handled with root ball in wire basket.
6. Furnish container stock with sufficient roots to insure healthy growth but not root bound. When plant is removed from container soil must hold together and roots must be visible but not encircling.
7. Free from Weeds.
8. Field grown trees and shrubs must have been transplanted or root pruned at least once no more than two years prior to this Contract.
9. Container stock may be substituted for Balled and Burlapped (B&B) stock at any time.

C. Trees shall have:

1. Single, straight, uniformly tapering trunks which are perpendicular to the ground, unless specified as multi-stemmed or otherwise on Plant List. Trees with co-dominant, damaged, crooked, or topped leaders will be rejected.
2. Healthy and vigorous overall condition.
3. Full and even branch distribution; structural scaffold branches at least 4 inches apart where they attach to the main trunk.
4. Well developed root systems. Trees with more than 2 inches of root ball soil covering root flare will be rejected.
5. Grafts near ground level.
6. Minimum/maximum branching heights above the ground unless specified otherwise on Plant List:
   a. 2 inch caliper tree: 5' - 7'
   b. 1.5 inch caliper tree: 4' - 6'
7. Conifers shall also have full, even branching to ground level and intact single leader.
8. Trees shall be free of:
   a. Major structural defects including, but not limited to, branches with narrow angle of attachment (less than 40 degrees to the trunk), bark with major branch unions, and trees with co-dominant leaders.

b. Poor pruning practices including, but not limited to, stubbed branches and topped leader.

c. Damage to the trunk, branches, and root system including, but not limited to, bark abrasions, sun scald, and disfiguring knots.

9. Trees shall be freshly dug during the most recent favorable harvest season.

2.02 SOIL MATERIALS

A. Planting Soil: On-site soil, natural, fertile, friable, with at least 10% humus; free of rock, clay, subsoil, clods, lumps, plants, roots, sticks, weeds, seeds, and other deleterious material, as approved.

1. At Plant Beds:
   a. Excavated from site. Stock piled on-site.
2. At Stormwater Planters:
   a. See Specification Section 31 20 00 for soil and compost.
3. At Lawns and Eco Lawns:
   a. Excavated from site. Stock piled on-site.

2.03 SOIL AMENDMENT MATERIALS

A. Lawn Installation Fertilizer: Uniform composition, dry, and free flowing of proportion necessary to eliminate any deficiencies of topsoil, to the following proportions:.

1. Nitrogen: 16 percent. (source of Nitrogen to be methyl-urea based)
2. Phosphoric Acid: 16 percent.
3. Soluble Potash: 16 percent.
4. Do not use within 50 feet of water.

B. Lawn Maintenance Fertilizer: Uniform composition, dry, and free flowing of proportion necessary to eliminate any deficiencies of topsoil, to the following proportions:.

1. Nitrogen: 25 percent. (30% Nitrogen from slow release)
2. Phosphoric Acid: 5 percent.
3. Soluble Potash: 10 percent.
4. Do not use within 50 feet of water.

C. Plant Bed Maintenance Fertilizer: Uniform composition, dry, and free flowing of proportion necessary to eliminate any deficiencies of topsoil, to the following proportions:.

1. Nitrogen: 16 percent. (Source of Nitrogen to be methyl-urea based)
2. Phosphoric Acid: 16 percent.
3. Soluble Potash: 16 percent.
4. Do not use within 50 feet of water.

D. Planting Tablets:

1. Product: Sierra Chemical "Agriform" with 20-10-5 chemical analysis.
2. Substitutions: See Section 01 60 00 - Product Requirements.

E. Micorrhizal Fungi:

1. MycroApply® All Purpose Granular by Micorrhizal Applications Inc, Grants Pass, Oregon (541-476-3985).
2. Substitutions: See Section 01 60 00 - Product Requirements.

F. Water: Clean, fresh, and free of substances or matter that could inhibit vigorous growth of plants.

G. Organic Material: 100% organic materials following guidelines and tested to meet the US Composting Council's seal of testing assurance.

1. Products: Garden Compost by Rexius Forest Byproducts, Eugene, Oregon.

H. Top Dressing: Turf Start by Rexius Forest Byproducts, Eugene, Oregon, or approved.

2.04 ACCENT STONES

A. Basalt stones in 2 distinct sizes:
   1. Medium Stone: Length 24"-30" x Width 18"- 24" x Height 12"-18"
   2. Small Stone: Length 18"-24" x Width 14"- 18" x Height 10"- 14"

B. Clean, hard, durable rounded river stones, with no broken fragments, in a range of natural colors. Provide accent stones from a single source in the Willamette Valley. Provide color photo inidcating sample of eight accent stones of assorted colors, indicating source of material. Provide accent stones in the following four 4 distinct sizes:

C. Approved Suppliers:
   1. Oakridge Quarry, Berry St. Oakridge, Oregon.
   2. Premium Landscape Stone by Mid Valley Gravel Company, Philomath, Oregon (541-929-2200).
   3. Substitutions: See Section 01 60 00 - Product Requirements.

2.05 GRASS SEED

A. Certified Oregon Blue Tag Free of Weed seed with dealer's statement analysis guarantee.

B. Current or latest season's crop labeled in conformance with State and US Department of Agriculture laws and regulations:
   1. Purity: 98% by weight
   2. Germination: 90%

C. Products:
   1. Lawn Seed:
      a. Futura 3000 by Pickseed, Tangent, Oregon
   2. Eco Lawn Seed:
      a. PT 705 Xeriscape by Hobbs and Hopkins, Portland, Oregon.

2.06 MULCH MATERIALS

A. Mulching Material at Plant Beds Type 1 & Type 2: Hemlock species wood shavings, free of growth or weeds, "sliver free".
   1. Products: Hemlock Bark by Rexius Forest Byproducts, Eugene, Oregon, or Lane Forest Products.

B. Basalt Quarry Rock Mulch at Stormwater Planters:
   1. River Rock Mulch at Stormwater Planters:
      a. Products: 3/4" - 1/4" washed, open quarry rock.

2.07 ACCESSORIES

A. Wrapping Materials: Burlap.

B. Stakes: 2 x 2 inch x 8 feet wood stakes, capable of at least 2 years ground burial, stained charcoal or black.

C. Tree Ties: Chain lock tree ties, 1 inch wide, or approved.

2.08 HERBICIDE

A. No herbicide use allowed.

2.09 METAL LANDSCAPE EDGE AND STAKE

A. 3000 Series Landscape Edge by Curv-Rite, Inc., 1-800-366-2878, or approved.
   1. Size: 1/8" x 5 1/2" x 16'.

2. Color: Mill Finish.

PART 3 EXECUTION

3.01 EXAMINATION

A. Prior to installation of Work of this Section, carefully inspect the work of others and verify that such work is complete to the point where this installation may properly commence.

B. Verify that materials and surfaces to receive work specified herein are accurately sized, shaped, and located; sound, secure, true, complete, and otherwise properly prepared.

C. Verify subgrades produce positive drainage and allow for placement of Soil Material, Ammendments, and Mulch to specified depths.

D. Do not install Work of this Section until all unsatisfactory conditions have been corrected. Beginning Work of this Section signifies acceptance of existing conditions.

3.02 TOLERANCES

A. Perform earthwork true to lines and grades, and to prevent ponding of water, with maximum variation in elevations of +/- 1/2 inch at subgrades and +/- 1/4 inch at finish grades.

B. Compacted thickness of materials within 1/4 inch of specified thickness.

3.03 PREPARATION OF SUBGRADE

A. Prepare subsoil to eliminate uneven areas or low spots. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

B. Remove foreign materials, weeds and undesirable plants and their roots, stones, rock, and dirt clods. Remove contaminated subsoil.

C. Scarify subsoil to a depth of 6 inches where plants are to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

D. Verify subgrades, whether comprised of subgrade soil or fill drain freely. Test area by flooding with Owner's Representative present. Where water does not drain freely auger a 10 inch hole, minimum 1 per 1,000 square feet, through fill material and into subsoil, or minimum 4 feet deep into subsoil to establish positive drainage.

E. Verify subgrades allow for placement of Soil Material, Amendments, and Mulch to depths specified.

F. Notify Owner's Representative for Subgrade Preparation Review prior to placing Soil Material.

3.04 PLACING SOIL MATERIAL

A. Soil Placement Schedule:

1. At Plant Beds: 18 inches minimum depth.
2. At Lawns: 9 inches minimum depth.
3. Reinforced Lawn at Fire Lane: As detailed.
4. At Eco Lawn: 9 inches minimum depth.
5. At Grassy Swales: Refer to Civil.
6. Place additional Soil Material as required to establish finish grades shown on drawings and to fill in depressions, blend grades, and produce positive drainage.

B. Place Soil Material during dry weather and on dry unfrozen subgrade. Suspend Soil Material placement if subgrade or Soil Material become saturated.

C. Phase Soil Material placement so that equipment does not travel over Soil Material already installed.

D. Place Soil Material in a relatively dry state to depths specified at locations shown on Drawings:

1. Remove stones, roots, grass, weeds, debris, and foreign material while spreading.
2. Manually spread around existing trees, paving, and other structures to prevent damage.

3. Establish levels, profiles, slopes, contours, and uniform gradients between given grade points as shown on Drawings.
4. Eliminate uneven or low spots at lawns and plant beds.
5. Fine grade Soil Material within specified tolerances.

E. Notify Owner's Representative for Soil Material Placement Review prior to proceeding with Work.

3.05 INITIAL WEED CONTROL

A. Inspect plant beds, lawns, and erosion control grass areas for the presence of weeds. If weeds are present manually remove.

3.06 SOIL PREPARATION AND FINISH GRADING

A. Remove debris, sticks, roots, clods, stones, and soils contaminated by petroleum products at plant beds and lawns. Rake smooth, eliminate uneven areas or low spots in Soil Material, and set grades for positive drainage.

B. At plant beds:
1. Manually remove weeds as described in Initial Weed Control.
2. Spread 3 inches Organic Material over entire plant bed. Organic Material must be incorporated immediately into plant beds, no stock piling is permitted.
3. Notify Owner's Representativet for Organic Material Placement Review prior to proceeding with tilling and planting.
4. Thoroughly rototill Organic Material into the top 6 inches of Soil Material, except within 10 feet of existing trees and Tree Protection zones where plants will be pocket planted.
5. Rake smooth and reset finish grades eliminating uneven or low spots in plant beds and setting grades for positive drainage. Ensure grades at edges of plant beds allow for placement of Mulch Material to specified depths and as detailed.

C. At trees:
1. Thoroughly mix 5 parts Soil Material and 1 part Organic Material for backfilling trees.

D. At lawns and eco lawns:
1. Manually remove weeds as described in Initial Weed Control.
2. Spread Lawn Installation Fertilizer at the rate of 15 lbs per 1000 square feet. If a Terraseeding method is used for lawn installation do not apply Lawn Installation Fertilizer.
3. Rototill to a minimum depth of 4 inches, except within 10 feet of existing trees and Tree Protection zones.
4. Set finish grades to ensure that finish grade of lawn will be flush with surrounding surfaces.
5. Establish a friable, fine textured seed bed free of bumps and depressions immediately before seeding.
6. Firm seed bed with a lawn roller making passes in 2 directions.

E. At reinforced lawn at fire lane:
1. Manually remove weeds as described in Initial Weed Control.
2. Establish a friable, fine textured seed bed free of bumps and depressions immediately before seeding.
3. Spread Lawn Installation Fertilizer at the rate of 15 lbs per 1000 square feet. If a Terraseeding method is used for lawn installation do not apply Lawn Installation Fertilizer.
4. Set finish grades to ensure that finish grade of lawn will be flush with surrounding surfaces.

F. At lawn repair areas:
1. Manually remove weeds as described in Initial Weed Control.

2. Place additional Soil Material as necessary to fill in depressions and blend grades with surrounding lawns, plant beds, and paving.
3. Set finish grades to ensure that finish grade of lawn will be flush with surrounding surfaces.
4. Establish a friable, fine textured seed bed free of bumps and depressions immediately before seeding.
5. Firm seed bed with a lawn roller making passes in 2 directions.
6. Spread Lawn Installation Fertilizer at the rate of 15 lbs per 1000 square feet. If a Terraseeding method is used for lawn installation do not apply Lawn Installation Fertilizer.

G. At renovated lawns in Tree Protection Zones:
1. Strip existing sod and remove from site.
2. Manually remove weeds as described in Initial Weed Control.
3. Core aerate with a minimum of 3 passes.
4. Place additional Soil Material as necessary to fill in depressions and blend grades with surrounding lawns, plant beds, and paving.
5. Set finish grades to ensure that finish grade of lawn will be flush with surrounding surfaces.
6. Establish a friable, fine textured seed bed free of bumps and depressions immediately before seeding.
7. Firm seed bed with a lawn roller making passes in 2 directions.
8. Spread Lawn Installation Fertilizer at the rate of 15 lbs per 1000 square feet. If a Terraseeding method is used for lawn installation do not apply Lawn Installation Fertilizer.

H. Notify Landscape Architect for Finish Grading Review prior to proceeding with Work.

3.07 ACCENT STONE PLACEMENT

A. Install Accent stones where shown on Plans. Make minor adjustments to accomodate irrigation, planting, and other site elements.
B. Notify Landscape Architect at least 2 days prior to commencement of Accent Stone Placement.
C. Accent stone mock-up and stone layout review:
1. Landscape Architect will provide on-site aesthetic direction for stone placement to establish design intent. Acceptable mock-up represents expected quality level of the remaining stone installation and may remain as part of Work.
2. Stake locations of Stones, using irrigation flags of contrasting colors for each stone size.

D. Install Accent Stones in the following sequence:
1. Medium
2. Small

E. Nest Accent Stones into Soil Material or Concrete as detailed. In general, stones should be installed based on the following, in order of importance:
1. Horizontal rather than vertical
2. Wider at the ground than at the top so the stone appears to grow out of the soil.
3. Flatter surface on top, positioned for seating opportunity.

F. Notify Landscape Architect for Accent Stone Placement Review.

3.08 SECOND WEED CONTROL

A. After completion of Soil Preparation and finish grading commence irrigation of all plant beds, lawns, and erosion control grass areas. If weeds are present manually remove.

3.09 INSTALLATION OF PLANT MATERIAL

A. Plant Material Review: Notify Landscape Architect prior to the delivery of all trees and plant materials to the site but prior to installing plants. Landscape Architect will review quality of plant materials and reject plant materials not in compliance the the Plant List and Specifications. This review is preliminary. Final approval of plants materials will not be given until Completion Review.

B. Plant Material Layout Review: Layout plant material (in containers or B&B) at plant beds for review prior to installation. Notify Landscape Architect for review of plant material layout prior to commencement of planting. The plant material layout review may occur concurrently with the planting mock-up review. Adjust plant materials as directed.

C. Planting Mock-Up Review: Notify Landscape Architect prior to commencement of planting. Install an initial 500 square feet sample of typical plantings for review. Adjust planting procedure as directed.

D. Tree Planting:
   1. Soak container grown, B&B, and BR plants before planting.
   2. Remove extra soil on top of root ball to expose flare of first buttress root. Root flare must be visible at top of root ball.
   3. Dig individual planting holes circular with vertical sides as shown on Planting Detail.
   4. Save and thoroughly loosen soil removed from planting hole and use as backfill around tree. Backfill trees with specified mixture if additional Soil Material is needed.
   5. Sprinkle micorrhizal fungi to surface of planting holes at rate of 2-4 ounces per inch of stem caliper.
   6. Lift trees by wire basket only. Do not lift trees by trunk or use trunk as a lever to position or move tree.
   7. Set B&B trees in the hole with the north marker facing north unless otherwise approved.
   8. Set root crown as shown on Planting Detail not less than 3 inches above surrounding finish grade.
   9. Cut and completely remove twine and other fasteners from root ball. Remove burlap from top half of root ball. Remove all burlap if not biodegradable. Neatly cut off broken or frayed roots.
   10. Remove top half of wire basket after planting.
   11. Stake trees as shown on Planting Detail.

E. All other Plants:
   1. Soak container grown, B&B, and BR plants before planting.
   2. Dig individual planting holes with circular and with vertical sides 1-1/2 inch shallower than depth of root ball.
   3. Dig holes for pocket-planted shrubs 3 times the diameter of the rootball.
   4. Sprinkle micorrhizal fungi to surface of planting holes at the following rates:
      a. #SP4 container - 1 tablespoon
      b. #1 container - 2 tablespoons
      c. #3 container - 3 tablespoons
      d. #5 container - 5 tablespoons
   5. Install Planting Tablet at shrubs and ground covers at manufacturer's recommended high rate.
   6. Cut circling roots with a sharp knife.
   7. Set root crowns 1-1/2 inch above surrounding grade and as detailed.

F. Plants set too deeply will be rejected. Reset plants that have settled.

G. Set Plants plumb and for best appearance.

H. Carefully tamp soil under and around root balls and bare roots to prevent settlement.
I. Backfill pocket-planted plants with equal parts Soil Material and Organic Material.
J. Flood hole when half backfilled and tamp soil between bare roots.
K. Complete backfilling and tamp soil between bare roots.
L. Thoroughly water each plant and entire bed immediately after planting.
M. Remove all tags, labels, strings, etc. from plants.
N. Prune Plant Material to remove dead, broken, or damaged branches.
O. Rake plant beds smooth, resetting finish grades for positive drainage and eliminating uneven or low spots.
P. Bulb Planting:
    1. Dig individual holes to the depth, size, and spacing scheduled on the Plant List.
    2. Place one teaspoon of Installation Fertilizer and work into soil. Place bulb and backfill soil.
    3. Cover entire area shown on Drawing as Mulch Area with Perennial Bulbs with 3 inches Organic Material as a mulch.

3.10 MULCH INSTALLATION

A. Install mulch within 24 hours after planting at plant beds and trees as shown on drawings and details at the following depths:
    1. Hemlock Bark: 3 inches
    2. River Rock/Stone Mulch: 3 inches.
B. Remove excess Mulch from foliage of plant materials and from bark of trees. Mulch must not be placed within 3 inches of tree trunks. Remove mulch from adjacent surfaces and produce edges shown on Details.

3.11 LAWN AND ECO LAWN INSTALLATION

A. Install lawns and eco lawns using one of the following methods
    1. Hand seeding:
        a. Apply seed evenly at rate of 6 lbs at lawns per 1000 square feet and 87 lbs per acre at eco lawn, meadow, and wet prairie.
        b. Apply Lawn Installation Fertilizer at a rate of 15 lbs per 1000 square feet.
        c. Rake lightly to a depth of 1/16 inch.
        d. Roll seeded area with half full lawn roller.
        e. Apply approved mulch as necessary to keep areas moist during germination.
    2. Terraseeding:
        a. Apply a 1 inch layer of Top Dressing injected with the following:
            1) Seed: 8 lbs per 1000 square feet at lawns or per manufacturer's specifications and 87 lbs per acre at eco lawn.
            2) Lawn Installation Fertilizer: 15 lbs per 1000 square feet.
        b. Do not install Top Dressing within mulch circles at trees.
        c. Approved Installer: Rexius Forest Byproducts, Eugene, Oregon, or approved.
B. Apply water with fine spray immediately after each area is sown.

3.12 TREE PRUNING

A. Perform pruning of trees as recommended in ANSI A300.
B. Prune newly planted trees as required to remove dead, broken, and split branches.

3.13 MAINTENANCE

A. At Plant Beds during period between installation and Final Completion:

1. Water, fertilize, weed, reset unstable or disturbed plants, and perform other maintenance necessary to assure healthy growth.
2. Install Plant Bed Maintenance Fertilizer at a rate of 6 lbs per 1000 square feet 45-60 days after installation. Adjust timing for seasonal requirements of plant materials.
3. Thoroughly water immediately after applying Plant Bed Maintenance Fertilizer.
4. Repair and regrade erosion damage .
5. Provide continued weed control and removal until any weed problem is fully eradicated.

B. At lawns during period between installation and Final Completion:
1. Water, weed, mow, reseed, top dress, and fertilize as necessary to establish a healthy, dense, uniform, weed free stand of grass; maintain at 2 inches high. This includes unirrigated lawns, unless otherwise noted on drawings.
2. Conduct first mowing after grass is firmly rooted and secure. Mow grass when it exceeds 2 inches in height, cutting no more than 1/3 of the grass height at a time. Remove all clippings.
3. Maintain surfaces and supply additional Soil Material and Seed where necessary.
4. After first mowing apply Lawn Maintenance Fertilizer at a rate of 8 lbs per 1000 square feet. Thoroughly water after application.
5. Manually remove weeds.

C. At eco lawn between installation and final completion:
1. Water, weed, mow, reseed, top dress, and fertilize as necessary to establish a healthy, dense, uniform, weed free stand of grass.
2. Maintain surfaces and supply additional Soil Material and Seed where necessary.
3. Manually remove weeds.

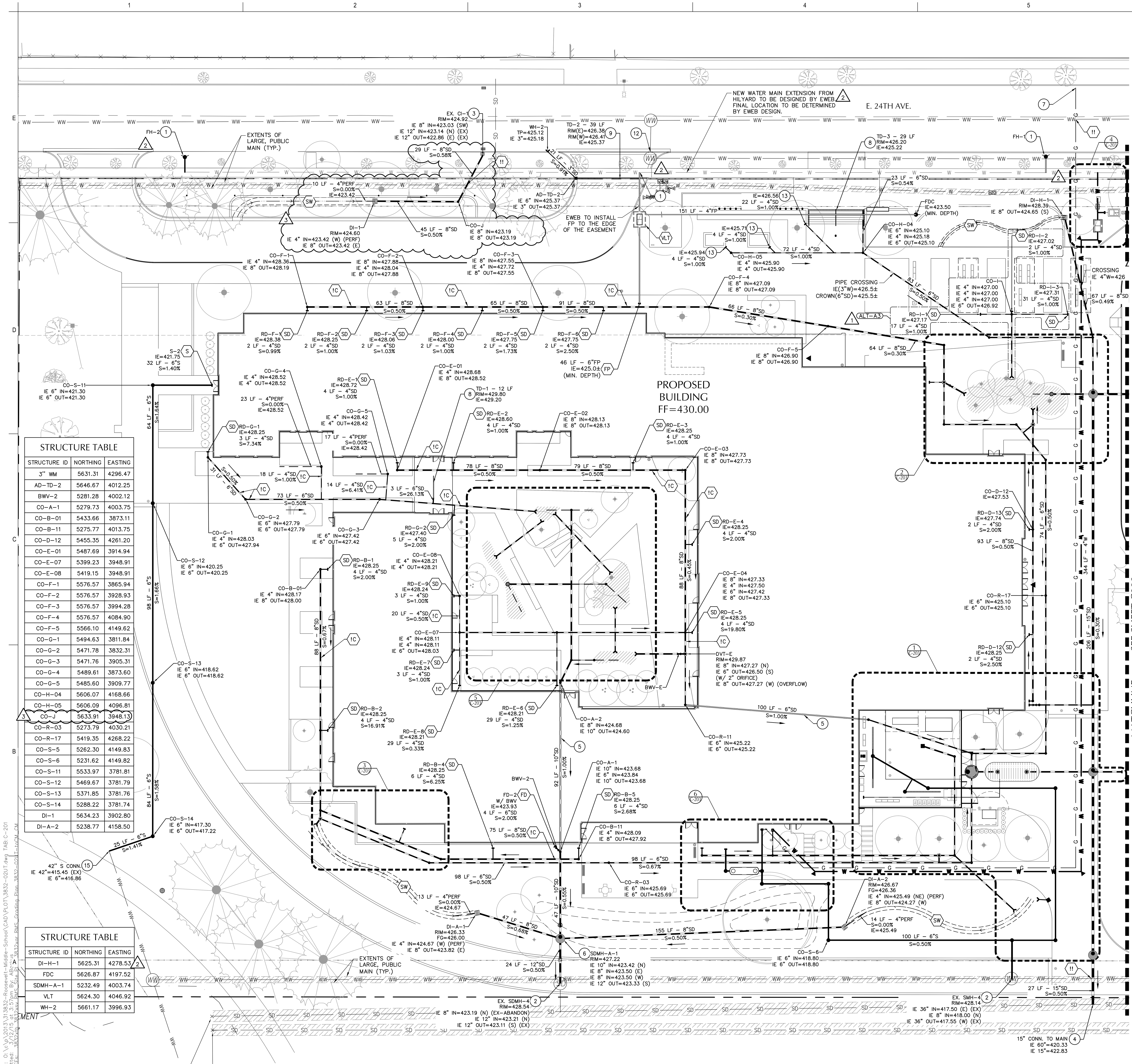
3.14 CLEANING

A. Remove excess materials from site. Protect drain inlets and underground piping as necessary and clean improvements soiled by Work of this Section.

3.15 COMPLETION REVIEW

A. Notify Landscape Architect for Completion Review when Work of this Section is complete.

END OF SECTION



STRUCTURE TABLE

STRUCTURE ID	NORTHING	EASTING
3" WM	5631.31	4296.47
AD-TD-2	5646.67	4012.25
BWV-2	5281.28	4002.12
CO-A-1	5279.73	4003.75
CO-B-01	5433.66	3873.11
CO-B-11	5275.77	4013.75
CO-D-12	5455.35	4261.20
CO-E-01	5487.69	3914.94
CO-E-07	5399.23	3948.91
CO-E-08	5419.15	3948.91
CO-F-1	5576.57	3865.94
CO-F-2	5576.57	3928.93
CO-F-3	5576.57	3994.28
CO-F-4	5576.57	4084.90
CO-F-5	5566.10	4149.62
CO-G-1	5494.63	3811.84
CO-G-2	5471.78	3832.31
CO-G-3	5471.76	3905.31
CO-G-4	5489.61	3873.60
CO-G-5	5485.60	3909.77
CO-H-04	5606.07	4168.66
CO-H-05	5606.09	4096.81
CO-J	5633.91	3948.13
CO-R-03	5273.79	4030.21
CO-R-17	5419.35	4268.22
CO-S-5	5262.30	4149.83
CO-S-6	5231.62	4149.82
CO-S-11	5533.97	3781.81
CO-S-12	5469.67	3781.79
CO-S-13	5371.85	3781.76
CO-S-14	5288.22	3781.74
DI-1	5634.23	3902.80
DI-A-2	5238.77	4158.50

STRUCTURE TABLE

STRUCTURE ID	NORTHING	EASTING
DI-H-1	5625.31	4278.53
FDC	5626.87	4197.52
SDMH-A-1	5232.49	4003.74
VLT	5624.30	4046.92
WH-2	5661.17	3996.93

File: O:\c\p\2013\313832-Roosevelt-Middle-School\CAD\PLOT\3832-02UT.dwg TAB:C-201
Plotted: 3/12/15 at 3:57pm By: ABcckus
XREFs: 3832xtb 3832xsv RMS_Site Pl 3832xar RMS_Grading Plan 3832-02UT-toCM_CM

SHEET NOTES

1. PIPE BEDDING AND BACKFILL FOR ALL UTILITIES SHALL BE DONE PER DETAIL 1/C-301. AT ALL BUILDING CONNECTIONS, INSTALL CLAY LENS PER DETAIL 1/C-301.
2. STRUCTURES LOCATIONS ARE BASED ON CENTER OF STRUCTURE UNLESS NOTED OTHERWISE.
3. INSTALL THRUST BLOCK ON FIRE AND WATER LINES PER DETAIL 1/C-302.

(X) KEY NOTES

1. COORDINATE WATER SERVICE POINTS OF CONNECTION WITH EWEB. EWEB TO PERFORM THE FOLLOWING WORK: TAP WATER MAIN FOR ON-SITE SERVICES, INSTALL DOMESTIC FROM MAIN TO AND INCLUDING WATER METER, INSTALL FIRE PROTECTION TO EDGE OF EASEMENT, AND INSTALL PUBLIC FIRE HYDRANTS. CONTRACTOR TO COORDINATE AN SCHEDULE WORK. (2)
2. CONNECT TO EXISTING MANHOLE.
3. CONNECT TO EXISTING CATCH BASIN.
4. CONNECT TO EXISTING 60-INCH PUBLIC STORM MAIN. COORDINATE SCHEDULE AND METHOD OF CONNECTION WITH CITY OF EUGENE. LATERAL SIZE AND APPROXIMATE IE AS NOTED.
5. SEE PLUMBING PLANS FOR CONSTRUCTION OF STORM DRAINS WITHIN BUILDING FOOTPRINT.
6. INSTALL TERMINAL BACKWATER VALVE ON ALL "IN" PIPES. (14/C-301)
7. COORDINATE WITH NW NATURAL TO CONNECT TO 2" GAS MAIN IN 24th AVE. GAS PIPING, VALVES, FITTINGS, AND METER SHOWN FOR REFERENCE ONLY. CONTRACTOR TO COORDINATE FINAL DESIGN AND LOCATION WITH NW NATURAL.
8. DECORATIVE TRENCH GRATE. USE JAMISON GRATE AS PRODUCED BY URBAN ACCESSORIES TO FIT SELECTED TRENCH DRAIN.
9. STANDARD TRENCH DRAIN. USE ADA COMPLIANT LOCKABLE HEAVY DUTY TRENCH GRATE – CLASS C.
10. RAIN GARDEN TO INCLUDE COMPACTED CLAY LENS. (12/C-301)
11. PROVIDE CONNECTION TO FIELD SUBDRAINAGE. SEE LANDSCAPE PLANS. (ALT-A2)
12. ADJUST EXISTING STRUCTURE TO GRADE.
13. CONNECT TO CONCRETE WALL FOOTING DRAIN. SEE LANDSCAPE PLANS.
14. CLEAN OUT EXISTING AREA DRAIN TO ENSURE DRAINAGE.
15. CONNECT TO EXIST. 36-INCH PUBLIC SANITARY MAIN. IE AS NOTED.

UTILITY LABEL LEGEND

STRUCTURE LABEL

XX XX-XX
RIM=
IE IN = XX.X
IE OUT = XX.X

- UTILITY TYPE (SD=STORM DRAINAGE, S=SANITARY SEWER, W=WATER, FP=FIRE PROTECTION)
- STRUCTURE TYPE CALLOUT
- ID NUMBER (WHERE APPLICABLE)
- STRUCTURE INFO (WHERE APPLICABLE)

PIPE LABEL

XXLF – XX" XX

- UTILITY LENGTH
- UTILITY SIZE
- UTILITY TYPE

S=X.XX% – SLOPE (WHERE APPLICABLE)

STRUCTURE TYPE

CALLOUT	DESCRIPTION	DETAIL REF.
BEND	BEND, ANGLE AS NOTED	
BWV	BACKWATER VALVE	3/C-301
CB	TRAPPED CATCH BASIN	2/C-301
CO	CLEANOUT TO GRADE	5/C-301
CU	CULVERT INLET/OUTLET	4/C-301
CONN	CONNECTION	
DI	DITCH INLET	10/C-301
DVT	STORM DIVERTER	3/C-303
FD	FOUNDATION DRAINAGE CONN.	
FDC	FIRE DEPARTMENT CONNECTION	4/C-302
FH	FIRE HYDRANT	5/C-302
GI	GREASE INTERCEPTOR	8/C-302
GV	GATE VALVE	
LF	LINEAL FEET	
OF	OUTFALL	8/C-301
OV	OVERFLOW INLET	11/C-301
SMH	48" DIA. SANITARY MH	
SDMH	48" DIA. STORM DRAIN MH	15/C-301
S-TRAP	SANITARY TRAP	9/C-301
TB	THRUST BLOCK	1/C-302
TD	TRENCH DRAIN	6/C-301
TD-AD	TRENCH DRAIN AREA DRAIN	6/C-301
WH	WEEP HOLE AT CURB	7/C-302
WM	WATER METER	
WQMH	WATER QUALITY MANHOLE	4/C-303

SHEET LEGEND

SYMBOL	DESCRIPTION	DETAIL REF.
RG	RAIN GARDEN	12/C-301
SW	GRASSY SWALE	13/C-301
S	CONNECT TO WASTE LINE. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.	
SD	CONNECT TO STORM DRAIN/ROOF DRAIN. SEE ARCHITECTURAL PLANS FOR CONTINUATION. SIZE AND IE AS NOTED.	9/C-302
W	CONNECT TO COLD WATER SYSTEM. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.	
FP	CONNECT TO FIRE PROTECTION SYSTEM. SIZE AS NOTED. SEE PLUMBING PLANS FOR CONTINUATION.	
G	CONNECT TO GAS METER. CONTRACTOR TO COORDINATE WITH GAS COMPANY. SEE PLUMBING FOR CONTINUATION.	
IR	IRRIGATION POINT OF CONNECTION. SEE IRRIGATION PLANS FOR CONTINUATION.	
VLT	6" DOUBLE DETECTOR CHECK FIRE BACKFLOW AND VAULT	2/C-302
RP	3" REDUCED PRESSURE DEVICE ABOVE-GROUND ENCLOSURE	3/C-302
FD	PERIMETER FOUNDATION DRAIN. INSTALL AROUND ENTIRE BUILDING PERIMETER. PROTECT WITH BACKWATER VALVE & CONNECT TO STORM SYSTEM. IE AS NOTED.	6/C-302
RWH	RAINWATER HARVESTING CISTERN AND ASSOCIATED FITTINGS.	1/C-303
TRP	P-TRAP TO BE AUTO-PRIMED AND VENTED. P-TRAP AND DRAIN MUST BE INSTALLED BY A LICENSED PLUMBING CONTRACTOR. SEE PLUMBING PLANS FOR AUTO-PRIME CONNECTION AND VENT.	9/C-301
!!	UTILITY CROSSING. POTHOLE EXISTING UTILITY PRIOR TO CONSTRUCTION AND REPORT ELEVATION, SIZE, AND HORIZONTAL LOCATION TO KPFF. PROVIDE 12" MIN. CLEARANCE, U.N.O.	
!C	PIPE COVER < 2'. USE HDPE ASTM F-714 OR AWWA C906(DR 21), PVC AWWA C900/C905, OR DI (DR 21).	

SCALE 1 INCH = 20 FEET
20 0 20 40

ROBERTSON/SHERWOOD/ARCHITECTS PC
132 EAST BROADWAY, SUITE 540
EUGENE, OREGON 97401
541-342-8077
www.robertsonsherwood.com

MAHLUM ARCHITECTS INC
1231 NW HOYT, SUITE 102
PORTLAND, OREGON 97209
503-224-4032

71 COLUMBIA, FLOOR 4
SEATTLE, WASHINGTON 98104
206-441-4151
www.mahlum.com

kpff
1201 Oak Street, Suite 100
Eugene, OR 97401
O: 541.684.4902
F: 541.684.4909
www.kpff.com

REGISTERED PROFESSIONAL ENGINEER 56481
Digital Signature
OREGON
JUL. 19, 2002
MATTHEW M. KEENAN
EXPIRATION DATE: 6/30/15

EUGENE SCHOOL DISTRICT 4J

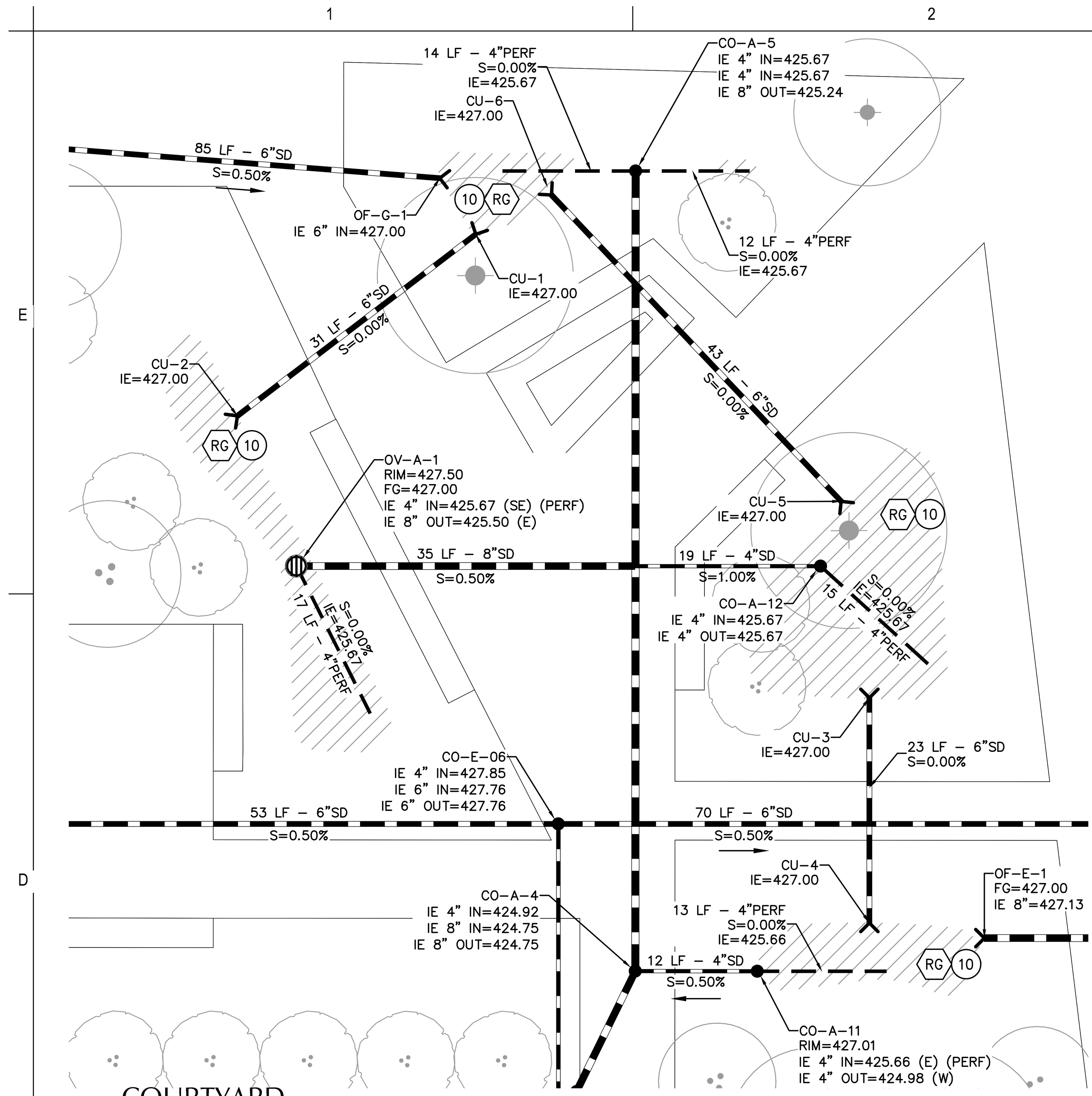
REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NUMBER 410.566.001

MARK	DATE	DESCRIPTION
3	3-12-2015	ADDENDUM 6
2	3-6-2015	ADDENDUM 3
1	2-18-2015	SUPPLEMENTAL INFO 1

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1
PROJECT NO: 2013912.00
DRAWN BY: AB, AF
CHECKED BY: MK
 ORIGINAL SHEET SIZE: 30"x42"

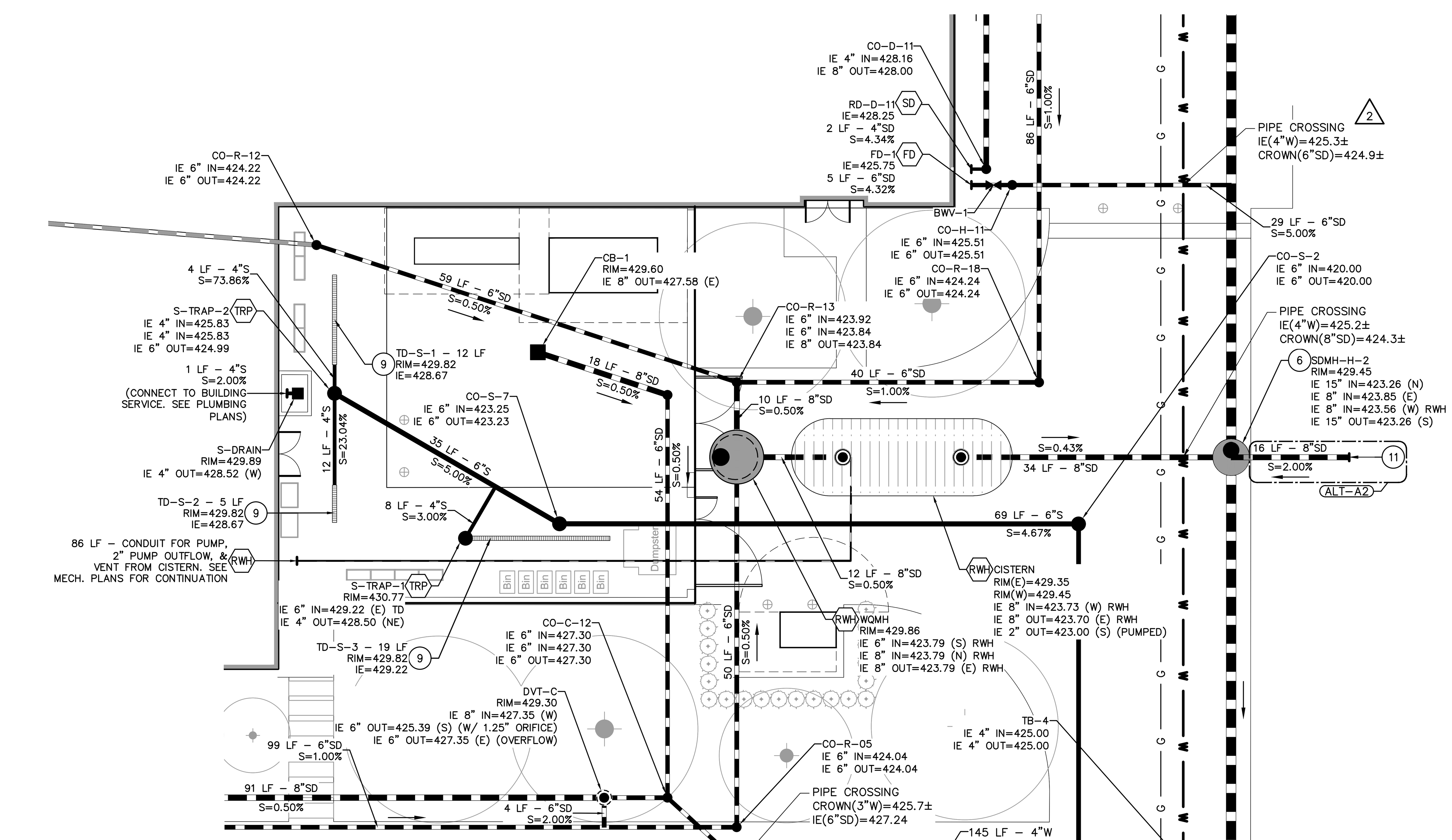
UTILITY PLAN

C-201



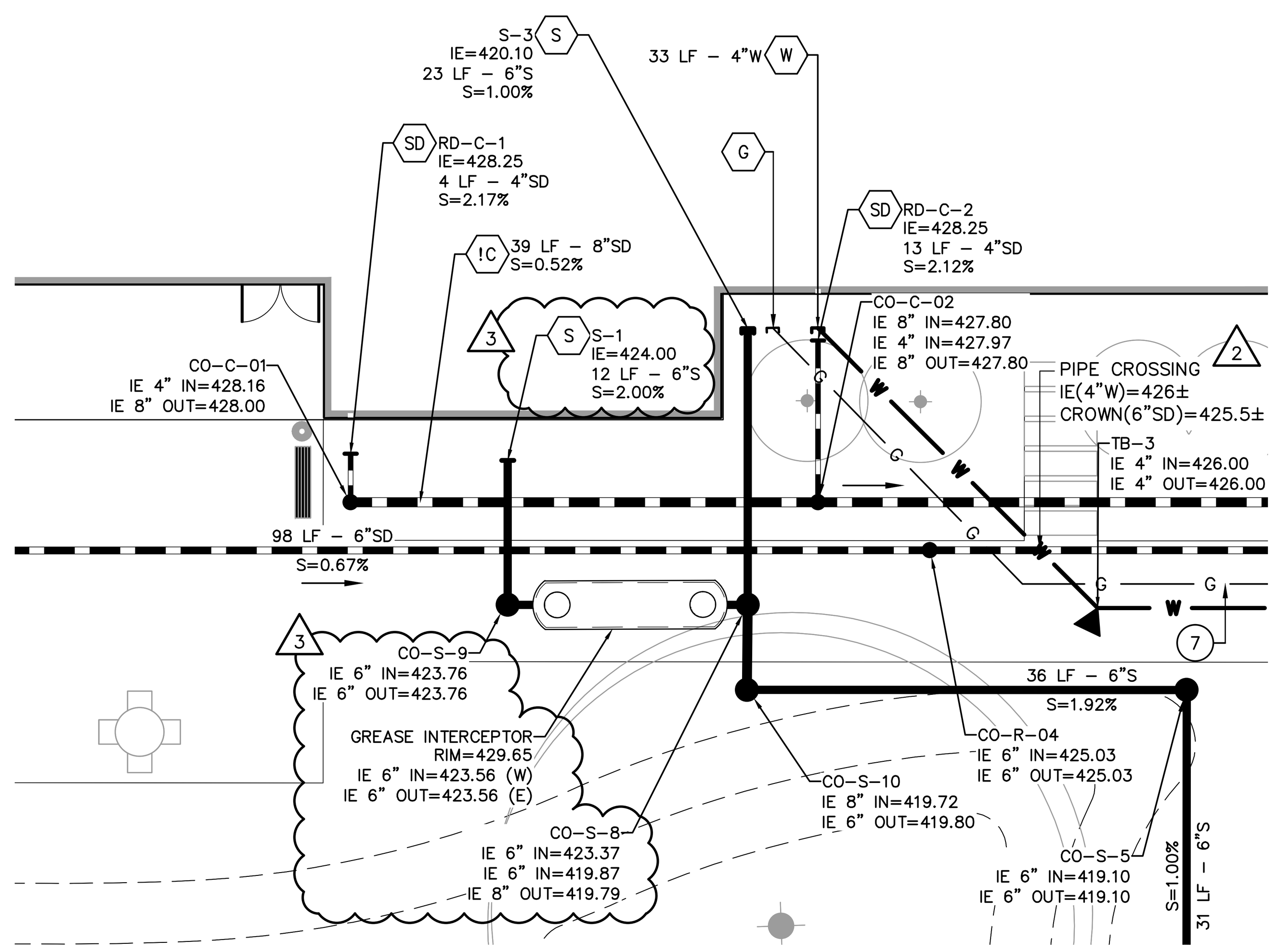
5 COURTYARD UTILITY DETAIL

SCALE: 1" = 10'



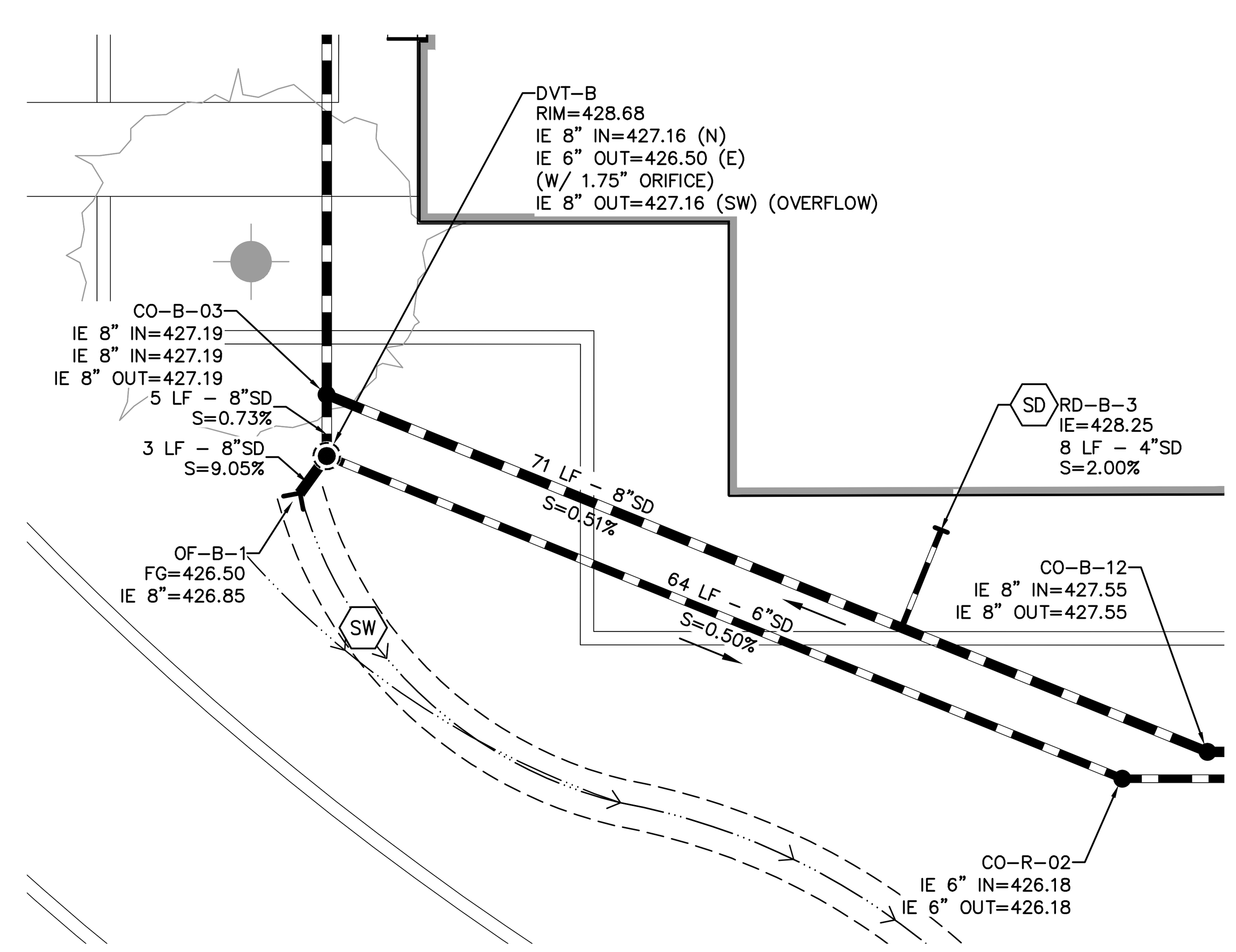
1 SERVICE AREA UTILITY DETAIL

SCALE: 1" = 10'



6 UTILITY DETAIL

SCALE: 1" = 10'



3 UTILITY DETAIL

SCALE: 1" = 10'

STRUCTURE TABLE

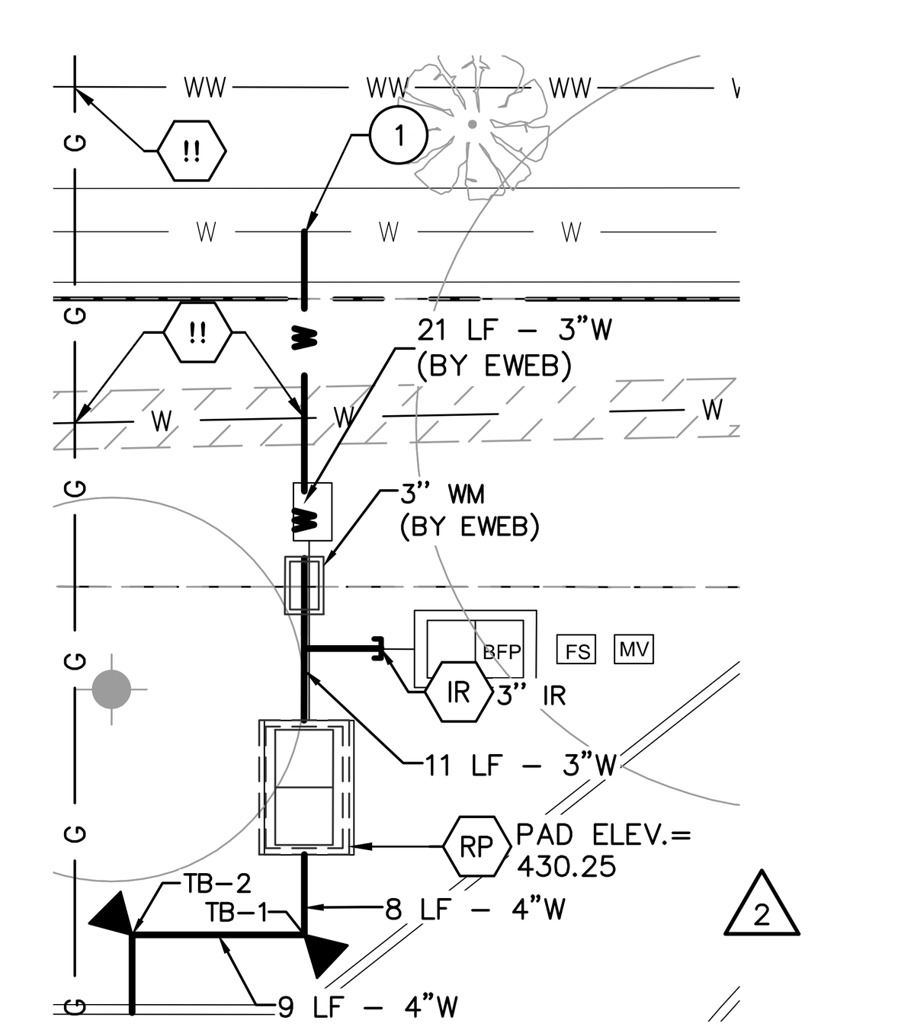
STRUCTURE ID	NORTHING	EASTING
3" WM	5631.31	4296.47
BWV-1	5359.77	4262.15
CB-1	5337.38	4201.20
CB-2	5253.49	4269.63
CISTERN	5323.35	4249.90
CO-A-4	5384.20	4009.78
CO-A-5	5465.93	4009.80
CO-A-11	5384.19	4022.25
CO-A-12	5425.57	4028.70
CO-B-03	5302.39	3873.07
CO-B-12	5275.77	3938.71
CO-C-01	5277.77	4080.93
CO-C-02	5277.77	4119.45
CO-C-11	5331.67	4218.55
CO-C-12	5277.77	4218.55
CO-D-11	5361.91	4261.18
CO-E-06	5399.23	4001.91
CO-F-6	5555.80	4212.77
CO-H-01	5559.95	4293.82
CO-H-02	5559.96	4237.36
CO-H-11	5359.78	4264.66
CO-R-02	5273.77	3932.36
CO-R-04	5273.82	4128.66
CO-R-05	5273.82	4227.80

STRUCTURE TABLE

STRUCTURE ID	NORTHING	EASTING
CO-R-12	5351.74	4171.60
CO-R-13	5333.37	4227.81
CO-R-14	5512.58	4212.77
CO-R-15	5512.50	4252.17
CO-R-16	5493.28	4268.19
CO-R-18	5333.36	4268.25
CO-S-2	5314.41	4273.52
CO-S-3	5231.58	4273.52
CO-S-4	5231.59	4249.82
CO-S-5	5262.30	4149.83
CO-S-7	5314.43	4204.11
CO-S-8	5269.31	4113.66
CO-S-9	5269.32	4093.88
CO-S-10	5262.31	4113.59
CU-1	5459.47	3993.48
CU-2	5440.91	3969.11
CU-3	5412.11	4033.70
CU-4	5389.12	4033.70
CU-5	5432.17	4030.81
CU-6	5463.48	4001.21
DVT-B	5297.81	3873.07
DVT-C	5277.77	4210.07
DVT-D	5512.49	4261.22
DVT-F	5535.54	4212.77

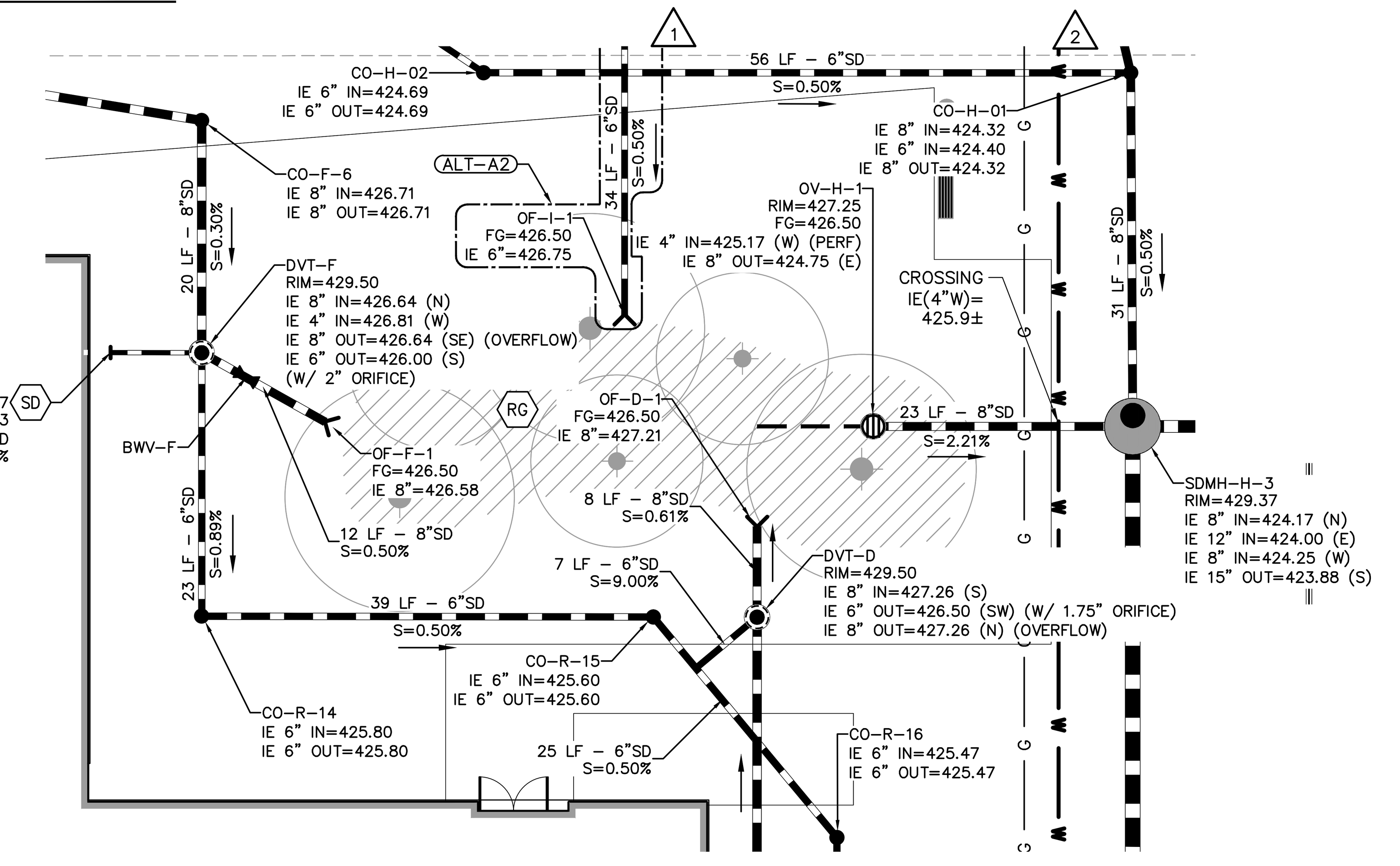
STRUCTURE TABLE

STRUCTURE ID	NORTHING	EASTING
FDC	5626.87	4197.52
FH-1	5658.48	4268.27
FP-CONN	5649.89	4046.90
GREASE INTERCEPTOR	5269.31	4103.97
OF-E-1	5387.57	4045.44
OF-G-1	5465.20	3989.79
OV-A-1	5425.57	3975.15
OV-H-1	5529.13	4271.35
RP-EN	5620.79	4296.46
S-DRAIN	5331.90	4169.04
S-TRAP-1	5312.50	4191.52
S-TRAP-2	5331.90	4174.01
SDMH-H-1	5223.46	4293.91
SDMH-H-2	5323.33	4293.93
SDMH-H-3	5529.12	4293.99
TB-1	5613.10	4296.47
TB-2	5613.10	4287.52
TB-3	5269.05	4142.49
TB-4	5269.01	4287.52
WQMH	5323.35	4227.81



4 WATER CONNECTIONS UTILITY DETAIL

SCALE: 1" = 10'



2 UTILITY DETAIL

SCALE: 1" = 10'

SHEET NOTES

1. PIPE BEDDING AND BACKFILL FOR ALL UTILITIES SHALL BE DONE PER DETAIL 1/C-301. AT ALL BUILDING CONNECTIONS, INSTALL CLAY LENS PER DETAIL 1/C-301.
2. STRUCTURES LOCATIONS ARE BASED ON CENTER OF STRUCTURE UNLESS NOTED OTHERWISE.
3. INSTALL THRUST BLOCK ON FIRE AND WATER LINES PER DETAIL 1/C-302.

(X) KEY NOTES

1. COORDINATE WATER SERVICE POINTS OF CONNECTION WITH EWEB. EWEB TO PERFORM THE FOLLOWING WORK: TAP WATER MAIN FOR ON-SITE SERVICES, INSTALL DOMESTIC FROM MAIN TO AND INCLUDING WATER METER, INSTALL FIRE PROTECTION TO EDGE OF EASEMENT, AND INSTALL PUBLIC FIRE HYDRANTS. CONTRACTOR TO COORDINATE AN SCHEDULE WORK.
2. CONNECT TO EXISTING MANHOLE.
3. CONNECT TO EXISTING CATCH BASIN.
4. CONNECT TO EXISTING 60-INCH PUBLIC STORM MAIN. COORDINATE SCHEDULE AND METHOD OF CONNECTION WITH CITY OF EUGENE. LATERAL SIZE AND APPROXIMATE IE AS NOTED.
5. SEE PLUMBING PLANS FOR CONSTRUCTION OF STORM DRAINS WITHIN BUILDING FOOTPRINT.
6. INSTALL TERMINAL BACKWATER VALVE ON ALL "IN" PIPES. (14/C-301)
7. COORDINATE WITH NW NATURAL TO CONNECT TO 2" GAS MAIN IN 24th AVE. GAS PIPING, VALVES, FITTINGS, AND METER SHOWN FOR REFERENCE ONLY. CONTRACTOR TO COORDINATE FINAL DESIGN AND LOCATION WITH NW NATURAL.
8. DECORATIVE TRENCH GRATE. USE JAMISON GRATE AS PRODUCED BY URBAN ACCESSORIES TO FIT SELECTED TRENCH DRAIN.
9. STANDARD TRENCH DRAIN. USE ADA COMPLIANT LOCKABLE HEAVY DUTY TRENCH GRATE – CLASS C.
10. RAIN GARDEN TO INCLUDE COMPACTED CLAY LENS. (12/C-301)
11. PROVIDE CONNECTION TO FIELD SUBDRAINAGE. SEE LANDSCAPE PLANS. (ALT-A2)
12. ADJUST EXISTING STRUCTURE TO GRADE.
13. CONNECT TO CONCRETE WALL FOOTING DRAIN. SEE LANDSCAPE PLANS.
14. CLEAN OUT EXISTING AREA DRAIN TO ENSURE DRAINAGE.
15. CONNECT TO EXIST. 36-INCH PUBLIC SANITARY MAIN. IE AS NOTED.

UTILITY LABEL LEGEND

STRUCTURE LABEL

XX XX-XX
RIM=
IE IN = XX.X
IE OUT = XX.X

- UTILITY TYPE (SD=STORM DRAINAGE, S=SANITARY SEWER, W=WATER, FP=FIRE PROTECTION)
- STRUCTURE TYPE CALLOUT
- ID NUMBER (WHERE APPLICABLE)
- STRUCTURE INFO (WHERE APPLICABLE)

PIPE LABEL

XXLF – XX" XX

- UTILITY LENGTH
- UTILITY SIZE
- UTILITY TYPE

S=X.XX% – SLOPE (WHERE APPLICABLE)

STRUCTURE TYPE

CALLOUT	DESCRIPTION	DETAIL REF.
BEND	BEND, ANGLE AS NOTED	
BWV	BACKWATER VALVE	3/C-301
CB	TRAPPED CATCH BASIN	2/C-301
CO	CLEANOUT TO GRADE	5/C-301
CU	CULVERT INLET/OUTLET	4/C-301
CONN	CONNECTION	
DI	DITCH INLET	10/C-301
DVT	STORM DIVERTER	3/C-303
FD	FOUNDATION DRAINAGE CONN.	
FDC	FIRE DEPARTMENT CONNECTION	4/C-302
FH	FIRE HYDRANT	5/C-302
GI	GREASE INTERCEPTOR	8/C-302
GV	GATE VALVE	
LF	LINEAL FEET	
OF	OUTFALL	8/C-301
OV	OVERFLOW INLET	11/C-301
SMH	48" DIA. SANITARY MH	
SDMH	48" DIA. STORM DRAIN MH	15/C-301
S-TRAP	SANITARY TRAP	9/C-301
TB	THRUST BLOCK	1/C-302
TD	TRENCH DRAIN	6/C-301
TD-AD	TRENCH DRAIN AREA DRAIN	6/C-301
WH	WEEP HOLE AT CURB	7/C-302
WM	WATER METER	
WQMH	WATER QUALITY MANHOLE	4/C-303

SHEET LEGEND

RG	RAIN GARDEN	12/C-301
SW	GRASSY SWALE	13/C-301
S	CONNECT TO WASTE LINE. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.	
SD	CONNECT TO STORM DRAIN/ROOF DRAIN. SEE ARCHITECTURAL PLANS FOR CONTINUATION. SIZE AND IE AS NOTED.	9/C-302
W	CONNECT TO COLD WATER SYSTEM. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.	
FP	CONNECT TO FIRE PROTECTION SYSTEM. SIZE AS NOTED. SEE PLUMBING PLANS FOR CONTINUATION.	
G	CONNECT TO GAS METER. CONTRACTOR TO COORDINATE WITH GAS COMPANY. SEE PLUMBING FOR CONTINUATION.	
IR	IRRIGATION POINT OF CONNECTION. SEE IRRIGATION PLANS FOR CONTINUATION.	
VLT	6" DOUBLE DETECTOR CHECK FIRE BACKFLOW AND VAULT	2/C-302
RP	3" REDUCED PRESSURE DEVICE ABOVE-GROUND ENCLOSURE	3/C-302
FD	PERIMETER FOUNDATION DRAIN. INSTALL AROUND ENTIRE BUILDING PERIMETER. PROTECT WITH BACKWATER VALVE & CONNECT TO STORM SYSTEM. IE AS NOTED.	6/C-302
RWH	RAINWATER HARVESTING CISTERN AND ASSOCIATED FITTINGS.	1/C-303
TRP	P-TRAP TO BE AUTO-PRIMED AND VENTED. P-TRAP AND DRAIN MUST BE INSTALLED BY A LICENSED PLUMBING CONTRACTOR. SEE PLUMBING PLANS FOR AUTO-PRIME CONNECTION AND VENT.	9/C-301
!!	UTILITY CROSSING. POTHOLE EXISTING UTILITY PRIOR TO CONSTRUCTION AND REPORT ELEVATION, SIZE, AND HORIZONTAL LOCATION TO KPFF. PROVIDE 12" MIN. CLEARANCE, U.N.O.	
!C	PIPE COVER < 2'. USE HDPE ASTM F-714 OR AWWA C906(DR 21), PVC AWWA C900/C905, OR DI (DR 21).	

SCALE 1 INCH = 20 FEET
20 0 20 40

Robertson | Sherwood | Architects pc
mahlum

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REGISTERED PROFESSIONAL ENGINEER 56481
Digital Signature
OREGON
JUL. 19, 2002
MATTHEW M. KEENAN
EXPIRATION DATE: 6/30/15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NUMBER 410.566.001

MARK	DATE	DESCRIPTION
3	3-12-2015	ADDENDUM 6
2	3-6-2015	ADDENDUM 3
1	2-18-2015	SUPPLEMENTAL INFO 1

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1
PROJECT NO: 2013912.00
DRAWN BY: AB, AF
CHECKED BY: MK

 ORIGINAL SHEET SIZE: 30"x42"

UTILITY PLAN

C-203

File: O:\c\p\2013\313832-Roosevelt-Middle-School\CAD\PLOT\3832-02UT.dwg TAB:C-203
Plotted: 3/12/15 at 3:45pm By: ABackus
XREFs: 3832xtb 3832xsv RMS_Site PL 3832xgr RMS_Grading Plan 3832-02UT-toCM_CM

PHASE ONE WORK
See Civil/Erosion Control Plans

PHASE TWO WORK
See Civil/Erosion Control Plans

ALTERNATE A4
Dashed line indicates expanded width of concrete walk

24TH AVENUE

BUS ONLY AREA

FIRE LANE

Steps

BIKE PARKING
Alternate A3 - Bike Shelters

ENTRY

ROOSEVELT MIDDLE SCHOOL

CENTER COURTYARD

Science Commons

South Commons

Half Court Basketball

Entry

Service Yard

PARENT DROP-OFF AREA

PARKING LOT - 92 Spaces
(88) 9-ft Stalls, (4) ADA

EASEMENT
See Note #8.

NATURAL TURF FIELD
(300 X 165')
Alternate A2 - Subgrade Drainage

SITE IMPROVEMENTS PENDING

HILYARD STREET

SERVICE ACCESS

PULL VAULT
See Electrical Plans

EXISTING UTILITY POLE
See Electrical Plans

PULL VAULT
See Electrical Plans

SITE PLAN NOTES:

1. All survey information provided by:
   Branch Engineering Inc.
   310 5th Street
   Springfield, OR 97477
   P: 541.746.0637
   F: 541.746.0389
   Date: 02.12.2014
2. Verify exact locations and routing of existing underground utilities prior to starting excavation. Repair any damage to existing pipes, utilities or related facilities at Contractor's expense in a manner approved by Owner's Representative.
3. Barricade and protect trunks, limbs, roots and root zones beyond dripline of existing trees and plant materials to remain as directed by Owner's Representative. Cut no limbs or roots larger than 2" in diameter without approval of Owner's Representative. Notify Owner's Representative prior to performing any excavation within protection areas.
4. Install new utilities so that rim elevations are flush with finish grades at pavement, lawn and plant beds. Adjust rim elevations of existing utilities accordingly.
5. All accessible components including, but not limited to signs, ramps, tactile warning, markings, etc. shall conform to all Oregon State Standards for parking and access for the disabled. Obtain Owner's Representative approval prior to installing any related work.
6. Verify existing elevations where new work abuts existing to remain. Notify Owner's Representative of any discrepancies.
7. In addition to improvements shown, repair all areas disturbed of damaged by construction impacts to the condition that existed prior to construction.
8. Refer to Civil and Survey Sheets for work within existing Easements. Contact EWEB prior to performing any work, including Grading, within Easement.
9. ADA Operator - Door operator at 36-inch with card reader at 42-inch mounted on 48-inch 4x4 painted galvanized HHS post with welded cap set in 12-inch diameter by 30-inch deep concrete footing.

LEGEND:

1. See Sheets L101.1 and L101.2 for Notes and Legend information.

SPECIAL NOTE

*** ALTERNATE A4**
Base Bid includes improvements to existing 5-ft sidewalk at locations shown on drawings. Alternate includes demo of existing 5-ft sidewalk and replacing with a new 8-ft concrete sidewalk. If Alternate is selected sidewalk expansion will increase concrete areas and decrease landscaped areas as shown on plans. Concrete and landscaped areas will be increased or reduced by the following quantities:

Concrete: +/- 3920 sf; in addition to the new concrete shown at the 5ft sidewalk included in the base bid.
Base Bid Concrete: +/- 4,593 sf

Plant Beds (Type 1): - 240 sf. Delete 240 sf of plant bed.
See Landscape Plan for additional information

Plant Beds (Type 2): - 1,400 sf. Delete 1400 sf of plant bed.
See Landscape Plan for additional information

Lawn Areas: -720 sf. Delete 720 sf of lawn.
See Landscape Plan for additional information

EcoLawn (Not Irrigated): -70 sf. Delete 70 sf. of Eco Lawn.
See Landscape Plan for additional information

OVERALL SITE PLAN

SCALE: 1" = 40'

NORTH

Robertson|Sherwood Architects PC mahlum

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REGISTERED 285 LARRY K GILBERT OREGON LANDSCAPE ARCHITECT

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL

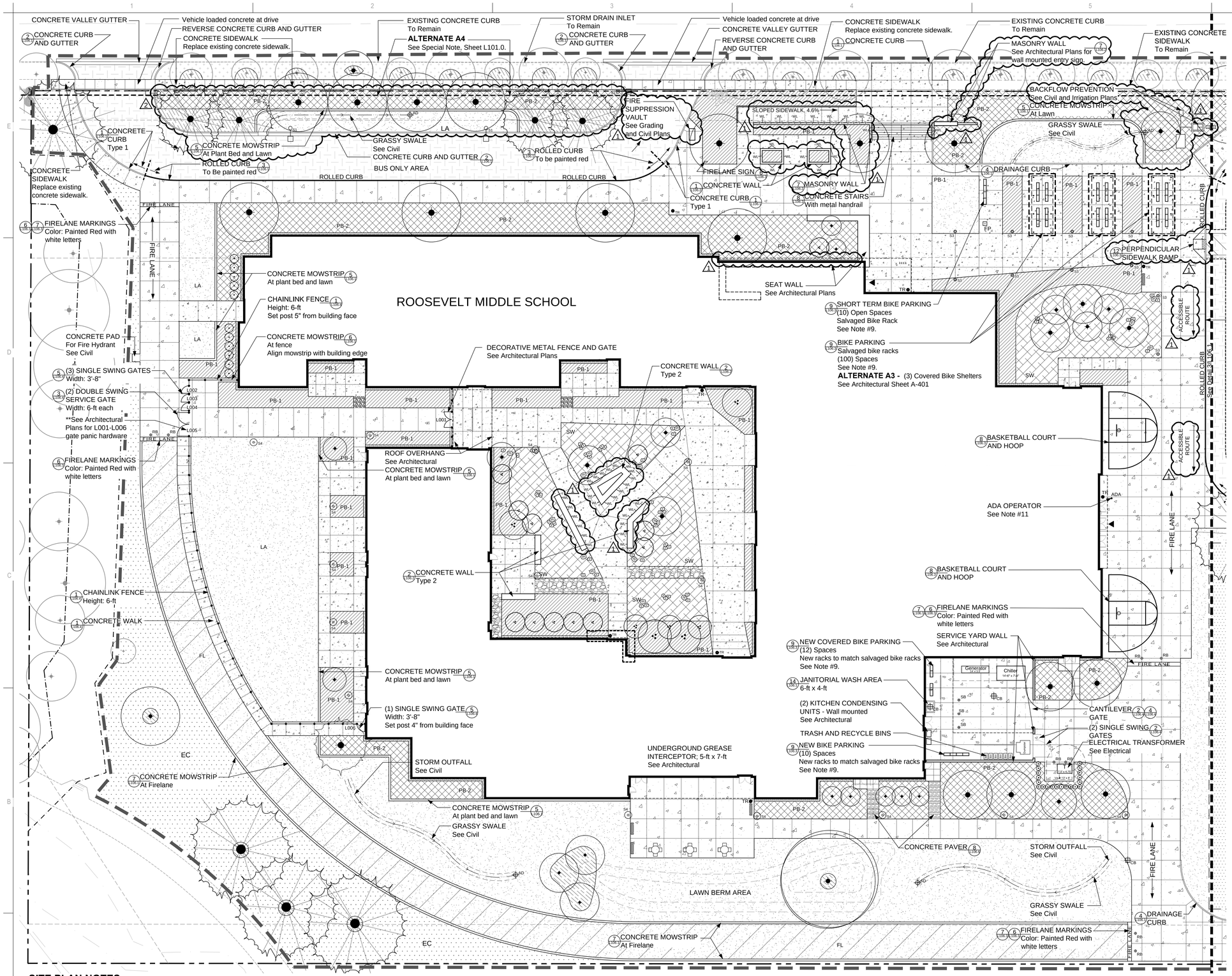
680 EAST 24TH AVENUE
EUGENE, OREGON 97405

MARK	DATE	DESCRIPTION
1	3-06-2015	ADDENDUM 3
2	3-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1
PROJECT NO: 2013912.00
DRAWN BY: NLR / KMK
CHECKED BY: LKG
ORIGINAL SHEET SIZE: 30"x42"

OVERALL SITE PLAN

L-101.0



SITE PLAN NOTES:

1. All survey information provided by:
   Branch Engineering Inc.
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   Springfield, OR 97477
   P: 541.746.0637
   F: 541.746.0389
   Date: 02.12.2014
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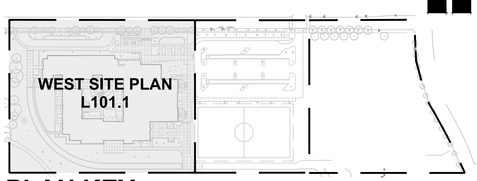
3. Barricade and protect trunks, limbs, roots and root zones beyond dripline of existing trees and plant materials to remain as directed by Owner's Representative. Cut no limbs or roots larger than 2" in diameter without approval of Owner's Representative. Notify Owner's Representative prior to performing any excavation within protection areas.
4. Install new utilities so that rim elevations are flush with finish grades at pavement, lawn and plant beds. Adjust rim elevations of existing utilities accordingly.
5. All accessible components including, but not limited to signs, ramps, tactile warning, markings, etc. shall conform to all Oregon State Standards for parking and access for the disabled. Obtain Owner's Representative approval prior to installing any related work.
6. Verify existing elevations where new work abuts existing to remain. Notify Owner's Representative of any discrepancies.
7. In addition to improvements shown, repair all areas disturbed of damaged by construction impacts to the condition that existed prior to construction.
8. **ALTERNATE A4**: See Sheet L101.0 for **Special Note**.
9. Salvage existing 14 bike racks (bike parking spaces for 110) for re-installation. Sand blast and prepare racks from new blue powder coating finish per painting Specifications 09 90 00. Verify color with Architect. Provide new anchors.
10. Refer to Civil and Survey Sheets for work within existing Easements. Contact EWEB prior to performing any work, including Grading, within Easement.
11. ADA Operator - Door operator at 36-inch with card reader at 42-inch mounted on 48-inch 4x4 painted galvanized HHS post with welded cap set in 12-inch diameter by 30-inch deep concrete footing.

SCALE: 1" = 20' (0', 10', 20', 40')

NORTH



PLAN KEY

LEGEND:

- LIMIT OF WORK (Approximate)
- PROPERTY LINE
- EASEMENT See Note #10.
- EXISTING TREES To Remain
- PROPOSED DECIDUOUS TREES See Planting Plan
- PROPOSED EVERGREEN TREES See Planting Plan
- GOAL 5 WATER RESOURCE SITE SETBACK
- GRASSY SWALE BASIN & FLOW LINE
- CHAINLINK FENCE
- DECORATIVE METAL FENCE
- CONCRETE PAVING - PEDESTRIAN 6 inch thick over 6 inch base
- CONCRETE PAVING - VEHICLE REINFORCED 8 inch thick over 15 inch base
- AC PAVING - HEAVY 4 inches over 15 inches See Civil
- AC PAVING - LIGHT 2-1/2 inches over 11 inches See Civil
- PB- 1 — PLANT BED - Type 1 At Grade, Bark Mulch
- PB- 2 — PLANT BED - Type 2 Above Grade, Bark Mulch
- SW — STORMWATER PLANTER Type: Rain Garden With Stone Mulch
- LA — LAWN See Landscape Plan
- LR — LAWN REPAIR Irrigated
- NT — NATURAL TURF FIELD **BASE BID:** Irrigated and seeded **ALTERNATE A2:** Subgrade Drainage System See Detail 11/L106.5
- EC — ECO LAWN Non-Irrigated
- FL — REINFORCED LAWN AT FIRE LANE Irrigated
- MULCH AREA
- CONCRETE EDGE At building exterior
- CONCRETE WALK Finish: Exposed Aggregate
- DETECTABLE PAVING
- BIKE RACK Hoop Style # Indicated number of bikes per rack See Note #9
- TRASH RECEPTACLE See Specifications
- BENCH See Specifications
- PICNIC TABLE See Specifications
- FLAG POLE See Specifications
- CONCRETE WHEEL STOP
- DRAINS See Civil & Grading Plan
- TRENCH DRAIN See Civil & Grading Plan
- ACCESSIBLE PARKING SIGN
- REMOVABLE BOLLARD See Specifications
- STEEL BOLLARD See Specifications
- FLEXIBLE PLASTIC BOLLARD See Specifications
- BASALT ACCENT STONE "S" - Small, "M" - Medium, See Specifications
- SITE LIGHTING See Electrical, Lighting Plan and Layout Plan See Specifications
- WALL LIGHT/SITE LIGHTING See Electrical, Lighting Plan and Layout Plan See Specifications
- BIKE/ SKATE STOP

Robertson|Sherwood|Architects PC — mahlum

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REGISTERED 285 LARRY K. GILBERT OREGON LANDSCAPE ARCHITECT

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
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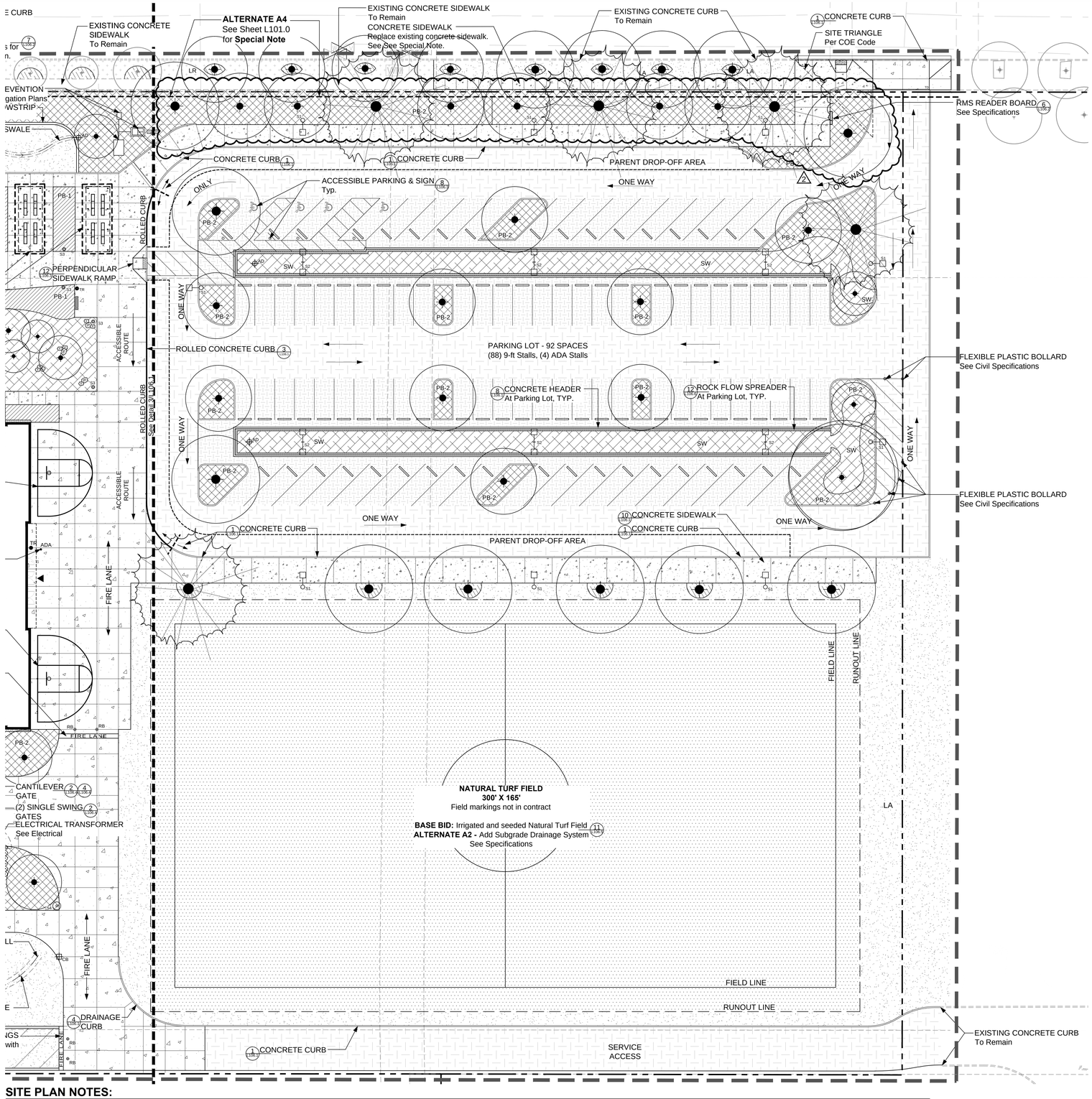
ORIGINAL SHEET SIZE: 30"x42"

WEST SITE PLAN

L-101.1



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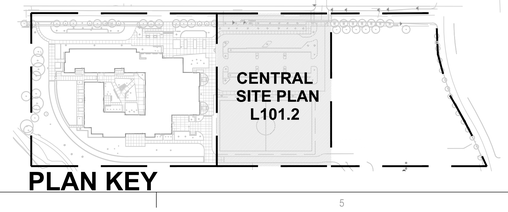
6. Verify existing elevations where new work abuts existing to remain. Notify Owner's Representative of any discrepancies.
7. In addition to improvements shown, repair all areas disturbed of damaged by construction impacts to the condition that existed prior to construction.
8. **ALTERNATE A4**: See Sheet L101.0 for **Special Note**.
9. Salvage existing 14 bike racks (bike parking spaces for 110) for re-installation. Sand blast and prepare racks from new blue powder coating finish per painting Specifications 09 90 00. Verify color with Architect. Provide new anchors.
10. Refer to Civil and Survey Sheets for work within existing Easements. Contact EWEB prior to performing any work, including Grading, within Easement.
11. ADA Operator - Door operator at 36-inch with card reader at 42-inch mounted on 48-inch 4x4 painted galvanized HHS post with welded cap set in 12-inch diameter by 30-inch deep concrete footing.

SCALE: 1" = 20' 0' 10' 20' 40' NORTH



PLAN KEY

LEGEND:

- LIMIT OF WORK (Approximate)
- PROPERTY LINE
- EASEMENT See Note #10.
- EXISTING TREES To Remain
- PROPOSED DECIDUOUS TREES (6/L106.2) See Planting Plan
- PROPOSED EVERGREEN TREES (5/L106.2) See Planting Plan
- GOAL 5 WATER RESOURCE SITE SETBACK
- GRASSY SWALE BASIN & FLOW LINE
- CHAINLINK FENCE (1/L106.1, 3/L106.1, 5/L106.1)
- DECORATIVE METAL FENCE
- CONCRETE PAVING - PEDESTRIAN (10/L106.2) 6 inch thick over 6 inch base
- CONCRETE PAVING - VEHICLE REINFORCED (11/L106.2) 8 inch thick over 15 inch base
- AC PAVING - HEAVY 4 inches over 15 inches See Civil
- AC PAVING - LIGHT 2-1/2 inches over 11 inches See Civil
- PB- 1: PLANT BED - Type 1 (1/L106.1) At Grade, Bark Mulch
- PB- 2: PLANT BED - Type 2 (2/L106.1) Above Grade, Bark Mulch
- SW: STORMWATER PLANTER (3/L106.1) Type: Rain Garden With Stone Mulch
- LA: LAWN See Landscape Plan
- LR: LAWN REPAIR Irrigated
- NT: NATURAL TURF FIELD **BASE BID:** Irrigated and seeded **ALTERNATE A2:** Subgrade Drainage System See Detail 11/L106.5
- EC: ECO LAWN Non-Irrigated (2)
- FL: REINFORCED LAWN AT FIRE LANE (7/L106.1, 12/L106.2) Irrigated
- MULCH AREA
- CONCRETE EDGE (9/L106.2) At building exterior
- CONCRETE WALK Finish: Exposed Aggregate
- DETECTABLE PAVING
- BIKE RACK (9/L106.2) Hoop Style # Indicated number of bikes per rack See Note #9
- TR: TRASH RECEPTACLE See Specifications
- BENCH See Specifications
- (1) PICNIC TABLE See Specifications
- FP: FLAG POLE See Specifications (4/L106.2)
- (1) CONCRETE WHEEL STOP
- CB, AD: DRAINS See Civil & Grading Plan
- TD TD: TRENCH DRAIN See Civil & Grading Plan
- ACCESSIBLE PARKING SIGN (10/L106.2)
- RB: REMOVABLE BOLLARD (1/L106.2) See Specifications
- SB: STEEL BOLLARD (2/L106.2) See Specifications
- FB: FLEXIBLE PLASTIC BOLLARD See Specifications
- BASALT ACCENT STONE (9/L106.2) "S" - Small, "M" - Medium, See Specifications
- SITE LIGHTING See Electrical, Lighting Plan and Layout Plan See Specifications
- (1) WL: WALL LIGHT/SITE LIGHTING See Electrical, Lighting Plan and Layout Plan See Specifications
- BIKE/ SKATE STOP (5/L106.2)

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REGISTERED 285 LANDSCAPE ARCHITECT LARRY K. GILBERT OREGON

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL

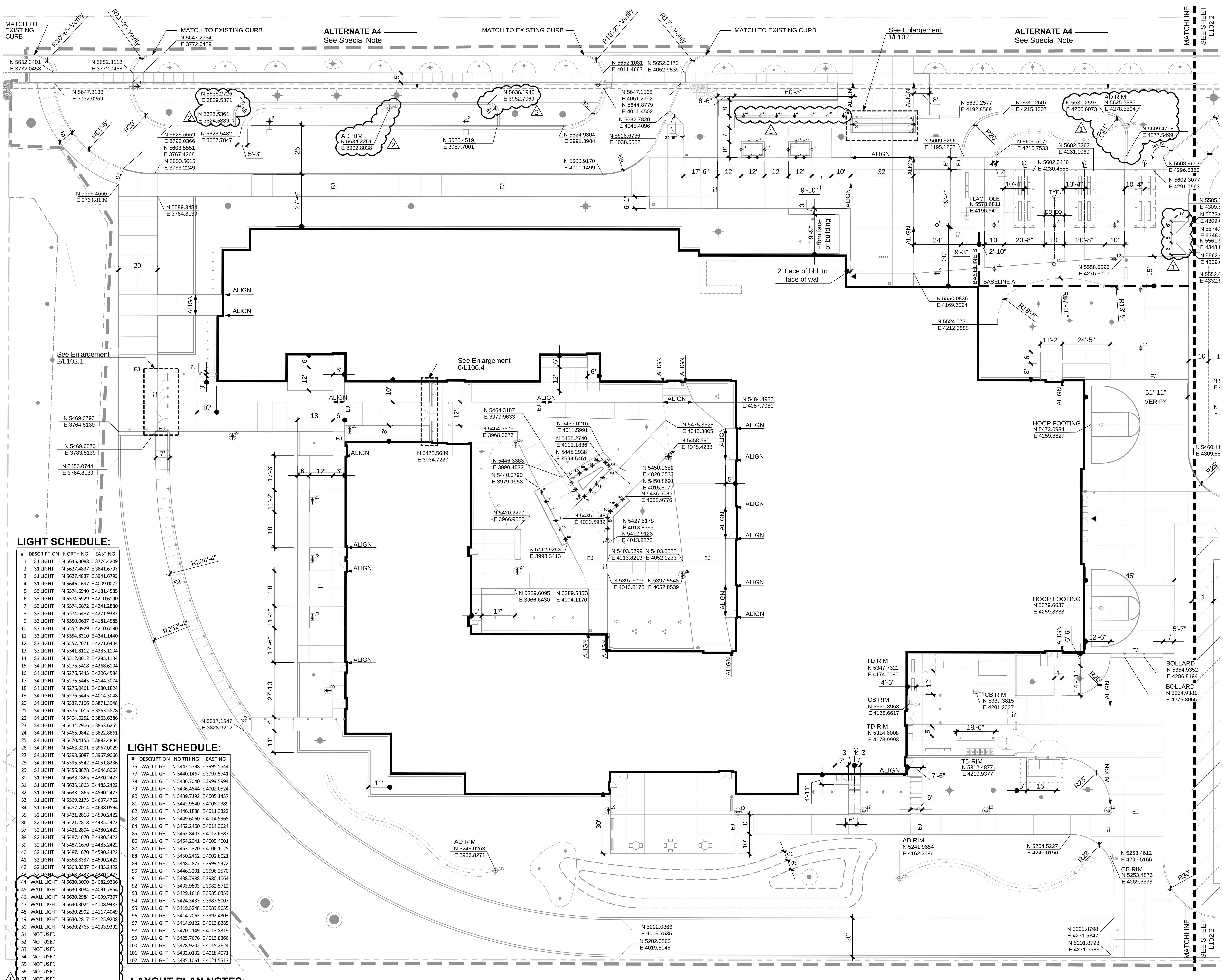
680 EAST 24TH AVENUE
EUGENE, OREGON 97405

MARK	DATE	DESCRIPTION
1	3-06-2015	ADDENDUM 3
2	3-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1
PROJECT NO: 2013912.00
DRAWN BY: NLR / KMK
CHECKED BY: LKG
ORIGINAL SHEET SIZE: 30"x42"

CENTRAL SITE PLAN

L-101.2



LIGHT SCHEDULE:

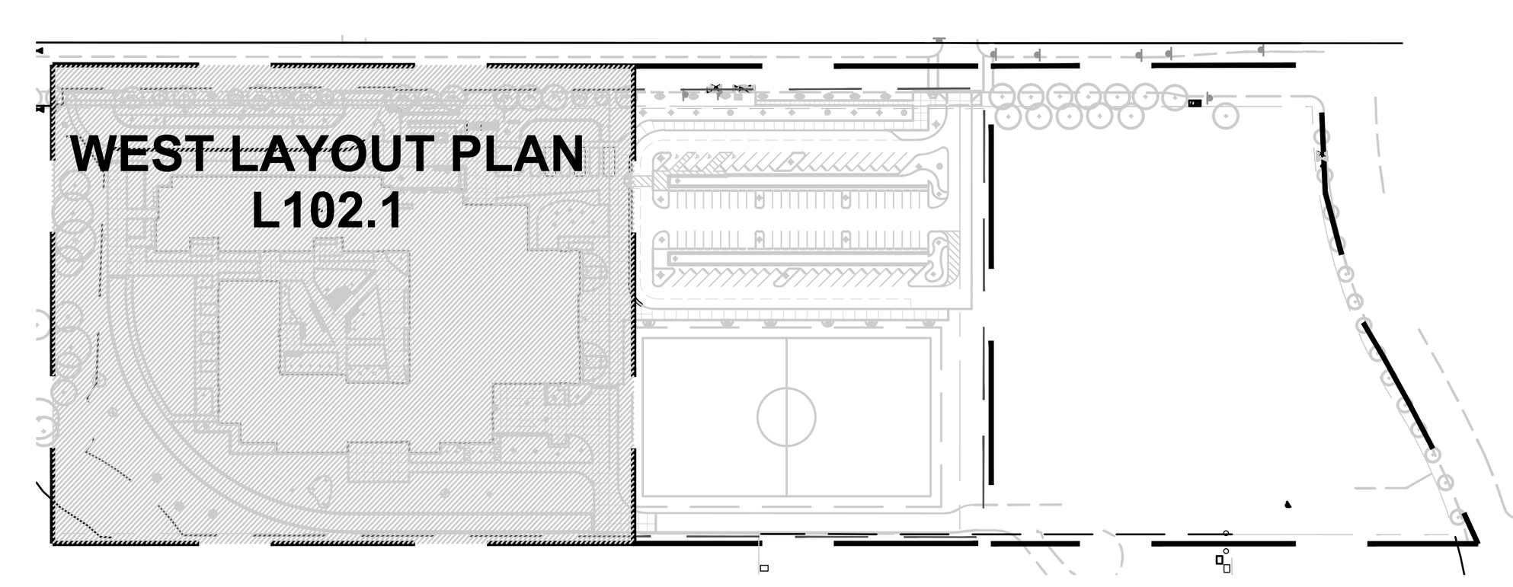
#	DESCRIPTION	NORTHING	EASTING
1	S1 LIGHT	N 5645.3088	E 3774.4209
2	S1 LIGHT	N 5627.4837	E 3841.6793
3	S1 LIGHT	N 5627.4837	E 3941.6793
4	S1 LIGHT	N 5646.1697	E 4009.0072
5	S3 LIGHT	N 5574.6940	E 4181.4585
6	S3 LIGHT	N 5574.6929	E 4210.6190
7	S3 LIGHT	N 5574.6672	E 4241.2880
8	S3 LIGHT	N 5574.6487	E 4271.9382
9	S3 LIGHT	N 5550.0637	E 4181.4585
10	S3 LIGHT	N 5552.3929	E 4210.6190
11	S3 LIGHT	N 5554.8310	E 4241.1440
12	S3 LIGHT	N 5557.2671	E 4271.6434
13	S3 LIGHT	N 5541.8112	E 4285.1134
14	S3 LIGHT	N 5512.0612	E 4285.1134
15	S4 LIGHT	N 5276.5418	E 4268.6104
16	S4 LIGHT	N 5276.5445	E 4206.4584
17	S4 LIGHT	N 5276.5445	E 4144.3074
18	S4 LIGHT	N 5276.0461	E 4080.1824
19	S4 LIGHT	N 5276.5445	E 4014.3048
20	S4 LIGHT	N 5337.7106	E 3871.3948
21	S4 LIGHT	N 5375.1015	E 3863.5878
22	S4 LIGHT	N 5404.6252	E 3863.6286
23	S4 LIGHT	N 5434.2906	E 3863.6255
24	S4 LIGHT	N 5466.9842	E 3822.8861
25	S4 LIGHT	N 5470.4155	E 3882.4834
26	S4 LIGHT	N 5463.3291	E 3967.0029
27	S4 LIGHT	N 5398.6087	E 3967.9066
28	S4 LIGHT	N 5396.5542	E 4051.8236
29	S4 LIGHT	N 5456.8878	E 4044.8064
30	S1 LIGHT	N 5633.1865	E 4380.2422
31	S1 LIGHT	N 5633.1865	E 4485.2422
32	S1 LIGHT	N 5633.1865	E 4590.2422
33	S1 LIGHT	N 5569.2173	E 4637.4762
34	S1 LIGHT	N 5487.2014	E 4638.0594
35	S2 LIGHT	N 5421.2818	E 4590.2422
36	S2 LIGHT	N 5421.2818	E 4485.2422
37	S2 LIGHT	N 5421.2894	E 4380.2422
38	S2 LIGHT	N 5487.1670	E 4380.2422
39	S2 LIGHT	N 5487.1670	E 4485.2422
40	S2 LIGHT	N 5487.1670	E 4590.2422
41	S2 LIGHT	N 5568.8337	E 4590.2422
42	S2 LIGHT	N 5568.8337	E 4485.2422
43	S2 LIGHT	N 5568.8337	E 4380.2422
44	WALL LIGHT	N 5630.3090	E 4082.9236
45	WALL LIGHT	N 5630.3034	E 4091.7954
46	WALL LIGHT	N 5630.2984	E 4099.7207
47	WALL LIGHT	N 5630.3024	E 4108.9487
48	WALL LIGHT	N 5630.2992	E 4117.4049
49	WALL LIGHT	N 5630.2817	E 4125.9208
50	WALL LIGHT	N 5630.2765	E 4133.9392
51	NOT USED		
52	NOT USED		
53	NOT USED		
54	NOT USED		
55	NOT USED		
56	NOT USED		
57	NOT USED		
58	WALL LIGHT	See Detail 8/L106.2	
59	WALL LIGHT	See Detail 8/L106.2	
60	WALL LIGHT	See Detail 8/L106.2	
61	WALL LIGHT	See Detail 8/L106.2	
62	WALL LIGHT	See Detail 8/L106.2	
63	WALL LIGHT	See Detail 8/L106.2	
64	WALL LIGHT	N 5613.1019	E 4081.8128
65	WALL LIGHT	N 5617.0915	E 4085.8146
66	WALL LIGHT	N 5617.0894	E 4089.8146
67	WALL LIGHT	N 5613.0873	E 4093.8121
68	WALL LIGHT	N 5609.0973	E 4089.8104
69	WALL LIGHT	N 5609.0994	E 4085.8104
70	WALL LIGHT	N 5613.0866	E 4105.8121
71	WALL LIGHT	N 5617.0845	E 4109.8145
72	WALL LIGHT	N 5617.0824	E 4113.8145
73	WALL LIGHT	N 5613.0739	E 4117.8121
74	WALL LIGHT	N 5609.0824	E 4113.8102
75	WALL LIGHT	N 5609.0845	E 4109.8104

LIGHT SCHEDULE:

#	DESCRIPTION	NORTHING	EASTING
76	WALL LIGHT	N 5443.5798	E 3995.5544
77	WALL LIGHT	N 5440.1467	E 3997.5741
78	WALL LIGHT	N 5436.7040	E 3999.5994
79	WALL LIGHT	N 5436.4844	E 4002.0524
80	WALL LIGHT	N 5439.7192	E 4005.1457
81	WALL LIGHT	N 5442.9540	E 4008.2389
82	WALL LIGHT	N 5446.1888	E 4011.3322
83	WALL LIGHT	N 5449.6060	E 4014.5965
84	WALL LIGHT	N 5452.2460	E 4014.3624
85	WALL LIGHT	N 5453.8403	E 4012.6887
86	WALL LIGHT	N 5454.2041	E 4009.4001
87	WALL LIGHT	N 5452.2320	E 4006.1125
88	WALL LIGHT	N 5450.2462	E 4002.8021
89	WALL LIGHT	N 5448.2877	E 3999.5372
90	WALL LIGHT	N 5446.3201	E 3996.2570
91	WALL LIGHT	N 5438.7988	E 3980.1064
92	WALL LIGHT	N 5433.9803	E 3982.5712
93	WALL LIGHT	N 5429.1618	E 3985.0359
94	WALL LIGHT	N 5424.3433	E 3987.5007
95	WALL LIGHT	N 5419.5248	E 3989.9655
96	WALL LIGHT	N 5414.7063	E 3992.4303
97	WALL LIGHT	N 5414.9122	E 4013.8285
98	WALL LIGHT	N 5420.2149	E 4013.8319
99	WALL LIGHT	N 5425.7676	E 4013.8366
100	WALL LIGHT	N 5428.9202	E 4015.2624
101	WALL LIGHT	N 5432.0132	E 4018.4071
102	WALL LIGHT	N 5435.1061	E 4021.5517

LAYOUT PLAN NOTES:

1. All survey information provided by:
   Branch Engineering Inc.
   310 5th Street
   Springfield, OR 97477
   P: 541.746.0637
   F: 541.746.0389
   Date: 02.12.2014
2. Verify existing conditions in the field. Notify Owner's Representative of any discrepancies.
3. Verify exact locations and routing of existing underground utilities prior to starting excavation. Repair any damage to existing pipes, utilities or related facilities at Contractor's expense in a manner approved by Owner's Representative.
4. Cease layout work and notify Owner's Representative of any discrepancies in project benchmarks, control points, coordinates, dimensions, degrees, locations, stakes, etc. Obtain approval prior to executing any layout work different from that shown or specified.
5. Locate all concrete paving joints as shown on Site and Layout Plans. All concrete paving joints not specifically dimensioned shall be equally spaced between shown or noted limits.
6. All coordinates and dimensions are at face of element (curb, walk, building, or wall) unless noted otherwise.
7. All accessible components including, but not limited to signs, ramps, tactile warning, markings, etc. shall conform to all Oregon state standards for parking and access for the disabled. Obtain Owner's Representative's approval prior to installing any related work.
8. See Civil Plans for locations of all drainage structures (deck drains, trench drains, catch basins and area drains). Coordinate exact location with Owner's Representative of concrete edge and jointing locations shown on Site Plan prior to installation.
9. Match new concrete sidewalk to existing sidewalk at nearest joint.
10. **ALTERNATE A4**: See Special Note.



PLAN KEY

SCALE: 1" = 20'   0' 10' 20' 40'   NORTH

LEGEND:

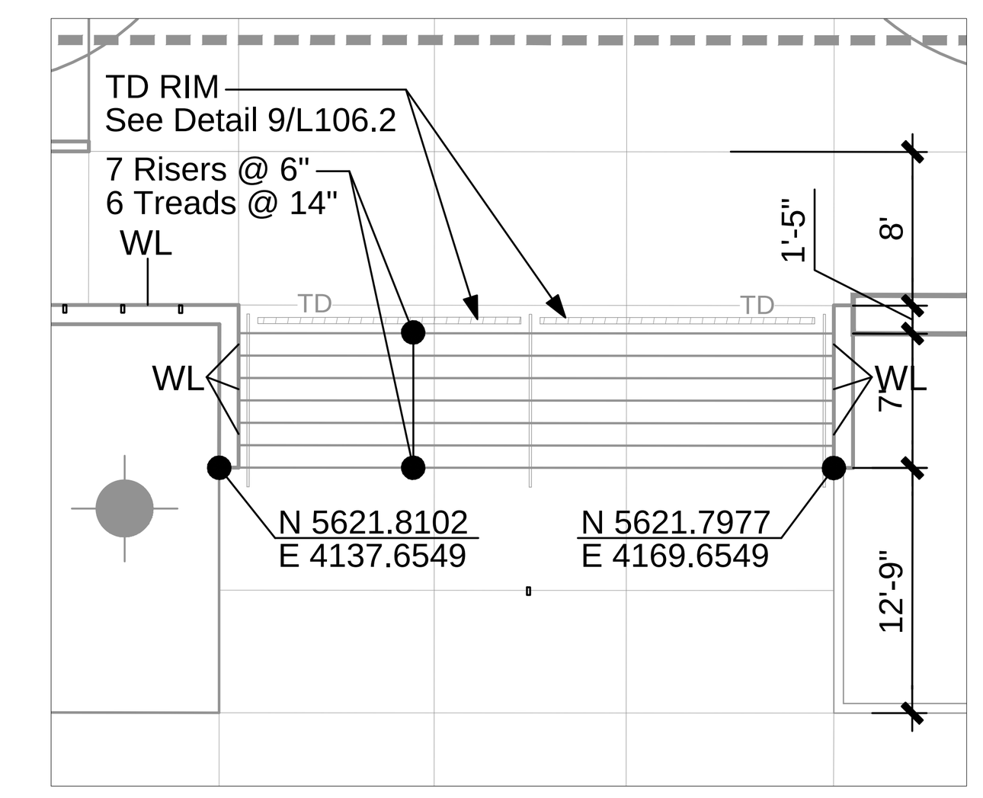
(heavy dashed line)	SITE LIMIT LINE (Approximate)
(light dashed line)	PROPERTY LINE
15'	DIMENSION
15'	DIMENSION From Building Face or Baseline
R5'	RADIUS All radius 3' unless otherwise noted
ALIGN	ALIGN WITH ELEMENT
N 5475.2235 E 5959.0604	NORTHING/EASTING COORDINATE
E.Q.	EQUAL
(x)	LIGHTING COORDINATE POINT See Light Schedule See Lighting Plan and Specifications for fixtures
EJ	EXPANSION JOINT

SPECIAL NOTE

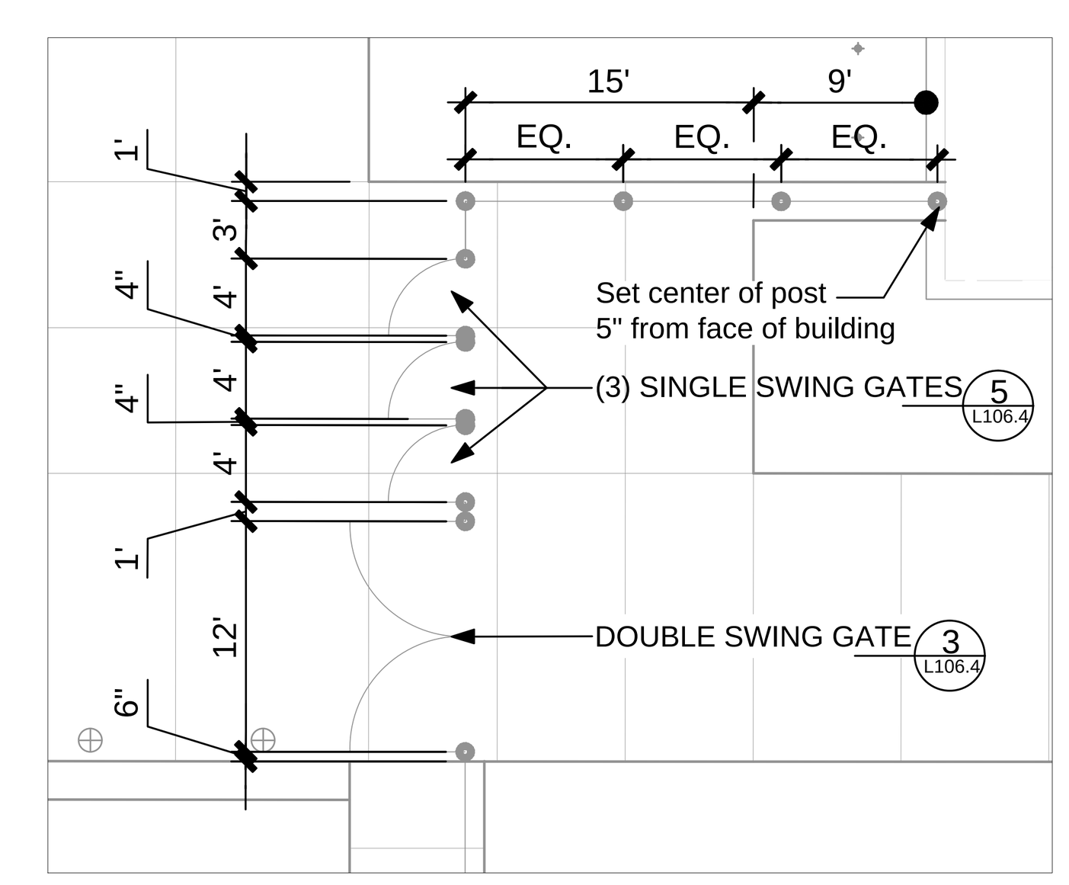
*** ALTERNATE A4**
Base Bid includes improvements to existing 5-ft sidewalk at locations shown on drawings. Alternate includes demo of existing 5-ft sidewalk and replacing with a new 8-ft concrete sidewalk. If Alternate is selected sidewalk expansion will increase concrete areas. Concrete areas will be increased by the following quantities:

Concrete: + 3920 sf; in addition to the new concrete shown at the 5ft sidewalk included in the base bid.
Base Bid Concrete: 4,593 sf

See Site Plan L101.0, L101.1 and L101.2.



ENTRY STAIR LAYOUT ENLARGEMENT — 1/L102.1



FENCE POST ENLARGEMENT PLAN — 1/L102.1

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OREGON

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL

680 EAST 24TH AVENUE
EUGENE, OREGON 97405

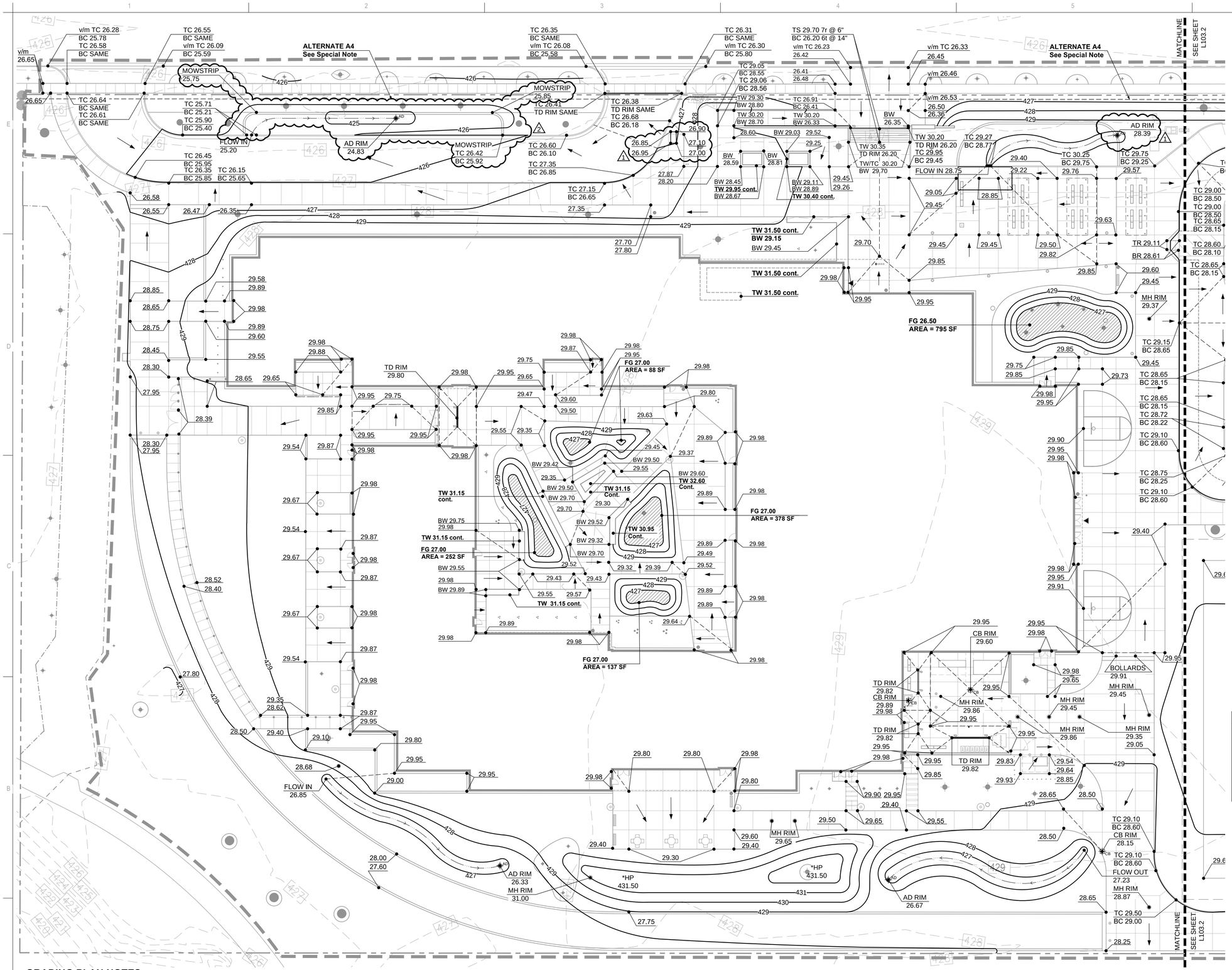
MARK	DATE	DESCRIPTION
1	3-06-2015	ADDENDUM 3
2	3-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1

PROJECT NO: 2013912.00
DRAWN BY: NLR / KMK
CHECKED BY: LKG
ORIGINAL SHEET SIZE: 30"x42"

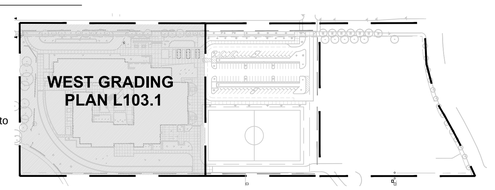
WEST LAYOUT PLAN

L-102.1



GRADING PLAN NOTES:

1. All survey information provided by:
   Branch Engineering Inc.
   310 5th Street
   Springfield, OR 97477
   P: 541.746.0637
   F: 541.746.0389
   Date: 02.12.2014
2. Verify exact locations and routing of existing underground utilities prior to starting excavation. Repair any damage to existing pipes, utilities or related facilities at Contractor's expense in a manner approved by Owner's Representative.
3. Barricade and protect trunks, limbs, roots and root zones beyond dripline of existing trees and plant materials to remain as directed by Owner's Representative. Cut no limbs or roots larger than 2" in diameter without approval of Owner's Representative. Notify Owner's Representative prior to performing any excavation within protection areas.
4. All accessible components including, but not limited to signs, ramps, tactile warning, markings, etc. shall conform to all Oregon State Standards for parking and access for the disabled. Obtain Owner's Representative approval prior to installing any related work.
5. Install new utilities so that rim elevations are flush with finish grades at pavement, lawn and plant beds. Adjust rim elevations of existing utilities accordingly.
6. Verify existing elevations where new work abuts existing to remain. Notify Owner's Representative of any discrepancies prior to any construction.
7. Adjust rim elevations of existing utilities so that rims are flush with finish grade at new paving and lawns.
8. Blend all new elevations back to existing grade to create a uniform slope. Maximum slope, 4:1.
9. Construct smooth transitions between new paving improvements and existing paving to remain.
10. Add 400 to all proposed spot elevations shown on plan. Elevations shown have been modified for clarity.
11. **Alternate A4: See Special Note.**
12. Refer to Civil and Survey sheets for work within existing easements. Contact EWEB prior to performing any work, including Grading, within Easement.



PLAN KEY

LEGEND:

- LIMIT OF WORK (Approximate)
- PROPERTY LINE
- 429 EXISTING CONTOUR
- 429 PROPOSED CONTOUR
- TREE CENTER
- 30.40 SPOT ELEVATION
- TC 30.40 / BC 29.90 TOP OF CURB ELEVATION / BOTTOM OF CURB ELEVATION
- TW 30.40 / BW 29.90 TOP OF WALL ELEVATION / BOTTOM OF WALL ELEVATION
- TW 30.40 cont. TOP OF WALL ELEVATION CONTINUOUS
- TS 430.40 / BS 429.90 TOP OF STAIR ELEVATION / BOTTOM OF STAIR ELEVATION
- TR 430.40 / BR 429.90 TOP OF RAMP ELEVATION / BOTTOM OF RAMP ELEVATION
- v/m 30.40 SPOT ELEVATION Verify/Match Existing Elevation Notify Landscape Architect if match elevation is significant different from shown.
- CB Rim 29.50 CATCH BASIN RIM ELEVATION
- AD Rim 29.50 AREA DRAIN RIM ELEVATION
- TD Rim 29.50 TRENCH DRAIN RIM ELEVATION
- HP HIGH POINT
- BREAK IN PLANE Arrow indicated direction of flow
- DRAINS See Civil
- TRENCH DRAIN See Civil
- GRASSY SWALE BASIN & FLOW LINE
- STORMWATER PLANTER BASIN AREA See Civil for overflow inverts

SPECIAL NOTE

*** ALTERNATE A4**
Base Bid includes improvements to existing 5-ft sidewalk at locations shown on drawings. Alternate includes demo of existing 5-ft sidewalk and replacing with a new 8-ft concrete sidewalk.
See Site Plan L101.0, L101.1 and L101.2 for Base Bid and Alternate work. Contractor will be provided revised plans with horizontal and vertical controls for new improvements if Alternate is selected.

SCALE: 1" = 20'
0' 10' 20' 40'
NORTH

Robertson|Sherwood|Architects PC mahlum

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REGISTERED 285 LARRY K GILBERT OREGON LANDSCAPE ARCHITECT

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL

680 EAST 24TH AVENUE
EUGENE, OREGON 97405

MARK	DATE	DESCRIPTI
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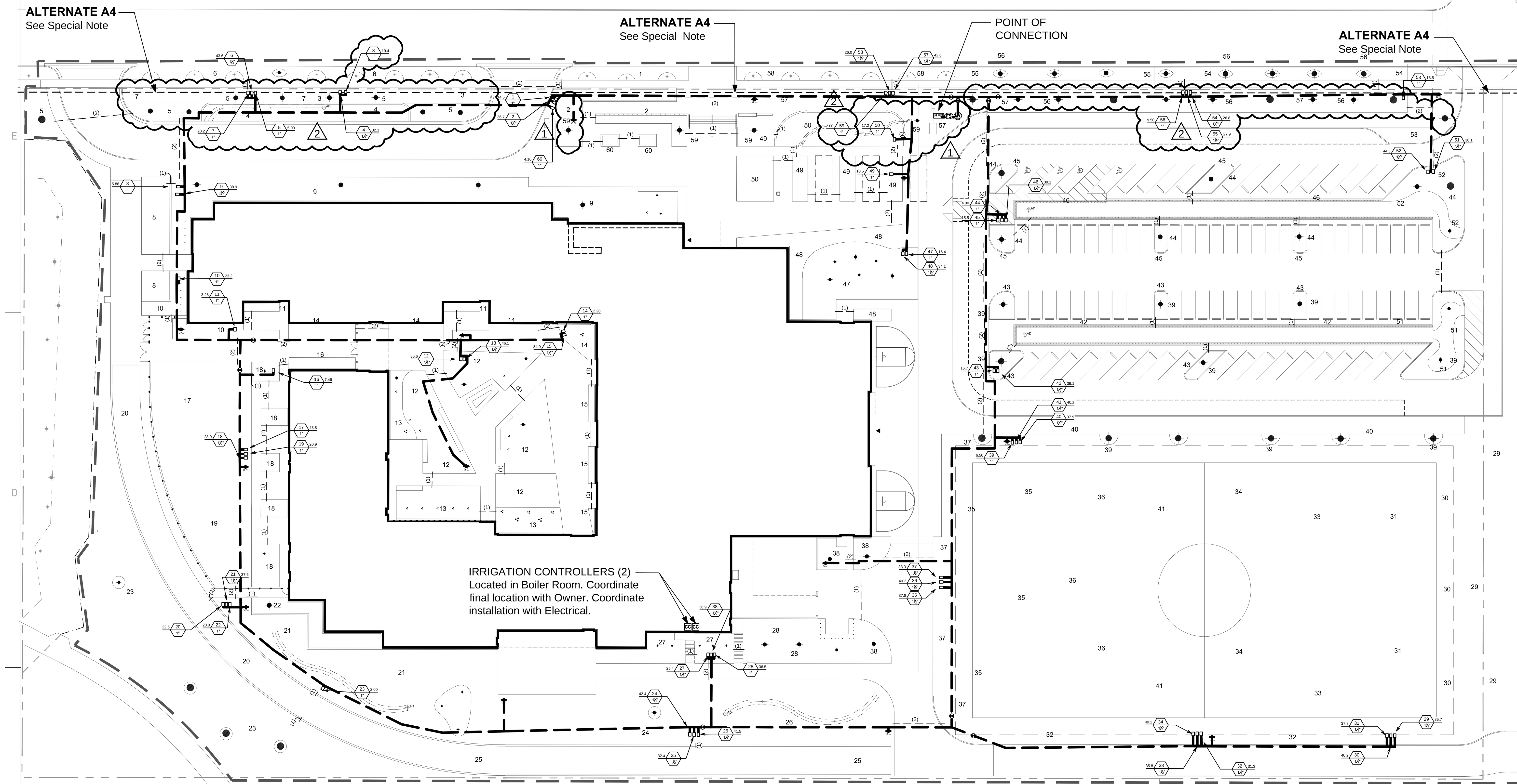
2	3-13-2015	ADDENDUI

ISSUE DATE: FEBRUARY 18, 2C
ISSUE: CONSTRUCTION DOCUMEN
VOLUME: PACKAG
PROJECT NO: 2013912
DRAWN BY: NLR / KI
CHECKED BY: L
ORIGINAL SHEET SIZE: 3

WEST GRADING PLAN

L-103.1



VALVE SCHEDULE

NUMBER	DESCRIPTION	SIZE	TYPE	PSI	GPM	PRECIP
1	Lawn	1"	Spray	30	14.56	1.73
2	Plant Bed	1-1/2"	Spray	30	36.74	1.86
3	Plant Bed	1"	Spray	30	19.41	1.52
4	Lawn	1-1/2"	Spray	30	32.12	1.84
5	Trees	1"	Bubbler	30	5	7.66
6	Lawn	1-1/2"	Spray	30	43.61	1.92
7	Plant Bed	1"	Spray	30	20.23	1.53
8	Lawn	1"	Rotary	40	5.88	0.43
9	Plant Bed	1-1/2"	Rotary	40	38.86	0.59
10	Plant Bed	1"	Spray	30	23.2	1.9
11	Plant Bed	1"	Spray	30	3.28	1.63
12	Plant Bed	1-1/2"	Rotary	40	36.56	0.65
13	Plant Bed	1-1/2"	Spray	30	46.11	1.9
14	Plant Bed	1-1/2"	Spray	30	2.2	0.92
15	Plant Bed	1-1/2"	Spray	30	34.02	2.05
16	Plant Bed	1"	Spray	30	7.46	2.36
17	Lawn	1"	Rotary	40	23.77	0.45
18	Plant Bed	1-1/2"	Spray	30	28.04	1.99
19	Lawn	1"	Rotary	40	20.88	0.46
20	Lawn	1"	Rotary	40	22.57	0.42
21	Lawn	1-1/2"	Rotary	40	37.64	0.48
22	Plant Bed	1"	Spray	30	19.99	1.88
23	Trees	1"	Bubbler	30	2	7.66
24	Lawn	1-1/2"	Rotary	40	42.43	0.45
25	Lawn	1-1/2"	Rotary	40	32.44	0.41
26	Lawn	1-1/2"	Rotary	40	41.51	0.61
27	Plant Bed	1-1/2"	Spray	30	25.35	1.83
28	Plant Bed	1"	Spray	30	36.54	1.71
29	Lawn	1-1/2"	Rotary	40	35.67	0.44
30	Lawn	1-1/2"	Rotor	35	40.23	0.76
31	Lawn	1-1/2"	Rotor	35	37.8	0.31
32	Lawn	1-1/2"	Rotor	35	31.29	0.52
33	Lawn	1-1/2"	Rotor	35	35.76	0.33
34	Lawn	1-1/2"	Rotor	35	40.23	0.34
35	Lawn	1-1/2"	Rotor	35	37.8	0.32
36	Lawn	1-1/2"	Rotor	35	40.23	0.31
37	Lawn	1-1/2"	Rotor	35	33.33	0.54
38	Plant Bed	1-1/2"	Spray	30	36.9	1.68
39	Trees	1"	Bubbler	30	6.5	7.66
40	Lawn	1-1/2"	Rotor	35	37.93	0.56
41	Lawn	1-1/2"	Rotor	35	40.23	0.34
42	Plant Bed	1-1/2"	Spray	30	39.15	1.71
43	Plant Bed	1"	Spray	30	16.74	1.63
44	Trees	1"	Bubbler	30	4	7.66
45	Plant Bed	1"	Spray	30	15.52	1.52
46	Plant Bed	1-1/2"	Spray	30	39.15	1.7
47	Plant Bed	1"	Rotary	40	16.4	0.5
48	Plant Bed	1-1/2"	Spray	30	34.13	1.79
49	Plant Bed	1"	Rotary	40	10.5	0.6
50	Lawn	1"	Rotary	40	17.21	0.56
51	Plant Bed	1-1/2"	Spray	30	36.05	1.79
52	Plant Bed	1-1/2"	Spray	30	44.46	2
53	Plant Bed	1"	Spray	30	18.49	1.84
54	Lawn	1-1/2"	Spray	30	26.79	1.91
55	Lawn	1-1/2"	Spray	30	27.88	1.86
56	Trees	1"	Bubbler	30	9.5	7.66
57	Plant Bed	1-1/2"	Rotary	40	42.59	0.48
58	Lawn	1-1/2"	Spray	30	25.97	1.92
59	Trees	1"	Bubbler	30	2	7.66
60	Plant Bed	1"	Spray	30	4.16	2

SPECIAL NOTE

***ALTERNATE A4**

Sidewalk expansion will reduce irrigated areas at locations shown on plan. Use smaller radius nozzle to achieve full and even coverage of plant bed. See head schedule for approved nozzle types. Nozzle adjustments will result in additional heads at the following zones:

ZONE 2:
*Reduced plant bed width may require use of Rain Bird MPR nozzles not shown in head schedule.
Total additional heads required = 5

ZONE 3:
Total additional heads required = 4

ZONE 7:
Total additional heads required = 6

ZONE 53:
Total additional heads required = 1

ZONE 57:
Total additional heads required = 18

IRRIGATION HEAD SCHEDULE

SYMBOL	MANUFACTURER/MODEL	PSI
2Q 2H 2F 4Q 4H 4F	Rain Bird 1800*-U-PRS SQ Series	30
Q T H F	Rain Bird 1800*-U-PRS U8 Series	30
Q T H F	Rain Bird 1800*-U-PRS U10 Series	30
Q T H TQ F	Rain Bird 1800*-U-PRS U12 Series	30
Q T H TQ F	Rain Bird 1800*-U-PRS U15 Series	30
Q H F	Rain Bird 1800*-PRS 5 Series MPR	30
08HE-VAN 12HE-VAN 10HE-VAN 15HE-VAN	Rain Bird 1800*-PRS ADJ	30
M L O	Hunter MP1000 PROS-CV** Series	40
K G R	Hunter MP2000 PROS-CV** Series	40
B Y A	Hunter MP3000 PROS-CV** Series	40
LB	Hunter MP3500 PROS-CV** Series	40
T	Hunter MP Corner PROS-CV** Series	40
	Hunter RZWS-36-25CV	30

* Use 1806 at Lawn, 1812 at Shrub Planting

** PROS-06 at Lawn, PROS-12 at Shrub Planting

SYMBOL	MANUFACTURER/MODEL	PSI	GPM	RADIUS
2.5	Rain Bird 5006-PC, FC-SAM-R	35	2.17	37'
5.0	Rain Bird 5006-PC, FC-SAM-R	35	4.47	41'

LEGEND:

- PROPERTY LINE
- LIMIT OF WORK (Approximate)
- EXISTING TREES To Remain
- NEW TREE CENTER See Planting Plan
- IRRIGATION CONTROLLER See Specifications
- BACKFLOW PREVENTION DEVICE (9)
- MASTER VALVE (5)
- FLOW SENSOR (5)
- ISOLATION VALVE (2)
- QUICK COUPLER ASSEMBLY (4)
- IRRIGATION MAINLINE Size: 3" throughout, unless noted.
- IRRIGATION SLEEVE (1) 6 inch sleeve at quantity shown in (#).
- ZONE CONTROL VALVE ASSEMBLY (3)
- 13 ZONE NUMBER
- ZONE CONTROL VALVE CALLOUT

IRRIGATION PLAN NOTES:

1. All survey information provided by:
   Branch Engineering Inc.
   310 5th Street
   Springfield, OR 97477
   P: 541.746.0637
   F: 541.746.0389
   Date: 02.12.2014
2. Verify exact locations and routing of existing and proposed underground utilities prior to starting any excavation. Any damage to existing pipes, underground utilities or related facilities to be repaired at contractor's expense in a manner approved by Owner's Representative.
3. Barricade and protect trunks, limbs, roots and root zones beyond dripline of existing trees and plant materials to remain as directed by Owner's Representative. Cut no limbs or roots larger than 1.5" in diameter without approval of Owner's Representative. Notify Owner's Representative prior to performing any excavation within protection areas.
4. Irrigation layout is schematic. It is intended that all irrigation lines will be routed through lawns and plant beds except where noted on drawing. Adjust routing of irrigation lines, heads and sleeves as necessary for any existing or proposed utilities.
5. Locate irrigation zone valve assemblies within plant beds where possible. Any irrigation zone valves diagrammatically located in pavement areas are to be installed in plant beds.
6. Locate Irrigation mainline, lateral lines, and valve boxes to avoid conflict with tree plantings.
7. Install spray heads 3" from adjacent pavement, walls, curbs, and planting edges; 6" from curbs in parking areas (3" if aligned with striping).
8. Adjust radius on irrigation heads as necessary to minimize overspray while achieving full and even coverage of planted areas.
9. Verify minimum static pressure of 65 psi at point of connection. Notify Owner's Representative prior to any construction if pressure is lower than 60 psi.
10. Provide all necessary wiring required to make the irrigation system a fully serviceable and operational controlled installation at the completion of the project.
11. Verify all pipe sizing with Schedule 40 Pipe Chart.
12. Mainline is intended to be straight segments with 45° elbows and should follow the adjacent walks as shown.
13. Install irrigation control, common, and communication wire in underground conduit where routing does not follow new or existing mainline.
14. All trenching & excavation within Zone of Protection shown on L100.2 is to be performed with the use of an air spade or by hand. Obtain Owner Representative's approval of trenching & excavation locations and methods prior to performing work.

IRRIGATION NOTES & MAIN LINE PLAN

SCALE: 1" = 40'
0' 20' 40' 80'
NORTH

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EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL

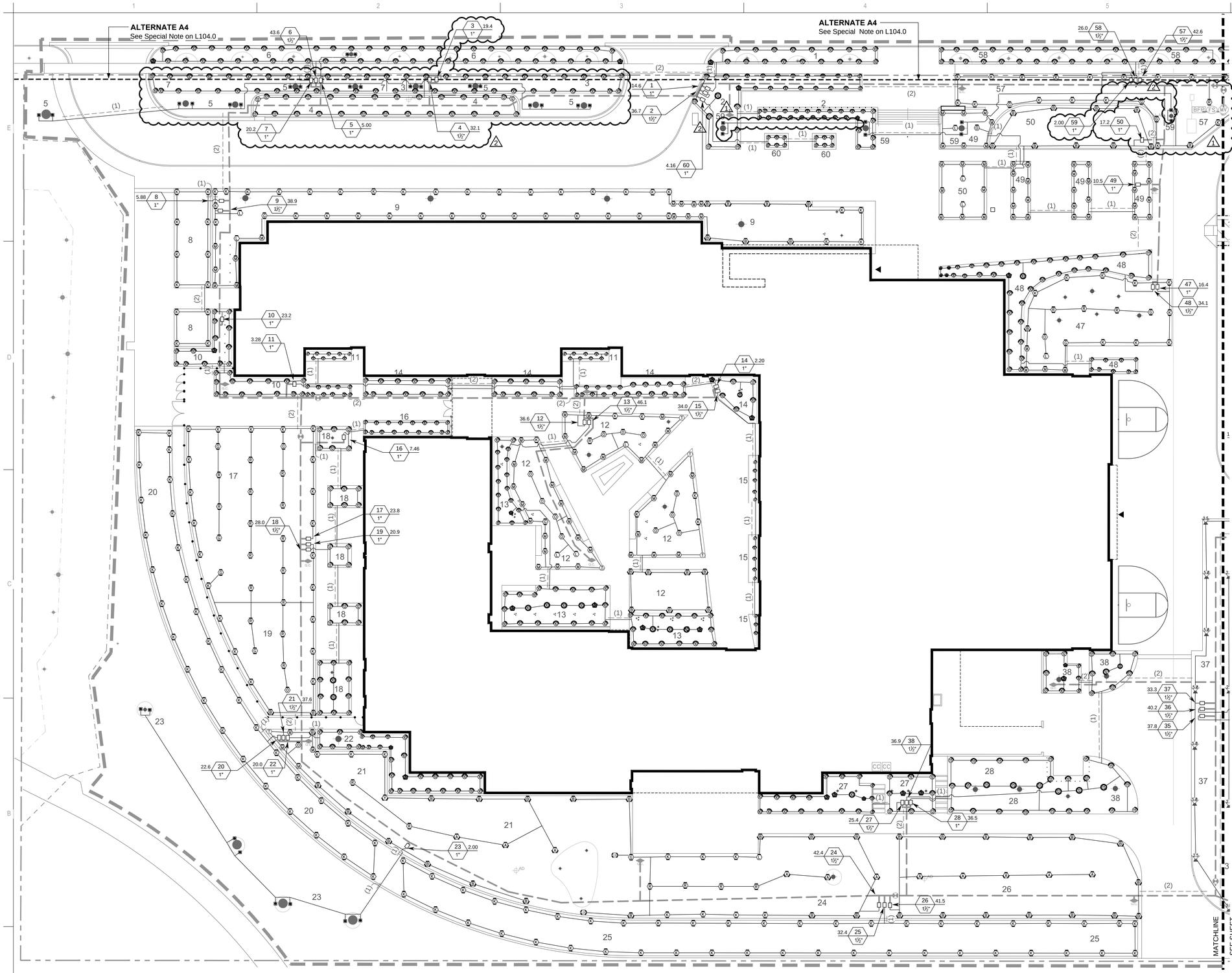
680 EAST 24TH AVENUE
EUGENE, OREGON 97405

MARK	DATE	DESCRIPTION
1	3-06-2015	ADDENDUM 3
2	3-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1
PROJECT NO: 2013912.00
DRAWN BY: NLR / KMK
CHECKED BY: LKG
ORIGINAL SHEET SIZE: 30"x42"

IRRIGATION NOTES & MAIN LINE PLAN

L-104.0



LEGEND:

- PROPERTY LINE
- LIMIT OF WORK (Approximate)
- EXISTING TREES To Remain
- NEW TREE CENTER See Planting Plan
- CC — IRRIGATION CONTROLLER See Specifications
- BFP — BACKFLOW PREVENTION DEVICE — 9 / L106.2
- MV — MASTER VALVE — 5 / L106.2
- FS — FLOW SENSOR — 6 / L106.2
- ISOLATION VALVE — 2 / L106.2
- QC — QUICK COUPLER ASSEMBLY — 4 / L106.2
- IRRIGATION MAINLINE Size: 3" throughout, unless noted.
- (1) — IRRIGATION SLEEVE At quantity shown in (#). See Note 14. — 1 / L106.2
- ZONE CONTROL VALVE ASSEMBLY — 3 / L106.2
- 13 — ZONE NUMBER
- Valve Number / GPM / Valve Size — ZONE CONTROL VALVE CALLOUT

VALVE SCHEDULE

1. See Sheet L104.0 for valve schedule

IRRIGATION PLAN NOTES:

1. See Sheet L104.0 for all notes

IRRIGATION HEAD SCHEDULE — 7 / L106.2, 8 / L106.2, 10 / L106.2

SYMBOL	MANUFACTURER/MODEL	PSI
2Q 2H 2F 4Q 4H 4F	Rain Bird 1800*-U-PRS SQ Series	30
Q T H F	Rain Bird 1800*-U-PRS U8 Series	30
Q T H F	Rain Bird 1800*-U-PRS U10 Series	30
Q T H TQ F	Rain Bird 1800*-U-PRS U12 Series	30
Q T H TQ F	Rain Bird 1800*-U-PRS U15 Series	30
Q H F	Rain Bird 1800*-PRS 5 Series MPR	30
OBHE-VAN 12HE-VAN 10HE-VAN 15HE-VAN	Rain Bird 1800*-PRS ADJ	30
M V	Hunter MP1000 PROS-CV** Series	40
K M	Hunter MP2000 PROS-CV** Series	40
B V A	Hunter MP3000 PROS-CV** Series	40
U	Hunter MP3500 PROS-CV** Series	40
T	Hunter MP Corner PROS-CV** Series	40
	Hunter RZWS-36-25CV	30

* Use 1806 at Lawn, 1812 at Shrub Planting

** PROS-06 at Lawn, PROS-12 at Shrub Planting

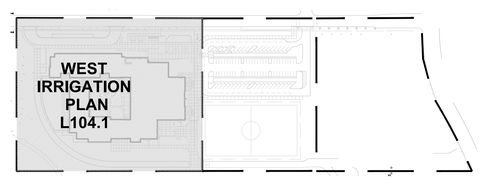
SYMBOL	MANUFACTURER/MODEL	PSI	GPM	RADIUS
2.5	Rain Bird 5006-PC, FC-SAM-R	35	2.17	37'
5.0	Rain Bird 5006-PC, FC-SAM-R	35	4.47	41'

PIPE SIZE SCHEDULE:

SCHEDULE 40 PIPE	
GPM	**SIZE**
0-7	3/4"
7-11	1"
11-21	1 1/4"
21-29	1 1/2"
29-49	2"
49-69	2 1/2"
69-110	3"

SCALE: 1" = 20' (0' 10' 20' 40')

NORTH



PLAN KEY

Robertson|Sherwood Architects PC mahlum

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REGISTERED 285 LAURY K GILBERT OREGON LANDSCAPE ARCHITECT

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL

680 EAST 24TH AVENUE
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ISSUE DATE: FEBRUARY 18, 2015
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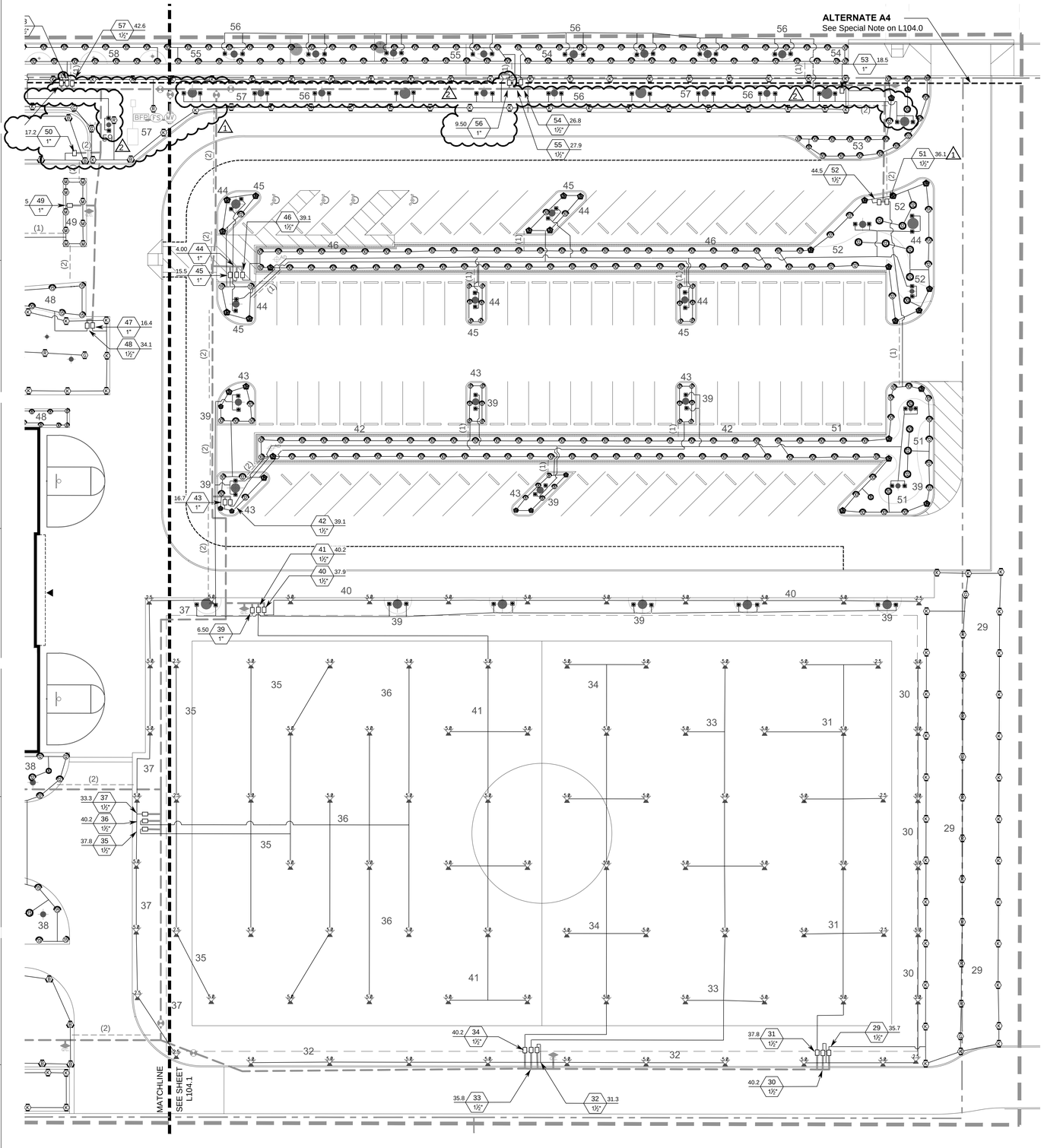
VOLUME: PACKAGE 1

PROJECT NO: 2013912.00
DRAWN BY: NLR / KMK
CHECKED BY: LKG
ORIGINAL SHEET SIZE: 30"x42"

WEST IRRIGATION PLAN

L-104.1



IRRIGATION PLAN NOTES:

1. See Sheet L104.0 for all notes

IRRIGATION HEAD SCHEDULE

SYMBOL	MANUFACTURER/MODEL	PSI
	Rain Bird 1800*-U-PRS SQ Series	30
	Rain Bird 1800*-U-PRS U8 Series	30
	Rain Bird 1800*-U-PRS U10 Series	30
	Rain Bird 1800*-U-PRS U12 Series	30
	Rain Bird 1800*-U-PRS U15 Series	30
	Rain Bird 1800*-PRS 5 Series MPR	30
08HE-VAN 12HE-VAN 10HE-VAN 15HE-VAN	Rain Bird 1800*-PRS ADJ	30
	Hunter MP1000 PROS-CV** Series	40
	Hunter MP2000 PROS-CV** Series	40
	Hunter MP3000 PROS-CV** Series	40
	Hunter MP3500 PROS-CV** Series	40
	Hunter MP Corner PROS-CV** Series	40
	Hunter RZWS-36-25CV	30

* Use 1806 at Lawn, 1812 at Shrub Planting

** PROS-06 at Lawn, PROS-12 at Shrub Planting

SYMBOL	MANUFACTURER/MODEL	PSI	GPM	RADIUS
2.5	Rain Bird 5006-PC, FC-SAM-R	35	2.17	37'
5.0	Rain Bird 5006-PC, FC-SAM-R	35	4.47	41'

PIPE SIZE SCHEDULE:

SCHEDULE 40 PIPE	
GPM	**SIZE**
0-7	3/4"
7-11	1"
11-21	1 1/4"
21-29	1 1/2"
29-49	2"
49-69	2 1/2"
69-110	3"

LEGEND:

- PROPERTY LINE
- LIMIT OF WORK (Approximate)
- EXISTING TREES To Remain
- NEW TREE CENTER See Planting Plan
- CC — IRRIGATION CONTROLLER See Specifications
- BFP — BACKFLOW PREVENTION DEVICE (9 / L106.2)
- MV — MASTER VALVE (5 / L106.2)
- FS — FLOW SENSOR (5 / L106.2)
- ISOLATION VALVE (2 / L106.2)
- QC — QUICK COUPLER ASSEMBLY (4 / L106.2)
- IRRIGATION MAINLINE Size: 3" throughout, unless noted.
- (1) — IRRIGATION SLEEVE At quantity shown in (#). See Note 14. (1 / L106.2)
- ZONE CONTROL VALVE ASSEMBLY (3 / L106.2)
- 13 — ZONE NUMBER
- Valve Number / GPM / Valve Size — ZONE CONTROL VALVE CALLOUT

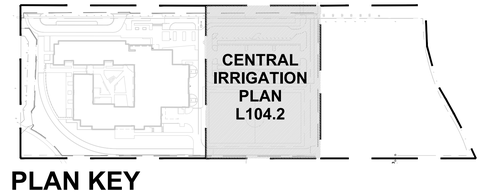
VALVE SCHEDULE

NUMBER	DESCRIPTION	SIZE	TYPE	PSI	GPM	PRECIP	
1	Lawn	1"	Spray	30	14.56	1.78	
2	Plant Bed	1-1/2"	Spray	30	36.74	1.86	
3	Lawn	1-1/2"	Spray	30	24.67	1.55	2
4	Lawn	1-1/2"	Spray	30	29.9	1.48	
5	Trees	1"	Bubbler	30	4	7.66	
6	Lawn	1-1/2"	Spray	30	43.41	1.62	
7	Lawn	1-1/2"	Spray	30	25.47	1.57	2
8	Lawn	1"	Rotary	40	5.86	0.65	
9	Plant Bed	1-1/2"	Rotary	40	38.86	0.59	
10	Plant Bed	1"	Spray	30	23.2	1.9	
11	Plant Bed	1"	Spray	30	3.28	1.63	
12	Plant Bed	1-1/2"	Rotary	40	36.56	0.65	
13	Plant Bed	1-1/2"	Spray	30	46.11	1.9	
14	Plant Bed	1-1/2"	Spray	30	2.2	0.92	
15	Plant Bed	1"	Spray	30	34.02	2.05	2
16	Plant Bed	1"	Spray	30	7.46	2.36	
17	Lawn	1"	Rotary	40	23.77	0.45	
18	Plant Bed	1-1/2"	Spray	30	28.04	1.99	
19	Lawn	1"	Rotary	40	20.88	0.46	
20	Lawn	1"	Rotary	40	22.57	0.42	
21	Lawn	1-1/2"	Rotary	40	37.64	0.48	
22	Plant Bed	1"	Spray	30	19.99	1.88	
23	Trees	1"	Bubbler	30	2	7.66	
24	Lawn	1-1/2"	Rotary	40	42.43	0.45	
25	Lawn	1-1/2"	Rotary	40	32.44	0.41	
26	Lawn	1-1/2"	Rotary	40	41.51	0.61	
27	Plant Bed	1-1/2"	Spray	30	25.35	1.83	
28	Plant Bed	1"	Spray	30	36.54	1.71	
29	Lawn	1-1/2"	Rotary	40	35.67	0.44	
30	Lawn	1-1/2"	Rotor	35	40.23	0.76	
31	Lawn	1-1/2"	Rotor	35	37.8	0.31	
32	Lawn	1-1/2"	Rotor	35	31.29	0.52	
33	Lawn	1-1/2"	Rotor	35	35.76	0.33	
34	Lawn	1-1/2"	Rotor	35	40.23	0.34	
35	Lawn	1-1/2"	Rotor	35	37.8	0.32	
36	Lawn	1-1/2"	Rotor	35	40.23	0.31	
37	Lawn	1-1/2"	Rotor	35	33.33	0.54	
38	Plant Bed	1-1/2"	Spray	30	36.9	1.68	
39	Trees	1"	Bubbler	30	6.5	7.66	
40	Lawn	1-1/2"	Rotor	35	37.93	0.56	
41	Lawn	1-1/2"	Rotor	35	40.23	0.34	
42	Plant Bed	1-1/2"	Spray	30	39.15	1.71	
43	Plant Bed	1"	Spray	30	16.74	1.63	
44	Trees	1"	Bubbler	30	4	7.66	
45	Plant Bed	1"	Spray	30	15.52	1.52	
46	Plant Bed	1-1/2"	Spray	30	39.15	1.7	
47	Plant Bed	1"	Rotary	40	16.4	0.5	
48	Plant Bed	1-1/2"	Spray	30	34.13	1.79	
49	Plant Bed	1"	Rotary	40	10.5	0.6	1
50	Lawn	1"	Rotary	40	17.21	0.56	1
51	Plant Bed	1-1/2"	Spray	30	36.05	1.79	
52	Plant Bed	1-1/2"	Spray	30	44.46	2	
53	Plant Bed	1"	Spray	30	18.49	1.84	
54	Lawn	1-1/2"	Spray	30	26.79	1.91	
55	Lawn	1-1/2"	Spray	30	27.88	1.86	2
56	Trees	1"	Bubbler	30	6.5	7.66	1
57	Plant Bed	1-1/2"	Rotary	40	52.14	0.48	2
58	Lawn	1-1/2"	Spray	30	45.92	1.92	
59	Trees	1"	Bubbler	30	1	7.66	2
60	Plant Bed	1"	Spray	30	4.16	2	

NORTH

SCALE: 1" = 20'

0' 10' 20' 40'



PLAN KEY

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ORIGINAL SHEET SIZE: 30"x42"

CENTRAL IRRIGATION PLAN

L-104.2

GENERAL PLANT LIST:

PLANT LIST

Qty	Key	Botanical Name	Common Name	Size	Spacing	Comments
Evergreen Trees						
	ABI GRA	Abies grandis	Grand Fir	8-10 ft.	as shown	full, evenly branched, matched
	MAG GRA	Magnolia grandiflora 'Little Gem'	Dwarf Southern Magnolia	2" ca.	as shown	full, evenly branched, matched
	PIN CON	Pinus contorta var. contorta	Shore Pine	2" ca.	as shown	full, evenly branched, matched
	PSE MEN	Pseudotsuga menziesii	Douglas Fir	8 ft.	as shown	full, evenly branched, matched
	TAX MED	Tasus x media 'Dark Green Pyramidal'	Dark Green Pyramidal Yew	5 ft.	as shown	full, evenly branched, matched
	THU OCC	Thuja occidentalis 'Degroot's Spire'	Degroot's Spire Arborvitae	6-8 ft.	as shown	full, evenly branched, matched
	THU PLI	Thuja plicata	Western Red Cedar	6-8 ft.	as shown	full, evenly branched, matched
Deciduous Trees						
	ACE CIR	Acer circinatum	Vine Maple	see coments	as shown	multi-trunk with a min. 3 stems, 1/2" caliper each
	ACE MON	Acer circinatum 'Monroe'	Cutleaf Vine Maple	see coments	as shown	multi-trunk with a min. 3 stems, 1/2" caliper each
	ACE MAC	Acer macrophyllum	Bigleaf Maple	2" ca.	as shown	full, evenly branched, matched
	ACE PAL	Acer palmatum 'Sagokaku'	Coral Bark Japanese Maple	1.5" ca.	as shown	full, evenly branched, matched
	BET 1	Betula nigra 'Heritage'	Heritage River Birch	see coments	as shown	multi-trunk with a min. 3 stems, 3/4" caliper each
	BET C	Betula nigra 'Cully'	Heritage Clump Birch	see coments	as shown	multi-trunk with a min. 3 stems, 3/4" caliper each
	CER JAP	Cercidiphyllum japonicum	Katsura Tree	2" ca.	as shown	full, evenly branched, matched
	CER CAN	Cercis canadensis 'Merlot'	Merlot Eastern Redbud	2" ca.	as shown	full, evenly branched, matched
	CHI RET	Chionanthus retusus	Chinese Fringe Tree	1.5" ca.	as shown	full, evenly branched, matched
	CLA KEN	Cladrastis kentukea	American Yellowwood	2" ca.	as shown	full, evenly branched, matched
	COR EDD	Cornus nuttallii x florida 'Eddie's White Wonder'	Eddie's White Wonder Flowering Dogwood	1.5" ca.	as shown	full, evenly branched, matched
	COR NUT	Cornus nuttallii 'Starlight'	Starlight Flowering Dogwood	1.5" ca.	as shown	full, evenly branched, matched
	GIN BIL	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	2" ca.	as shown	full, evenly branched, matched
	PHE SAC	Phellodendron sacalinense 'His Majesty'	His Majesty Corktree	2" ca.	as shown	full, evenly branched, matched
	QUE BIC	Quercus bicolor	Swamp Oak	2" ca.	as shown	full, evenly branched, matched
	QUE FRA	Quercus frainetto 'Schmidt'	Forest Green Oak	2" ca.	as shown	full, evenly branched, matched
	STE PSE	Stewartia pseudocamellia	Japanese Stewartia	1.5" ca.	as shown	full, evenly branched, matched
	TIL AME	Tilia americana 'McKsentry'	American Sentry Linden	2" ca.	as shown	full, evenly branched, matched
	ULM JAP	Ulmus japonica x wilsoniana 'Morton"	Accolade Elm	2" ca.	as shown	full, evenly branched, matched
	ZEL SER	Zelkova serrata 'Halka'	Halka Zelkova	2" ca.	as shown	full, evenly branched, matched
Site Shrubs						
	ARC UVA	Arcstaphylos uva-ursi 'Green Supreme'	Green Supreme Manzanita	#1	12" o.c.	full and bushy
	AUC JAP	Aucuba japonica 'Rozannie'	Rozannie Japanese Aucuba	#3	30" o.c.	matched, full and bushy
	BLE SPI	Blechnum spicant	Deer Fern	#3	24" o.c.	full and bushy
	COR STO	Cornus stolonifera 'Farrow'	Arctic Fire Red Twig Dogwood	#5	3' o.c.	matched, full and bushy
	CRY FAL	Cyrtomium falcatum 'Rochfordianum'	Frochfordianum Hollyfern	#3	24" o.c.	matched, full and bushy
	DRY ERY	Dryopteris erythrosora 'Brilliance'	Brilliance Autumn Fern	#3	30" o.c.	full and bushy
	HAM MOL	Hamamelis mollis 'Pallida'	Yellow Witch Hazel	#3	as shown	full and bushy
	HYD QUE	Hydrangea quercifolia 'Pee Wee'	Pee Wee Hydrangea	#5	48" o.c.	matched, full and bushy
	LON INV	Lonicer involucrata	Twinflower	#5	60" o.c.	matched, full and bushy
	MAH REP	Mahonia repens	Creeping Mahonia	#2	24" o.c.	matched, full and bushy
	PRU LAU	Prunus laurocerasus 'Mt. Vernon'	Mt. Vernon Laurel	#2	36" o.c.	matched, full and bushy
	POL MUN	Polystichum munitum	Sword Fern	#2	30" o.c.	full and bushy
	POL POL	Polystichum polyblepharum	Japanese Tassel Fern	#2	18" o.c.	full and bushy
	POL SET	Polystichum setiferum	Alaskan Fern	#3	30" o.c.	full and bushy
	RHO FIR	Rhododendron 'Firestorm'	Firestorm Rhododendron	B&B or Cont.	18"-24" width	matched, full and bushy
	RHO RAM	Rhododendron 'Ramapo'	Ramapo Rhododendron	B&B or Cont.	18"-24" width	matched, full and bushy
	RHO UNI	Rhododendron 'Unique'	Unique Rhododendron	B&B or Cont.	18"-24" width	matched, full and bushy
	RHO YAK	Rhododendron 'Yaku Princess'	Yaku Princess Rhododendron	B&B or Cont.	24"-30" width	matched, full and bushy
	RIB SAN	Ribes sanguineum 'King Edward IIV'	King Edward IIV Red Flowering Currant	#3	48" o.c.	full and bushy
	SAR RUS	Sarcocca rustifolia	Fragrant Sweet Box	#3	36" o.c.	matched, full and bushy
	TAX BAC	Taxus baccata 'Repadens'	Spreading English Yew	#3	30" o.c.	matched, full and bushy
Perennials/Grasses/Groundcovers/Bulbs/Vines						
	ASA CAU	Asarum caudatum	Wild Ginger	4-inch	9" o.c.	full and bushy
	CAL KAR	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	#1	30" o.c.	full and bushy
	CAR ALB	Carex albula	Frosty Curls Sedge	#1	20" o.c.	full and bushy
	CAR DOL	Carex dolichostachya 'Kaga-nishiki'	Kaga-nishiki Sedge	#1	18" o.c.	full and bushy
	CAR MOR	Carex morrowii 'Ice Dance'	Ice Dance Sedge	#1	18" o.c.	full and bushy
	HEM A	Hemerocallis 'Alabama Jubilee'	Alabama Jubilee Daylily	#2	20" o.c.	red flower, tall
	HEL ORI	Helleborous orientalis	Lenton Rose	#1	24" o.c.	full and bushy
	HYD ANO	Hydrangea anomala petiolaris	Climbing Hydrangea	#3	as shown	
	IRI TEN	Iris tenax	Oregon Iris	#1	8" o.c.	full and bushy
	LIR MUS	Liriopy muscari 'Big Blue'	Big Blue Lilyturf	#1	12" o.c.	full and busy
	NAR KIN	Narcissus 'King Alfred'	King Alfred Daffodil	bulb	12" o.c.	
	PEN HAM	Pennisetum alopecuroides 'Hameln'	Hameln Fountain Grass	#3	30" o.c.	full and bushy
	PEN LIL	Pennisetum alopecuroides 'Little Honey'	Little Honey Dwarf Fountain Grass	#3	16" o.c.	full and bushy
	RUD FUL	Rudbeckia fulgida 'Goldstrum'	Black Eyed Susan	#1	30" o.c.	full and bushy

STORMWATER FACILITY PLANT LIST:

Qty	Key	Botanical Name	Common Name	Size	Spacing	Comments
Stormwater Trees						
	ACE CIR	Acer circinatum	Vine Maple		as shown	multi-trunk with a min. 3 stems, 1/2" caliper each
	ACE MAC	Acer macrophyllum	Bigleaf Maple	2" ca.	as shown	full, evenly branched, matched
	ALN 1	Alnus rubra	Red Alder	1.5" ca.	as shown	full, evenly branched, matched
	ALN 2	Alnus rubra	Red Alder	3/4" ca.	as shown	full, evenly branched, matched
	AME GRA	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	1.5" ca.	as shown	full, evenly branched, matched
	NYS SYL	Nyssa Sylvatica 'Wildfire'	Wildfire Blackgum	1.5" ca.	as shown	full, evenly branched, matched
Stormwater Shrubs, Grasses, & Bulbs						
	CAM QUA	Camassia quamash	Camas	#1	24" o.c.	
	CAR DEN	Carex densa	Dense Sedge	#1	18" o.c.	Full and Bushy
	IRI TEN	Iris Tenax	Oregon Iris	#1	24" o.c.	
	JUN PAT	Juncus patens	California Rush	#1	18" o.c.	full and bushy

LANDSCAPE PLAN NOTES:

1. All survey information provided by:
   Branch Engineering Inc.
   310 5th Street
   Springfield, OR 97477
   P: 541.746.0637
   F: 541.746.0389
   Date: 02.12.2014
2. Verify exact locations and routing of existing and proposed underground utilities prior to starting any excavation. Any damage to existing pipes, underground utilities or related facilities to be repaired at contractor's expense in a manner approved by Owner's Representative.
3. Do not install any plant materials until Owner's Representative has reviewed and approved irrigation system installation, area coverage balancing, soil preparation and finish grading. Refine the shape and finish grade of plant beds as directed by Owner's Representative.
4. Protect all existing trees and plant materials to remain including limbs, trunks, roots and root zones. Protect trunks, limbs, roots, and root zones at drip line of existing trees and plant materials to remain as directed by Owner's Representative. Cut no limbs or roots larger than 1.5" in diameter without approval of Owner's Representative. Sharp pruning equipment such as saws and loppers must be used for roots greater than 1" diameter. Roots shall be cut with approved saws.
5. Finish grade is top of soil. Mulch is in addition.
6. Prune all new plant materials as directed by Owner's Representative.
7. Make minor adjustments in tree spacing as necessary to accommodate the irrigation system as installed.
8. Where new lawn abuts existing, provide a smooth transition and make repairs as necessary to existing lawn.
9. Triangle space all shrubs and groundcovers, unless otherwise noted.
10. Trees, shrubs, and groundcovers planted too deeply will not be accepted. See typical planting details.
11. In addition to improvements shown, repair all areas disturbed or damaged by construction impacts to the condition that existed prior to construction.

STORMWATER TABULATIONS:

RAIN GARDEN 1: At Courtyard
TOTAL FACILITY SURFACE AREA PROVIDED = 88 SF

PLANTING SCHEME: I

GROUNDCOVER PLANTS REQUIRED:
Facility Surface Area Coverage Required = 100%
Plants Required:
(4" pots, 12-inches o.c.) 88
Surface Area Coverage Provided = 100%
Plants Provided:
(1 gallon plants, 18-inches o.c.) 44

RAIN GARDEN 2: At Courtyard
TOTAL FACILITY SURFACE AREA PROVIDED = 377 SF

PLANTING SCHEME: I

GROUNDCOVER PLANTS REQUIRED:
Facility Surface Area Coverage Required = 100%
Plants Required:
(4" pots, 12-inches o.c.) 377
Surface Area Coverage Provided = 100%
Plants Provided:
(1 gallon plants, 18-inches o.c.) 174

RAIN GARDEN 3: At Courtyard
TOTAL FACILITY SURFACE AREA PROVIDED = 137 SF

PLANTING SCHEME: I

GROUNDCOVER PLANTS REQUIRED:
Facility Surface Area Coverage Required = 100%
Plants Required:
(4" pots, 12-inches o.c.) 137
Surface Area Coverage Provided = 100%
Plants Provided:
(1 gallon plants, 18-inches o.c.) 64

RAIN GARDEN 4: At Courtyard
TOTAL FACILITY SURFACE AREA PROVIDED = 252 SF

PLANTING SCHEME: I

GROUNDCOVER PLANTS REQUIRED:
Facility Surface Area Coverage Required = 100%
Plants Required:
(4" pots, 12-inches o.c.) 252
Surface Area Coverage Provided = 100%
Plants Provided:
(1 gallon plants, 18-inches o.c.) 104

RAIN GARDEN 5: North of Gym
TOTAL FACILITY SURFACE AREA PROVIDED = 795 SF

PLANTING SCHEME: I

GROUNDCOVER PLANTS REQUIRED:
Facility Surface Area Coverage Required = 100%
Plants Required:
(4" pots, 12-inches o.c.) 795
Surface Area Coverage Provided = 100%
Plants Provided:
(1 gallon plants, 18-inches o.c.) 327
Trees Provided: 6

RAIN GARDEN 6: At Parking Lot
TOTAL FACILITY SURFACE AREA PROVIDED = 1,335 SF

PLANTING SCHEME: I

GROUNDCOVER PLANTS REQUIRED:
Facility Surface Area Coverage Required = 100%
Plants Required:
(4" pots, 12-inches o.c.) 1,335 SF
Surface Area Coverage Provided = 100%
Plants Provided:
(1 gallon plants, 18-inches o.c.) 528
Trees Provided: 1

RAIN GARDEN 7: At Parking Lot
TOTAL FACILITY SURFACE AREA PROVIDED = 1,480 SF

PLANTING SCHEME: I

GROUNDCOVER PLANTS REQUIRED:
Facility Surface Area Coverage Required = 100%
Plants Required:
(4" pots, 12-inches o.c.) 1.480
Surface Area Coverage Provided = 100%
Plants Provided:
(1 gallon plants, 18-inches o.c.) 583
Trees Provided: 2

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REGISTERED 285 LARRY K GILBERT OREGON LANDSCAPE ARCHITECT

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL

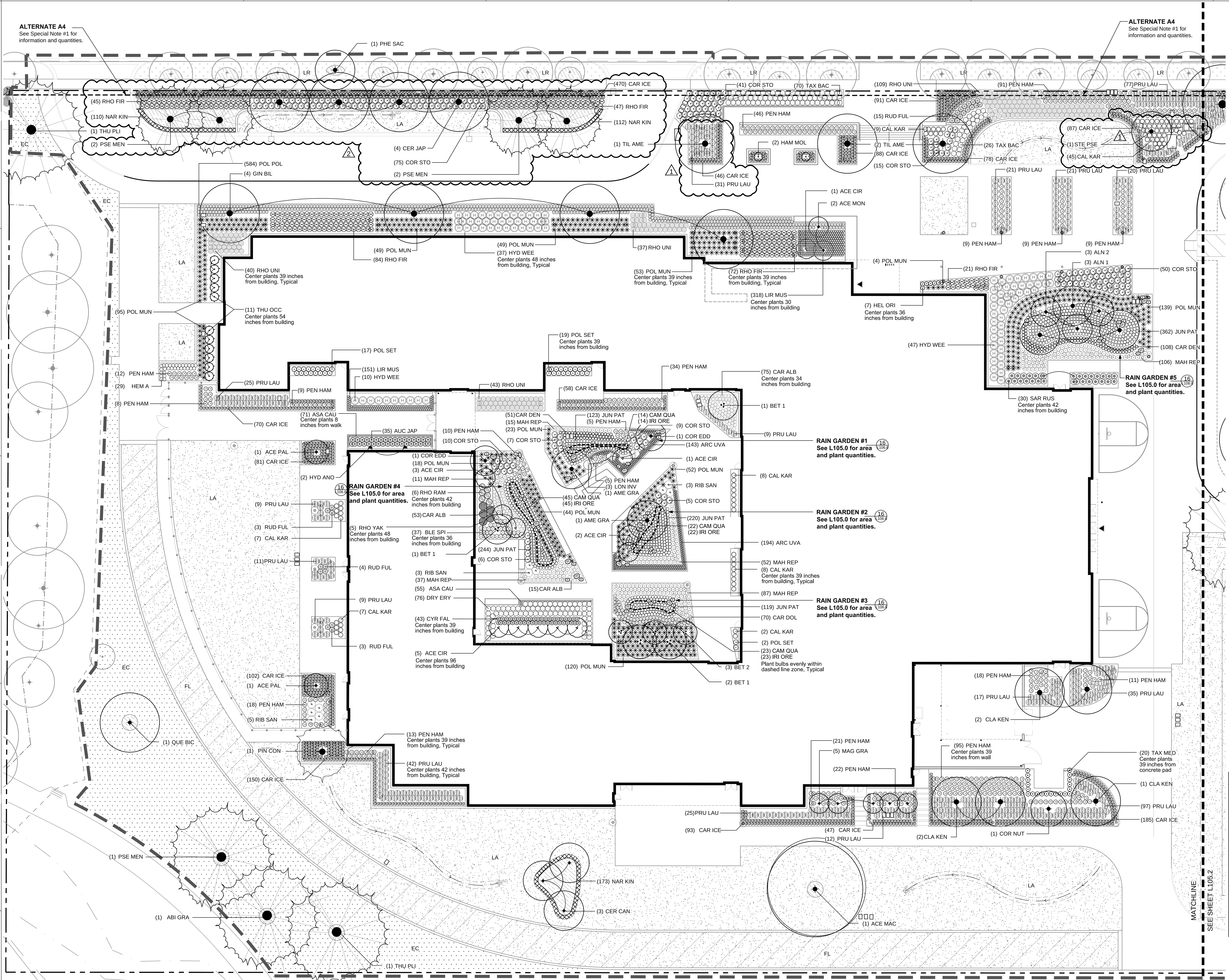
680 EAST 24TH AVENUE
EUGENE, OREGON 97405

MARK	DATE	DESCRIPTION
1	3-06-2015	ADDENDUM 3
2	3-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1
PROJECT NO: 2013912.00
DRAWN BY: NLR / KMK
CHECKED BY: LKG
ORIGINAL SHEET SIZE: 30"x42"

GENERAL NOTES & PLANT LIST

L-105.0



ALTERNATE A4
See Special Note #1 for information and quantities.
(1) PHE SAC
(470) CAR ICE
(45) RHO FIR
(110) NAR KIN
(1) THU PLI
(2) PSE MEN
(47) RHO FIR
(112) NAR KIN
(1) TIL AME
(4) CER JAP
(75) COR STO
(2) PSE MEN
(584) POL POL
(4) GIN BIL
(41) COR STO
(70) TAX BAC
(46) PEN HAM
(2) HAM MOL
(46) CAR ICE
(31) PRU LAU
(109) RHO UNI
(91) CAR ICE
(15) RUD FUL
(9) CAL KAR
(2) TIL AME
(88) CAR ICE
(15) COR STO
(91) PEN HAM
(77) PRU LAU
(87) CAR ICE
(1) STE PSE
(45) CAL KAR
(26) TAX BAC
(78) CAR ICE
(21) PRU LAU
(21) PRU LAU
(20) PRU LAU
(1) ACE CIR
(2) ACE MON
(49) POL MUN
(84) RHO FIR
(49) POL MUN
(37) HYD WEE
Center plants 48 inches from building, Typical
(37) RHO UNI
(53) POL MUN
Center plants 39 inches from building, Typical
(72) RHO FIR
Center plants 39 inches from building, Typical
(318) LIR MUS
Center plants 30 inches from building
(4) POL MUN
(21) RHO FIR
(9) PEN HAM
(9) PEN HAM
(9) PEN HAM
(3) ALN 2
(3) ALN 1
(50) COR STO
(40) RHO UNI
Center plants 39 inches from building, Typical
(95) POL MUN
(11) THU OCC
Center plants 54 inches from building
(7) HEL ORI
Center plants 36 inches from building
(139) POL MUN
(362) JUN PAT
(108) CAR DEN
(106) MAH REP
(47) HYD WEE
RAIN GARDEN #5
See L105.0 for area and plant quantities.
(30) SAR RUS
Center plants 42 inches from building
(17) POL SET
(151) LIR MUS
(10) HYD WEE
(19) POL SET
Center plants 39 inches from building
(34) PEN HAM
(75) CAR ALB
Center plants 34 inches from building
(1) BET 1
(12) PEN HAM
(29) HEM A
(8) PEN HAM
(25) PRU LAU
(9) PEN HAM
(43) RHO UNI
(58) CAR ICE
(70) CAR ICE
(71) ASA CAU
Center plants 8 inches from walk
(35) AUC JAP
(10) PEN HAM
(10) COR STO
(51) CAR DEN
(15) MAH REP
(23) POL MUN
(7) COR STO
(123) JUN PAT
(5) PEN HAM
(14) CAM QUA
(14) IRI ORE
(9) COR STO
(1) COR EDD
(143) ARC UVA
(9) PRU LAU
RAIN GARDEN #1
See L105.0 for area and plant quantities.
(1) ACE PAL
(81) CAR ICE
(2) HYD ANO
RAIN GARDEN #4
See L105.0 for area and plant quantities.
(1) COR EDD
(18) POL MUN
(3) ACE CIR
(11) MAH REP
(6) RHO RAM
Center plants 42 inches from building
(53) CAR ALB
(1) ACE CIR
(52) POL MUN
(5) PEN HAM
(3) LON INV
(1) AME GRA
(45) CAM QUA
(45) IRI ORE
(44) POL MUN
(1) AME GRA
(3) RIB SAN
(5) COR STO
(8) CAL KAR
(220) JUN PAT
(22) CAM QUA
(22) IRI ORE
RAIN GARDEN #2
See L105.0 for area and plant quantities.
(9) PRU LAU
(3) RUD FUL
(7) CAL KAR
(5) RHO YAK
Center plants 48 inches from building
(37) BLE SPI
Center plants 36 inches from building
(2) ACE CIR
(194) ARC UVA
(11) PRU LAU
(4) RUD FUL
(244) JUN PAT
(6) COR STO
(1) BET 1
(3) RIB SAN
(37) MAH REP
(55) ASA CAU
(76) DRY ERY
(15) CAR ALB
(52) MAH REP
(8) CAL KAR
Center plants 39 inches from building, Typical
(87) MAH REP
(9) PRU LAU
(7) CAL KAR
(3) RUD FUL
(43) CYR FAL
Center plants 39 inches from building
(5) ACE CIR
Center plants 96 inches from building
(119) JUN PAT
(70) CAR DOL
RAIN GARDEN #3
See L105.0 for area and plant quantities.
(2) CAL KAR
(2) POL SET
(23) CAM QUA
(23) IRI ORE
Plant bulbs evenly within dashed line zone, Typical
(120) POL MUN
(3) BET 2
(2) BET 1
(102) CAR ICE
(1) ACE PAL
(18) PEN HAM
(5) RIB SAN
(1) QUE BIC
(1) PIN CON
(150) CAR ICE
(13) PEN HAM
Center plants 39 inches from building, Typical
(42) PRU LAU
Center plants 42 inches from building, Typical
(18) PEN HAM
(17) PRU LAU
(2) CLA KEN
(11) PEN HAM
(35) PRU LAU
(21) PEN HAM
(5) MAG GRA
(22) PEN HAM
(95) PEN HAM
Center plants 39 inches from wall
(20) TAX MED
Center plants 39 inches from concrete pad
(1) CLA KEN
(97) PRU LAU
(185) CAR ICE
(25) PRU LAU
(93) CAR ICE
(47) CAR ICE
(12) PRU LAU
(2) CLA KEN
(1) COR NUT
(1) PSE MEN
(1) ABI GRA
(173) NAR KIN
(3) CER CAN
(1) ACE MAC
(1) THU PLI
LA
LR
EC
FL
MATCHLINE
SEE SHEET L105.2

LEGEND:

- PROPERTY LINE
- LIMIT OF WORK (Approximate)
- EXISTING TREES To Remain
- PROPOSED DECIDUOUS TREE See Tree List (6 / L106.1)
- PROPOSED EVERGREEN TREE See Tree List (5 / L106.1)
- LANDSCAPE PLANTINGS See Site Plan for mulch type (7 / L106.1)
- GRASSY SWALE BASIN & FLOW LINE See Civil
- BULB PLANTING See Plant List for spacing
- LA — LAWN AREA
- FL — REINFORCED LAWN AT FIRE LANE (7 / L106.1, 12 / L106.1)
- LR — LAWN REPAIR
- EC — ECO-LAWN
- MULCH ONLY AREA
- BASALT ACCENT STONE "S" - Small, "M" - Medium, See Specifications (9 / L106.1)
- IRRIGATION VALVE BOX See Irrigation Plan
- SITE LIGHTING See Electrical, Lighting Plan and Layout Plan

SPECIAL NOTE

PLANT SPACING

Hold plantings back at plant bed edges, buildings, walls, and at plant beds in parking lot where car doors swing. Allow 6" unplanted space plus 1/2 the on center spacing from edge of paving to plant center at plant bed edges. At all other locations (buildings, walls, and plant beds in parking lots where car doors will swing) allow 24" unplanted space plus 1/2 the on center spacing from face of building, wall or curb to center of plants along those edges.

SPECIAL NOTE

ALTERNATE A4

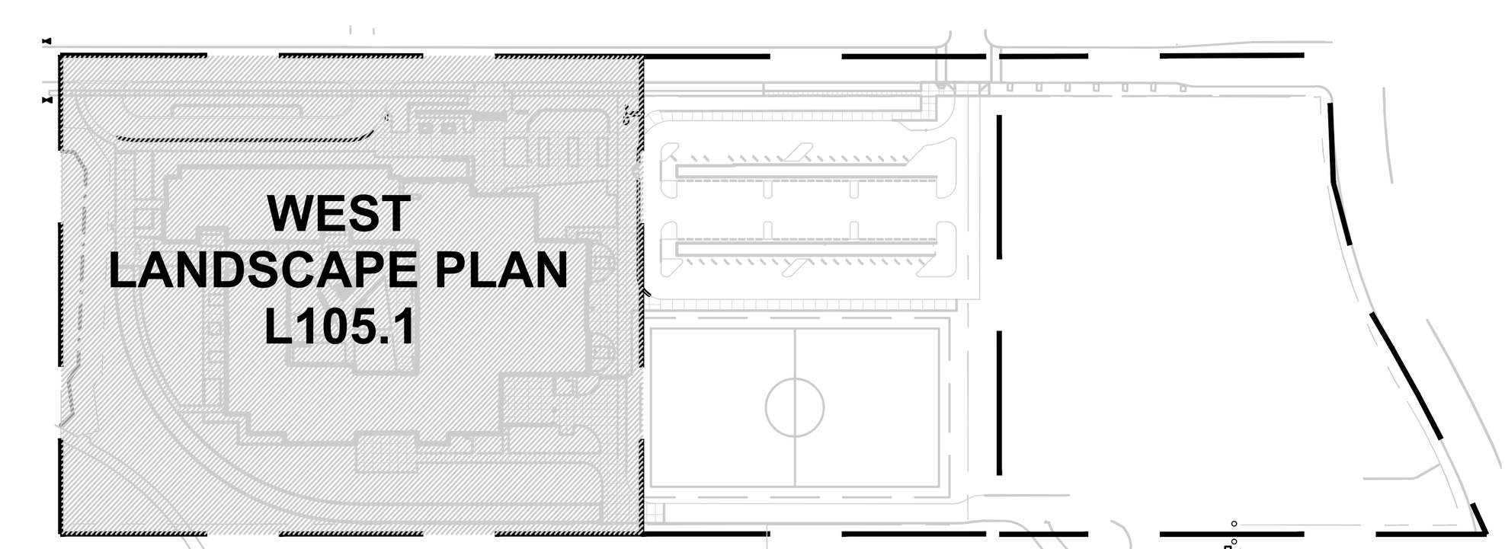
Sidewalk expansion will reduce landscaped areas at locations shown on plan. Plant quantities will be reduced by 1 row for all species except for Carex species. Reduce Carex plantings by 2 rows. See drawings for additional notes on 'Alternate A4 Adjustment.' Overall plant quantities will be reduced as follows:

SITE SHRUBS:
- Cornus stolonifera 'Farrow' (COR STO) = -7
- Prunus laurocerasus 'Mt. Vernon' (PRU LAU) = -25
- Rhododendron 'Unique' (RHO UNI) = -12
- Taxus baccata 'Repadens' (TAX BAC) = -23

PERENNIALS / GRASSES / GROUNDCOVERS / BULBS / VINES
- Carex morrowii 'Ice Dance' (CAR MOR) = -665
- Pennisetum alopecuroides 'Hameln' (PEN HAM) = -16

NORTH

SCALE: 1" = 20'   0' 10' 20' 40'



PLAN KEY

Robertson Sherwood Architects | mahlum

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132 EAST BROADWAY, SUITE 540
EUGENE, OREGON 97401
541-342-8077
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www.cameronmccarthy.com

REGISTERED LANDSCAPE ARCHITECT
LARRY K GILBERT
285
OREGON

EUGENE SCHOOL DISTRICT 4J

4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL

680 EAST 24TH AVENUE
EUGENE, OREGON 97405

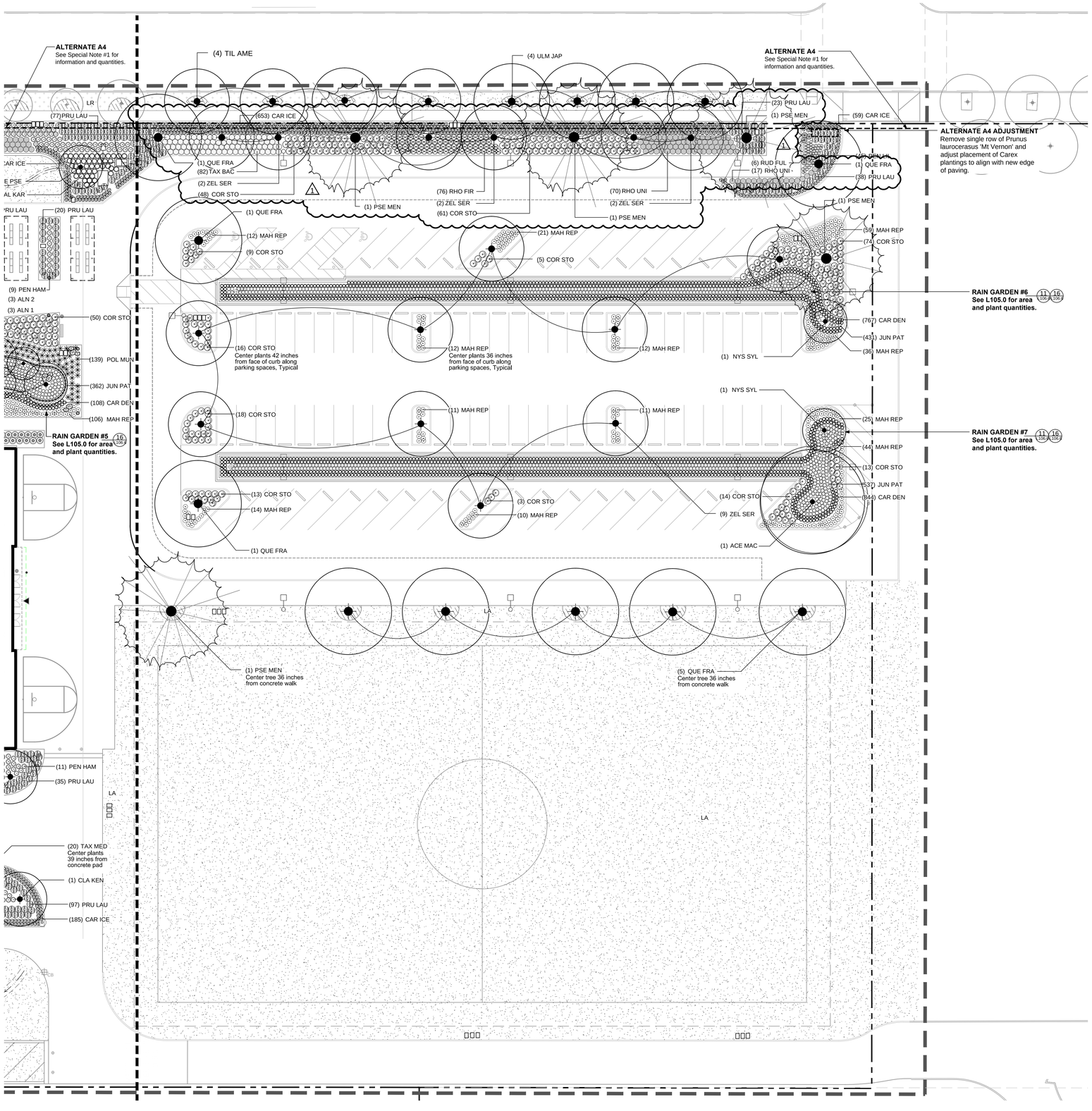
MARK	DATE	DESCRIPTION
1	3-06-2015	ADDENDUM 3
2	3-13-2015	ADDENDUM 6

ISSUE DATE:	FEBRUARY 18, 2015
ISSUE:	CONSTRUCTION DOCUMENTS
VOLUME:	PACKAGE 1
PROJECT NO:	2013912.00
DRAWN BY:	NLR / KMK
CHECKED BY:	LKG

ORIGINAL SHEET SIZE: 30"x42"

WEST LANDSCAPE PLAN

L-105.1



LEGEND:

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- PROPOSED EVERGREEN TREE See Tree List — 5 L106.2
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- EC — ECO-LAWN
- MULCH ONLY AREA
- BASALT ACCENT STONE "S" - Small, "M" - Medium, See Specifications — 9 L106.2
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NORTH

SCALE: 1" = 20'

0' 10' 20' 40'

PLAN KEY

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REGISTERED 285 LARRY K. GILBERT LANDSCAPE ARCHITECT OREGON

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ISSUE DATE: FEBRUARY 18, 2015
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CHECKED BY: LKG
ORIGINAL SHEET SIZE: 30"x42"

CENTRAL LANDSCAPE PLAN

L-105.2

DRAWING INDEX

		ISSUE LOG								
		50% Design Dev.	DD Cost Estimate	100% DD SET	75% CD SET	95% CD SET	PERMIT PACKAGE 1	SUPPLEMENTAL INFO 1	PERMIT PACKAGE 2	ADDENDUM 3	ADDENDUM 6
S-001	DRAWING INDEX AND LIST OF ABBREVIATIONS	X	X	X	X	X	X	-	X	X	
S-002	GENERAL STRUCTURAL NOTES	-	X	X	X	X	X	-	X	X	
S-003	GENERAL STRUCTURAL NOTES CONTINUED	-	X	X	X	X	X	-	-	-	
S-004	STATEMENT OF SPECIAL INSPECTIONS AND TESTING	-	X	X	X	X	X	-	-	-	
S-005	STATEMENT OF SPECIAL INSPECTIONS AND TESTING CONT.	-	X	X	X	X	X	-	-	-	
S-111	FIRST FLOOR PLAN OVERALL	X	X	X	X	X	X	-	-	-	
S-112	SECOND FLOOR, EQUIPMENT PLATFORM, AND LOW ROOF PLAN OVERALL	X	X	X	X	X	X	-	-	-	
S-113	EQUIPMENT PLATFORM AND MID-ROOF PLAN OVERALL	X	X	X	X	X	X	-	-	-	
S-114	HIGH ROOF PLAN OVERALL	X	X	X	X	X	X	-	-	-	
S-120	TYPICAL PLAN NOTES	-	X	X	X	X	X	-	-	-	
S-121A	FIRST FLOOR PLAN - ZONE A	X	X	X	X	X	X	-	X	-	
S-121B	FIRST FLOOR PLAN - ZONE B	X	X	X	X	X	X	-	X	-	
S-121C	FIRST FLOOR PLAN - ZONE C	X	X	X	X	X	X	-	X	-	
S-121D	FIRST FLOOR PLAN - ZONE D	X	X	X	X	X	X	-	X	-	
S-121E	FIRST FLOOR PLAN - ZONE E	X	X	X	X	X	X	-	X	X	
S-122A	SECOND FLOOR PLAN - ZONE A	X	X	X	X	X	X	-	X	-	
S-122B	SECOND FLOOR PLAN - ZONE B	X	X	X	X	X	X	-	X	-	
S-122C	EQUIPMENT PLATFORM PLAN - ZONE C	X	X	X	X	X	X	-	-	-	
S-122D	EQUIPMENT PLATFORM PLAN - ZONE D	X	X	X	X	X	X	-	X	-	
S-122E	EQUIPMENT PLATFORM AND LOW ROOF PLAN - ZONE E	X	X	X	X	X	X	-	X	-	
S-123A	EQUIPMENT PLATFORM PLAN - ZONE A	-	X	X	X	X	X	-	X	X	
S-123B	EQUIPMENT PLATFORM PLAN - ZONE B	-	X	X	X	X	X	-	X	X	
S-123C	MID-ROOF ATTIC PLAN - ZONE C	-	X	X	X	X	X	-	X	X	
S-123D	MID-ROOF PLAN - ZONE D	-	X	X	X	X	X	-	X	-	
S-123E	MID-ROOF PLAN - ZONE E	-	X	X	X	X	X	-	X	-	
S-124A	HIGH ROOF PLAN - ZONE A	-	X	X	X	X	X	-	X	X	
S-124B	HIGH ROOF PLAN - ZONE B	-	X	X	X	X	X	-	X	X	
S-124C	HIGH ROOF PLAN - ZONE C	-	X	X	X	X	X	-	-	X	
S-151	PARTIAL PLANS	-	-	-	-	-	X	-	-	-	
S-200	EXTERIOR CLADDING KEY PLAN	-	-	-	-	-	-	X	X	-	
S-221	ENLARGED EXTERIOR CLADDING ELEVATIONS	-	-	-	-	-	-	X	X	-	
S-222	ENLARGED EXTERIOR CLADDING ELEVATIONS	-	-	-	-	-	-	X	X	-	
S-223	ENLARGED EXTERIOR CLADDING ELEVATIONS	-	-	-	-	-	-	X	X	X	
S-224	ENLARGED EXTERIOR CLADDING ELEVATIONS	-	-	-	-	-	-	X	X	-	
S-225	ENLARGED EXTERIOR CLADDING ELEVATIONS	-	-	-	-	-	-	X	X	-	
S-301	CMU SHEAR WALL ELEVATIONS	-	-	-	X	X	X	-	X	-	
S-302	CMU SHEAR WALL ELEVATIONS	-	-	-	X	X	X	-	X	-	
S-303	CMU SHEAR WALL ELEVATIONS	-	-	-	X	X	X	-	X	-	
S-304	CMU SHEAR WALL ELEVATIONS	-	-	-	X	X	X	-	X	-	
S-305	CMU SHEAR WALL ELEVATIONS	-	-	-	X	X	X	-	X	-	
S-306	CMU SHEAR WALL ELEVATIONS	-	-	-	X	X	X	-	X	-	
S-307	CMU SHEAR WALL ELEVATIONS	-	-	-	X	X	X	-	X	-	
S-351	LOAD BEARING STUD WALL ELEVATIONS	-	-	-	X	X	X	-	X	-	
S-401	CMU DETAILS	-	-	X	X	X	X	-	X	X	
S-402	CMU DETAILS	-	-	-	-	-	X	-	X	X	
S-403	CMU DETAILS	-	-	-	-	-	-	-	X	X	
S-501	CONCRETE DETAILS	-	X	X	X	X	X	-	-	-	
S-502	CONCRETE DETAILS	-	-	-	X	X	X	-	-	-	
S-503	CONCRETE DETAILS	-	-	-	-	-	X	-	-	-	
S-601	STEEL DETAILS	-	-	X	X	X	X	-	X	-	
S-602	STEEL DETAILS	-	-	X	X	X	X	-	X	-	
S-603	STEEL DETAILS	-	-	-	X	X	X	-	-	X	
S-604	STEEL DETAILS	-	-	-	-	X	X	-	X	X	
S-605	STEEL DETAILS	-	-	-	-	-	-	-	-	X	
S-701	WOOD DETAILS	-	-	X	X	X	X	-	X	-	
S-702	WOOD DETAILS	-	-	-	X	X	X	-	X	-	
S-703	WOOD DETAILS	-	-	-	-	-	X	X	X	-	
S-801	PRIMARY LIGHT GAUGE METAL FRAMING DETAILS	-	-	-	X	X	X	-	X	-	
S-802	PRIMARY LIGHT GAUGE METAL FRAMING DETAILS	-	X	X	X	X	X	-	X	X	
S-901	EXTERIOR CLADDING DETAILS	-	-	-	-	*	*	-	X	X	
S-902	EXTERIOR CLADDING DETAILS	-	-	-	-	-	-	-	X	X	
S-903	EXTERIOR CLADDING DETAILS	-	-	-	-	-	-	-	X	X	
S-904	EXTERIOR CLADDING DETAILS	-	-	-	-	-	-	-	X	X	
	DATE	08/08/2014	08/22/2014	09/10/2014	11/25/2014	12/22/2014	01/21/2015	02/18/2015	02/18/2015	03/06/2015	03/13/2015

ISSUE LOG KEY:
' X ' ISSUED AS PART OF A SET
' - ' NOT A PART OF ISSUED SET
' * ' FOR INFORMATION ONLY

LIST OF ABBREVIATIONS

A.B.	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADD'L.	ADDITIONAL
AESS	ARCHITECTURAL EXPOSED STRUCTURAL STEEL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION INCORPORATED
ALT.	ALTERNATE
ALUM.	ALUMINUM
ARCH.	ARCHITECT
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BLDG.	BUILDING
BOT.	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
C.G.	CENTER OF GRAVITY
C.I.P.	CAST IN PLACE
C.J.	CONTROL JOINT
C.J.P.	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
db	BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DET.	DETAIL
DIA., Ø	DIAMETER
DIAG.	DIAGONAL
D.L.	DEAD LOAD
DWG.	DRAWING
ELEC.	ELECTRICAL
EL.	ELEVATION
EQ.	EQUAL
EXIST., (E)	EXISTING
EXP.	EXPANSION
EXT.	EXTERIOR
FDN.	FOUNDATION
FIN.	FINISH
FLR.	FLOOR
FT.	FOOT
FTG.	FOOTING
GA.	GAUGE
GALV.	GALVANIZED
GL	GLULAM
HORIZ.	HORIZONTAL
HSS	HOLLOW STRUCTURAL STEEL
IBC	INTERNATIONAL BUILDING CODE
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
I.D.	INSIDE DIAMETER
IN.	INCH
INT.	INTERIOR
K	KIPS
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
LB.	POUND
L.L.	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC.	LOCATION
LONG.	LONGITUDINAL
LVF	LOW VELOCITY FASTENER
MAX.	MAXIMUM
MBMA	METAL BUILDING MANUFACTURERS ASSOCIATION
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MPH	MILES PER HOUR
MT	MAGNETIC PARTICLE TESTING
(N)	NEW
N.I.C.	NOT IN CONTRACT
NOM.	NOMINAL
NO.	NUMBER
N.T.S.	NOT TO SCALE
o.c.	ON CENTER
O.D.	OUTSIDE DIAMETER
OPP.	OPPOSITE
OWT	OPEN WEB TRUSS
OWJ	OPEN WEB JOIST
PAF	POWDER ACTUATED FASTENER
PART.	PARTITION
P/C	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERIM.	PERIMETER
PL	PLATE
PP	PARTIAL PENETRATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P/T	POST-TENSIONED
P.T.	PRESSURE TREATED
PVC	POLYVINYL CHLORIDE
R, RAD.	RADIUS
RCSC	RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS
REF.	REFERENCE
RET.	RETURN
REINF.	REINFORCING
REQ'D.	REQUIRED
REQ'MTS.	REQUIREMENTS
SCHED.	SCHEDULE
S.C.	SLIP CRITICAL
SIM.	SIMILAR
SLRS	SEISMIC LOAD RESISTING SYSTEM
S.O.G.	SLAB ON GRADE
SPEC.	SPECIFICATION
SQ.	SQUARE
SS	STAINLESS STEEL
SSMA	STEEL STUD MANUFACTURERS ASSOCIATION
STD.	STANDARD
STRUCT.	STRUCTURAL
SYM.	SYMMETRICAL
THRU	THROUGH
T & G	TONGUE AND GROOVE
TRANS.	TRANSVERSE
TJ	TRUSS JOIST
TS	LIGHT GAUGE TUBE STEEL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
U.T.	ULTRASONIC TESTING
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
w/	WITH
WF	WIDE FLANGE
w/o	WITHOUT
W.P.	WORK POINT
WPS	WELDING PROCEDURE SPECIFICATION
WWF	WELDED WIRE FABRIC

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STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
17388
OREGON
JULY 9, 1982
BLAKE D. PATSY
EXPIRES 12-13-16

EUGENE SCHOOL DISTRICT 4J

4j

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1

PROJECT NO: 213417
DRAWN BY: MF
CHECKED BY: MT

 ORIGINAL SHEET SIZE: 30"x42"

DRAWING INDEX AND LIST OF ABBREVIATIONS

S-001

GENERAL STRUCTURAL NOTES

STRUCTURAL DRAWINGS ARE A PORTION OF THE CONTRACT DOCUMENTS AND ARE INTENDED TO BE USED WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REQUIREMENTS FROM THESE DRAWINGS INTO THEIR SHOP DRAWINGS AND WORK.

THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.

CODE REQUIREMENTS:
CONFORM TO THE 2014 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2012 INTERNATIONAL BUILDING CODE (IBC).

TEMPORARY CONDITIONS:
THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.

CONTRACTOR'S CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.

EXISTING CONDITIONS:
ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY SIGNIFICANT DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS.

ASSUMED FUTURE CONSTRUCTION:
VERTICAL: NONE
HORIZONTAL: SEISMICALLY INDEPENDANT BUILDING EXPANSION TO THE WEST OF ZONE A

DESIGN CRITERIA:
DESIGN WAS BASED ON THE STRENGTH AND DEFLECTION CRITERIA OF THE OSSC. IN ADDITION TO THE DEAD LOADS, THE FOLLOWING LOADS AND ALLOWABLES WERE USED FOR DESIGN, WITH LIVE LOADS (L.L.) REDUCED PER OSSC:

DESIGN CRITERIA		
GRAVITY SYSTEM CRITERIA		
ROOF LIVE/SNOW LOAD	25 PSF L.L. (ALSO SEE SNOW LOAD CRITERIA BELOW)	
FLOOR LIVE LOADS:	UNIFORM LOAD	CONCENTRATED LOAD
CLASSROOMS	40 PSF L.L.	1,000 LBS.
1ST FLOOR CORRIDORS	100 PSF L.L.	1,000 LBS.
2ND FLOOR CORRIDORS	80 PSF L.L.	1,000 LBS.
OFFICES	50 PSF L.L.	1,000 LBS.
STAGE	150 PSF L.L.	
GYMS AND ASSEMBLY AREAS	100 PSF L.L.	
STORAGE (LIGHT)	125 PSF L.L	
MEDIA/LIBRARY (STACK ROOMS)	150 PSF L.L.	1,000 LBS.
MECHANICAL MEZZANINES	50 PSF. L.L.	300 LBS
KITCHEN/MECHANICAL SPACE	125 PSF L.L.	
VERTICAL FLOOR DEFLECTION (CLADDING DESIGN)	0.75" OR L/360 WHICHEVER IS LESS LONG TERM DEAD LOAD PLUS LIVE LOAD 0.375" OR L/600 WHICHEVER IS LESS AT BRICK VENEER SUPPORTS	
VERTICAL FLOOR DEFLECTION (INTERIOR)	L/360 LIVE LOAD PER OSSC TABLE 1604.3	
NOTES:	1. LIVE LOADS REDUCED PER OSSC.	
	2. MEMBER DESIGNED FOR MORE CRITICAL OF UNIFORM OR CONCENTRATED LOAD.	
SNOW CRITERIA		
DESIGN ROOF SNOW LOAD	25 PSF MINIMUM IN ACCORDANCE WITH OSSC	
SNOW DRIFT	PER OSSC AS SHOWN ON PLANS	
GROUND SNOW LOAD	Pg= 11 PSF IN ACCORDANCE WITH 2013 SNOW LOAD ANALYSIS FOR OREGON	
FLAT ROOF SNOW LOAD	Pf = 8.5 PSF	
SNOW EXPOSURE FACTOR	Ce = 1.0	
SNOW LOAD IMPORTANCE FACTOR	Is = 1.10	
THERMAL FACTOR	Ct = 1.0	
GEOTECHNICAL CRITERIA		
DESIGN BASED ON REPORT BY:	FOUNDATION ENGINEERING, INC. DATED APRIL 23, 2014	
ALLOWABLE SOIL PRESSURE:	2,500 PSF	
ALLOWABLE DOWNWARD PILE CAPACITY:	100 KIPS	
ALLOWABLE PILE UPLIFT CAPACITY:	13 KIPS	
ALLOWABLE PILE LATERAL CAPACITY:	6 KIPS	
ULTIMATE PILE DOWNWARD CAPACITY:	250 KIPS	
ULTIMATE PILE UPLIFT CAPACITY:	38 KIPS	
WIND CRITERIA		
RISK CATEGORY	III	
BASIC WIND SPEED (3-SECOND GUST)	130 MPH	
EXPOSURE CATEGORY	C	
GUST/INTERNAL PRESSURE	GCpi = +/- 0.18	
SEISMIC CRITERIA		
RISK CATEGORY	III	
SEISMIC DESIGN CATEGORY	D	
SITE CLASS	C	
IMPORTANCE FACTOR	Ie = 1.25	
MCE SPECTRAL ACCELERATION	Ss = 0.77	S1 = 0.40
SITE COEFFICIENT	Fa = 1.09	Fv = 1.40
DESIGN SPECTRAL ACCELERATION	Sds = 0.56	Sd1 = 0.38
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE PER ASCE 7-10, SECTION 12.8	
CLASSROOM/ADMIN WING: ZONES A AND B		
	X DIRECTION (E / W)	Y DIRECTION (N / S)
SEISMIC LOAD RESISTING SYSTEM (SLRS)	SPECIAL REINFORCED MASONRY SHEAR WALLS	SPECIAL REINFORCED MASONRY SHEAR WALLS
RESPONSE MODIFICATION FACTOR	R = 5	R = 5
SEISMIC RESPONSE COEFFICIENT	Cs = 0.14	Cs = 0.14
DESIGN BASE SHEAR	508 KIPS	508 KIPS
REDUNDANCY FACTOR	rho = 1.0	rho = 1.0
DESIGN INELASTIC STORY DRIFT	Δ = 0.55"	Δ = 0.25"
GYM/COMMONS/SCIENCE WINGS: ZONES C, D, AND E		
	X DIRECTION (E / W)	Y DIRECTION (N / S)
SEISMIC LOAD RESISTING SYSTEM (SLRS)	SPECIAL REINFORCED MASONRY SHEAR WALLS AND LIGHT-FRAMED CFS WALLS WITH WOOD STRUCTURAL PANELS	SPECIAL REINFORCED MASONRY SHEAR WALLS AND LIGHT-FRAMED CFS WALLS WITH WOOD STRUCTURAL PANELS
RESPONSE MODIFICATION FACTOR	R = 5	R = 5
SEISMIC RESPONSE COEFFICIENT	Cs = 0.14	Cs = 0.14
DESIGN BASE SHEAR	632 KIPS	632 KIPS
REDUNDANCY FACTOR	rho = 1.0	rho = 1.0
DESIGN INELASTIC STORY DRIFT	Δ = 0.75"	Δ = 0.75"

SEISMIC LOAD RESISTING SYSTEM:
THE SEISMIC LOAD RESISTING SYSTEM (SLRS) FOR THE COMPLETED STRUCTURE IS AS FOLLOWS:

THE FIRST FLOOR STRUCTURAL SLAB ON GRADE DIAPHRAGM DISTRIBUTES LATERAL LOADS TO LATERAL RESISTING PILES.

1 ELEVATED DIAPHRAGMS CONSIST OF METAL DECK AT THE GYM ROOF, CONCRETE OVER METAL DECK AT LEVEL 2 IN ZONES A AND B AND PLYWOOD SHEATHING AT ALL OTHER LOCATIONS.

FULL HEIGHT CMU SHEAR WALLS ARE LOCATED IN ZONES A, B, C, D AND E AND WITH ADDITIONAL FULL HEIGHT LIGHT-FRAMED SHEAR WALLS IN ZONES C AND E.

REFERENCE SHEETS S-301 THRU S-307 FOR CMU SHEAR WALL ELEVATIONS AND DETAILS. REFERENCE PLANS FOR ADDITIONAL SLRS COMPONENTS AND DETAILS.

REFER TO THE GENERAL STRUCTURAL NOTES AND PROJECT SPECIFICATIONS FOR DETAILING, INSTALLATION, TESTING AND INSPECTION REQUIREMENTS FOR MEMBERS THAT ARE PART OF THE SEISMIC LOAD RESISTING SYSTEM (SLRS).

DESIGN AND DETAILING WAS BASED ON CRITERIA FOR SEISMIC DESIGN CATEGORY D.

STRUCTURAL OBSERVATION:
THE STRUCTURAL ENGINEER OF RECORD (SER) WILL PERFORM STRUCTURAL OBSERVATION BASED ON THE REQUIREMENTS OF THE OSSC AT THE STAGES OF CONSTRUCTION LISTED BELOW. CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE SER TO PERFORM THESE OBSERVATIONS.

STRUCTURAL OBSERVATIONS

ITEM	OBSERVED BY (2)		COMMENTS
	AOR	SER	
PRIOR TO FIRST CONCRETE POUR		X	REF. NOTES 1,3,4,5
PRIOR TO FIRST CONCRETE DECK POUR		X	REF. NOTES 1,3,4,5
DURING INITIAL STEEL ERECTION		X	REF. NOTES 1,3,4
AS REQUIRED TO ADDRESS STRUCTURAL ISSUES		X	REF. NOTES 1,3,4

FOOTNOTES:

1. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE SER IN ADVANCE.
2. SER - STRUCTURAL ENGINEER OF RECORD.
   AOR - ARCHITECT OF RECORD.
3. A FIELD REPORT WILL BE SUBMITTED TO THE BUILDING DEPARTMENT FOLLOWING EACH SITE VISIT.
4. STRUCTURAL OBSERVATION IS FOR THE GENERAL CONFORMANCE OF THE STRUCTURAL DRAWING, SPECIAL INSPECTION IS STILL REQUIRED.
5. AFTER REINFORCING STEEL HAS BEEN INSTALLED.

SPECIAL INSPECTION AND TESTING:
SPECIAL INSPECTION WILL BE PROVIDED BY THE OWNER BASED ON THE REQUIREMENTS OF THE OSSC AS SUMMARIZED IN THE SPECIAL INSPECTION AND TESTING PROGRAM ON SHEET S-004 AND S-005. CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE SPECIAL INSPECTOR TO PERFORM THESE INSPECTIONS.

SUBMITTALS:
SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION OF ALL STRUCTURAL ITEMS, INCLUDING THE FOLLOWING:

SUBMITTALS

ITEM	SUBMITTAL (1,4)	DEFERRED SUBMITTAL (2,4)	COMMENTS
PILES	X		
CONCRETE MIX DESIGNS	X		
CONCRETE REINFORCEMENT	X		
MASONRY REINFORCEMENT	X		
CONCRETE ANCHORAGES	X		
EMBEDDED STEEL ITEMS	X		
STRUCTURAL STEEL	X		
STEEL WELDING PROCEDURES	X		
STEEL DECKING	X		
LIGHT GAUGE METAL FRAMING	X		
STEEL FASTENERS	X		
STEEL JOISTS	X	X	
GLUE-LAMINATED MEMBERS	X		
PREMANUFACTURED WOOD JOISTS	X	X	
PREMANUFACTURED WOOD TRUSSES	X	X	
CURTAIN WALL, WINDOW WALL AND OTHER GLAZING SYSTEMS	X	X	
METAL STAIRS AND RAILINGS	X	X	
MEP EQUIPMENT ANCHORAGE AND BRACING	X	X	REF. NOTES
PV ARRAY SUPPORT FRAMING AND ANCHORAGE	X	X	

FOOTNOTES:

1. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION OF STRUCTURAL ITEMS. IF THE SHOP DRAWINGS DIFFER FROM OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND ARE SUBJECT TO REVIEW AND ACCEPTANCE OF THE STRUCTURAL ENGINEER.

2. DESIGN DRAWINGS, SHOP DRAWINGS, AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON, AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION. CALCULATIONS SHALL BE INCLUDED FOR ALL CONNECTIONS TO THE STRUCTURE, CONSIDERING LOCALIZED EFFECTS ON STRUCTURAL ELEMENTS INDUCED BY THE CONNECTION LOADS. DESIGN SHALL BE BASED ON THE REQUIREMENTS OF THE OSSC AND AS NOTED UNDER "DESIGN CRITERIA".

3. THE CONTRACTOR SHALL COORDINATE SEISMIC RESTRAINTS OF MECHANICAL, PLUMBING, AND ELECTRICAL EQUIPMENT, MACHINERY, AND ASSOCIATED PIPING WITH THE STRUCTURE. CONNECTIONS TO STRUCTURE SHALL CONFORM TO ASCE 7-10 CHAPTER 13, BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE OF OREGON, AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION. 1

4. FIELD ENGINEERED DETAILS DEVELOPED BY THE CONTRACTOR THAT DIFFER FROM OR ADD TO THE STRUCTURAL DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO CONSTRUCTION.

STEEL PILES:
STEEL PILES SHALL BE PP12.75x0.375 AND SHALL CONFORM TO ASTM A252, GRADE 3. PILES SHALL BE DRIVEN TO EMBEDMENT LENGTH OR BLOW COUNT INTO THE SOIL AS SPECIFIED IN THE SOILS REPORT BY THE GEOTECHNICAL ENGINEER. REFERENCE GEOTECHNICAL CRITERIA THIS SHEET FOR ADDITIONAL INFORMATION.

CONCRETE:
CONCRETE WORK SHALL CONFORM TO CHAPTER 19 OF THE OSSC. CONCRETE STRENGTHS SHALL BE VERIFIED BY STANDARD 28-DAY CYLINDER TESTS PER ASTM C39, AND SHALL BE AS FOLLOWS:

CONCRETE STRENGTHS

f'c (PSI)	ABSOLUTE WATER-CEMENT RATIO BY WEIGHT		USE
	NON AIR-ENTRAINED	AIR-ENTRAINED	
3,000	.54	.46	ALL USES, UNLESS NOTED OTHERWISE
4,000	.50	.45	PILE CAPS, FOOTINGS, GRADE BEAMS AND SLABS ON METAL DECK
5,000	.45	.40	GROUND LEVEL STRUCTURAL SLAB

VERIFY WATER/CEMENT RATIO WITH FLOOR COVERING MANUFACTURER FOR CONCRETE FLOORS WITH MOISTURE SENSITIVE FLOOR COVERINGS.

MINIMUM CEMENT CONTENT PER CUBIC YARD SHALL BE AS FOLLOWS:

CEMENT CONTENT

f'c (PSI)	MINIMUM CEMENT PER CUBIC YARD
3,000	470 LBS.
4,000	550 LBS.
5,000	630 LBS.

FLYASH CONFORMING TO ASTM C618 (INCLUDING TABLE 2A) TYPE F OR TYPE C MAY BE USED TO REPLACE UP TO 20% OF THE CEMENT CONTENT, PROVIDED THAT THE MIX STRENGTH IS SUBSTANTIATED BY TEST DATA.

THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS ALONG WITH TEST DATA COMPLIANT WITH OSSC SECTION 1905 A MINIMUM OF TWO WEEKS PRIOR TO PLACING CONCRETE. NO WATER MAY BE ADDED TO CONCRETE IN THE FIELD UNLESS SPECIFICALLY APPROVED IN WRITING BY THE CONCRETE SUPPLIER IN CONJUNCTION WITH THE CONCRETE MIX DESIGN.

A WATER-REDUCING ADMIXTURE CONFORMING TO ASTM C494 USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS SHALL BE INCORPORATED IN CONCRETE DESIGN MIXES. A HIGH-RANGE WATER-REDUCING (HRWR) ADMIXTURE CONFORMING TO ASTM C494 TYPE F OR G MAY BE USED IN CONCRETE MIXES PROVIDING THAT THE SLUMP DOES NOT EXCEED 10". AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260 SHALL BE USED IN CONCRETE MIXES FOR EXTERIOR HORIZONTAL SURFACES EXPOSED TO WEATHER. THE AMOUNT OF ENTRAINED AIR SHALL BE 6% ± 1% BY VOLUME.

POLISHED CONCRETE FINISHING:
REFERENCE SPECIFICATION SECTION 03 35 20 - POLISHED CONCRETE FINISHING AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS AT EXPOSED CONCRETE SLABS.

SLEEVES, OPENINGS, CONDUIT, AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER BEFORE PLACING IN CONCRETE.

WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING CONCRETE SURFACE SHALL BE CLEANED AND ROUGHENED TO A MINIMUM 1/4" AMPLITUDE. PROVIDE 3/8" RADIUS ON ALL EXPOSED CONCRETE EDGES, UNLESS NOTED OTHERWISE.

VERIFY ALL BLOCKOUTS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING REQUIREMENTS.

EMBEDDED CONDUIT:
CONDUIT PLACED IN CONCRETE SLABS MUST BE PLACED IN ACCORDANCE WITH THE FOLLOWING GUIDELINES:
1. DO NOT CROSS MORE THAN ONE LAYER OF CONDUIT OVER ANOTHER IN ANY GIVEN AREA.
2. PLACE CONDUIT WITHIN MIDDLE 1/3 OF SLAB THICKNESS.
3. MAXIMUM OUTSIDE CONDUIT DIAMETER NOT TO EXCEED 1/4 OF SLAB THICKNESS OR 2".
4. CENTER-TO-CENTER SPACING OF CONDUITS TO BE 3X DIAMETER OF LARGEST CONDUIT OR 6".
5. DO NOT CONTACT, INTERUPT OR DISPLACE SLAB REINFORCEMENT.
6. ALUMINUM CONDUIT SHALL NOT BE USED UNLESS EFFECTIVELY COATED OR COVERED TO PREVENT CORROSIVE REACTION BETWEEN ALUMINUM AND STEEL.

REINFORCING STEEL:
REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, FOR DEFORMED BARS AND ASTM A185 FOR SMOOTH WELDED WIRE FABRIC (WWF), UNLESS OTHERWISE NOTED. REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706. COLUMN SPIRALS SHALL BE PLAIN OR DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60. REINFORCING STEEL SHALL BE SECURELY TIED IN PLACE WITH #16 ANNEALED IRON WIRE.

BARS IN BEAMS AND SLABS SHALL BE SUPPORTED ON WELL-CURED CONCRETE BLOCKS OR APPROVED METAL CHAIRS, AS SPECIFIED BY THE CRSI MANUAL OF STANDARD PRACTICE, MSP-1. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315. SHOP DRAWINGS SHALL INCLUDE ELEVATIONS OF ALL BEAMS, WALLS AND COLUMNS SHOWING BAR LOCATIONS. LAP ALL REINFORCING BARS PER THE TYPICAL LAP SPLICE LENGTH SCHEDULES, EXCEPT AS NOTED ON DRAWINGS. USE LAP LENGTH FOR SMALLER BAR WHEN SPLICING DIFFERENT BAR SIZES. MECHANICAL SPLICES NOTED ON THE PLANS SHALL BE DAYTON SUPERIOR BAR-LOCK (ICC ESR-2495) OR TAPERLOCK COUPLERS (ICC ESR-2481) OR APPROVED WITH A CURRENT ICC APPROVAL REPORT.

TYP. SLAB LAP SPLICE LENGTH SCHEDULE (IN.)

BAR SIZE	SLAB BOTTOM BARS (NOTE 7)			SLAB TOP BARS (NOTE 7)		
	f'c = 3,000 PSI	f'c = 4,000 PSI	f'c = 5,000 PSI	f'c = 3,000 PSI	f'c = 4,000 PSI	f'c = 5,000 PSI
#3	14	12	12	18	16	14
#4	22	20	18	28	26	22
#5	32	28	26	42	36	32
#6	44	38	34	58	50	44
#7	70	62	54	92	78	70
#8	86	74	68	112	98	88
#9	104	92	82	136	118	106
#10	126	108	98	164	142	126
#11	148	128	116	192	166	150

TYP. BEAM LAP SPLICE LENGTH SCHEDULE (IN.)

BAR SIZE	f'c = 3,000 PSI		f'c = 4,000 PSI		f'c = 5,000 PSI	
	BEAM TOP BARS	OTHER BARS	BEAM TOP BARS	OTHER BARS	BEAM TOP BARS	OTHER BARS
#4	24	18	20	16	18	14
#5	30	22	26	20	22	18
#6	34	28	30	24	28	22
#7	50	38	43	34	40	30
#8	56	44	49	38	44	34
#9	70	56	61	48	56	42
#10	88	68	75	58	68	54
#11	104	80	91	70	82	64

TABLE NOTES:
1. MINIMUM LAP SPLICES NOTED ARE FOR NON-LATERAL LOAD RESISTING ELEMENTS. FOR REBAR LAPS SPLICES AT LATERAL LOAD RESISTING ELEMENTS, REFERENCE PLANS AND ELEVATIONS.
2. ASTM A615 or ASTM A706, GRADE 60 DEFORMED REINFORCING BARS
3. MINIMUM CLEAR COVER AND BAR SPACING of 4db TO BE PROVIDED.
4. NORMAL WEIGHT CONCRETE, FOR LIGHT-WEIGHT CONCRETE MULTIPLY TABLE VALUES BY 1.3.
5. UNCOATED BARS, FOR EPOXY-COATED BARS MULTIPLY TABLE VALUES BY 1.5.
6. COMBINATIONS OF EFFECTS DUE TO CONCRETE STRENGTH, CONCRETE WEIGHT, AND EPOXY COATING ARE CUMULATIVE.
7. SLAB AND FOUNDATION MAT TOP BARS ARE BARS CAST ABOVE MORE THAN 12" OF FRESH CONCRETE. ALL OTHER SLAB BARS MAY BE CONSIDERED BOTTOM BARS.

REINFORCING STEEL SHALL HAVE PROTECTION AS FOLLOWS:

REINFORCING STEEL CONCRETE COVER

USE	CLEAR COVER
GRADE BEAM BARS	2" (TO STIRRUPS OR TIES)
GROUND FLOOR SLAB BARS	1" AT TOP 2" AT BOTTOM
FOOTING AND PILE CAP BARS	3"

CONCRETE REINFORCING DETAILS:
AT SLAB AND WALL OPENINGS PROVIDE A MINIMUM OF TWO #5 BARS OVER, UNDER AND AT THE SIDES OF THE OPENINGS. EXTEND THESE BARS LAP DISTANCE OR A MINIMUM OF 2'-0" PAST THE OPENING. PROVIDE ONE #5 FOR SINGLE-LAYER REINFORCING AND TWO #5 FOR DOUBLE-LAYER REINFORCING, 4'-0" LONG, DIAGONALLY AT EACH CORNER OF ALL OPENINGS. PROVIDE TWO #4, 4'-0" LONG DIAGONALLY AT EACH RE-ENTRANT CORNER IN SLABS. PROVIDE HOOKED DOWELS FROM FOOTINGS TO MATCH VERTICAL WALL REINFORCING.

CONCRETE ACCESSORIES:
HEADED SHEAR STUDS SHALL BE NELSON HEADED ANCHORS WITH FLUXED ENDS (ICC ESR-2856) OR APPROVED. DEFORMED BAR ANCHORS (D.B.A.) SHALL BE NELSON, TYPE D2L (ICC ESR-2907), OR APPROVED. STUDS AND D.B.A. SHALL BE AUTOMATICALLY END-WELDED WITH THE MANUFACTURER'S STANDARD EQUIPMENT IN ACCORDANCE WITH THEIR RECOMMENDATIONS.

APPROVED POST INSTALLED CONCRETE ANCHORS

ANCHORS	TYPE	ALTERNATE
EXPANSION	HILTI KWIK BOLT TZ (ICC ESR-1917)	SIMPSON STRONG-BOLT 2 (ICC ESR-3037)
CONCRETE SCREW	HILTI KWIK HUS-EZ (ICC ESR-3027)	SIMPSON TITEN HD (ICC ESR-2713)
EPOXY ADHESIVE	HILTI HIT-HY200 (ICC ESR-3187)	SIMPSON SET-XP (ICC ESR-2508)

ALL ANCHORS SHALL BE INSTALLED IN STRICT CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. DO NOT CUT REINFORCING IN NEW OR EXISTING CONCRETE DURING INSTALLATION. ANCHORS EXPOSED TO EARTH OR WEATHER SHALL BE PROTECTED FROM CORROSION BY HOT-DIP GALVANIZING OR USE OF STAINLESS STEEL.

PERMANENTLY EXPOSED EMBEDDED PLATES AND ANGLES SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION, UNLESS OTHERWISE NOTED. NO LOADS OR WELDS SHALL BE PLACED ON EMBEDDED PLATES OR ANGLES FOR A MINIMUM OF 7 DAYS AFTER CASTING.

RIGID POLYSTYRENE GEOFOAM (EPS):
EPS GEOFOAM USED IN OVERFRAMING APPLICATIONS SHALL CONFORM TO ASTM D6817 WITH THE FOLLOWING PROPERTIES:

AT TYPICAL FLOOR AREAS, USE GEOFOAM TYPE EPS15 WITH MINIMUM COMPRESSIVE RESISTANCE OF 3.6 PSI AT 1% DEFORMATION.

EPOXY REPAIR ADHESIVE:
EPOXY REPAIR ADHESIVE SHALL CONFORM TO ASTM C881 AND SHALL BE A TWO-COMPONENT, LIQUID EPOXY WITH NON-SAG CONSISTENCY AND A LONG POT LIFE. THE EPOXY ADHESIVE SHALL BE SUITABLE FOR USE ON DRY OR DAMP SURFACES. MINIMUM SLANT SHEAR STRENGTH SHALL BE 5,000 PSI, AND MINIMUM TENSILE STRENGTH SHALL BE 4,000 PSI. HOLE SIZES AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE APPROVED ICC REQUIREMENTS. DO NO CUT REINFORCING IN NEW OR EXISTING CONCRETE DURING INSTALLATION.

EPOXY REPAIR ADHESIVE:
EPOXY REPAIR ADHESIVE SHALL CONFORM TO ASTM C881 AND SHALL BE A TWO-COMPONENT, LIQUID EPOXY WITH NON-SAG CONSISTENCY AND A LONG POT LIFE. THE EPOXY ADHESIVE SHALL BE SUITABLE FOR USE ON DRY OR DAMP SURFACES. MINIMUM SLANT SHEAR STRENGTH SHALL BE 5,000 PSI, AND MINIMUM TENSILE STRENGTH SHALL BE 4,000 PSI. HOLE SIZES AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE APPROVED ICC REQUIREMENTS. DO NO CUT REINFORCING IN NEW OR EXISTING CONCRETE DURING INSTALLATION.

REINFORCED CONCRETE MASONRY:
CONCRETE MASONRY UNITS SHALL COMPLY WITH ASTM C90, SAMPLED AND TESTED IN ACCORDANCE w/ ASTM C140. LINEAL SHRINKAGE FOR UNITS SHALL NOT EXCEED 0.065%. BLOCK COMPRESSIVE STRENGTH SHALL BE AS INDICATED IN BELOW TABLE. ASSEMBLIES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f 'm) AS INDICATED IN BELOW TABLE AS VERIFIED BY THE UNIT STRENGTH METHOD CONFORMING TO OSSC SECTION 2105. WALLS SHALL BE REINFORCED AS SHOWN ON THE PLANS AND DETAILS AND, IF NOT SHOWN, SHALL BE AS NOTED UNDER "MASONRY REINFORCING STEEL".

CONCRETE MASONRY ASSEMBLY STRENGTH

fm (PSI)	BLOCK UNIT STRENGTH (PSI)	GROUT STRENGTH (PSI)	MORTAR
2,000	2,800	2,000	TYPE M OR S

MORTAR:
MORTAR SHALL BE OF THE TYPE INDICATED IN THE PRECEDING TABLE, WITH A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 1,800 PSI AND SHALL CONFORM TO OSSC SECTION 2103.

MASONRY GROUT:
GROUT SHALL HAVE COMPRESSIVE STRENGTH AS INDICATED IN THE PRECEDING TABLE AND SHALL CONFORM TO OSSC SECTION 2103. GROUT SHALL CONSIST OF A MIXTURE OF CEMENTITIOUS MATERIALS AND AGGREGATE TO WHICH SUFFICIENT WATER HAS BEEN ADDED TO CAUSE THE MIXTURE TO FLOW WITHOUT SEGREGATION OF THE CONSTITUENTS. ALL MASONRY SHALL BE FULLY GROUTED.

THE MAXIMUM GROUT POUR HEIGHT SHALL BE 12'-8". CLEAN-OUTS ARE REQUIRED FOR ANY POUR HEIGHT GREATER THAN 5'-4". WHERE REQUIRED, CLEAN-OUTS SHALL BE LOCATED AT ALL CORES CONTAINING VERTICAL REINFORCEMENT AND AT A MAXIMUM OF 32" O.C. GROUT LIFTS GREATER THAN 5'-4" ARE LIMITED IN HEIGHT TO THE BOTTOM OF THE LOWEST BOND BEAM THAT IS MORE THAN 5'-4" ABOVE THE BOTTOM OF THE LIFT, PROVIDED THAT: 1) THE MASONRY HAS CURED FOR AT LEAST 4 HOURS, AND 2) THE GROUT SLUMP IS MAINTAINED BETWEEN 10 AND 11 INCHES. IF EITHER OF THESE TWO CONDITIONS ARE NOT MET, THEN THE MAXIMUM LIFT HEIGHT SHALL BE 5'-4". REFERENCE TYPICAL MASONRY DETAILS.

MASONRY REINFORCING STEEL:
1 REINFORCING SHALL CONFORM TO OSSC SECTION 2103.13. DEFORMED BARS SHALL BE ASTM A615 GRADE 60, AND SHALL BE SECURELY PLACED IN ACCORDANCE WITH ACI 530.1-11 SPECIFICATION SECTION 3.4. WELDED REINFORCEMENT SHALL CONFORM TO ASTM A706 GRADE 60. UNLESS NOTED OTHERWISE ON THE PLANS, THE MINIMUM WALL REINFORCEMENT SHALL BE AS FOLLOWS:

RUNNING BOND PATTERN

WALL THICKNESS	VERTICAL BARS	HORIZONTAL BARS (IN BOND BEAMS)
6"	#5 @ 48" o.c.	#5 @ 48" o.c.
8"	#6 @ 48" o.c.	(2) #4 @ 48" o.c.
10"	#6 @ 48" o.c.	(2) #5 @ 48" o.c.
12"	#6 @ 48" o.c.	(2) #5 @ 48" o.c.

1 BOND BEAMS WITH TWO #5 BARS HORIZONTALLY SHALL BE PROVIDED AT ALL FLOOR AND ROOF LINES AND AT THE TOP OF WALLS. STEP BOND BEAMS AS REQUIRED TO MATCH ROOF SLOPES. PROVIDE A BOND BEAM WITH TWO #5 BARS HORIZONTALLY ABOVE AND BELOW ALL OPENINGS, AND EXTEND THESE BARS 2'-0" PAST THE OPENING AT EACH SIDE. PROVIDE JAMB REINFORCEMENT PER 12/S-403 AT EACH SIDE OF OPENINGS, WALL ENDS AND INTERSECTIONS. DOWELS TO MASONRY WALLS SHALL BE EMBEDDED A MINIMUM OF 1'-0" OR HOOKED INTO THE SUPPORTING STRUCTURE AND BE OF THE SAME SIZE AND SPACING AS WALL REINFORCING. PROVIDE CORNER BARS TO MATCH THE HORIZONTAL WALL REINFORCING AT WALL INTERSECTIONS. BARS SPLICED BY 2 NON-CONTACT LAP SPLICES SHALL NOT BE SPACED FARTHER APART THAN ONE-FIFTH THE LENGTH OF LAP NO MORE THAN 8 INCHES. LAP ALL REINFORCING BARS AS FOLLOWS UNLESS NOTED OTHERWISE ON DRAWINGS:

TYP. LAP SPLICE LENGTH SCHEDULE (IN.)

f'm=2000 PSI	CASE 1	CASE 2		
BAR SIZE	ALL BLOCK	8" BLOCK	10" BLOCK	12' BLOCK
#3	16	12	12	12
#4	29	12	12	12
#5	45	19	15	12
#6	54	37	29	23
#7	63	51	40	32
#8	72	72	61	49
#9	81	81	78	63

NOTES:
CASE 1: BARS LOCATED NEAR THE FACE OF BLOCK WITH ONLY MINIMUM COVER OR CELLS WITH MORE THAN (1) BAR.

CASE 2: SINGLE BARS LOCATED AT THE CENTER OF A CELL.

1. FOR EPOXY COATED BARS, MULTIPLY LAP LENGTHS BY 1.5.
2. MAXIMUM OF (2) BARS IN (1) CELL ((4) AT LAP SPLICE.)
3. AT CONTRACTOR'S OPTION: PROVIDE MECHANICAL SPLICES FOR #8 AND #9 BARS.

REINFORCING STEEL COVER

USE	COVER
MASONRY FACE NOT EXPOSED TO EARTH OR WEATHER	1 1/2"
MASONRY FACE EXPOSED TO EARTH OR WEATHER	1 1/2" (#5 AND SMALLER) 2" (#6 AND LARGER)

MASONRY ACCESSORIES:
ALL ANCHORS SHALL BE INSTALLED IN STRICT CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. REINFORCING IN NEW OR EXISTING MASONRY SHALL NOT BE CUT DURING INSTALLATION. ALL ANCHORS EXPOSED TO EARTH OR WEATHER SHALL BE PROTECTED FROM CORROSION BY HOT-DIP GALVANIZING OR USE OF STAINLESS STEEL.

MASONRY ANCHORS

ANCHORS	TYPE	ALTERNATE
EXPANSION	HILTI KWIK BOLT 3 (ICC ESR-1385)	SIMPSON WEDGE-ALL (ICC ESR-1396)
ADHESIVE	HILTI HIT-HY 70 (ICC ESR-2682)	SIMPSON SET (ICC ESR-1772)

STRUCTURAL STEEL:
STRUCTURAL STEEL SHALL BE:

STRUCTURAL STEEL

WIDE FLANGE SHAPES	ASTM A992, GRADE 50
PLATES WHERE NOTED	ASTM A572, GRADE 50
CHANNELS, PLATES AND ANGLES, U.N.O.	ASTM A36
HOLLOW STRUCTURAL SECTIONS (TUBES)	ASTM A500, GRADE B (FY=46KSI)
PIPES	ASTM A53, GRADE B (FY=35 KSI)
DRIVEN PIPE PILES	ASTM A252, GRADE 3

DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE "AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" WITH "COMMENTARY" AND THE "CODE OF STANDARD PRACTICE", WITH EXCEPTIONS NOTED IN SPECIFICATIONS.

BOLTS SHALL CONFORM TO THE ASTM AND RCSC SPECIFICATIONS FOR JOINTS USING A325 OR A490 HIGH STRENGTH BOLTS. BOLTS SHALL BE SNUG-TIGHT UNLESS NOTED OTHERWISE.

WELDING SHALL CONFORM TO THE AWS CODES FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH A WELDED PROCEDURE SPECIFICATION (WPS) AS REQUIRED IN AWS D1.1 AND APPROVED BY THE STRUCTURAL ENGINEER. THE WPS VARIABLES SHALL BE WITHIN THE PARAMETERS ESTABLISHED BY THE FILLER-METAL MANUFACTURER. FOR MEMBERS INCLUDED IN THE SEISMIC LOAD RESISTING SYSTEM (SLRS), REQUIREMENTS OF AWS D1.8 (SEISMIC SUPPLEMENT) SHALL APPLY.

ALL WELDS USED IN MEMBERS AND CONNECTIONS THAT ARE PART OF THE SEISMIC LOAD RESISTING SYSTEM (SLRS) SHALL BE MADE WITH A FILLER METAL THAT HAS A MINIMUM CHARPY V-NOTCH (CVN) TOUGHNESS OF 20 FT-LBS AT 0 DEGREES F, AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION. ALL COMPLETE JOINT PENETRATION WELDS DESIGNATED AS DEMAND CRITICAL SHALL BE MADE WITH FILLER METAL THAT HAS A MINIMUM CVN TOUGHNESS OF 20 FT-LBS AT MINUS 20 DEGREES F, AND 40 FT-LBS AT 70 DEGREES F. FOR COMPLETE JOINT PENETRATION WELDS ASSOCIATED WITH MEMBER SPLICES AND CONNECTIONS NOT PART OF THE SLRS, WELDS SHALL BE MADE WITH FILLER METAL THAT HAS A MINIMUM CVN TOUGHNESS OF 20 FT-LBS AT 40 DEGREES F.

WELDS SHALL BE MADE USING E70XX ELECTRODES AND SHALL BE 3/16" MINIMUM, UNLESS OTHERWISE NOTED. WELDING SHALL BE BY AWS CERTIFIED WELDERS.

PROVIDE WEEP HOLES AT EXTERIOR CLOSED SECTIONS WHERE MOISTURE MAY ACCUMULATE.

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STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 17688 OREGON NOV. 9, 1999 BLAKE D. PATSY
EXPIRES 12-13-16

EUGENE SCHOOL DISTRICT 4J

4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
2	3-13-2015	ADDENDUM 6
1	3-6-2015	ADDENDUM 3

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1
PROJECT NO: 213417
DRAWN BY: MF
CHECKED BY: MT

ORIGINAL SHEET SIZE: 30"x42"

GENERAL STRUCTURAL NOTES

S-002

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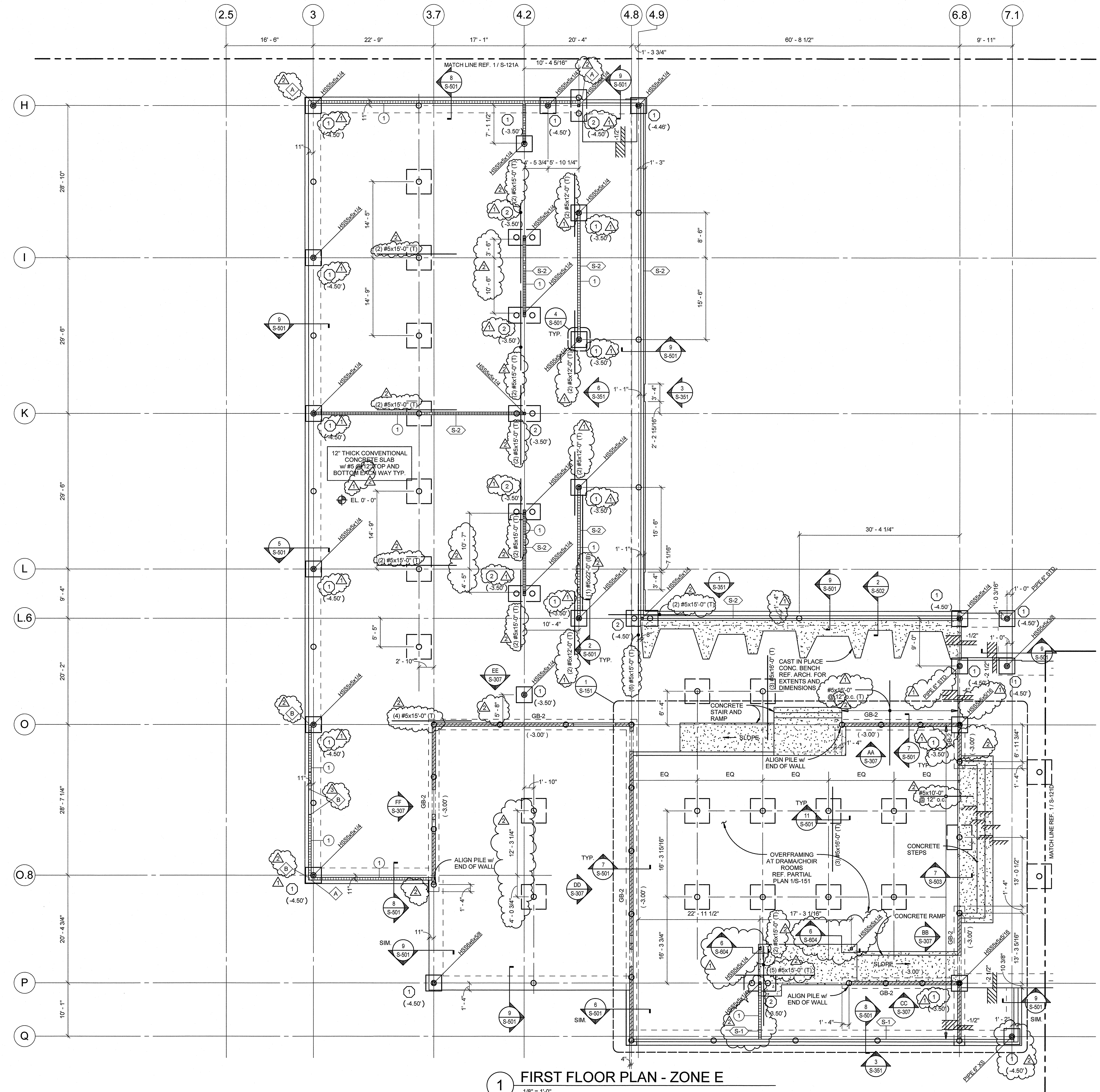

1 FIRST FLOOR PLAN - ZONE E
1/8" = 1'-0"

PLAN NOTES:
REF. SHEET S-120 FOR TYPICAL PLAN NOTES.

PLAN NORTH

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REGISTERED PROFESSIONAL ENGINEER
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BLAKE D. PATSY
EXPIRES 12-13-16

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REPLACEMENT ROOSEVELT MIDDLE SCHOOL
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CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
3	3-13-2015	ADDENDUM 6
2	3-6-2015	ADDENDUM 3
1	2-18-2015	SUPPLEMENTAL INFO 1

ISSUE DATE:	FEBRUARY 18, 2015
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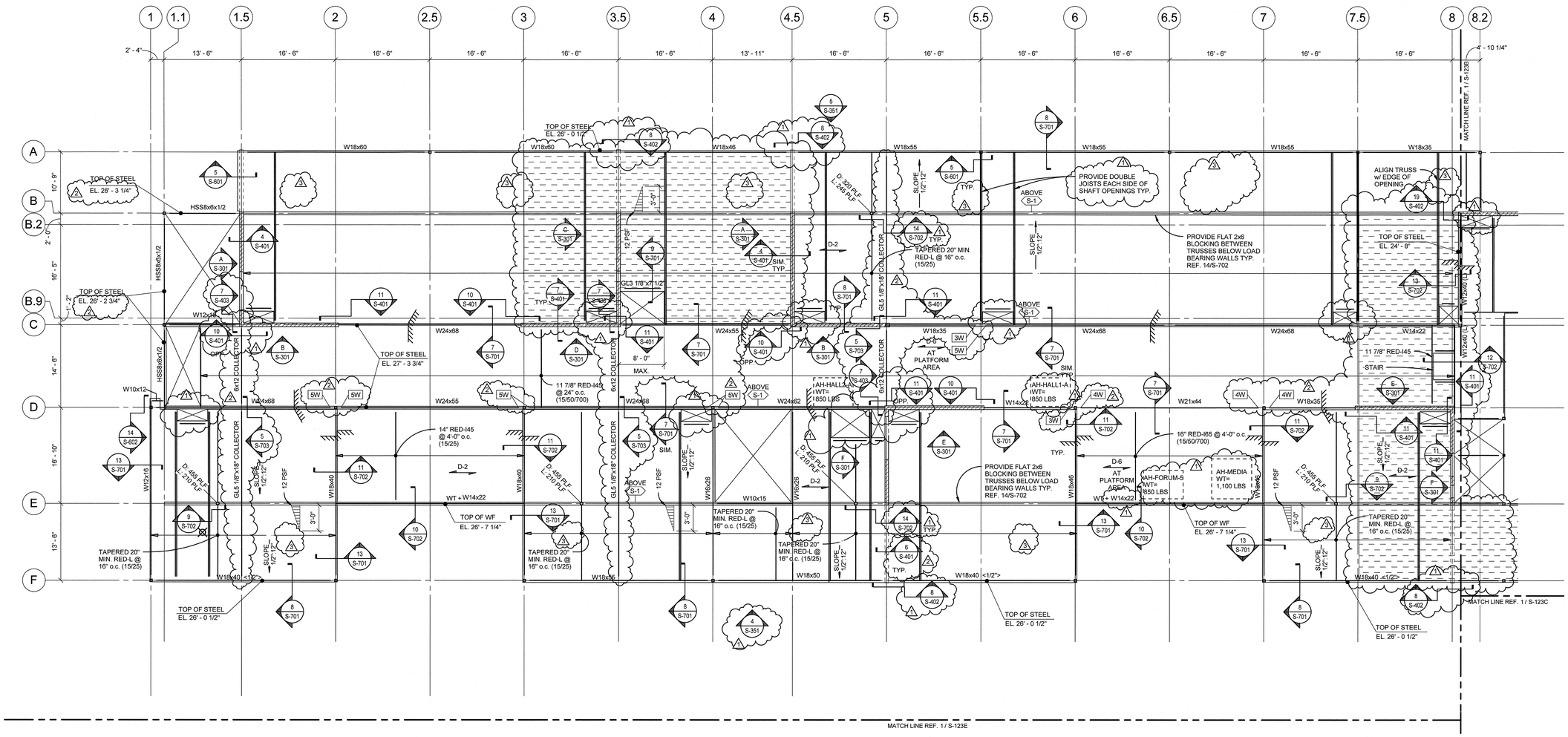
FIRST FLOOR PLAN - ZONE E

S-121E



PLAN NOTES:
REF. SHEET S-120 FOR TYPICAL PLAN NOTES.

1 EQUIPMENT PLATFORM PLAN - ZONE A

1/8" = 1'-0"

PLAN NORTH

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STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 7638 OREGON BLAKE D. PATSY
EXPIRES 12-13-16

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REPLACEMENT ROOSEVELT MIDDLE SCHOOL
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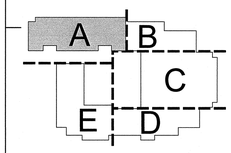
CIP NO. 410.566.001



MARK	DATE	DESCRIPTION
3	3-13-2015	ADDENDUM 6
2	3-6-2015	ADDENDUM 3
1	2-18-2015	SUPPLEMENTAL INFO 1

ISSUE DATE: FEBRUARY 18, 2015
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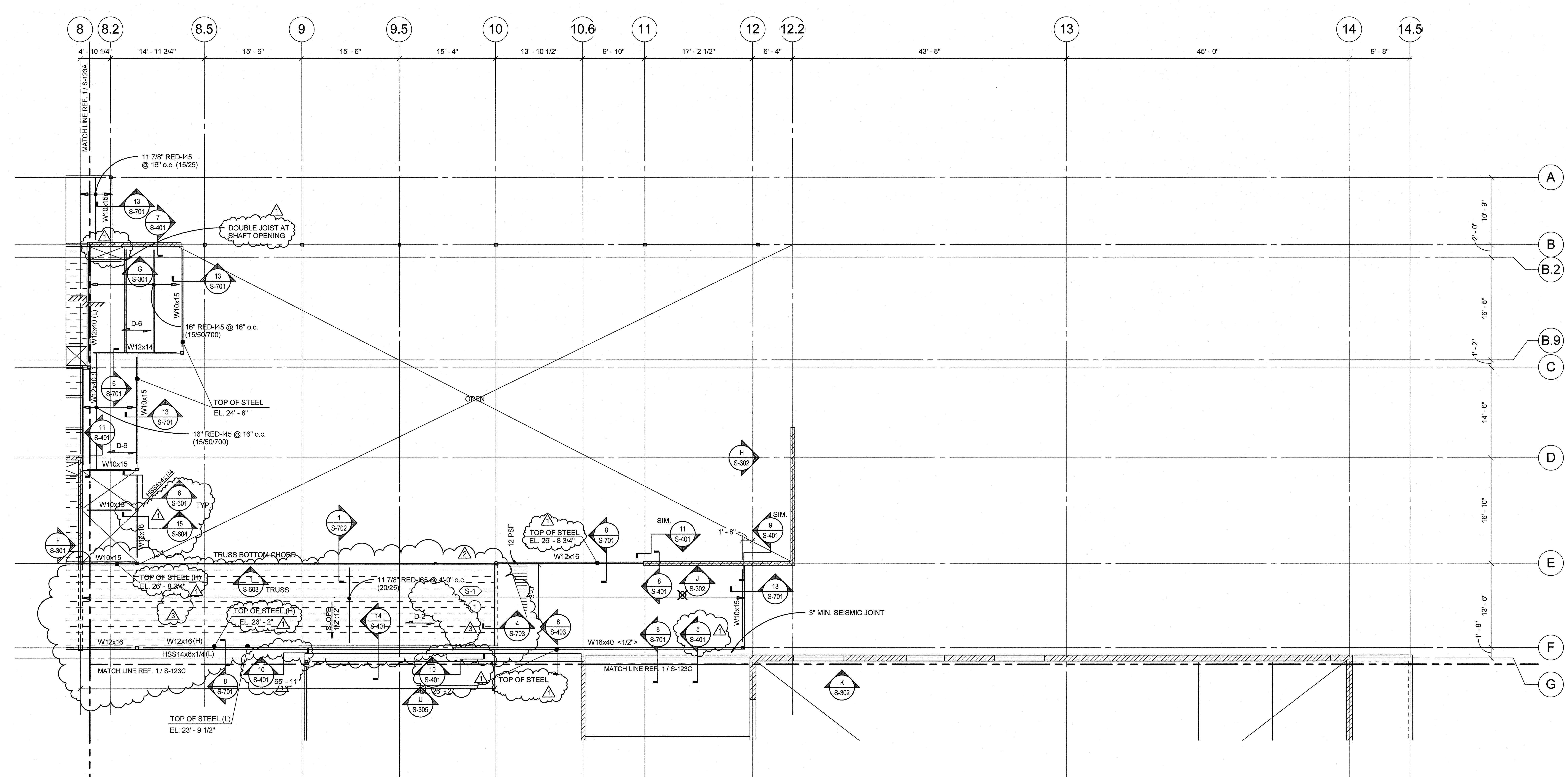
CHECKED BY: MT

 ORIGINAL SHEET SIZE: 30"x42"

EQUIPMENT PLATFORM PLAN - ZONE A

S-123A



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PROJECT NO: 213417
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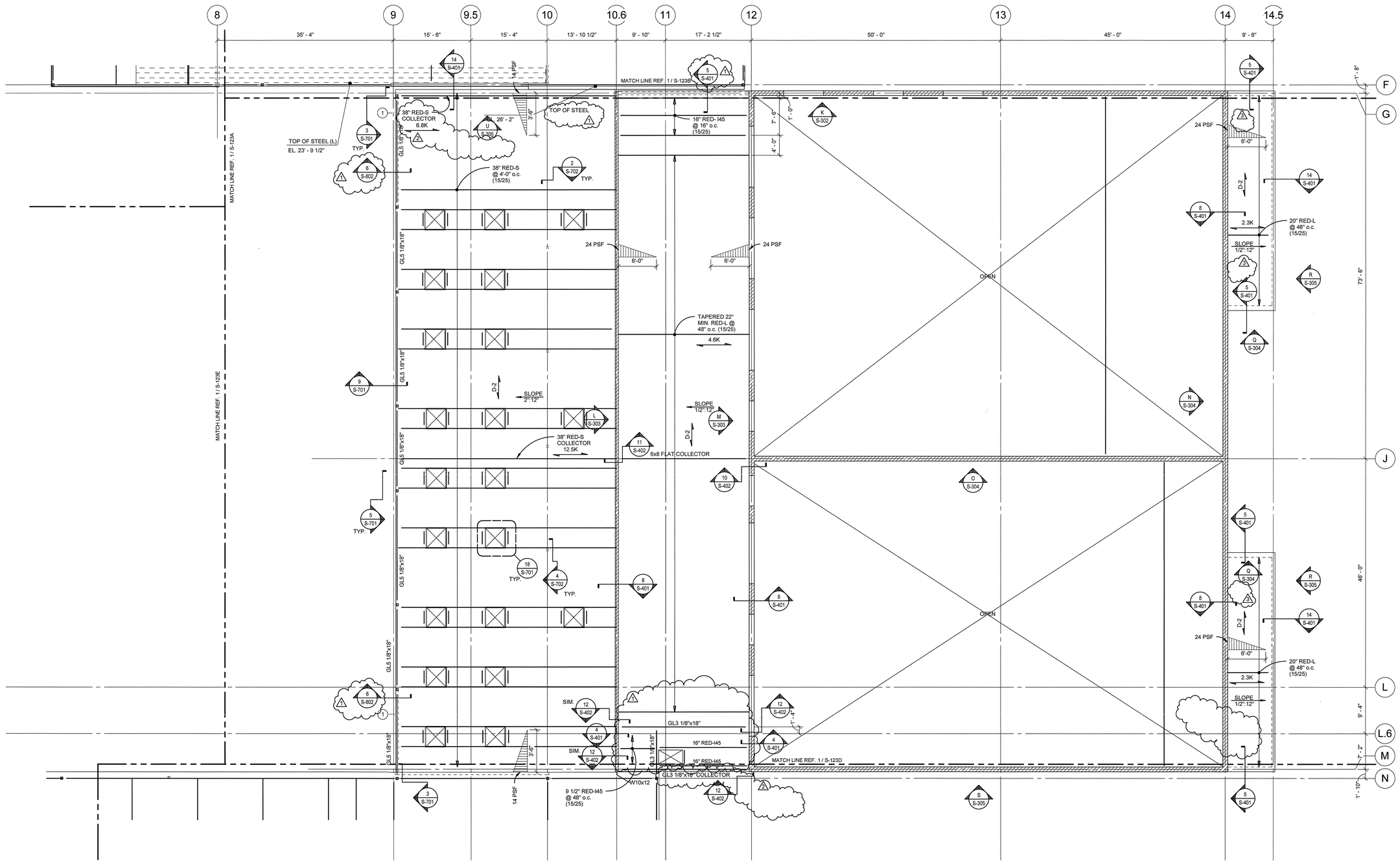
EQUIPMENT PLATFORM PLAN - ZONE B

S-123B



PLAN NOTES:
REF. SHEET S-120 FOR TYPICAL PLAN NOTES.

1 MID-ROOF PLAN - ZONE C

1/8" = 1'-0"

PLAN NORTH

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4J

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A B C E D

MARK	DATE	DESCRIPTION
3	3-13-2015	ADDENDUM 6
2	3-6-2015	ADDENDUM 3
1	2-18-2015	SUPPLEMENTAL INFO 1

ISSUE DATE: FEBRUARY 18, 2015
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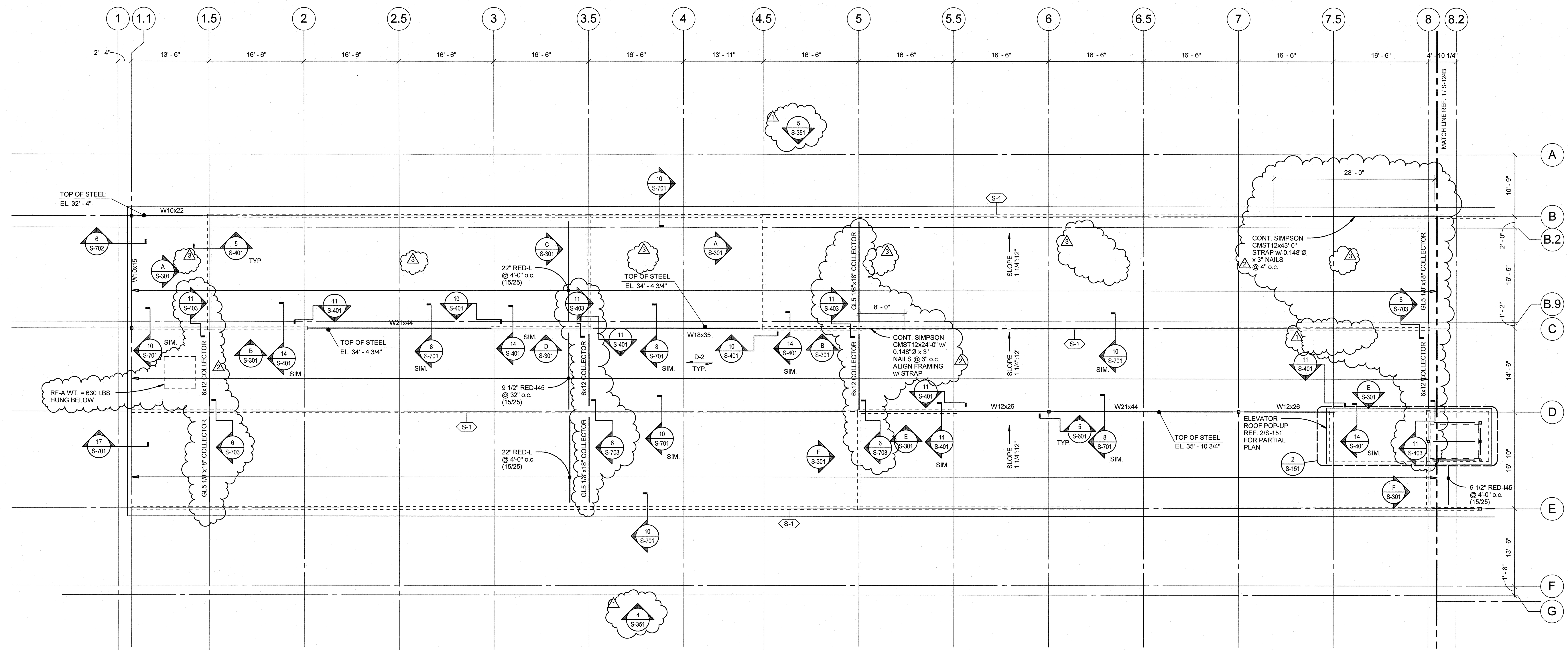
 ORIGINAL SHEET SIZE: 30"x42"

MID-ROOF ATTIC PLAN - ZONE C

S-123C



PLAN NOTES:
REF. SHEET S-120 FOR TYPICAL PLAN NOTES.

1 HIGH ROOF PLAN - ZONE A
1/8" = 1'-0"

PLAN NORTH

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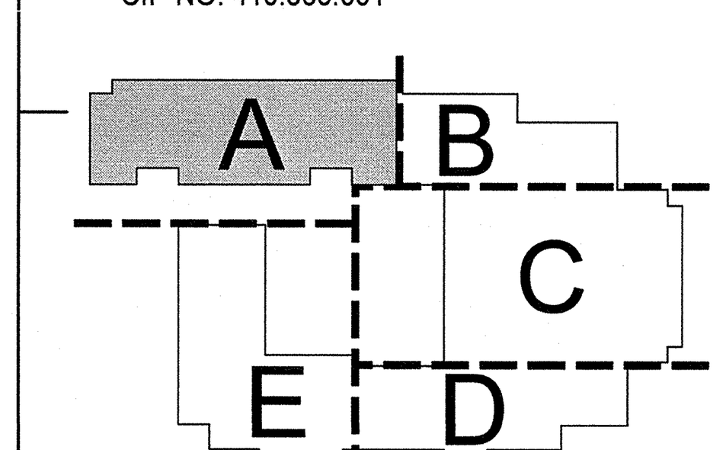
CIP NO. 410.566.001



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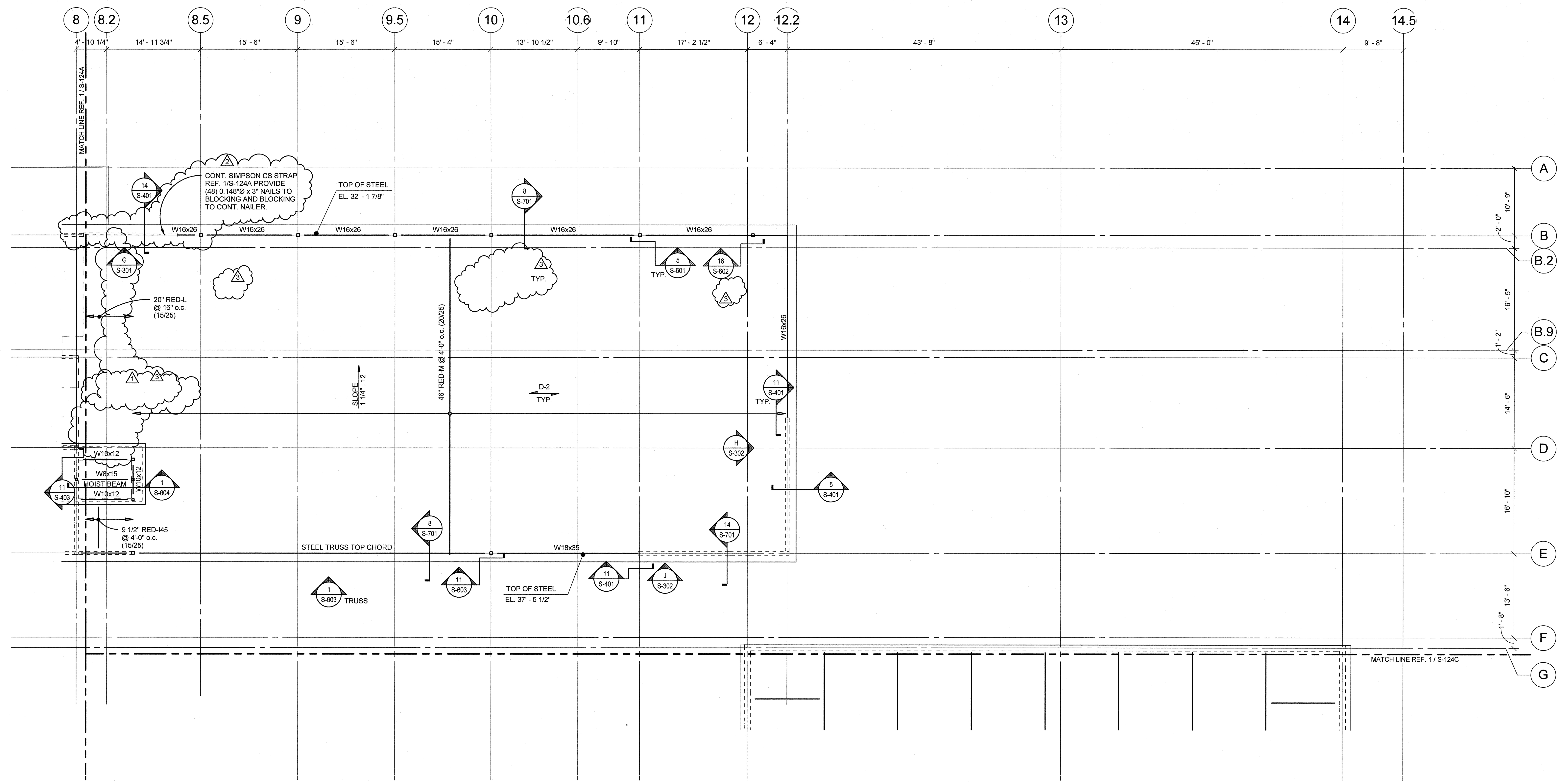
HIGH ROOF PLAN - ZONE A

S-124A



PLAN NOTES:
REF. SHEET S-120 FOR TYPICAL PLAN NOTES.

1 HIGH ROOF PLAN - ZONE B
1/8" = 1'-0"

PLAN NORTH

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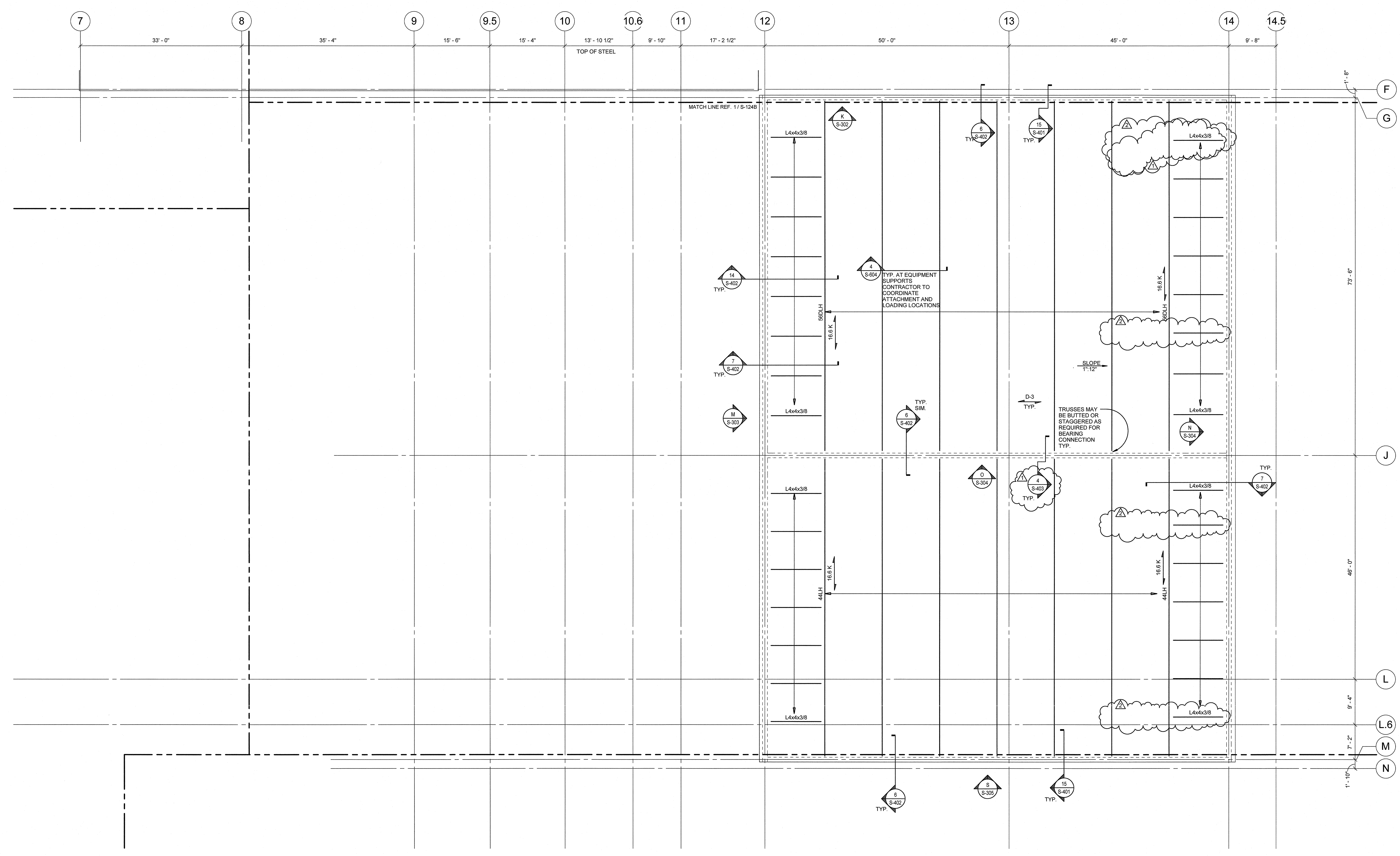
HIGH ROOF PLAN - ZONE B

S-124B



1 HIGH ROOF PLAN - ZONE C

1/8" = 1'-0"

PLAN NORTH

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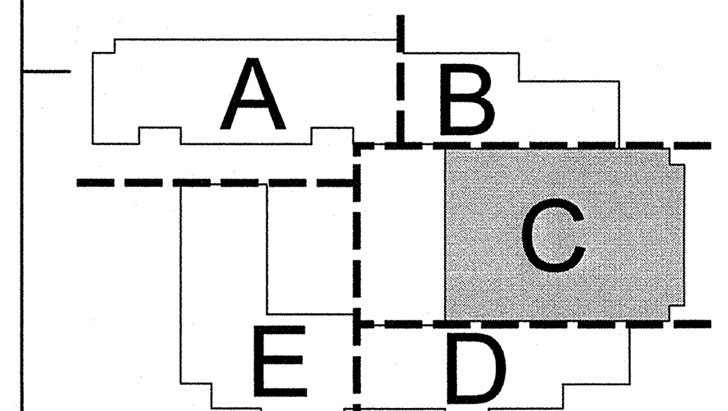

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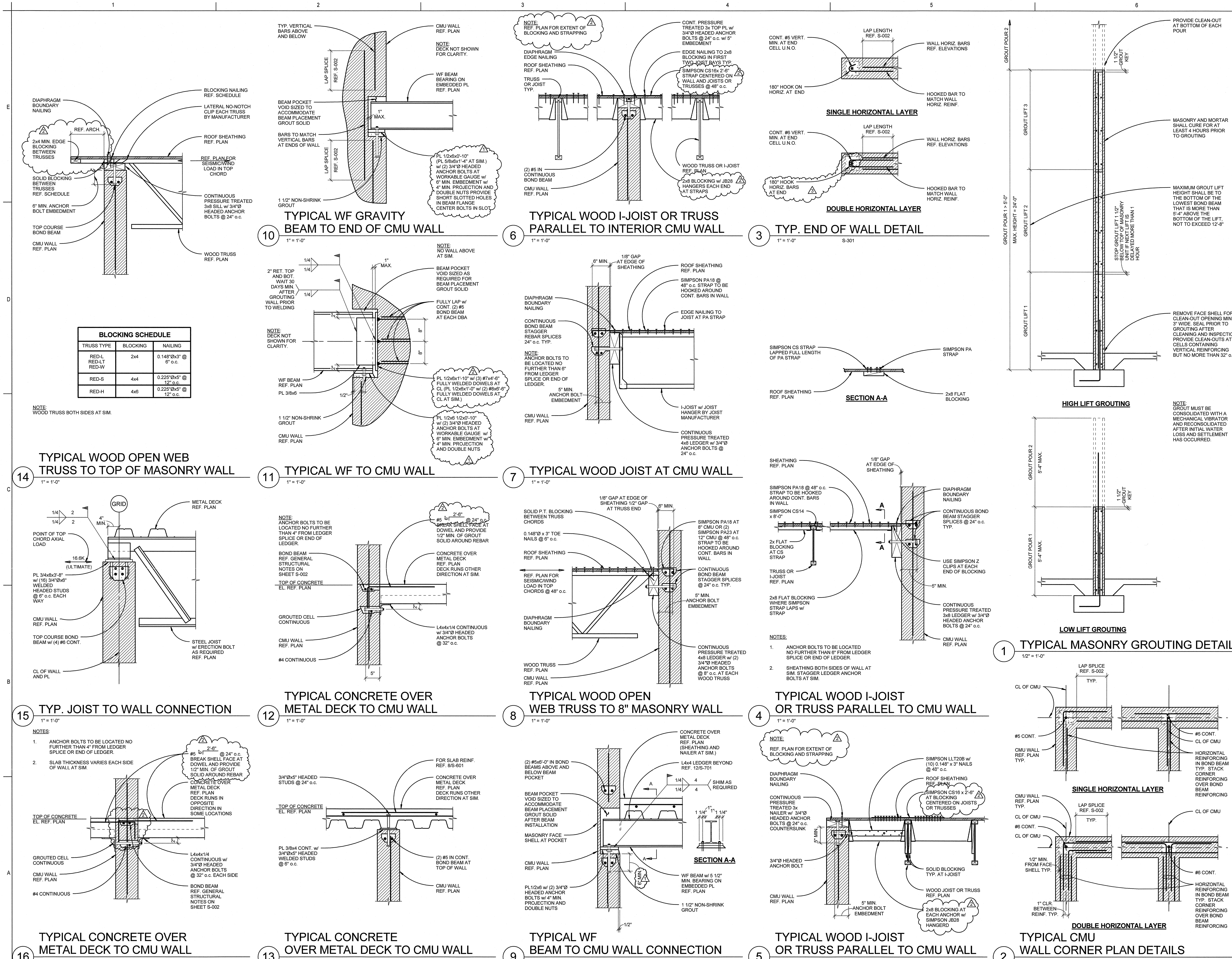
HIGH ROOF PLAN - ZONE C

S-124C


TYPICAL WOOD OPEN WEB TRUSS TO TOP OF MASONRY WALL 14 1" = 1'-0"
TYPICAL WF GRAVITY BEAM TO END OF CMU WALL 10 1" = 1'-0"
TYPICAL WOOD I-JOIST OR TRUSS PARALLEL TO INTERIOR CMU WALL 6 1" = 1'-0"
TYP. END OF WALL DETAIL 3 1" = 1'-0" S-301
SINGLE HORIZONTAL LAYER
DOUBLE HORIZONTAL LAYER
SECTION A-A
HIGH LIFT GROUTING
LOW LIFT GROUTING
TYPICAL MASONRY GROUTING DETAIL 1 1/2" = 1'-0"
TYPICAL WF TO CMU WALL 11 1" = 1'-0"
TYPICAL WOOD JOIST AT CMU WALL 7 1" = 1'-0"
TYP. JOIST TO WALL CONNECTION 15 1" = 1'-0"
TYPICAL CONCRETE OVER METAL DECK TO CMU WALL 12 1" = 1'-0"
TYPICAL WOOD OPEN WEB TRUSS TO 8" MASONRY WALL 8 1" = 1'-0"
TYPICAL WOOD I-JOIST OR TRUSS PARALLEL TO CMU WALL 4 1" = 1'-0"
TYPICAL CONCRETE OVER METAL DECK TO CMU WALL 16 1" = 1'-0"
TYPICAL CONCRETE OVER METAL DECK TO CMU WALL 13 1" = 1'-0" S-122A
TYPICAL WF BEAM TO CMU WALL CONNECTION 9 1" = 1'-0"
TYPICAL WOOD I-JOIST OR TRUSS PARALLEL TO CMU WALL 5 1" = 1'-0"
TYPICAL CMU WALL CORNER PLAN DETAILS 2 1" = 1'-0" S-301
NOTE: WOOD TRUSS BOTH SIDES AT SIM.
NOTES:
1. ANCHOR BOLTS TO BE LOCATED NO FURTHER THAN 4" FROM LEDGER SPLICE OR END OF LEDGER.
2. SLAB THICKNESS VARIES EACH SIDE OF WALL AT SIM.
NOTES:
1. ANCHOR BOLTS TO BE LOCATED NO FURTHER THAN 6" FROM LEDGER SPLICE OR END OF LEDGER.
2. SHEATHING BOTH SIDES OF WALL AT SIM. STAGGER LEDGER ANCHOR BOLTS AT SIM.
NOTE: GROUT MUST BE CONSOLIDATED WITH A MECHANICAL VIBRATOR AND RECONSOLIDATED AFTER INITIAL WATER LOSS AND SETTLEMENT HAS OCCURRED.

BLOCKING SCHEDULE

TRUSS TYPE	BLOCKING	NAILING
RED-L RED-LT RED-W	2x4	0.148"Ø x3" @ 6" o.c.
RED-S	4x4	0.225"Ø x5" @ 12" o.c.
RED-H	4x6	0.225"Ø x5" @ 12" o.c.

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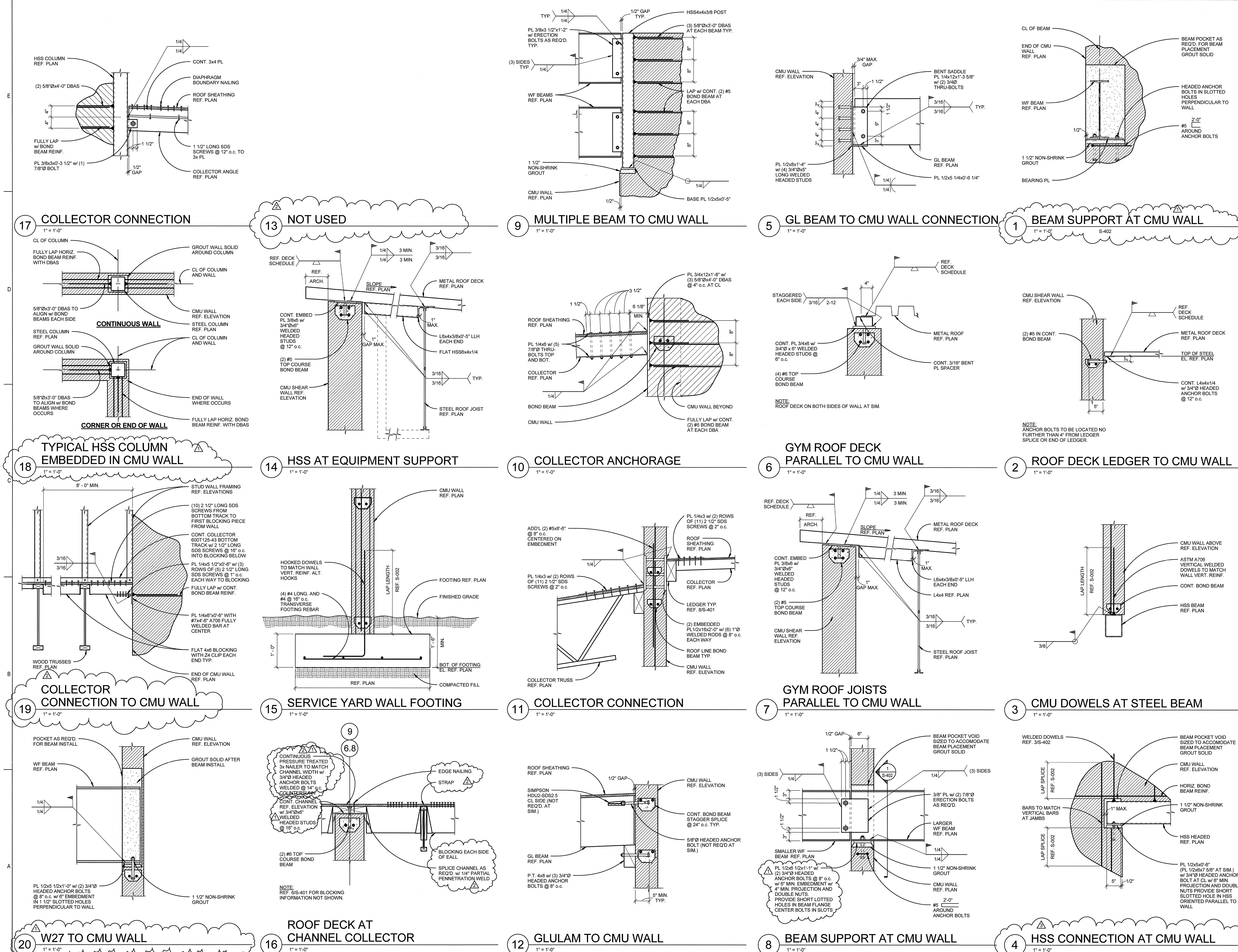
CMU DETAILS

S-401



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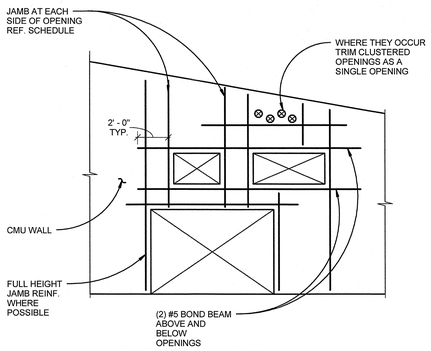
CMU DETAILS

S-402



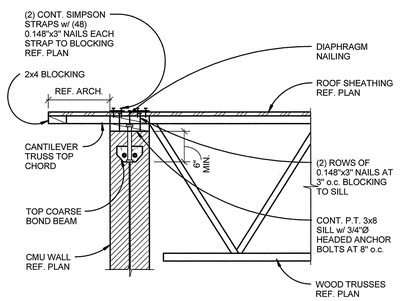
3

JAMB REINFORCEMENT SCHEDULE

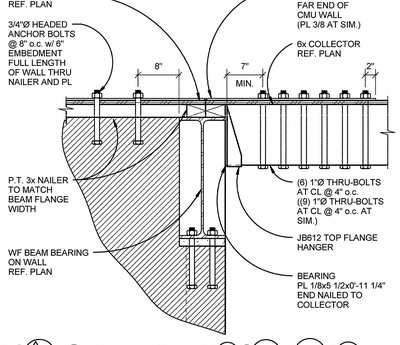
~~OPENING~~ WIDTH	8" CMU	12" CMU
W≤4'-0"	(1) #6	(1) #6
4'-0"<W≤8'-0"	(1) #6 FIRST (2) CELLS	#4 EACH FACE FIRST (2) CELLS
8'-0"<W<13'-0"	(1) #6 FIRST (3) CELLS	#4 EACH FACE FIRST (2) CELLS

12 TYPICAL CMU WALL OPENING REINFORCEMENT
1/4" = 1'-0"

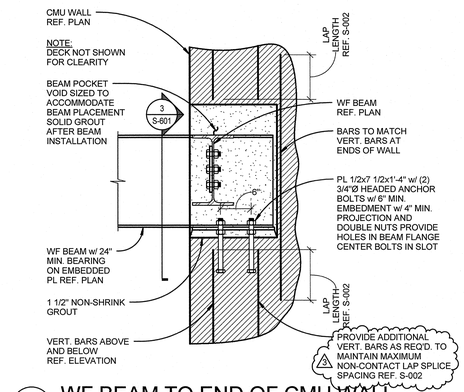
9 NOT USED



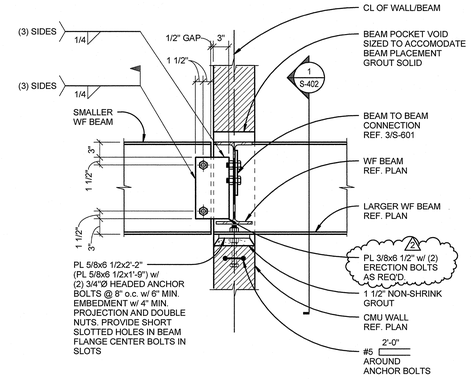
10 COLLECTOR ANCHORAGE TO TOP OF WALL
1" = 1'-0"



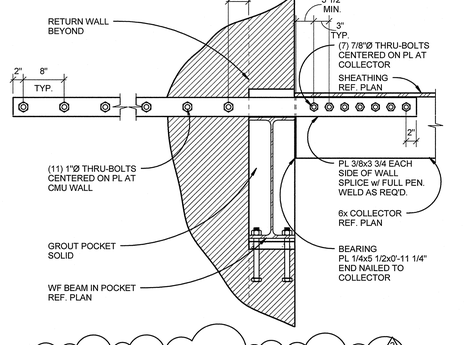
11 COLLECTOR ANCHORAGE DETAIL
1" = 1'-0"



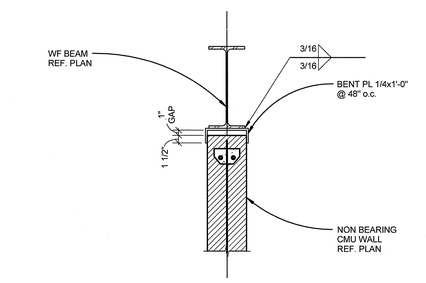
5 WF BEAM TO END OF CMU WALL
1" = 1'-0"



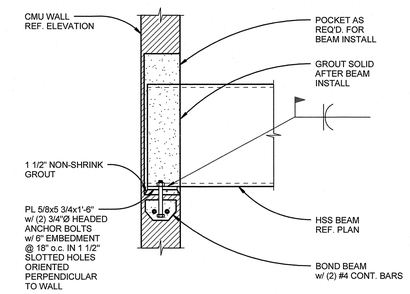
6 BEAM SUPPORT AT CMU WALL
1" = 1'-0"



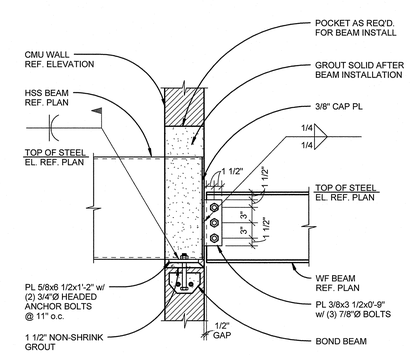
7 COLLECTOR ANCHORAGE DETAIL
1" = 1'-0"



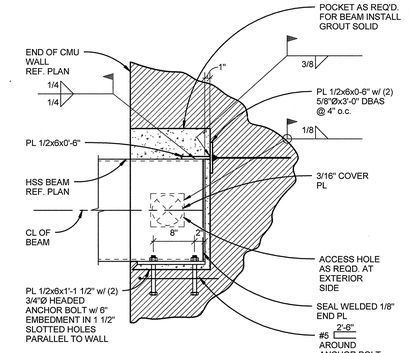
8 TOP OF CMU WALL DETAIL
1" = 1'-0"



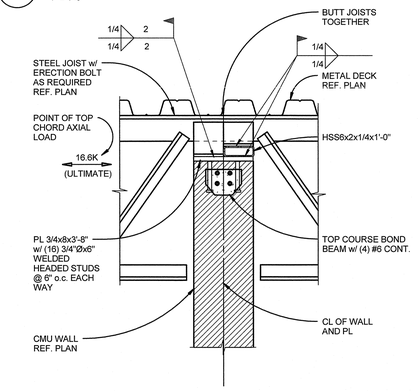
1 HSS TO CMU WALL DETAIL
1" = 1'-0"



2 HSS/W14 CONN. TO CMU WALL
1" = 1'-0"



3 HSS TO END OF WALL
1" = 1'-0"



4 JOIST TO CMU WALL EACH SIDE
1" = 1'-0"

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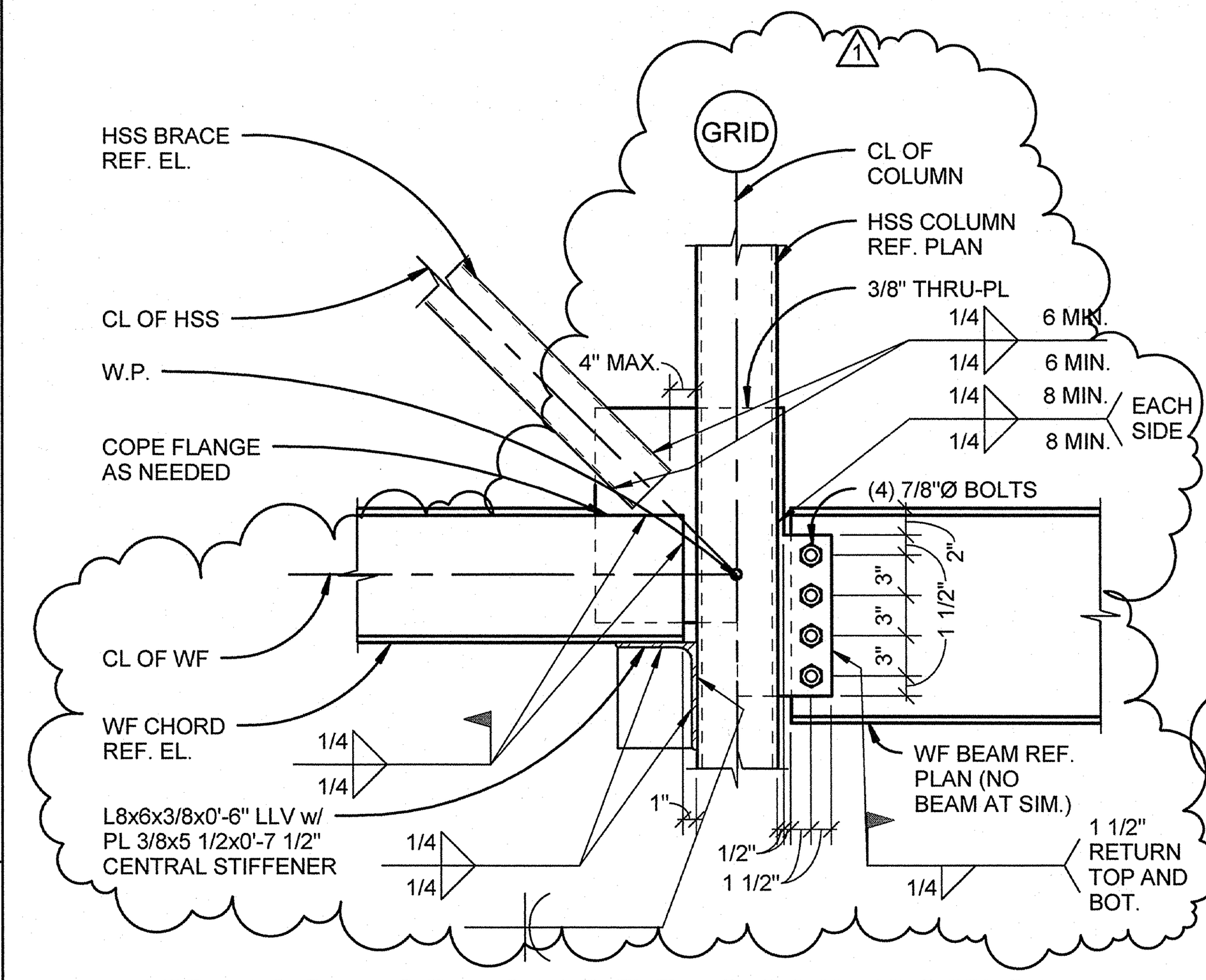
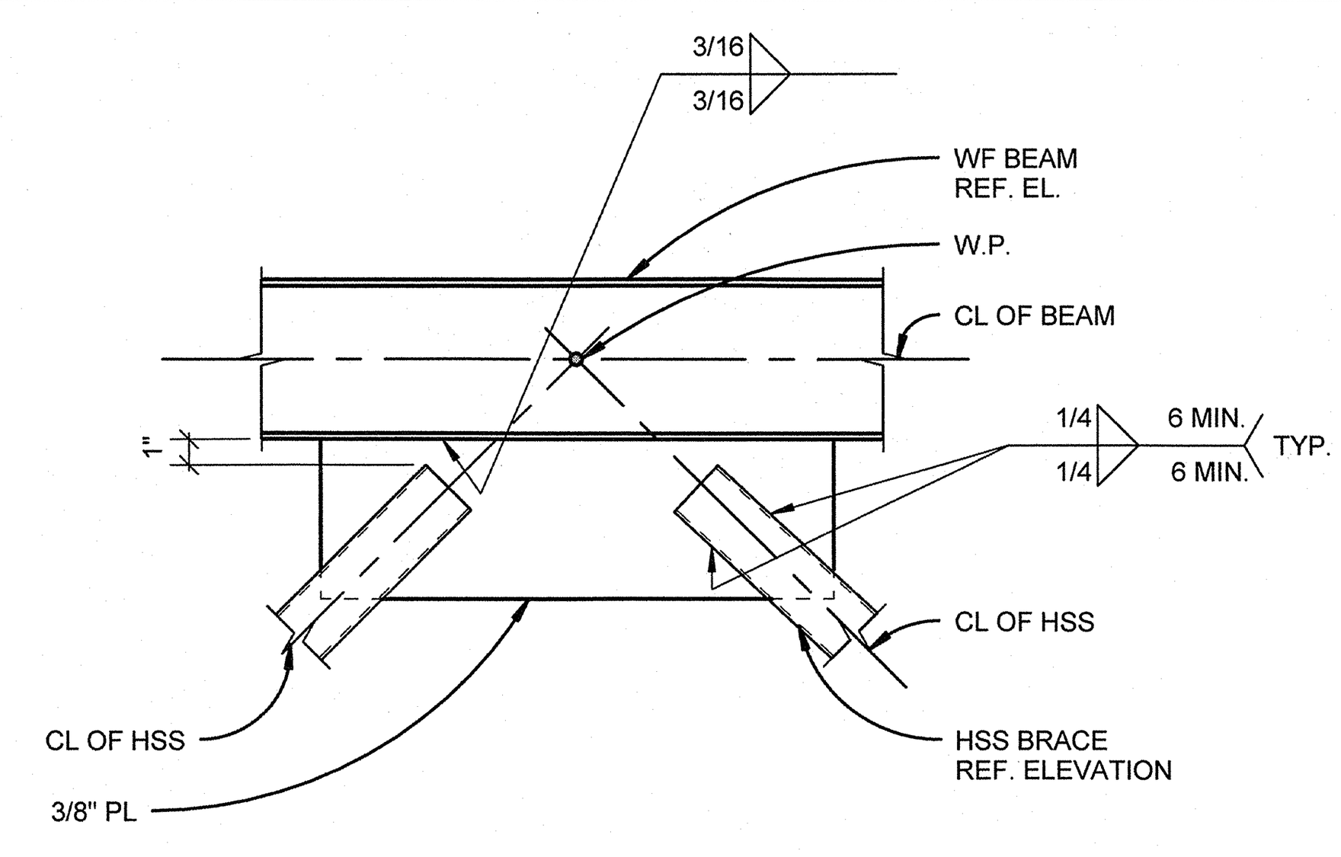
CMU DETAILS

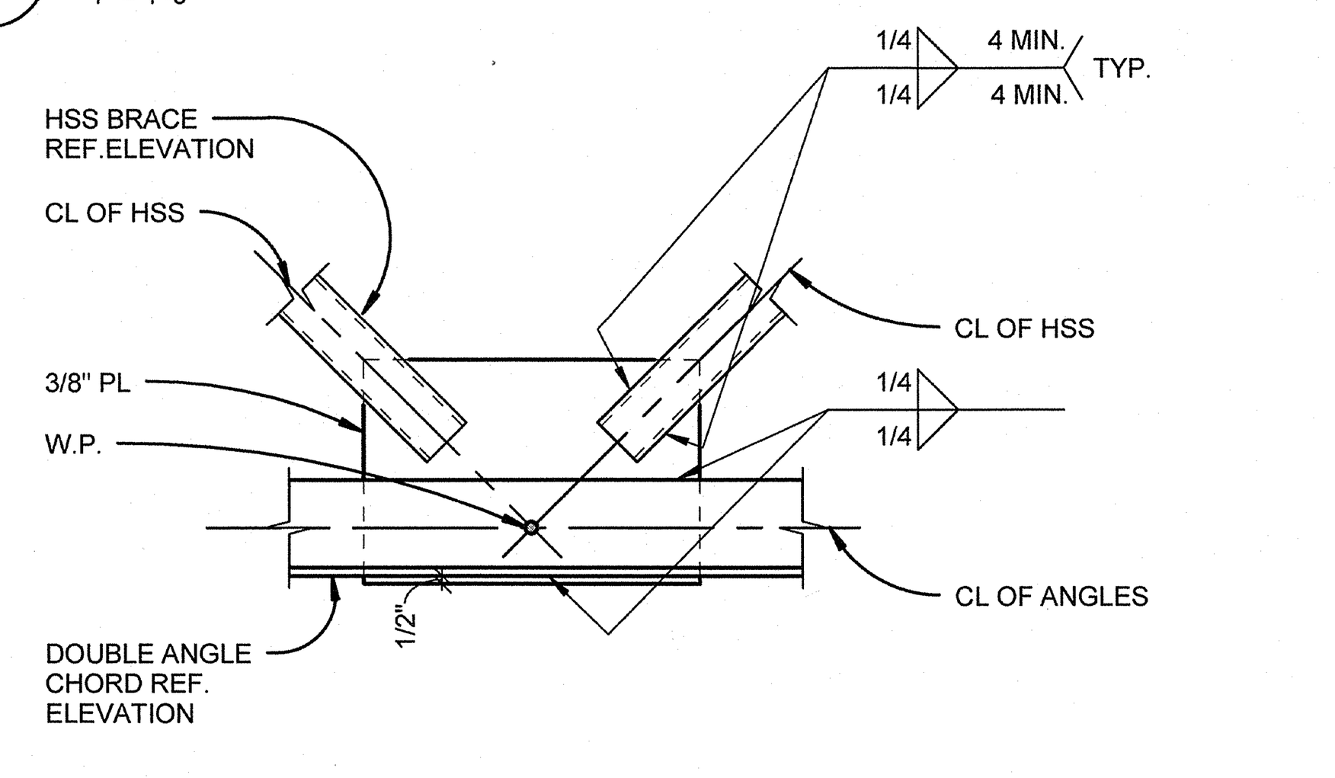
S-403 1



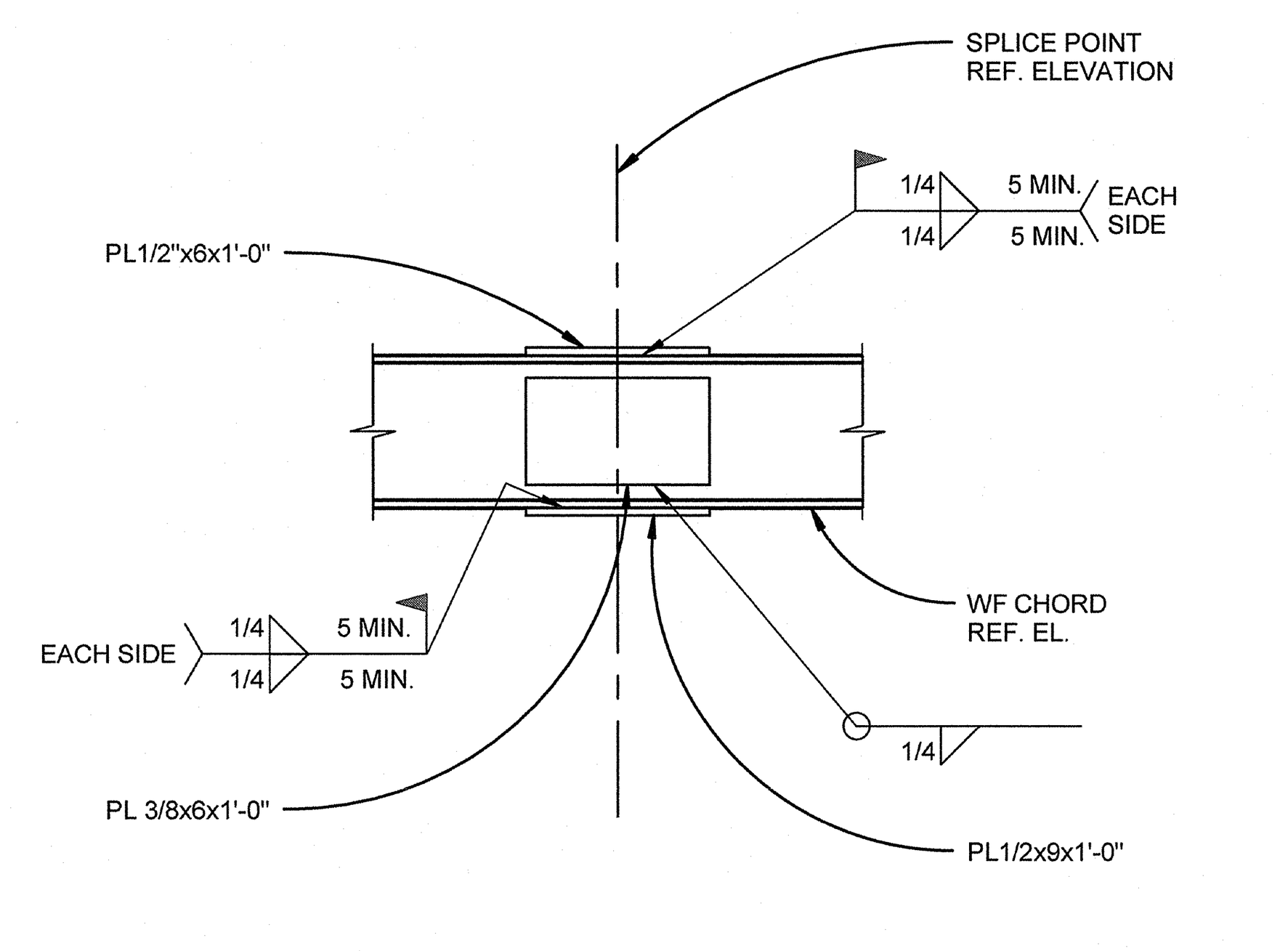
9 TRUSS BOT. CHORD CONNECTION
1" = 1'-0"



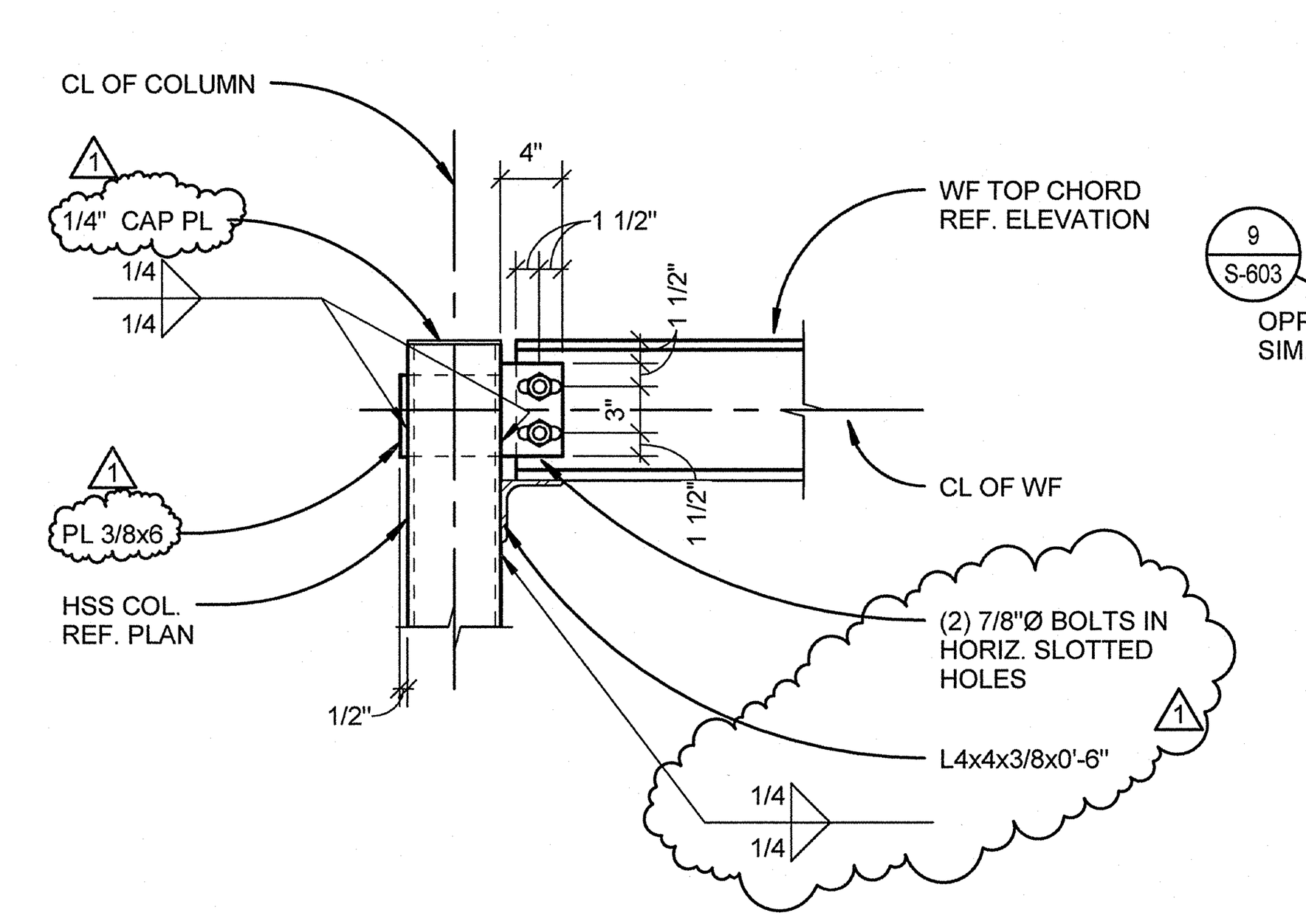
4 TYPICAL TRUSS TOP CONNECTION
1" = 1'-0"



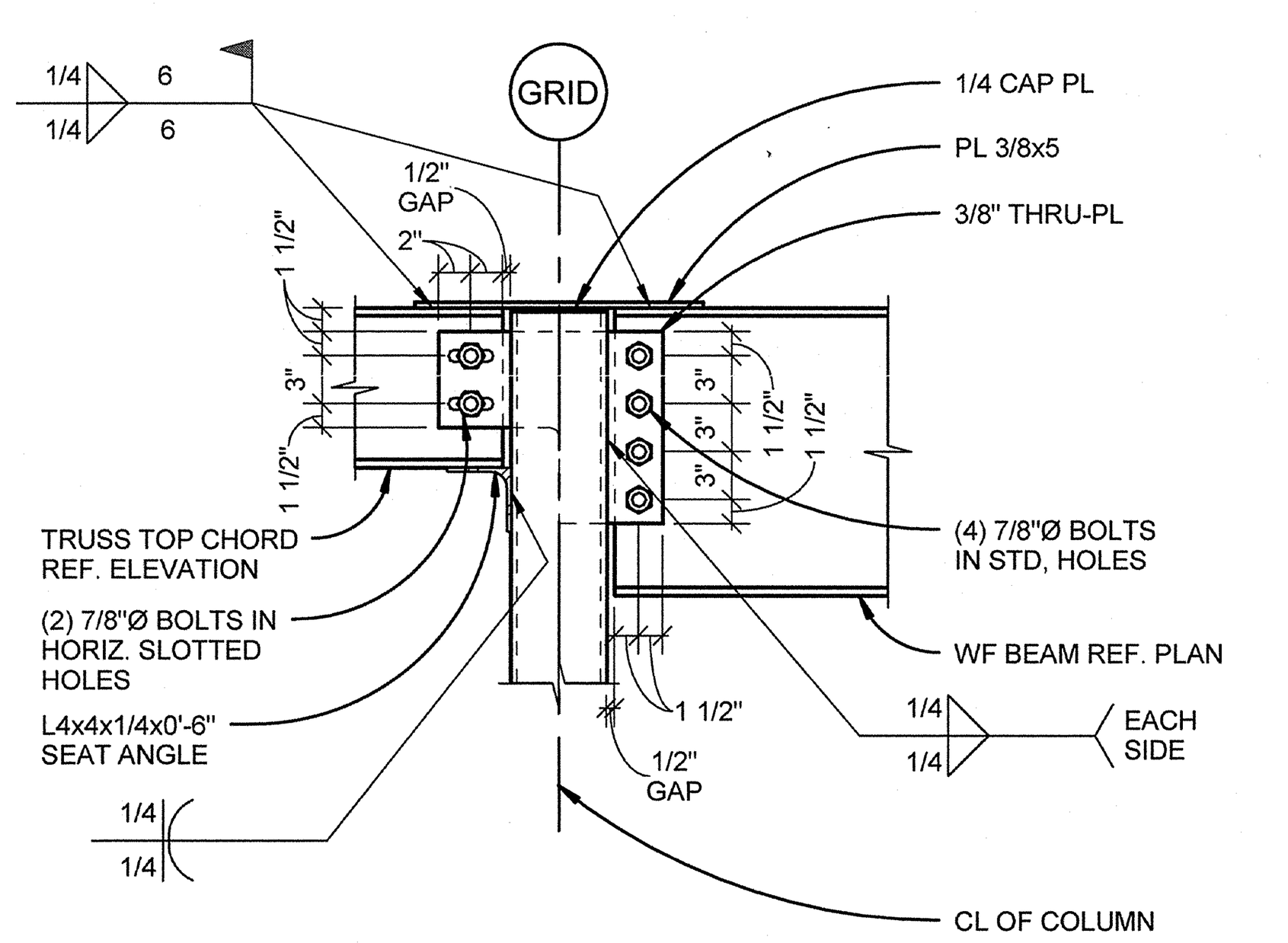
5 TYPICAL TRUSS BOT. CONNECTION
1" = 1'-0"



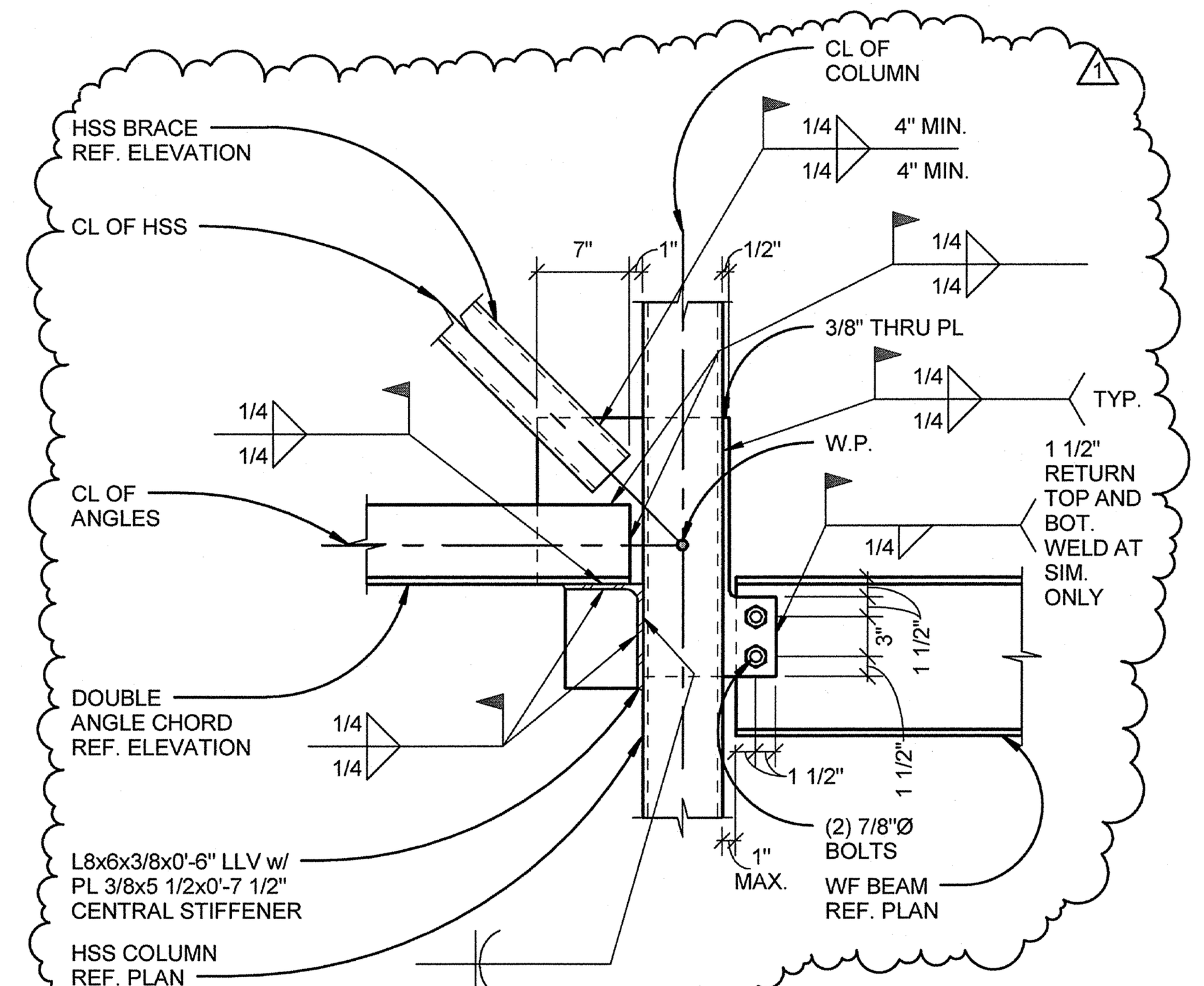
10 SPLICE IN TOP WF CHORD
1" = 1'-0"



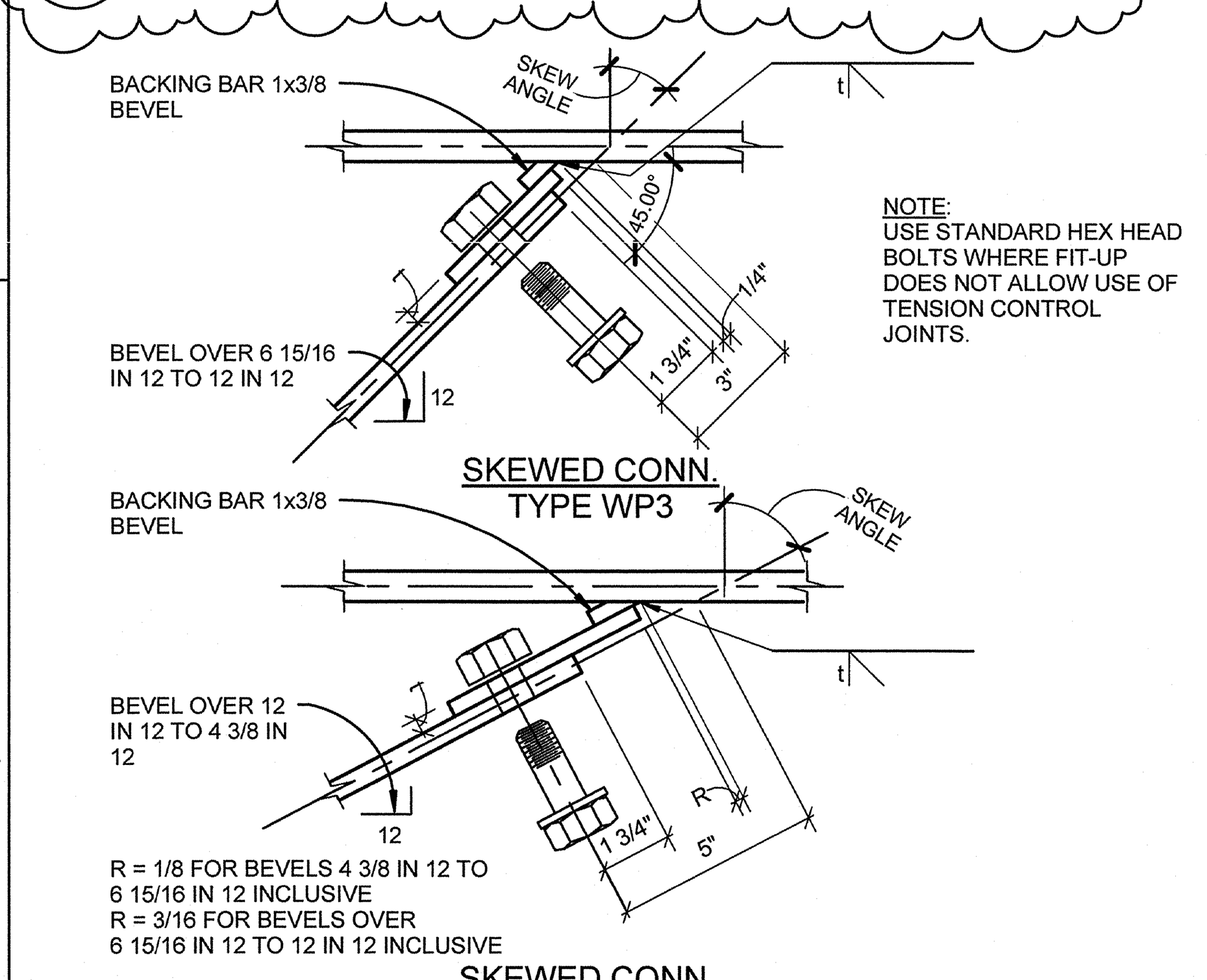
6 TYPICAL TOP CHORD CONNECTION
1" = 1'-0"



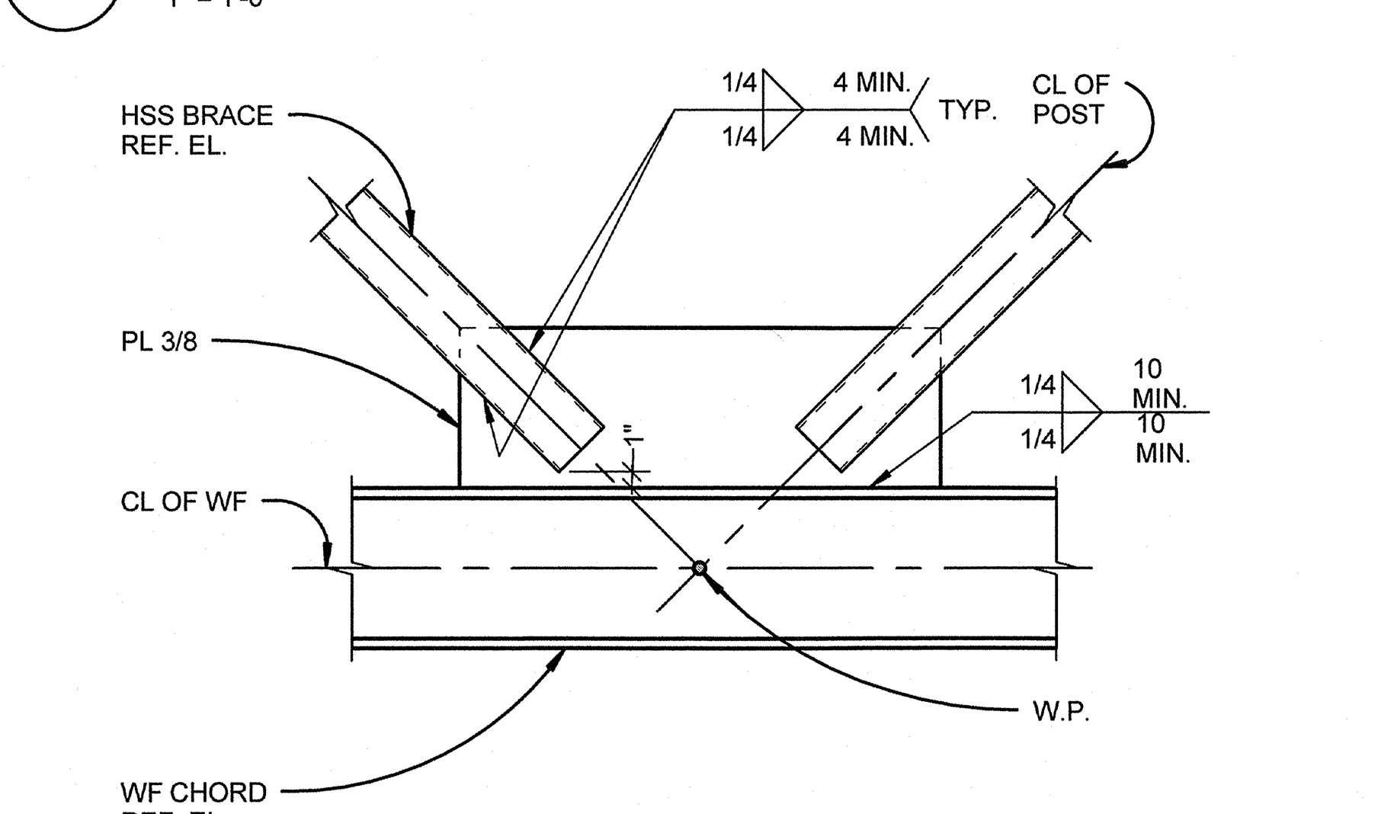
11 TRUSS TOP CHORD COLLECTOR CONNECTION
1" = 1'-0"



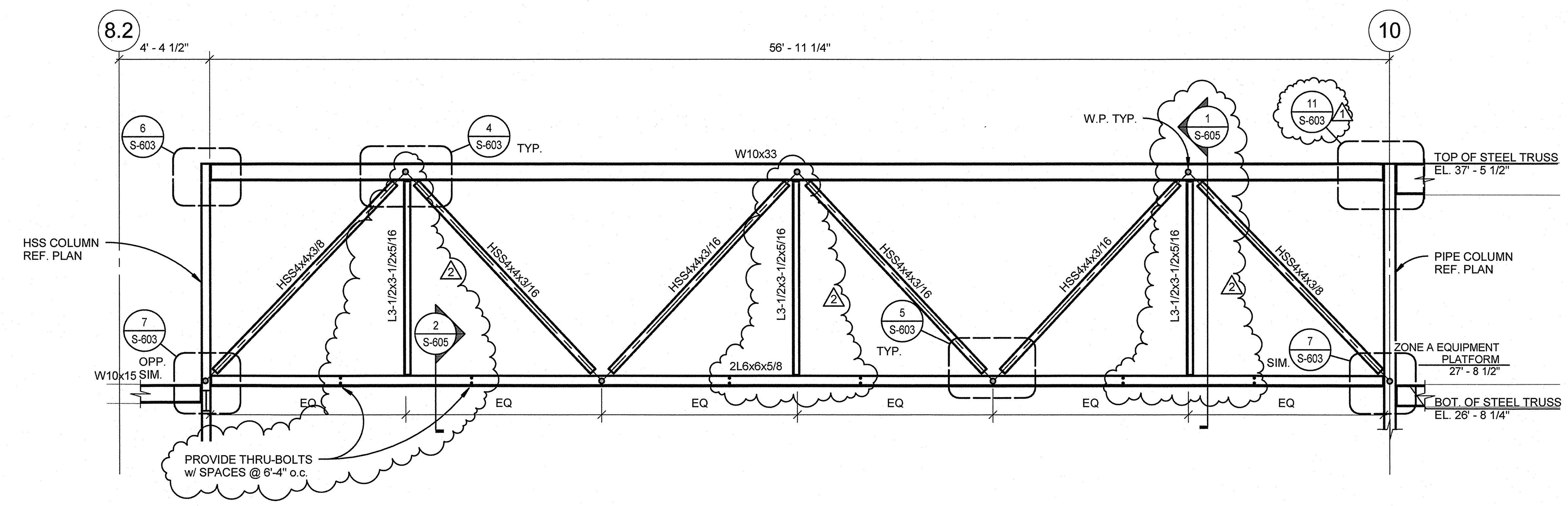
7 TRUSS BOTTOM CHORD CONNECTION
1" = 1'-0"



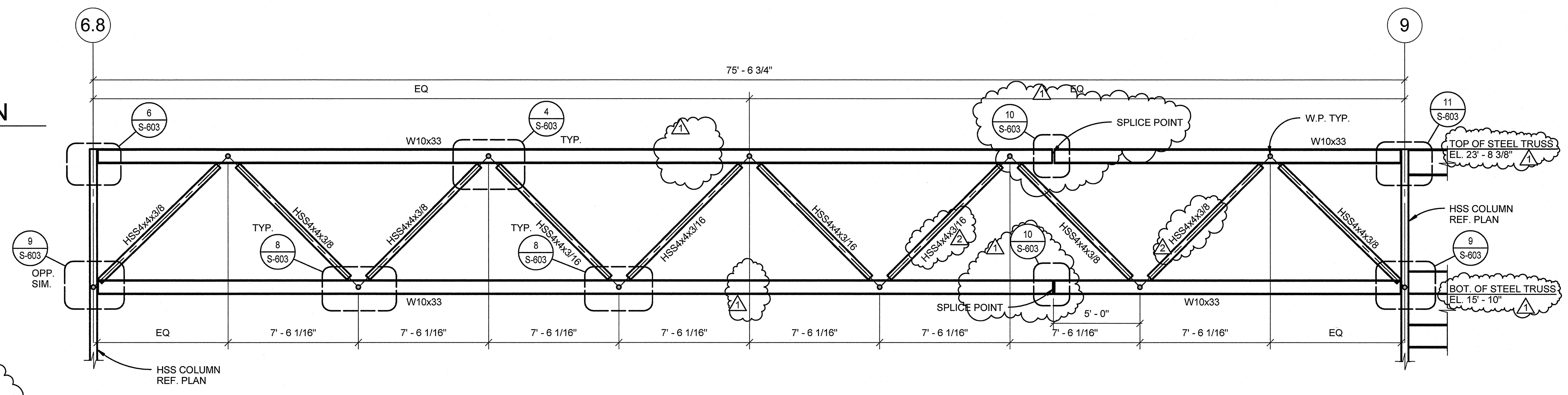
12 TYPICAL SKEWED SHEAR PLATE WELDS
3" = 1'-0"



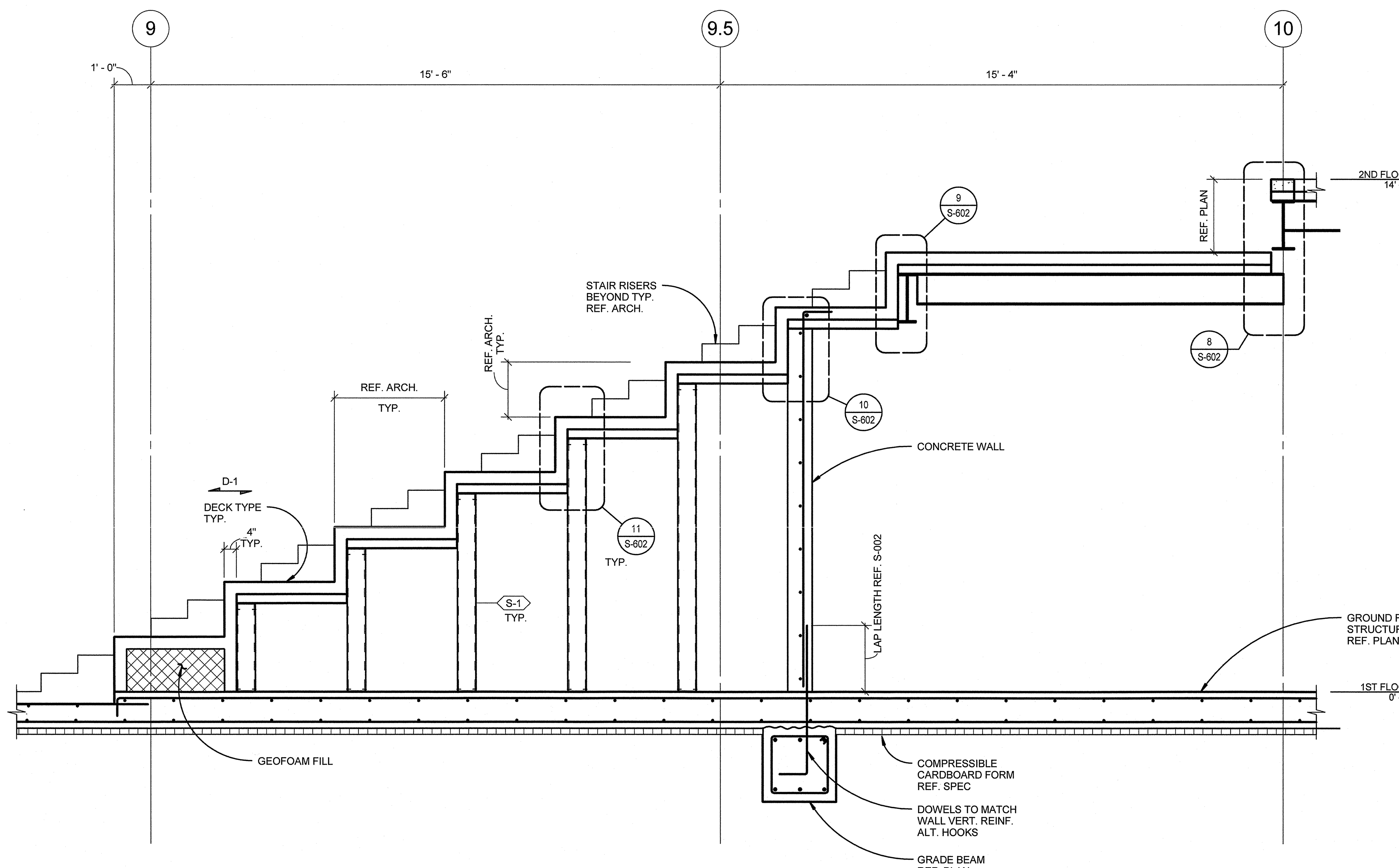
8 TYPICAL HSS BRACE-LOWER CHORD CONNECTION
1" = 1'-0"



1 STEEL TRUSS ELEVATION - GRID E
1/4" = 1'-0"



2 STEEL TRUSS ELEVATION - GRID P
1/4" = 1'-0"



3 SECTION THROUGH FORUM STADIUM SEATING
1/2" = 1'-0"

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EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
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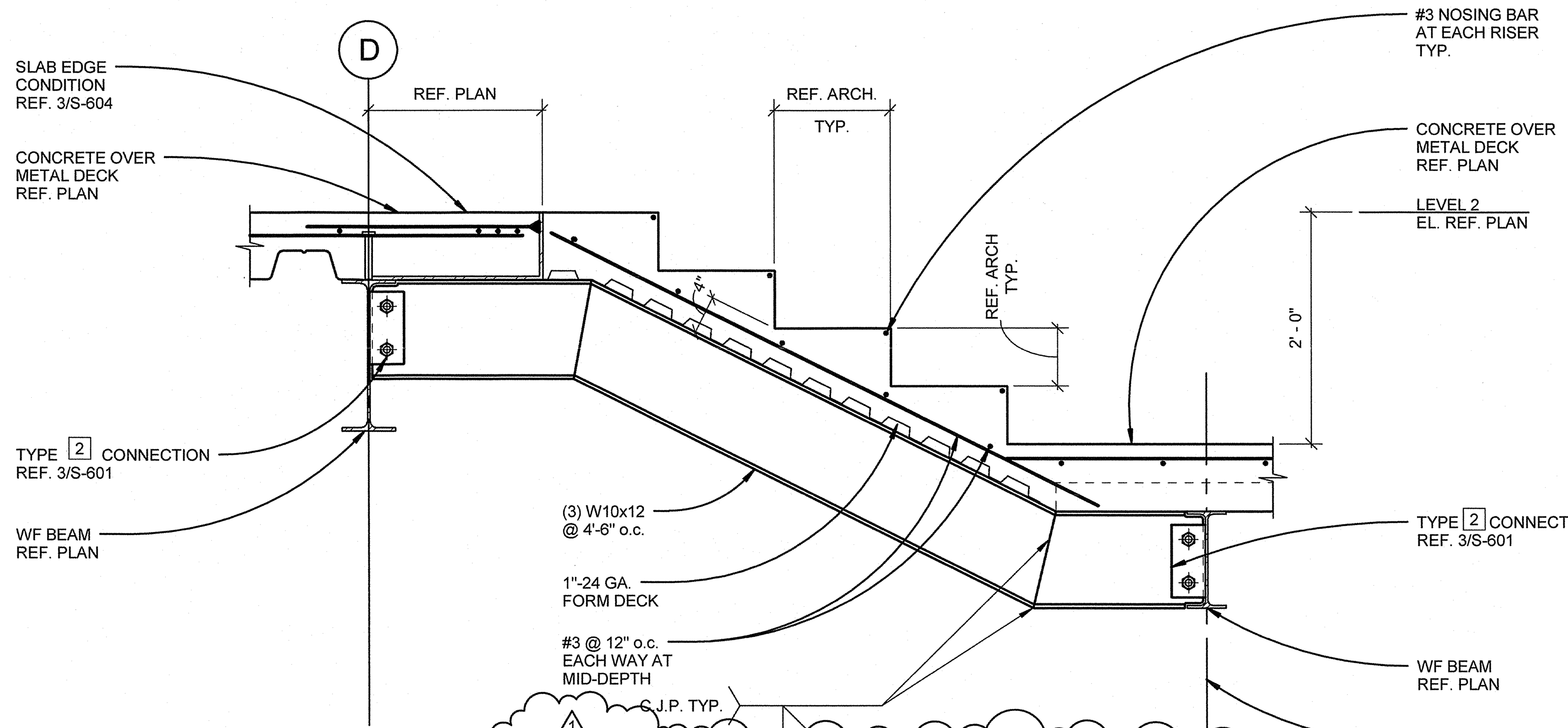
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
2	3-13-2015	ADDENDUM 6
1	2-18-2015	SUPPLEMENTAL INFO 1

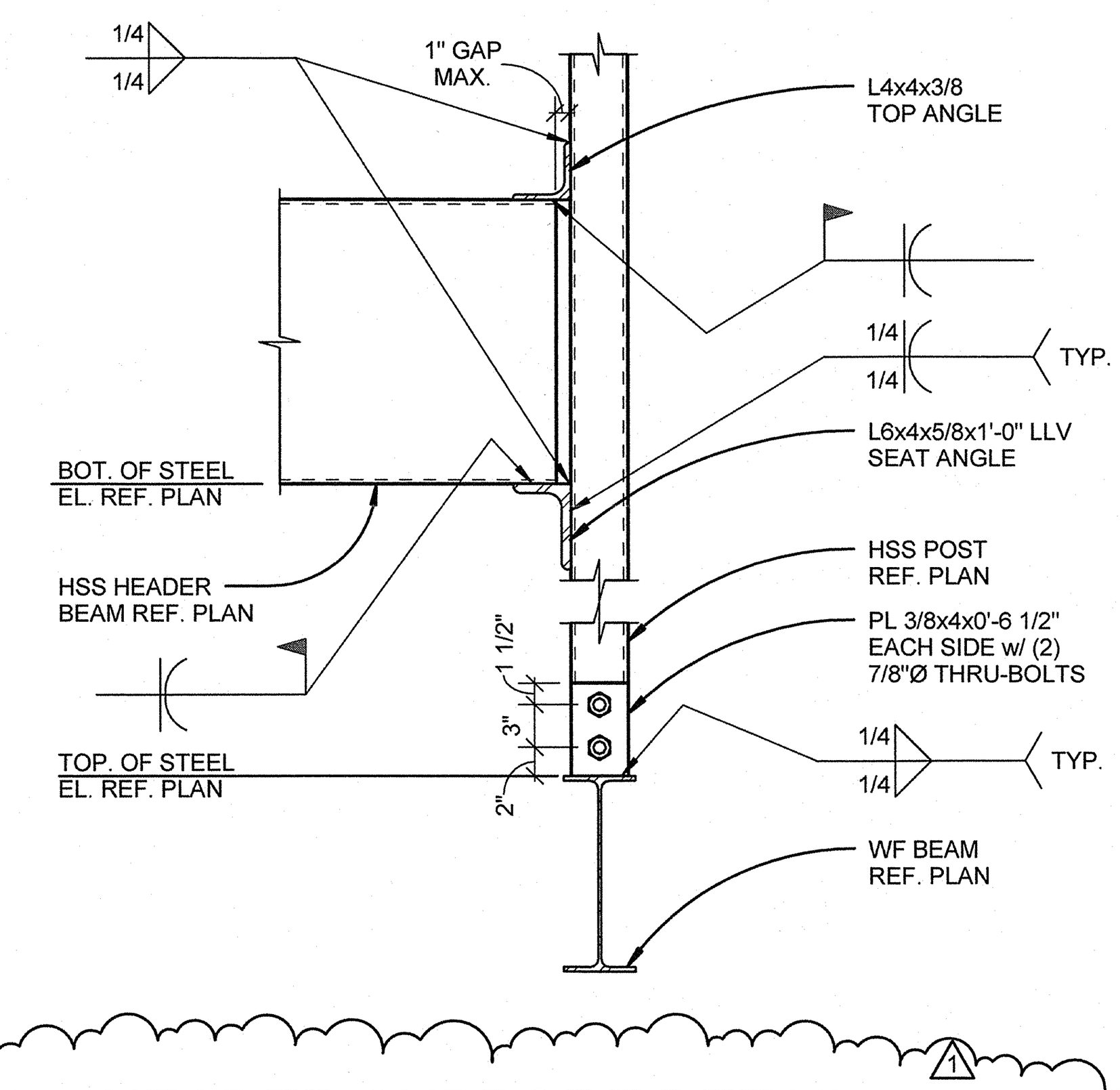
ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1
PROJECT NO: 213417
DRAWN BY: MF
CHECKED BY: MT

STEEL DETAILS

S-603



13 FORUM STAIR DETAIL
1" = 1'-0" S-122A



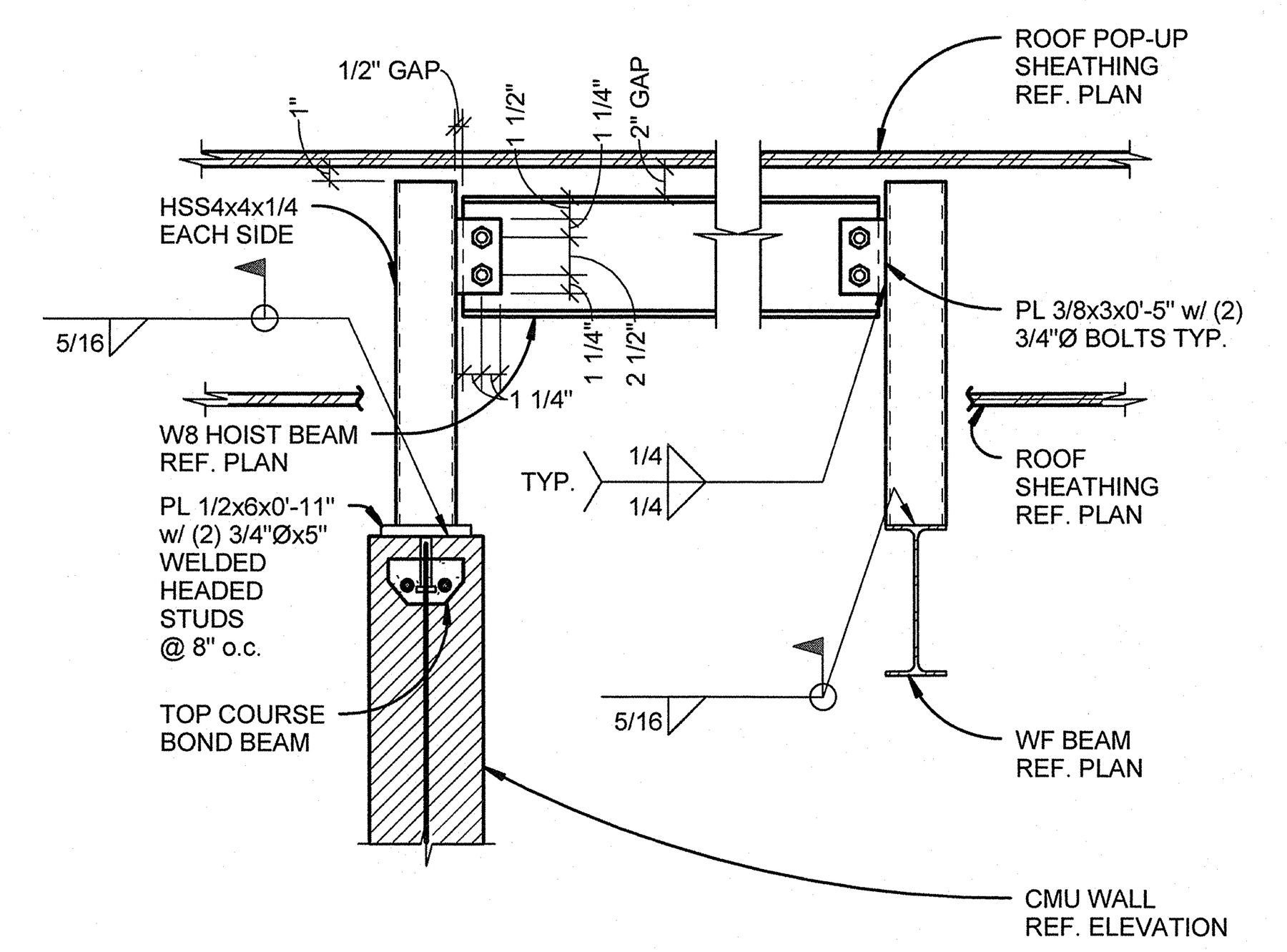
9 HEADER SUPPORT DETAIL
1" = 1'-0" S-122A

GYM EQUIPMENT LOADING ON STEEL JOISTS

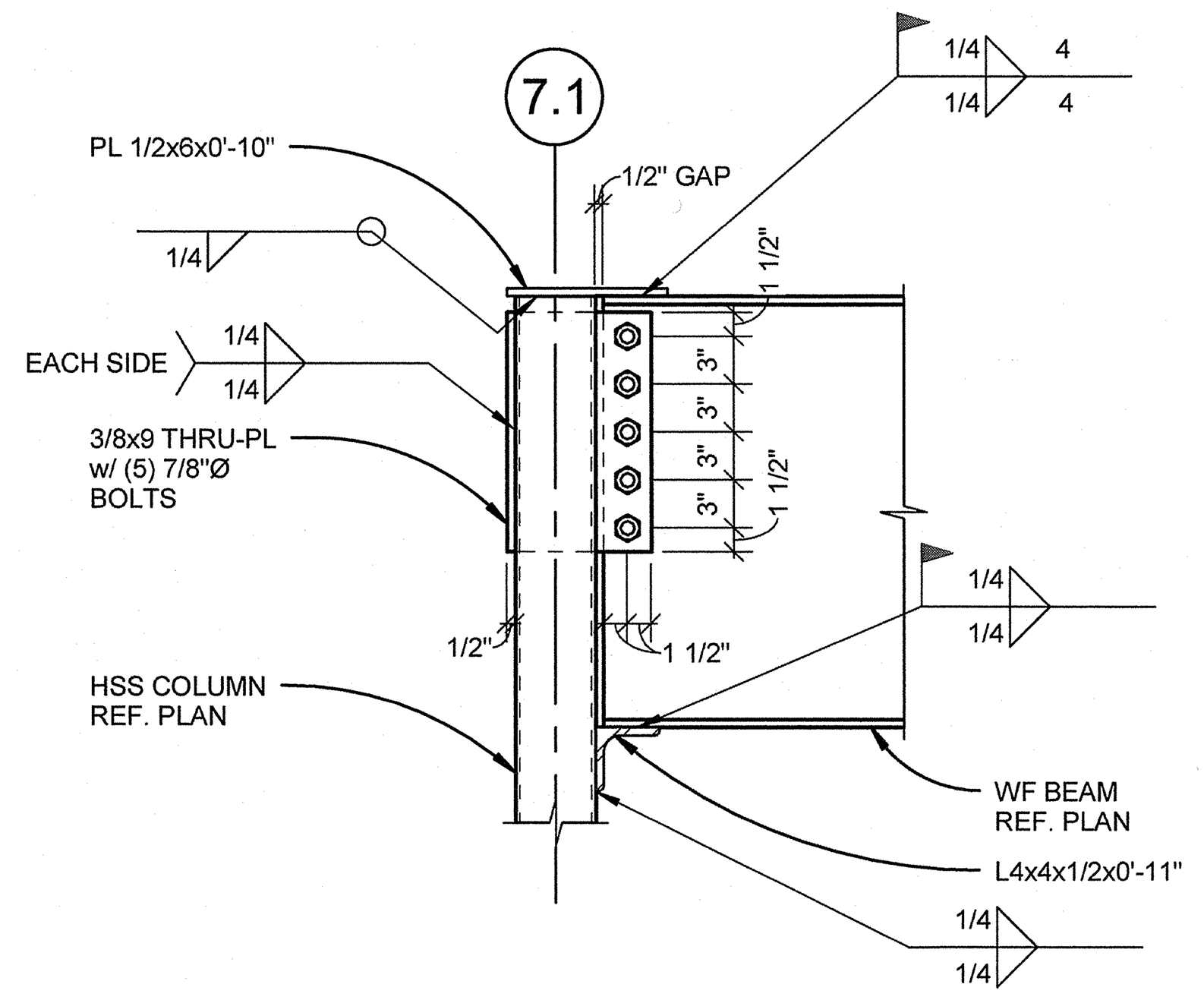
EQUIPMENT SUPPORTED	Fx	Fy	AXIAL
FRONT FOLD HOOP	717#	844#	209#
SIDE FOLD HOOP	771#	801# AND -134#	176#
VOLLEY BALL NET	N/A	1940#	N/A

NOTE:
REF. 4/S-604 FOR LOADING DETAIL.

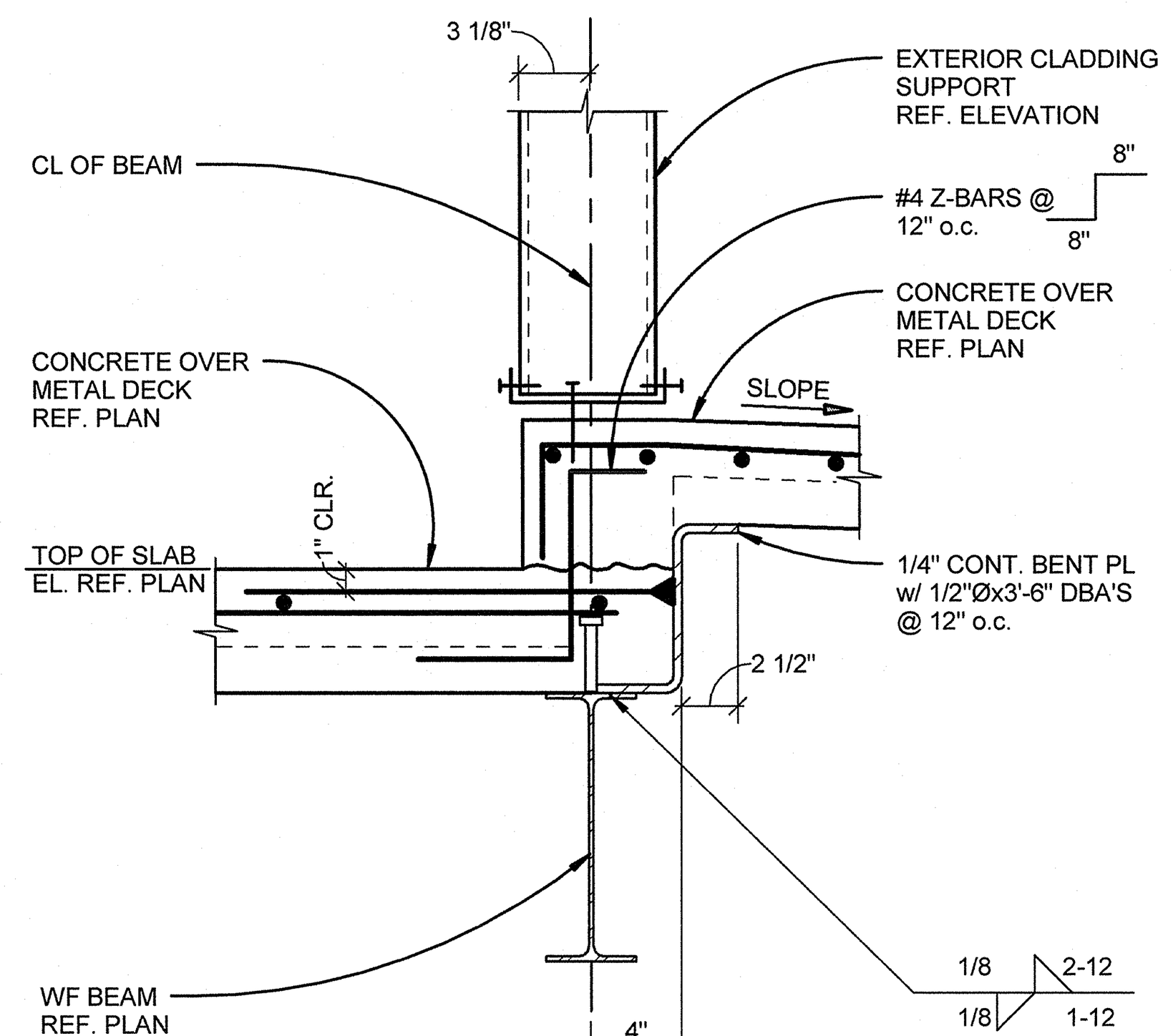
5 GYM EQUIPMENT LOADING SCHEDULE
1" = 1'-0"



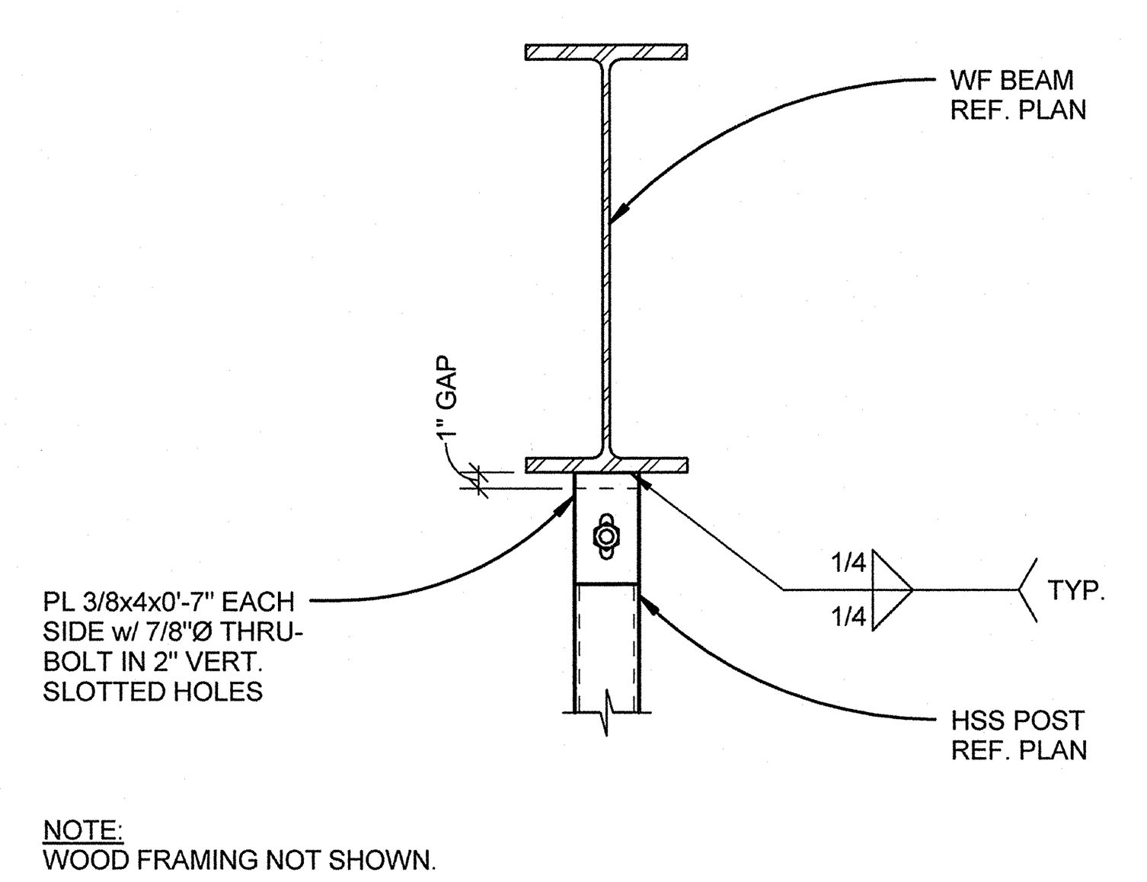
1 ELEVATOR HOIST BEAM DETAIL
1" = 1'-0"



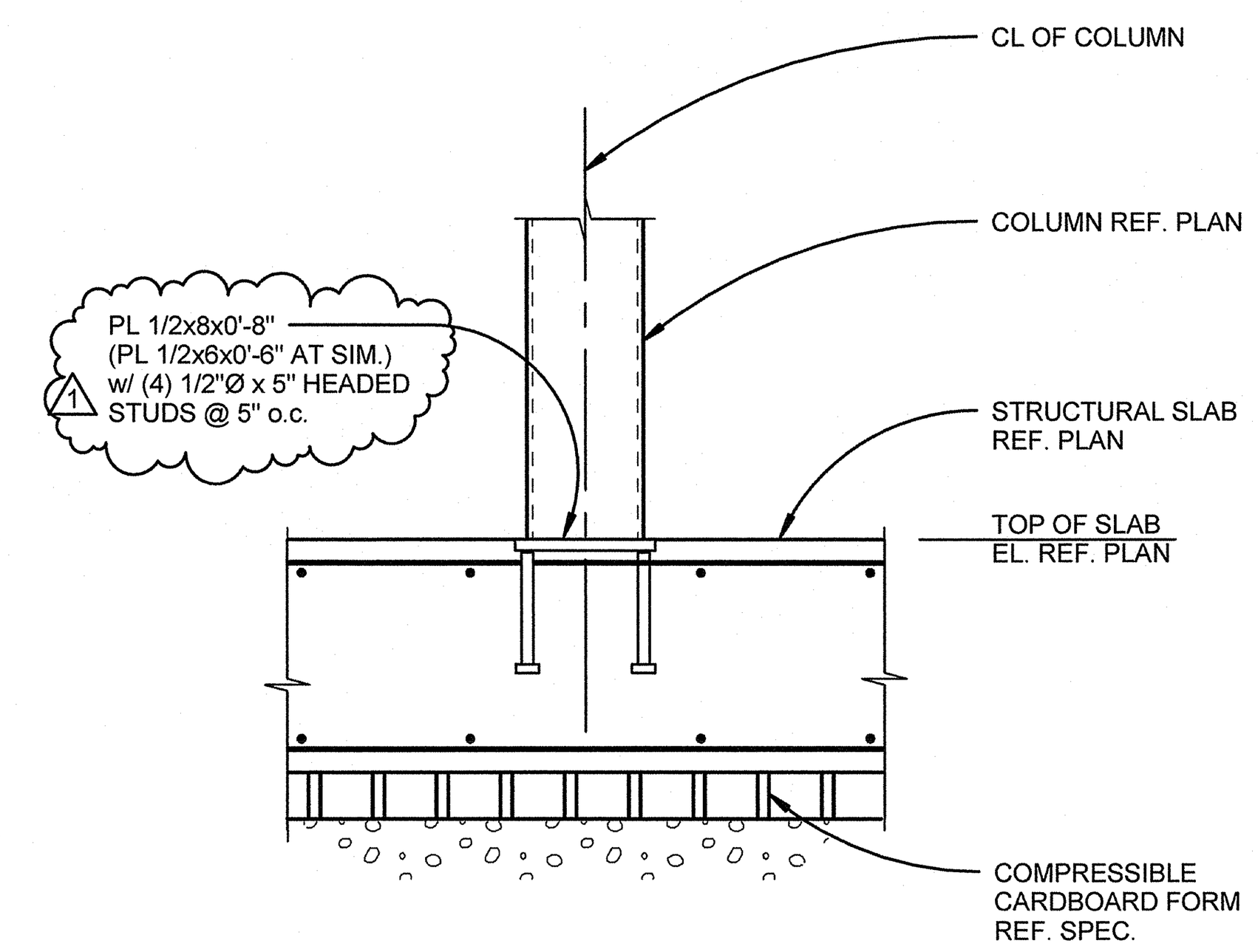
17 BEAM TO COLUMN CONNECTION
1" = 1'-0" S-122A



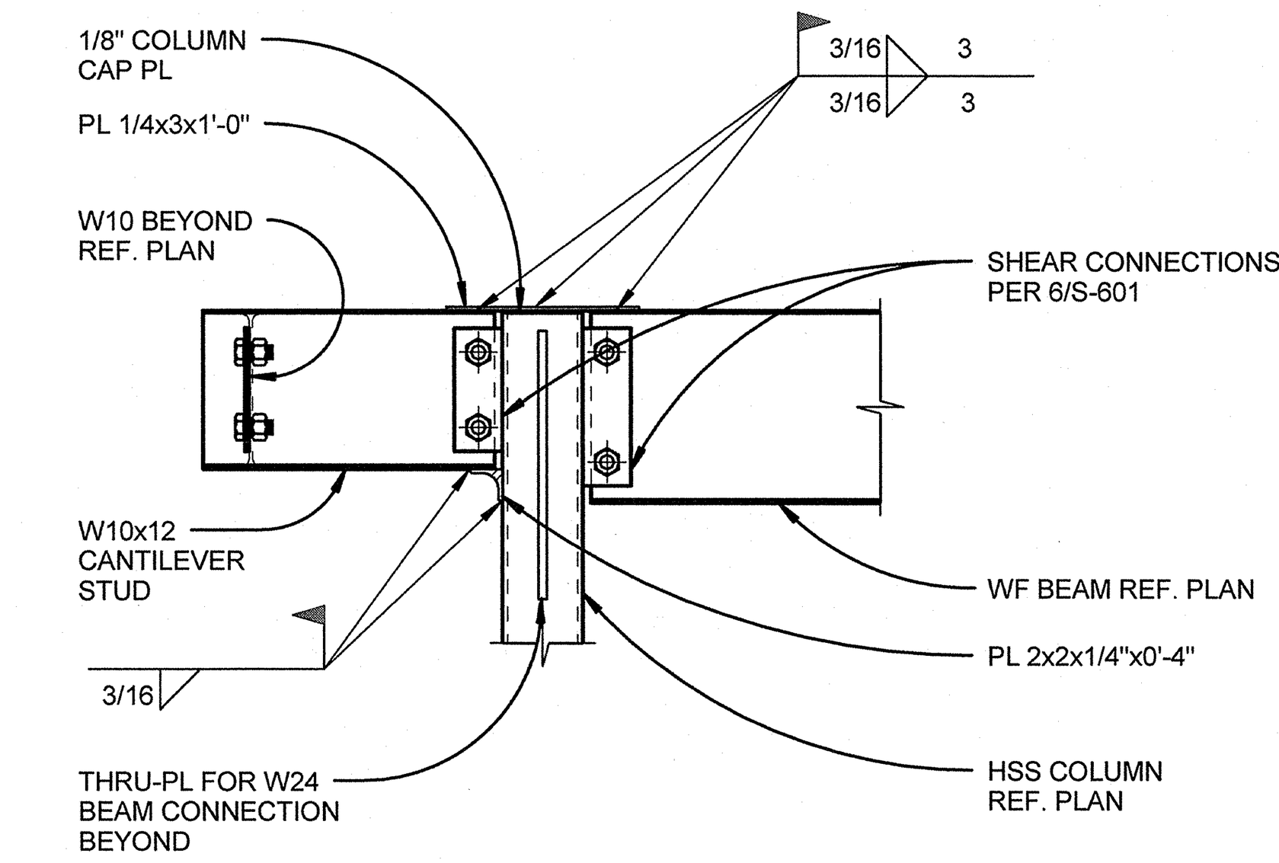
14 SLAB STEP DETAIL
1 1/2" = 1'-0" S-122A



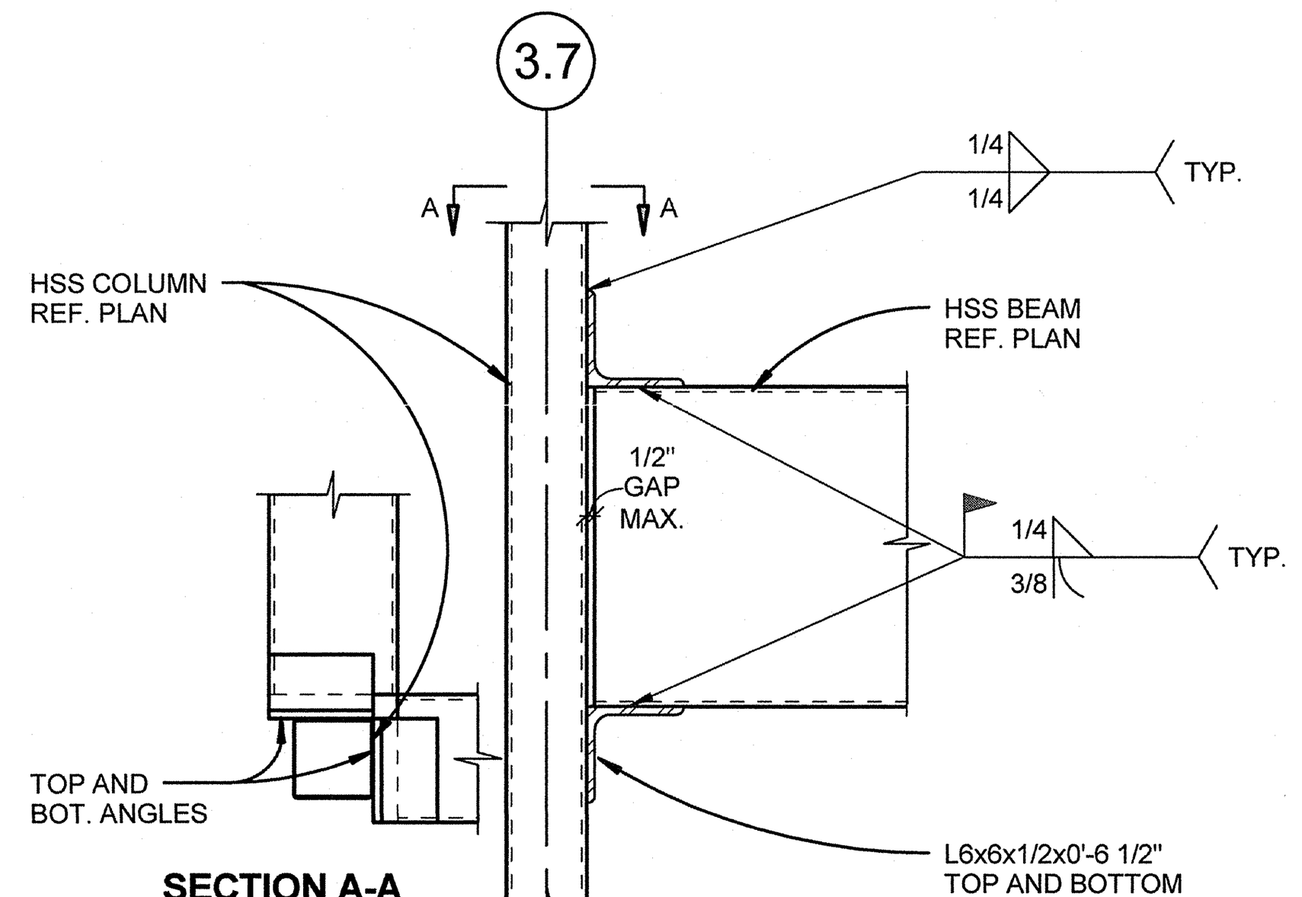
10 POST DEFLECTION HEAD DETAILS
1" = 1'-0" S-123A



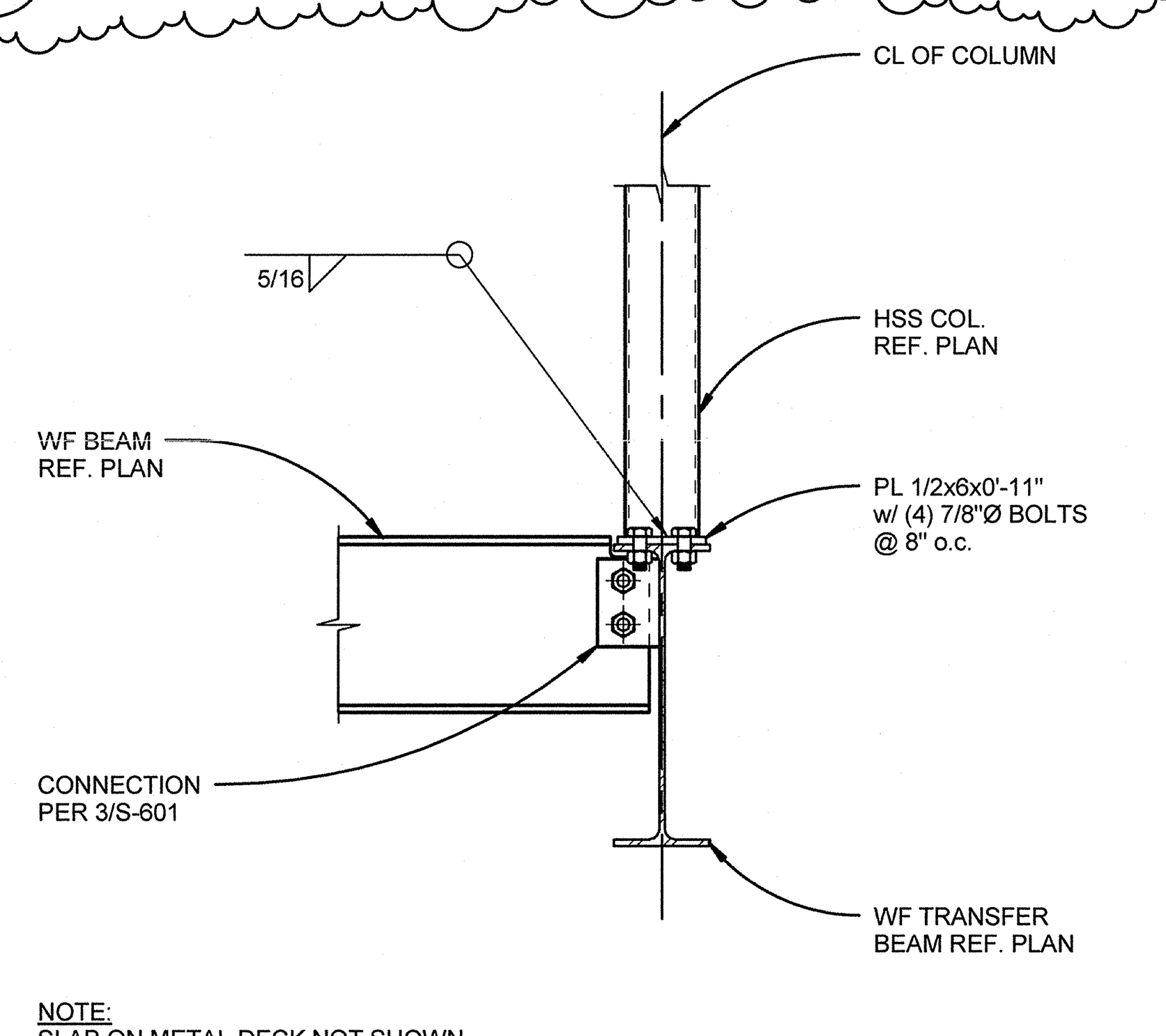
6 COLUMN BASE ON STRUCTURAL SLAB
1 1/2" = 1'-0"



2 CANTILEVER STUB DETAIL
1" = 1'-0"

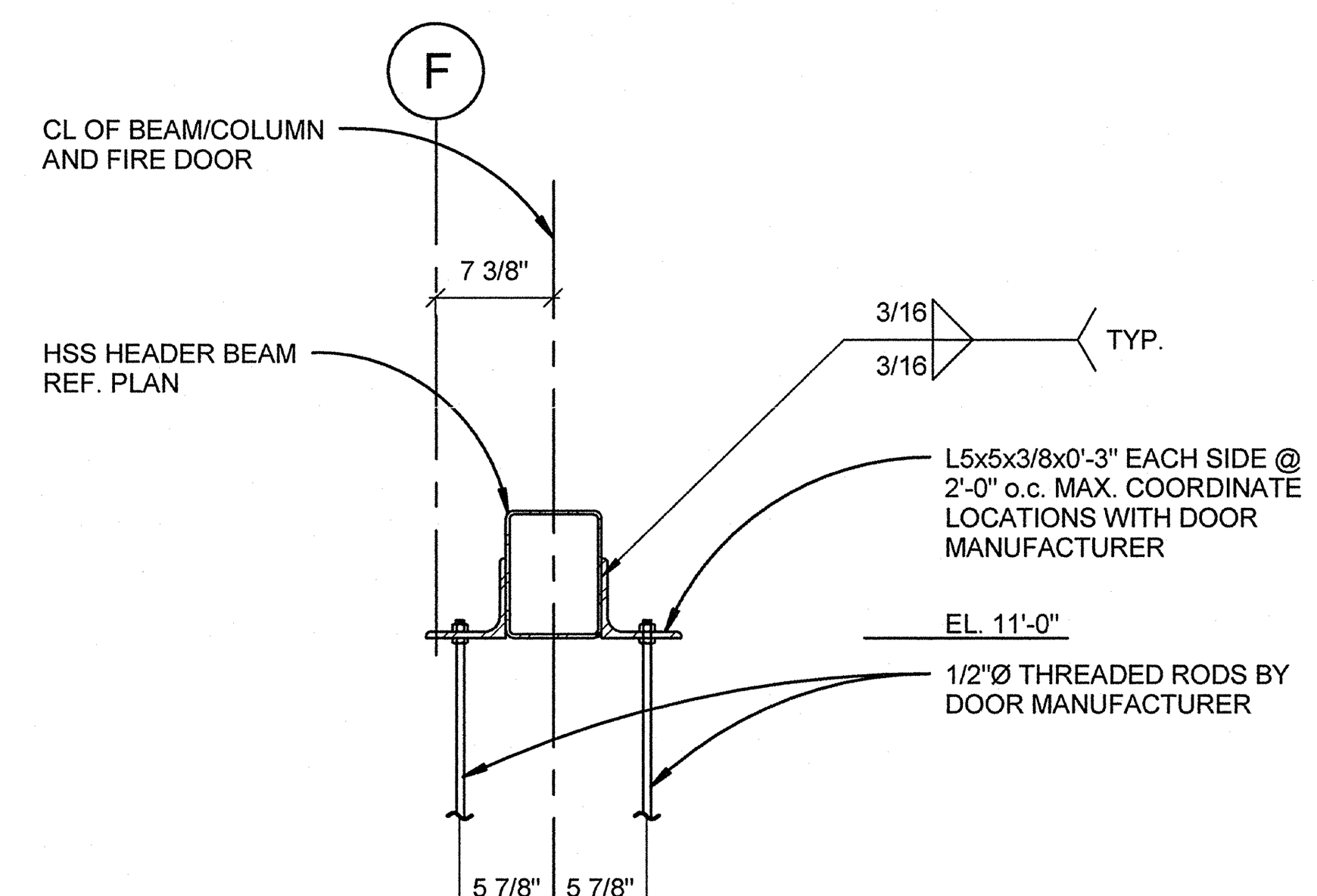


18 BEAMS TO HSS CONNECTOR
1" = 1'-0" S-122A

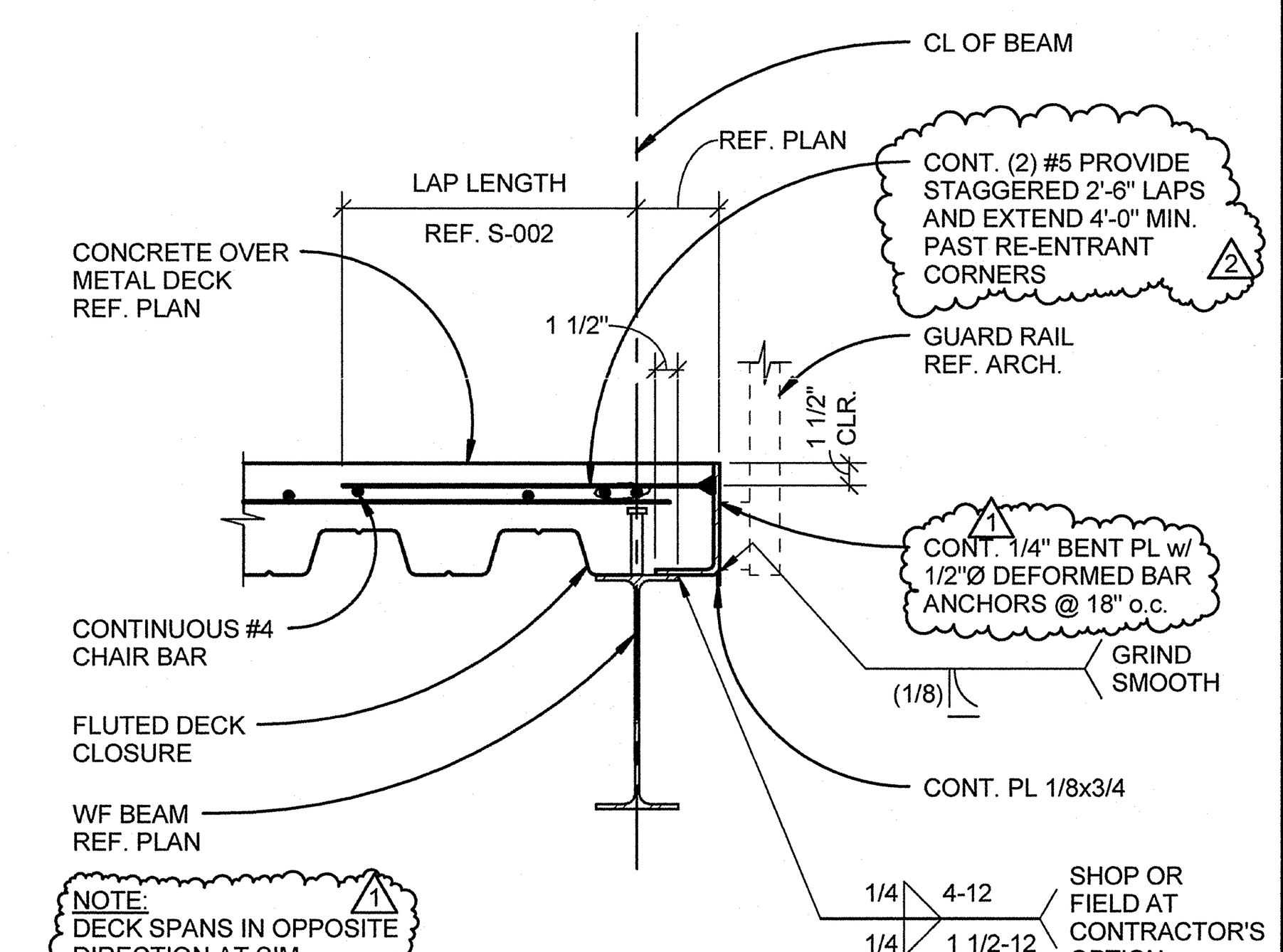


15 DETAIL AT COLUMN TRANSFER
1" = 1'-0" S-122A

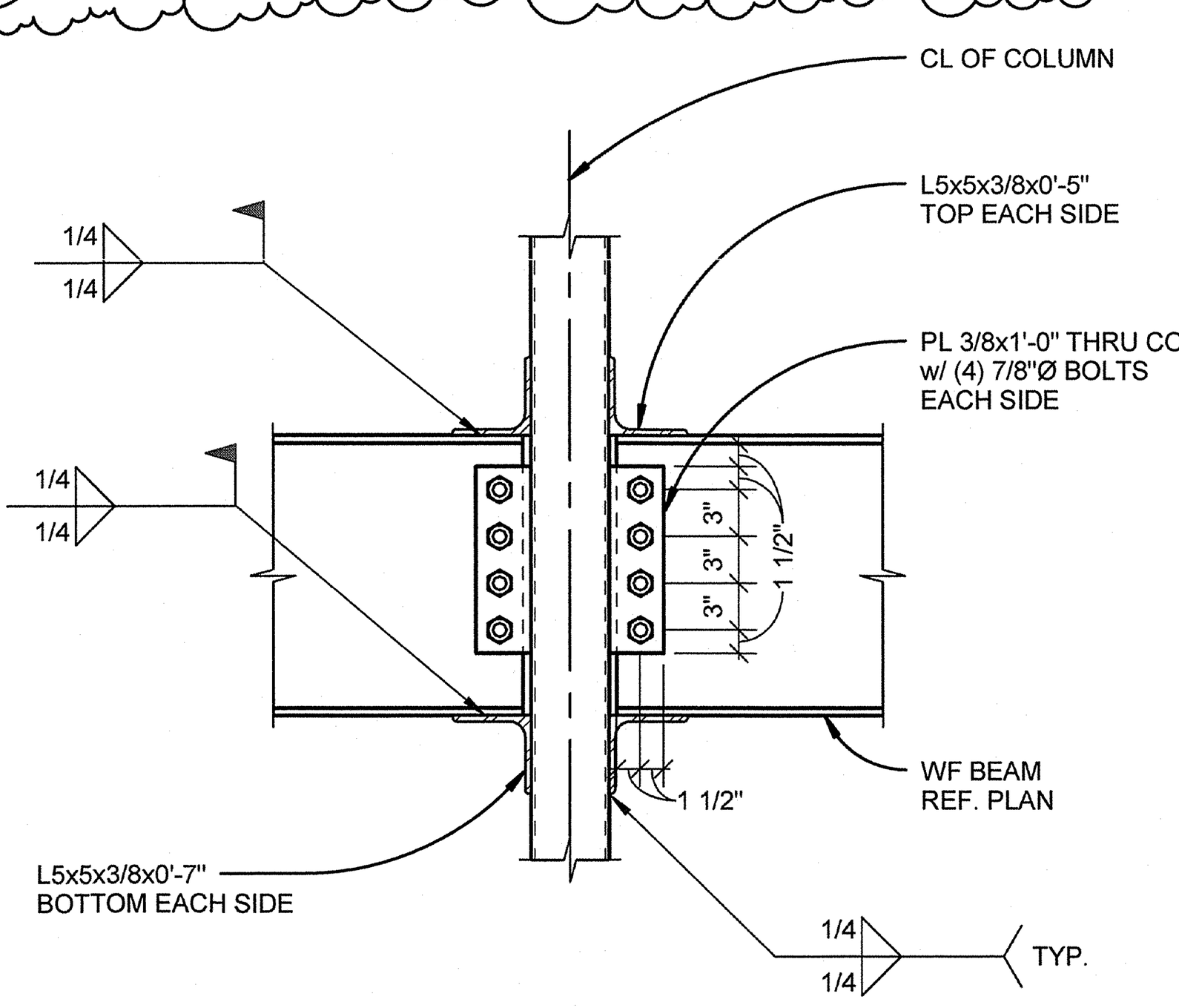
11 NOT USED



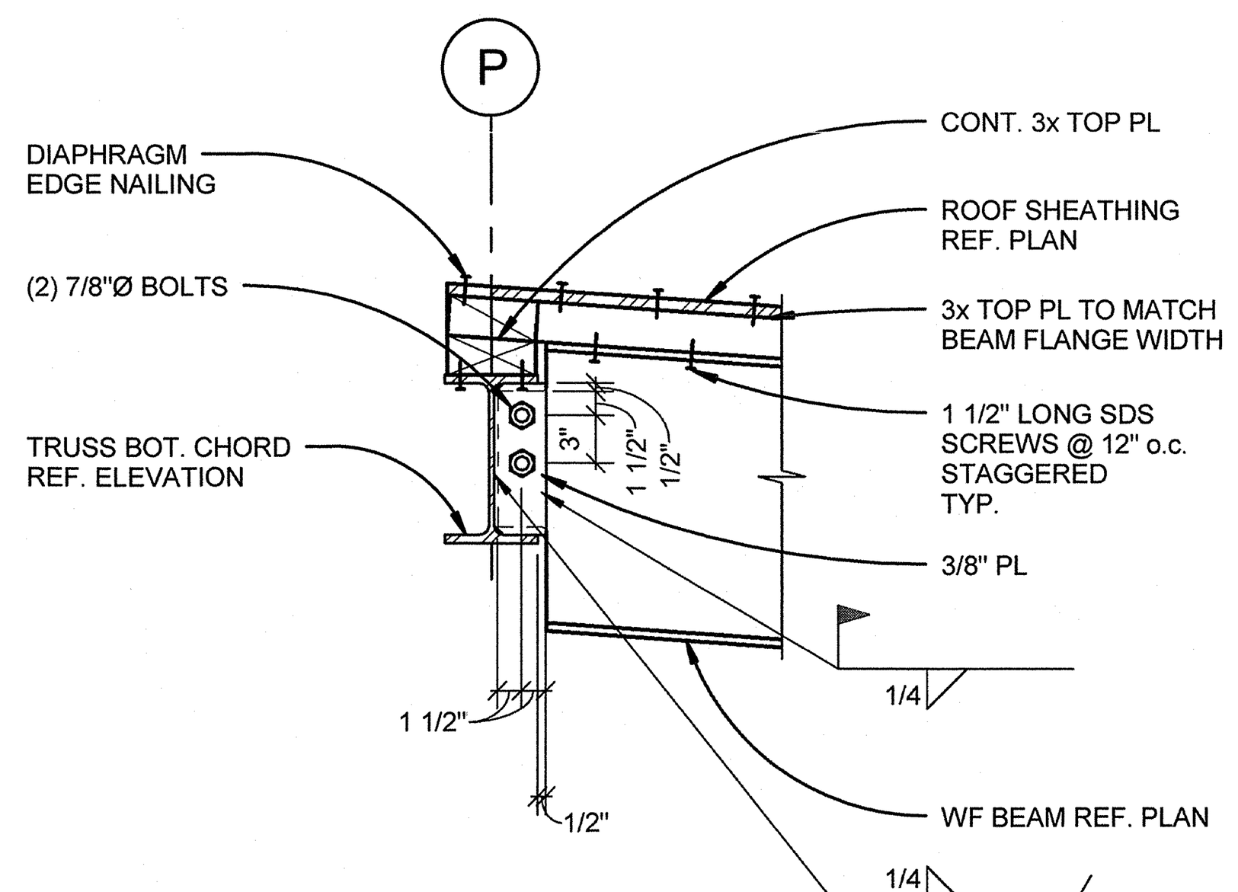
7 FIRE DOOR HEADER DETAIL
1" = 1'-0"



3 TYPICAL EDGE OF DECK DETAIL AT GUARD RAIL
1" = 1'-0"

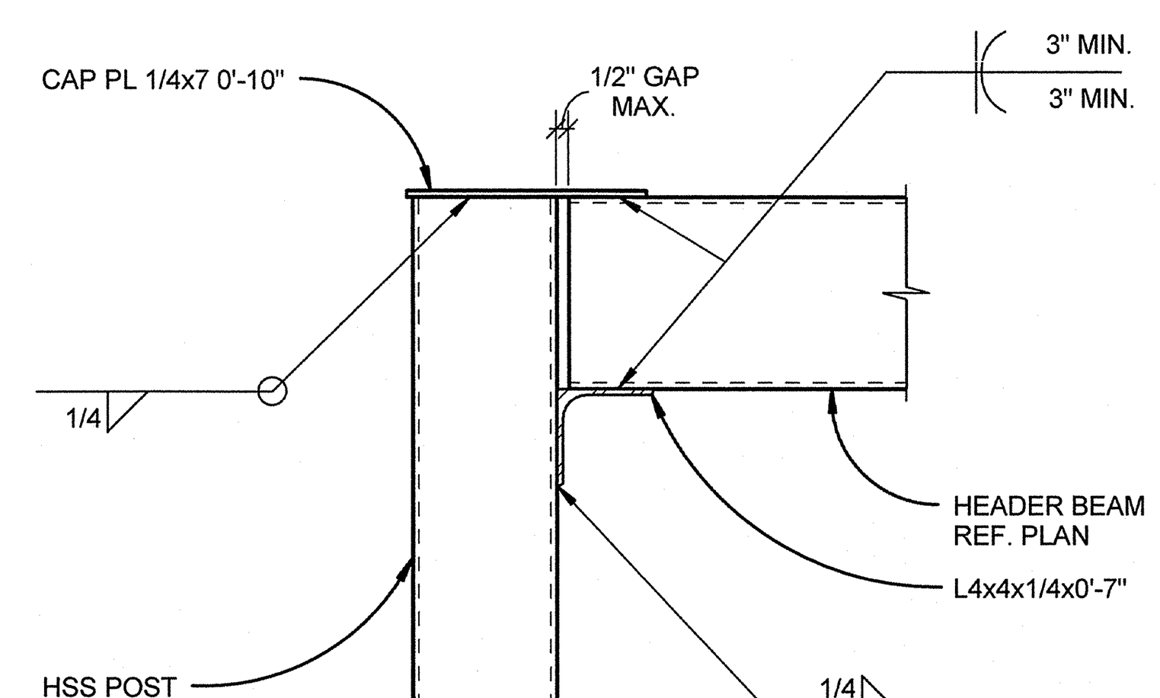


19 FIXED THRU BEAM CONNECTION
1" = 1'-0" S-123A

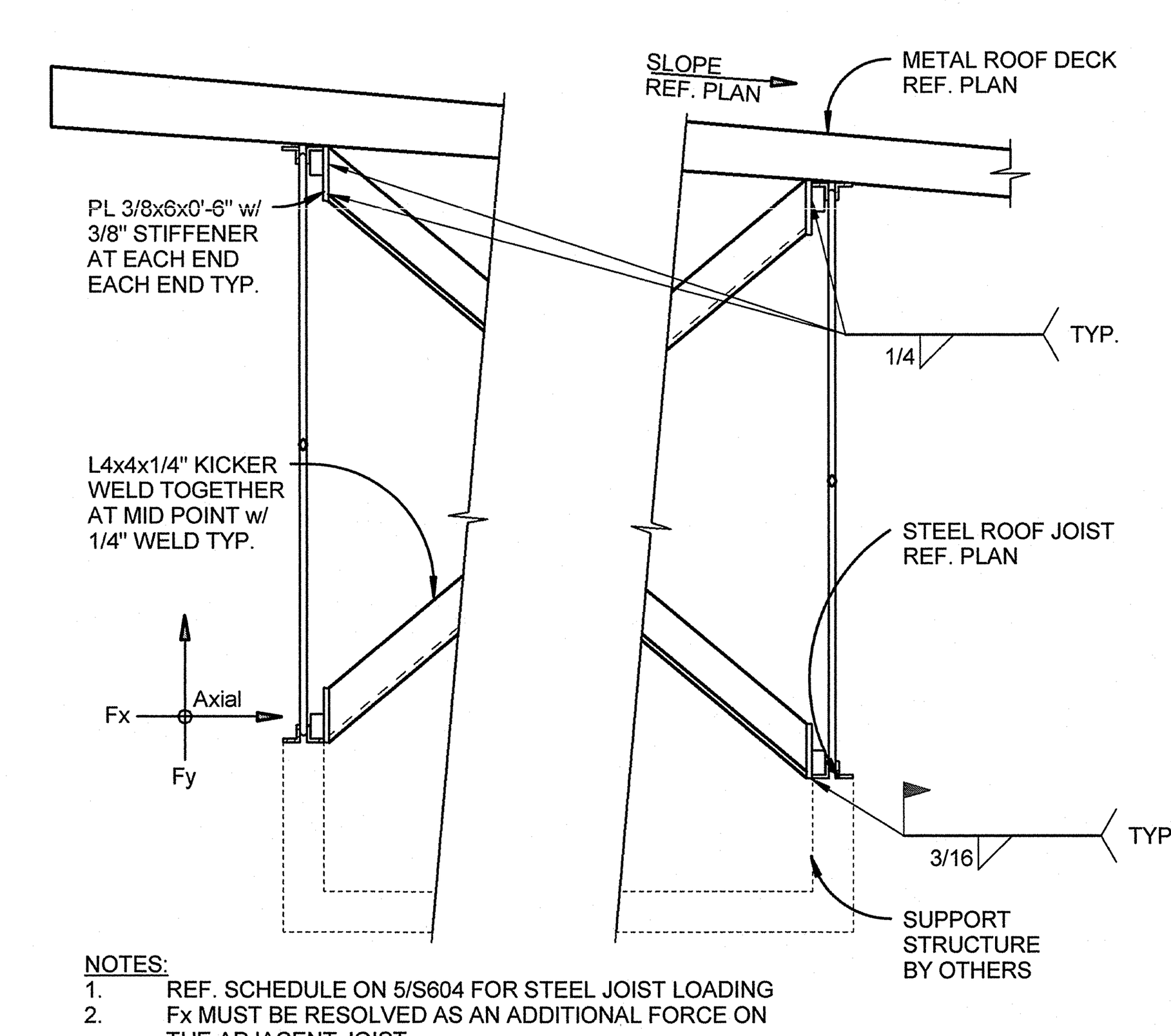


16 BEAM TO TRUSS BOTTOM CHORD
1" = 1'-0" S-122A

12 NOT USED



8 FIRE DOOR HEADER CONNECTION
1" = 1'-0"



NOTES:
1. REF. SCHEDULE ON 5/S604 FOR STEEL JOIST LOADING
2. Fx MUST BE RESOLVED AS AN ADDITIONAL FORCE ON THE ADJACENT JOIST.

4 BRACING AT EQUIPMENT SUPPORT

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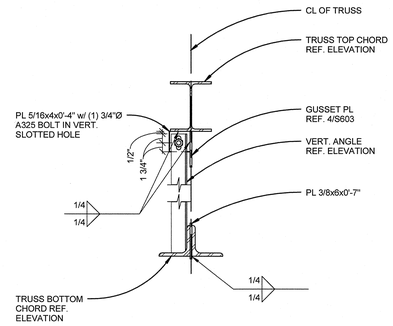
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
3	3-13-2015	ADDENDUM 6
2	3-6-2015	ADDENDUM 3
1	2-18-2015	SUPPLEMENTAL INFO 1

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1
PROJECT NO: 213417
DRAWN BY: MF
CHECKED BY: MT

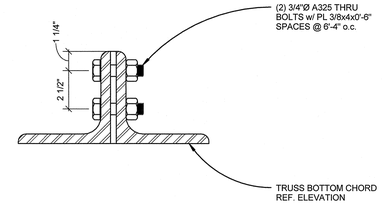
STEEL DETAILS

S-604



1 TRUSS TORSIONAL BRACING DETAIL

1" = 1'-0" S-603



2 TRUSS BOTTOM CHORD DETAIL

3" = 1'-0" S-603

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CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	3-13-2015	ADDENDUM 6

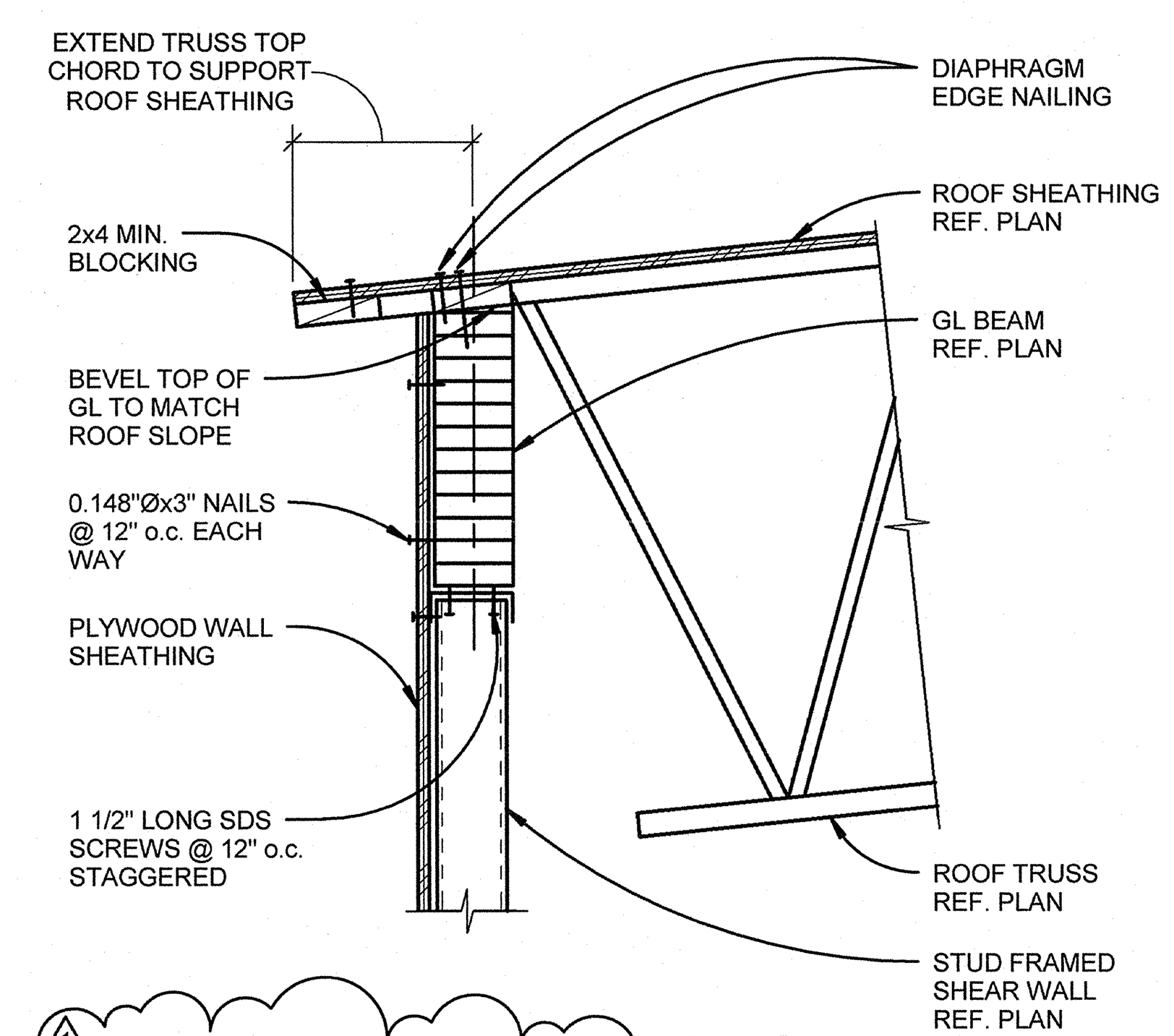
ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1

PROJECT NO: 213417
DRAWN BY: MF
CHECKED BY: MT

 ORIGINAL SHEET SIZE: 30"x42"

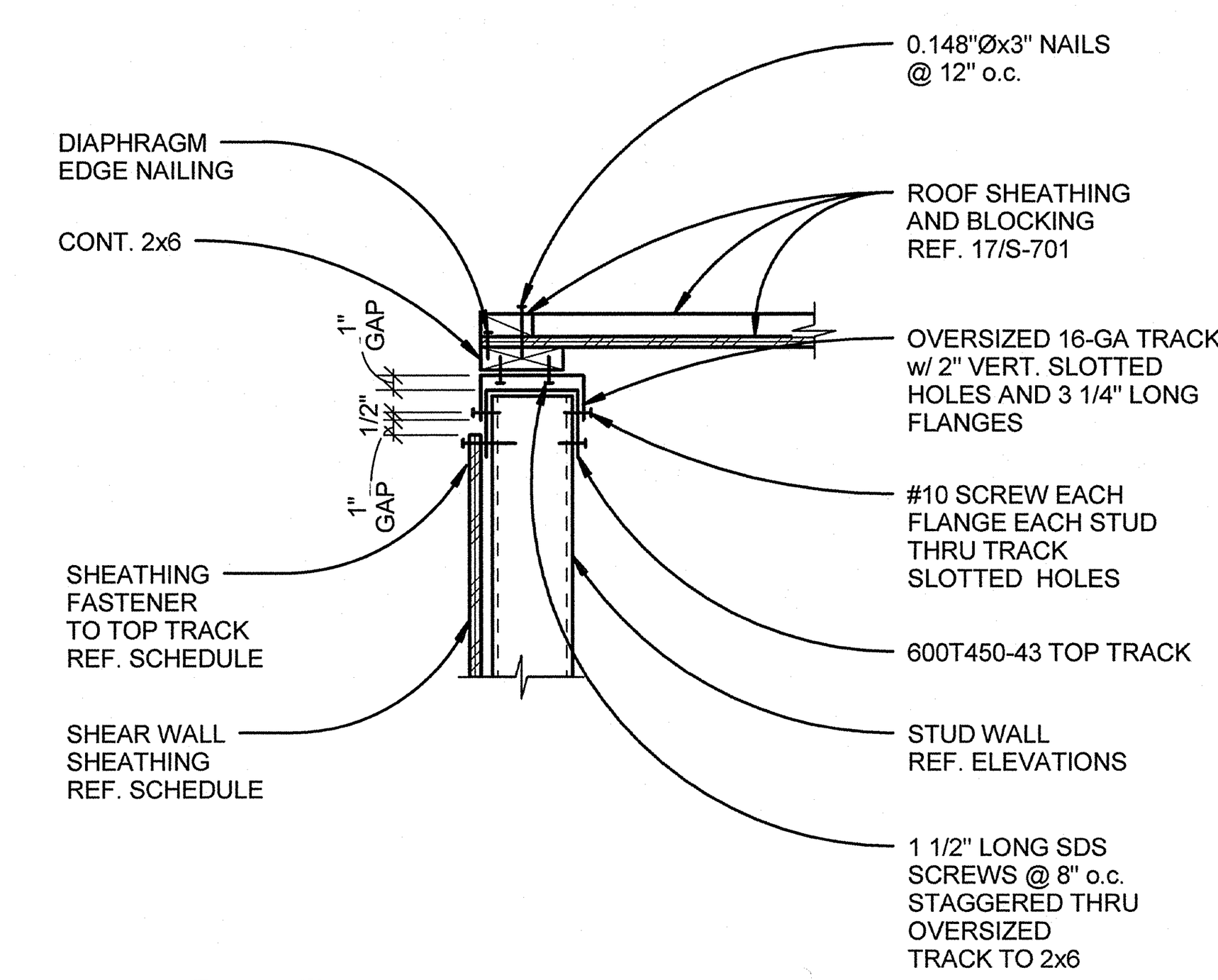
STEEL DETAILS

S-605



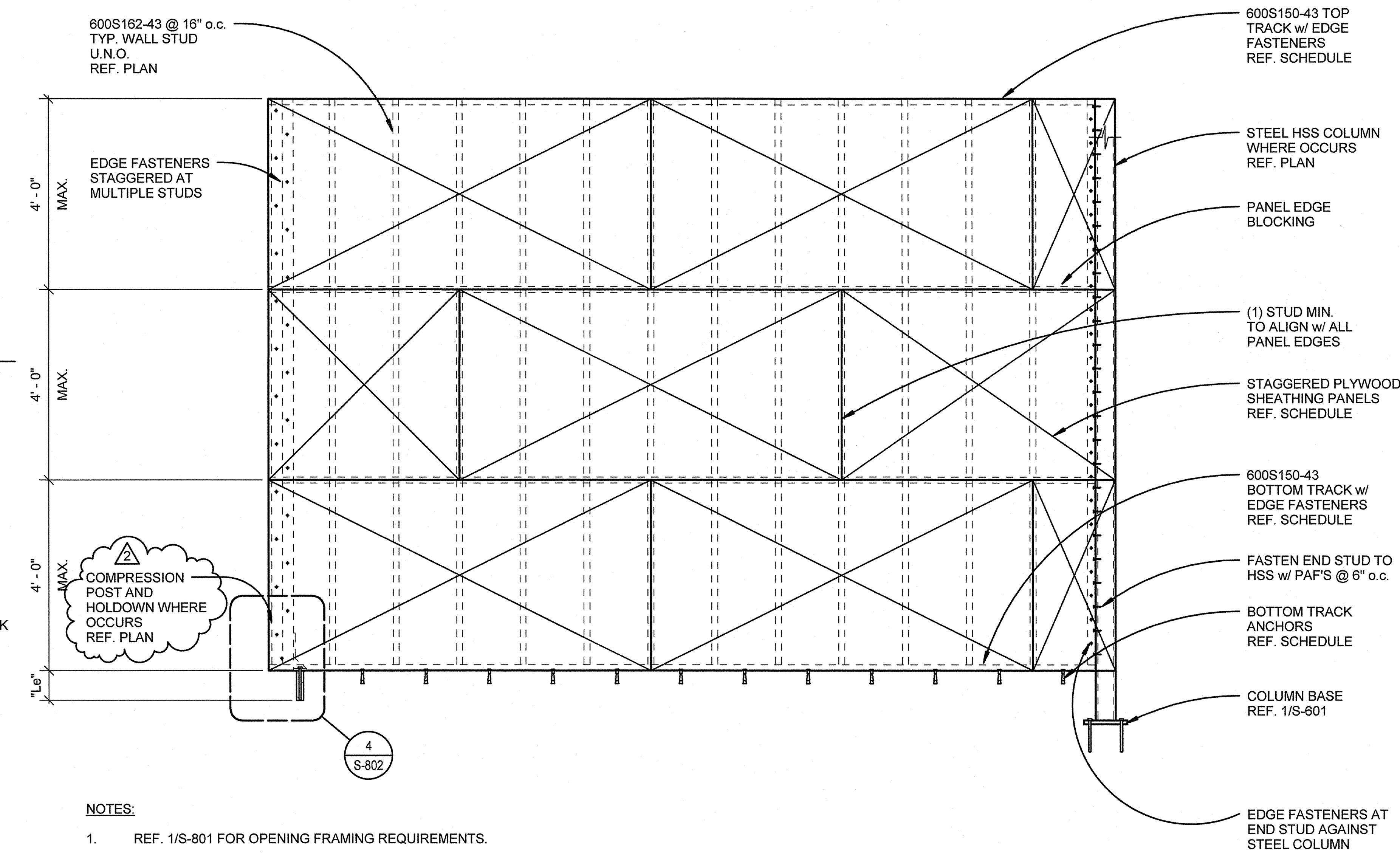
6 SHEAR WALL SHEAR TRANSFER AT GL BEAM

1" = 1'-0" S-123A



7 DEFLECTION JOINT AT SHEAR WALL

1" = 1'-0" S-701

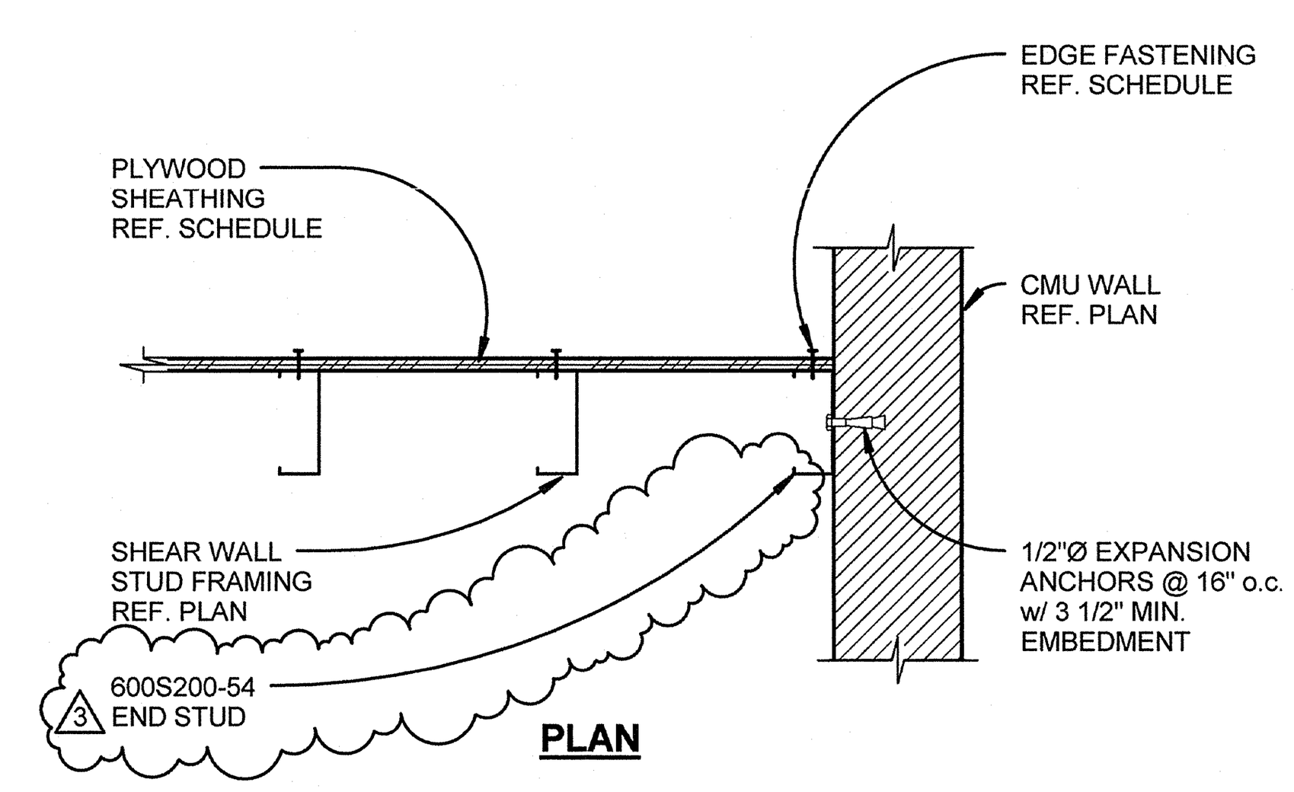


NOTES:

1. REF. 1/S-801 FOR OPENING FRAMING REQUIREMENTS.
2. REF. 2/S-802 FOR SHEAR WALL SCHEDULE.
3. ALL SHEATHING PANEL EDGES TO BE BLOCKED PER 7/S-801.
4. REF. 8/S-802 FOR END OF WALL CONDITION FRAMING INTO CMU WALL.

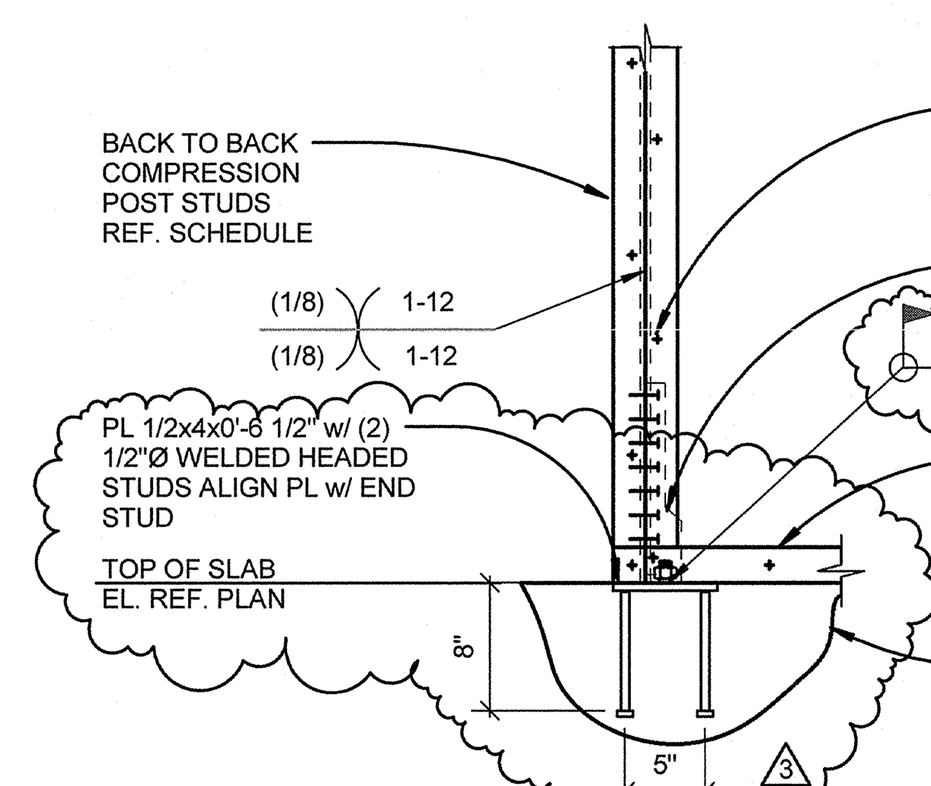
1 TYPICAL PLYWOOD SHEAR WALL ELEVATION

1/2" = 1'-0"



8 TYP. PLYWOOD SHEAR TO CMU WALL

1" = 1'-0"



NOTES:

1. PROVIDE 3 1/4" MIN. EDGE DISTANCE FROM HEADED STUDS TO SLAB EDGE.
2. SHEATHING NOT SHOWN FOR CLARITY.

4 HOLDOWN TYPE A ANCHORAGE DETAIL

1" = 1'-0" S-802

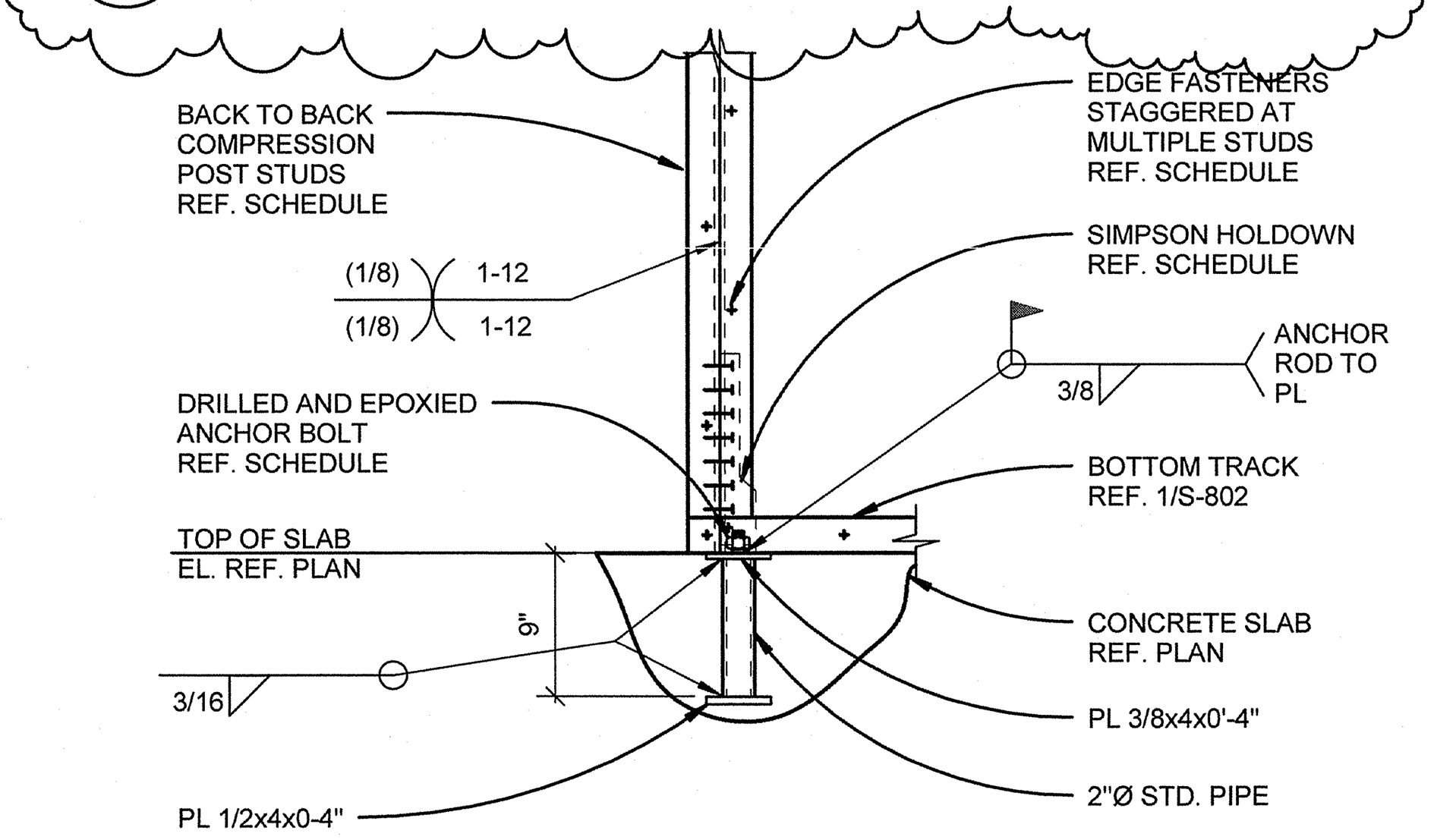
PLYWOOD SHEAR WALL SCHEDULE				
SHEAR WALL SYMBOL	SHEATHING (1)	SCREWS (4)		BOTTOM TRACK ANCHOR SPACING (8)
		EDGE (3)	FIELD SUPPORT (2)	
(1)	15/32"	#8 @ 6" o.c.	#8 @ 12" o.c.	4'-0" o.c.

NOTES:

1. FIRE TREATED STRUCTURAL 1 PLYWOOD SHEATHING.
2. FIELD SCREWS OCCUR AT INTERMEDIATE FRAMING MEMBERS WITHIN PANELS.
3. EDGE SCREWS OCCUR AT ALL PANEL EDGES.
4. SHEATHING ATTACHMENT SCREWS SHALL BE #8x1" COUNTERSUNK SELFTAPPING SCREWS WITH A MINIMUM HEAD DIAMETER OF .285 INCHES. EDGE SCREWS SHALL BE PLACED NOT LESS THAN 3/8" FROM PANEL EDGES.
5. BLOCK ALL HORIZONTAL PANEL EDGES PER 7/S-801.
6. TOP AND BOTTOM TRACKS SHALL MATCH GAUGE OF STUDS.
7. REF. 1/S-802 FOR TYPICAL SHEAR WALL ELEVATION.
8. ALL CONCRETE ANCHORS SHALL BE 1/2"Ø HILTI KB-TZ EXPANSION ANCHORS w/ 3 1/2" EMBEDMENT.

2 PLYWOOD SHEAR WALL SCHEDULE

1" = 1'-0"

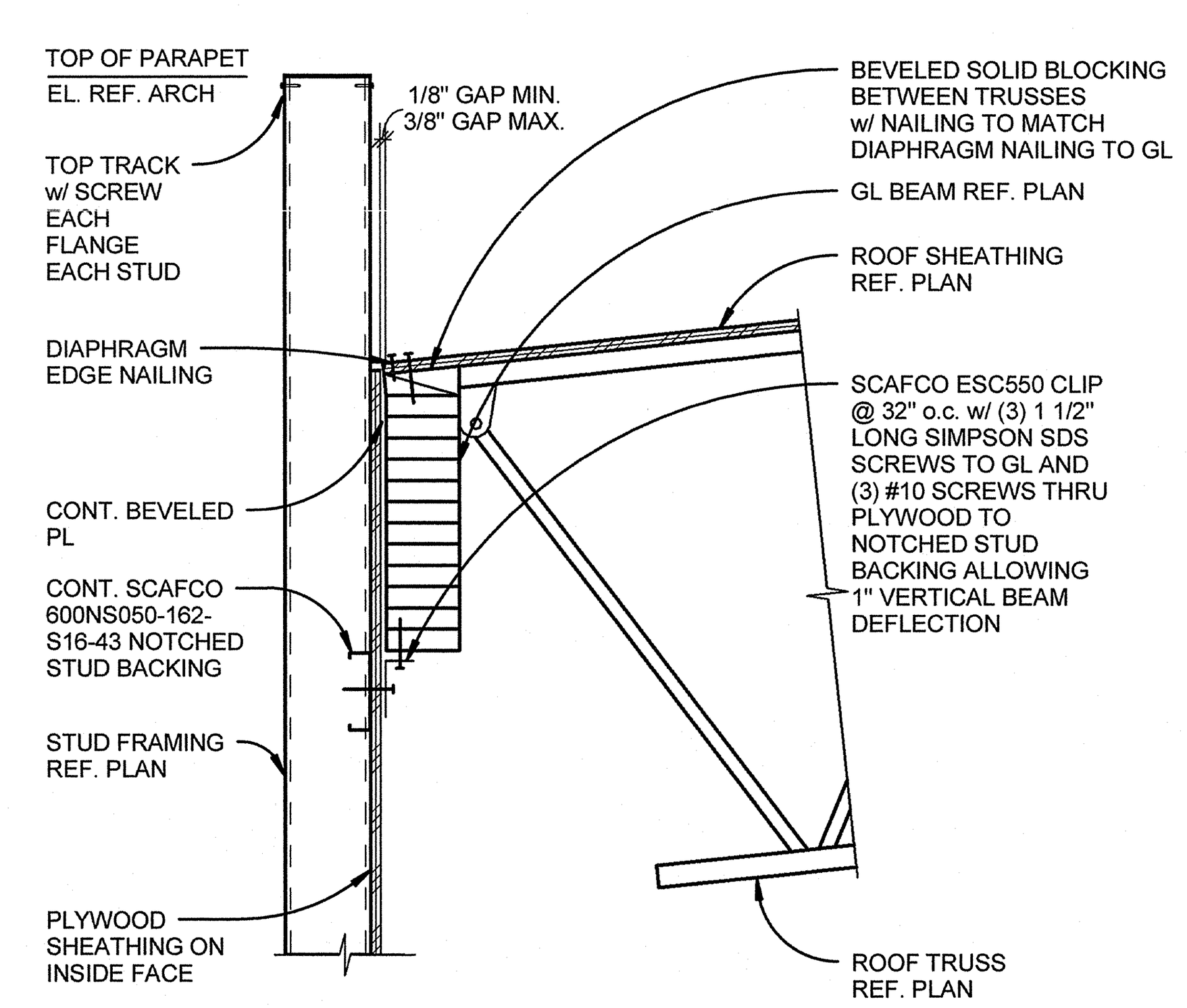


NOTES:

1. PROVIDE 3 1/4" MIN. EDGE DISTANCE FROM ANCHOR CL TO SLAB EDGE.
2. SHEATHING NOT SHOWN FOR CLARITY.
3. CENTER EMBEDMENT ON HOLDOWN ANCHOR ROD.

9 HOLDOWN TYPE B ANCHORAGE DETAIL

1" = 1'-0"



5 SHEAR WALL SHEAR TRANSFER AT GL BEAM

1" = 1'-0" S-122A

HOLDOWN SCHEDULE				
MARK	TYPE	COMPRESSION POSTS	ANCHOR DIAMETER	DETAIL
A	SIMPSON S/HDU9	(2) 600S200-43	5/8"	4/S-802
B	SIMPSON S/HDU9	(2) 600S200-54	7/8"	9/S-802

NOTES:

1. REF. 1/S-802 AND 4/S-802 FOR DEFINITION OF Le.
2. ANCHORS SHALL BE ASTM F1554 GRADE 36 WELDABLE THREADED ANCHOR RODS.
3. ALL HOLDOWNS SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

3 HOLDOWN SCHEDULE

1" = 1'-0"

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EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
3	3-13-2015	ADDENDUM 6
2	3-6-2015	ADDENDUM 3
1	2-18-2015	SUPPLEMENTAL INFO 1

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1
PROJECT NO: 213417
DRAWN BY: MF
CHECKED BY: MT

PRIMARY LIGHT GAUGE METAL FRAMING DETAILS

S-802

GENERAL NOTES:

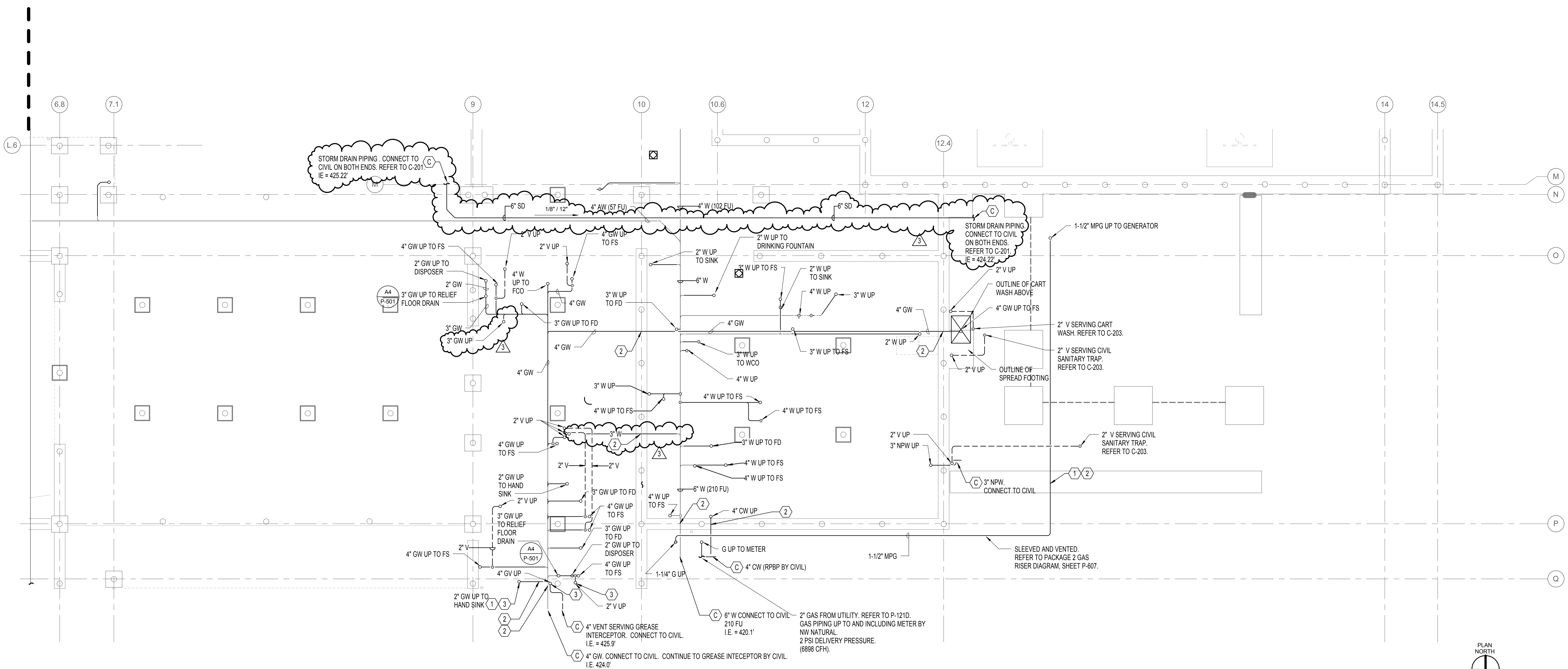
A. PROVIDE WALL CLEANOUTS ON WASTE PIPE SYSTEM EVERY 100 FT. FOR STRAIGHT RUNS, AT 90 DEGREE TURNS IN MAINS, AND AT ANY TURN EXCEEDING 135 DEGREES.

B. PROVIDE EXTERIOR CTG'S ON WASTE PIPE SYSTEM AT BEGINNINGS AND ENDS OF WASTE PIPING MAINS.

C. FINISHED FLOOR ELEVATION = 430'

NOTES:

1. TIGHT TO GRADE BEAMS OR PILE CAPS.
2. PIPE RUNS BELOW STRUCTURE.
3. REFER TO SHEET S-502 FOR VERTICAL GRADE BEAM PENETRATION.



A1 FIRST FLOOR UNDERGROUND - ZONE D - PLUMBING

1/8" = 1'-0"

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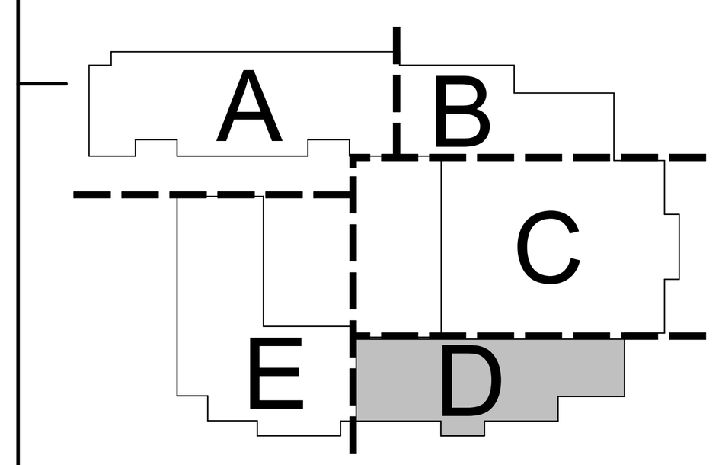
CIP NO. 410.566.001



MARK	DATE	DESCRIPTION
3	03-13-2015	ADDENDUM 6
2	03-06-2015	ADDENDUM 4
1	2-18-2015	Supplemental Info 1

ISSUE DATE:	FEBRUARY 18, 2015
ISSUE:	CONSTRUCTION DOCUMENTS
VOLUME:	PACKAGE 1
PROJECT NO:	2013912.00
DRAWN BY:	SG
CHECKED BY:	JCY

UNDERGROUND PLAN - ZONE D - PLUMBING

P-120D

GENERAL NOTES:

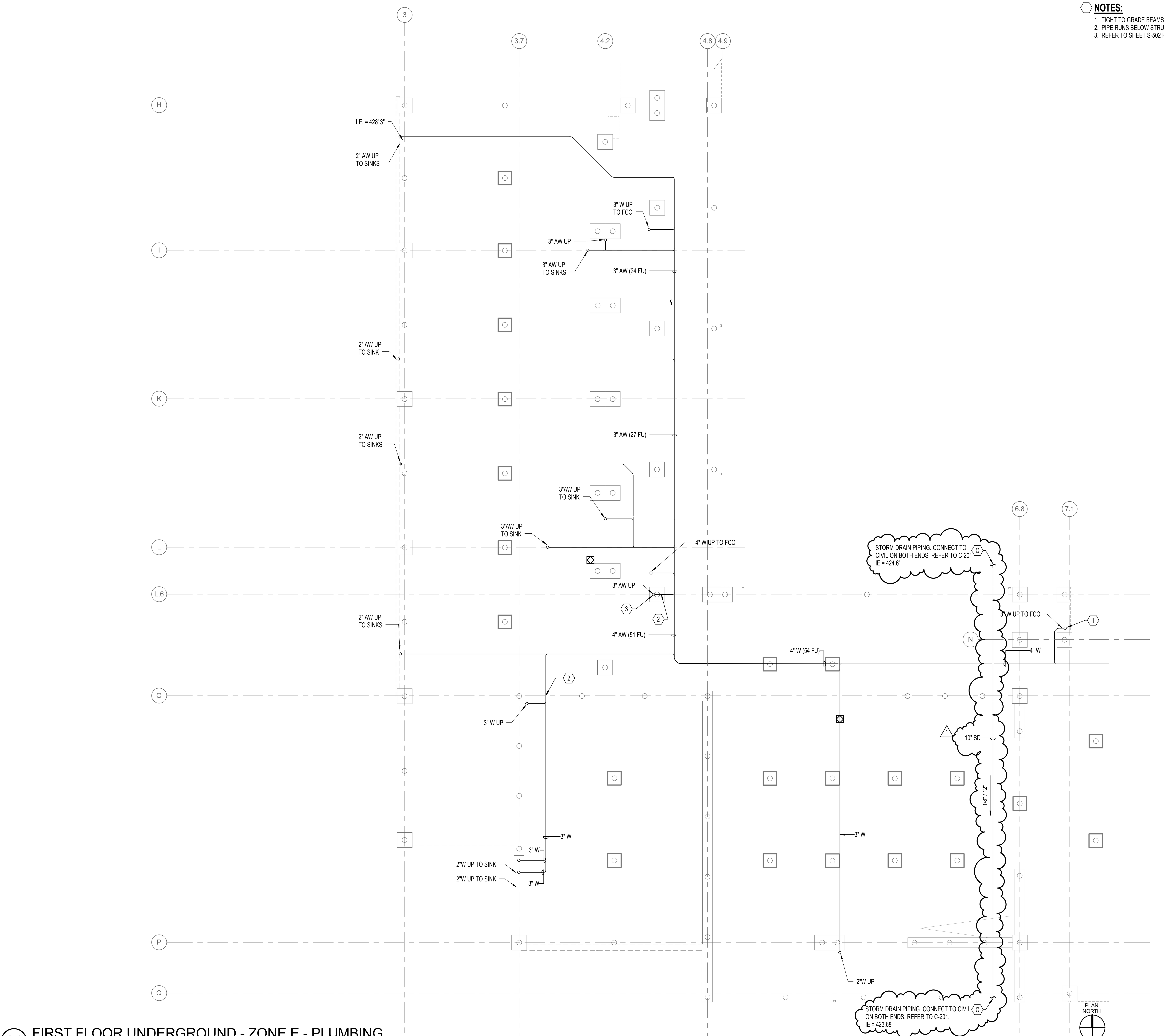
A. PROVIDE WALL CLEANOUTS ON WASTE PIPE SYSTEM EVERY 100 FT. FOR STRAIGHT RUNS, AT 90 DEGREE TURNS IN MAINS, AND AT ANY TURN EXCEEDING 135 DEGREES.

B. PROVIDE EXTERIOR CTG'S ON WASTE PIPE SYSTEM AT BEGINNINGS AND ENDS OF WASTE PIPING MAINS.

C. FINISHED FLOOR ELEVATION = 430'

NOTES:

1. TIGHT TO GRADE BEAMS OR PILE CAPS.
2. PIPE RUNS BELOW STRUCTURE.
3. REFER TO SHEET S-502 FOR VERTICAL GRADE BEAM PENETRATION.



A1 FIRST FLOOR UNDERGROUND - ZONE E - PLUMBING

1/8" = 1'-0"

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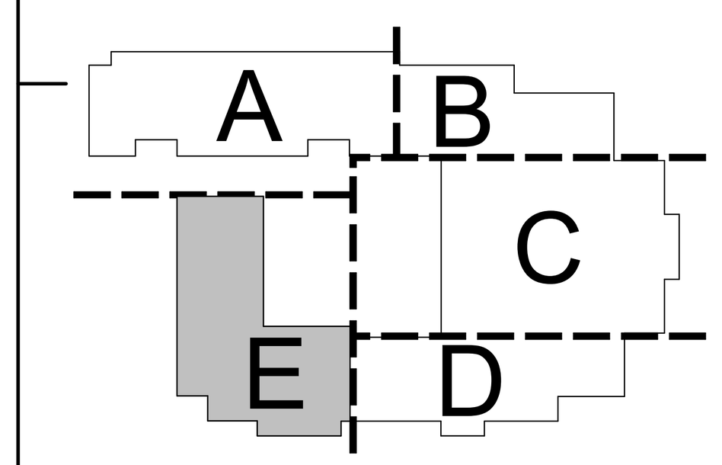


MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1

PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

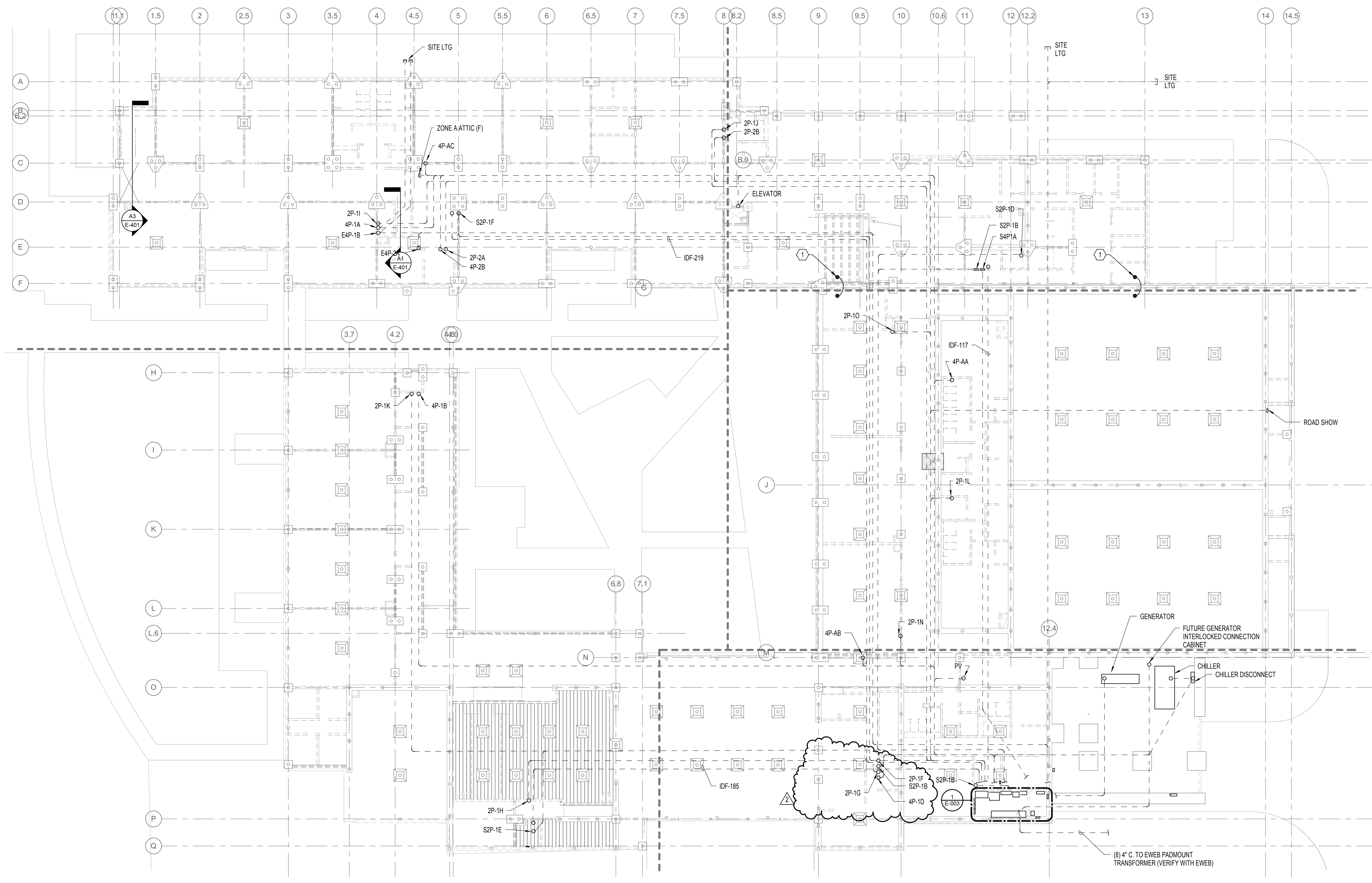
 ORIGINAL SHEET SIZE: 30"x42"

UNDERGROUND PLAN - ZONE E - PLUMBING

P-120E

NOTES:

1. #4/0 BARE COPPER. BOND SEISMICALLY SEPARATED CONCRETE SLABS AT REBAR VIA EXOTHERMIC WELC CONNECTION.



A1 FIRST FLOOR UNDERGROUND - OVERALL - ELECTRICAL

1/16" = 1'-0"

PLAN NORTH

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EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

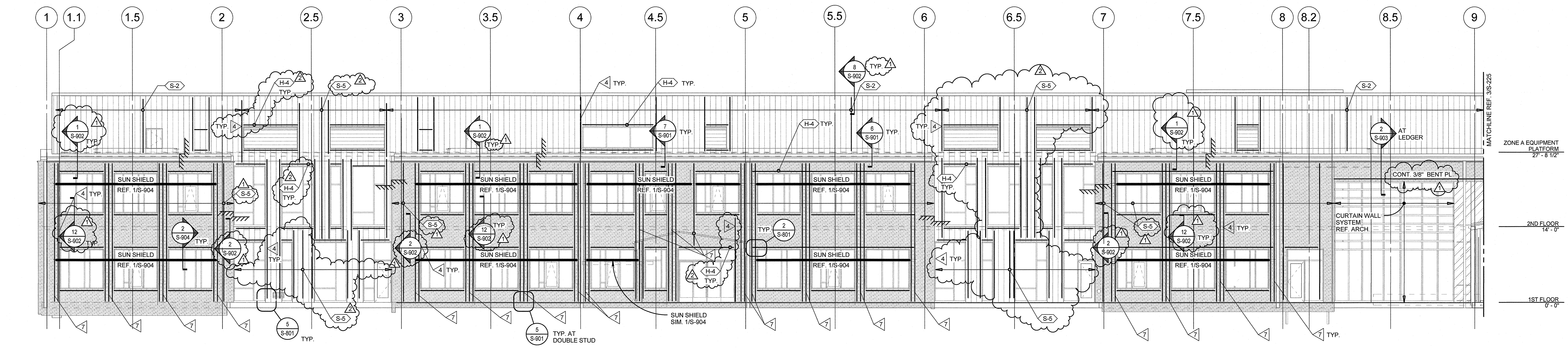
MARK	DATE	DESCRIPTION
2	03-13-2015	ADDENDUM 6
1	2-18-2015	Supplemental Info 1

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 1

PROJECT NO: 2013912.00
DRAWN BY: JAR
CHECKED BY: SPD

UNDERGROUND OVERALL - ELECTRICAL

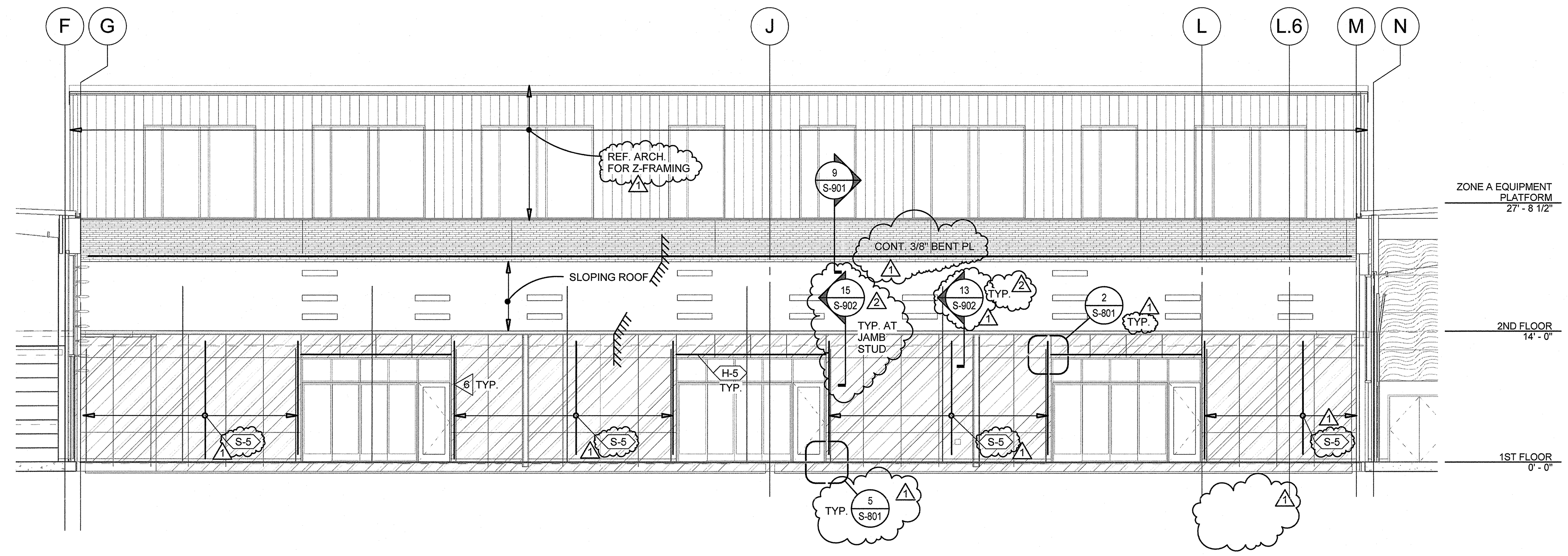
E-110



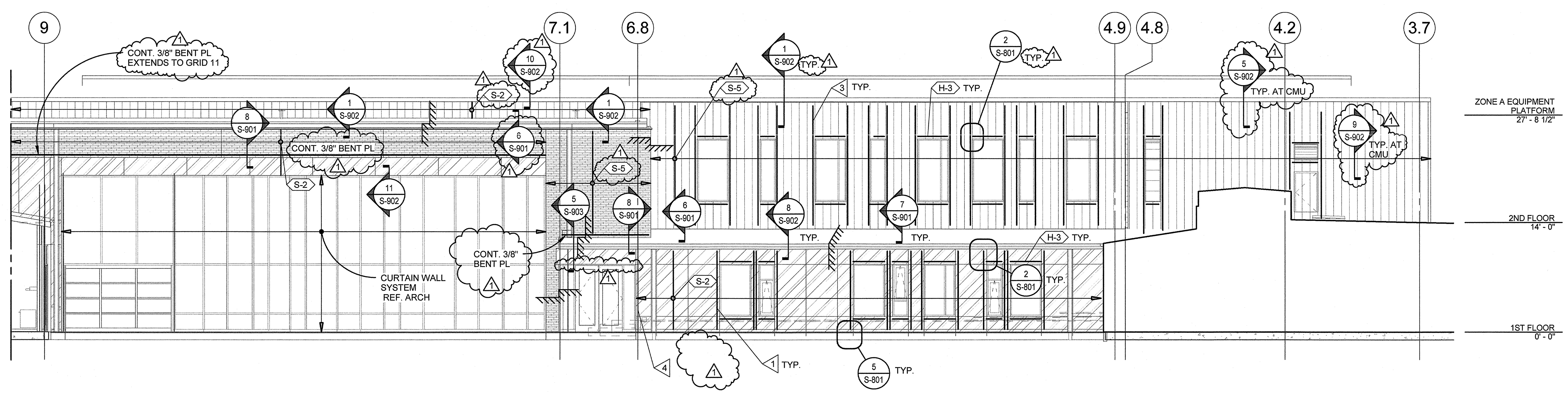
1 ENLARGED COURTYARD ELEVATION LOOKING NORTH
1/8" = 1'-0"

CLADDING ELEVATION NOTES:

1. REF. GENERAL STRUCTURAL NOTES FOR METAL STUD FRAMING REQUIREMENTS.
2. COORDINATE STUD FRAMING AND DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
3. ALL EXTERIOR WALL FRAMING TO BE TYPE S-2 REF. 7/S-801 FOR TYPICAL STUD BLOCKING. U.N.O.
4. PROVIDE LOOSE LINGELS OVER OPENINGS IN BRICK REF. 3/S-901.
5. SILLS TO BE 600T125-54 U.N.O. REF. 3/S-801 FOR DETAILS.
6. REF. S-901 FOR EXTERIOR CLADDING STUD, HEADER, AND JAMB SCHEDULE.



2 ENLARGED COURTYARD ELEVATION LOOKING EAST
1/8" = 1'-0"



3 ENLARGED PARTIAL COURTYARD ELEVATION LOOKING SOUTH
1/8" = 1'-0"

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F: 503.227.7980
www.kpff.com

REGISTERED PROFESSIONAL ENGINEER OREGON BLAKE D. PATTY
EXPIRES 12-13-16

EUGENE SCHOOL DISTRICT 4J

4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

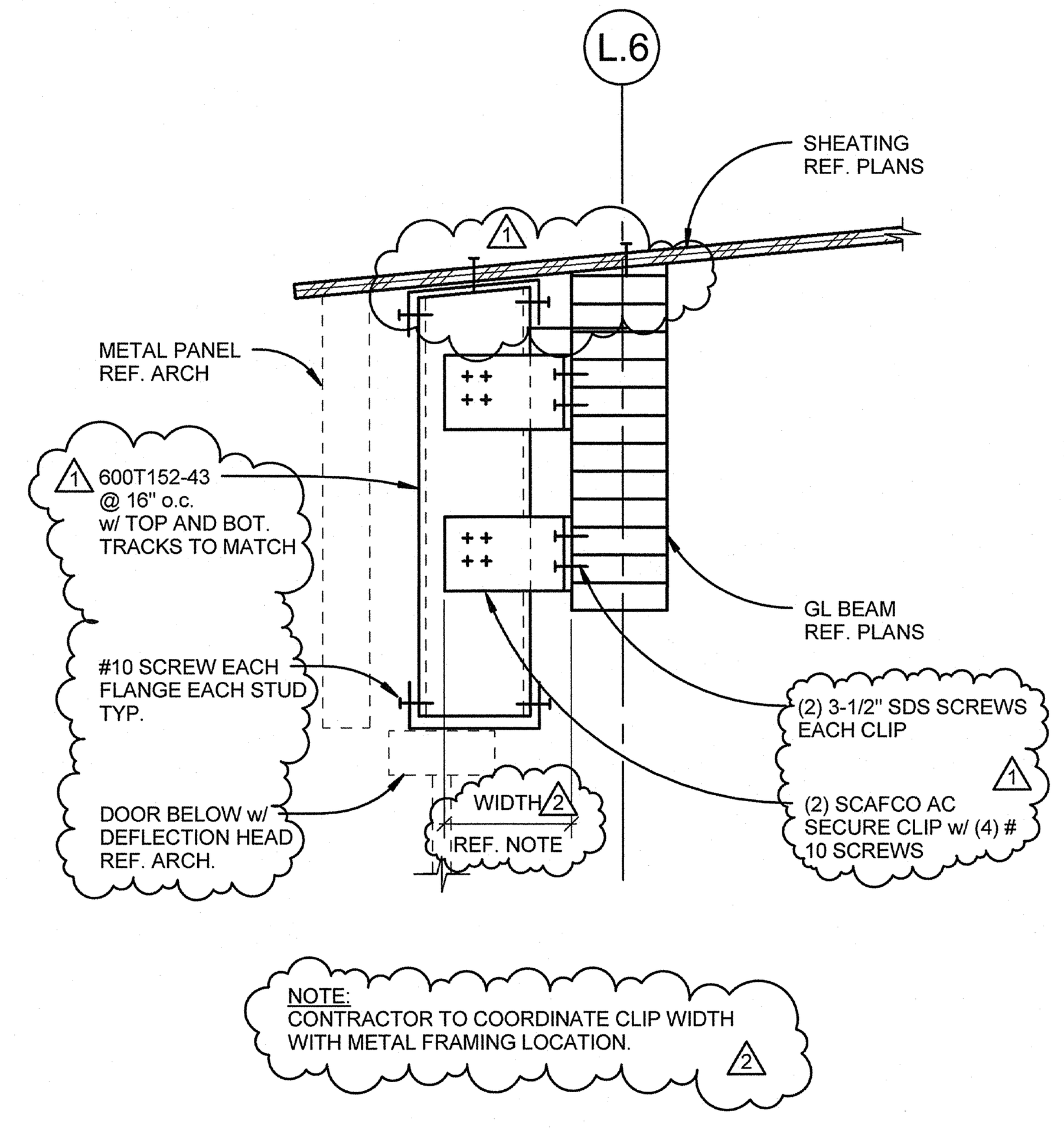
MARK	DATE	DESCRIPTION
2	3-13-2015	ADDENDUM 6
1	3-6-2015	ADDENDUM 3

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 1

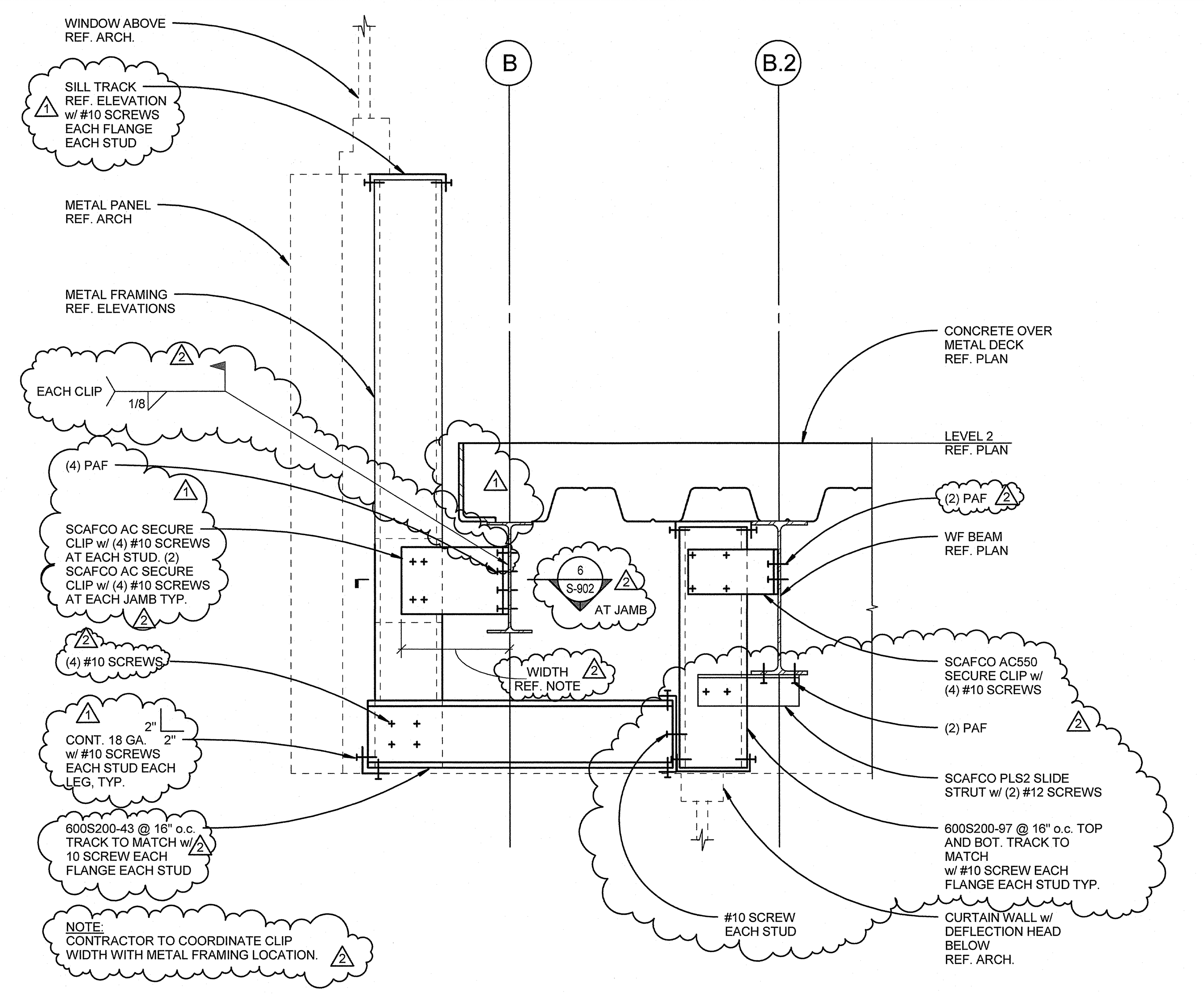
PROJECT NO: 213417
DRAWN BY: MF
CHECKED BY: MT

ENLARGED EXTERIOR CLADDING ELEVATIONS

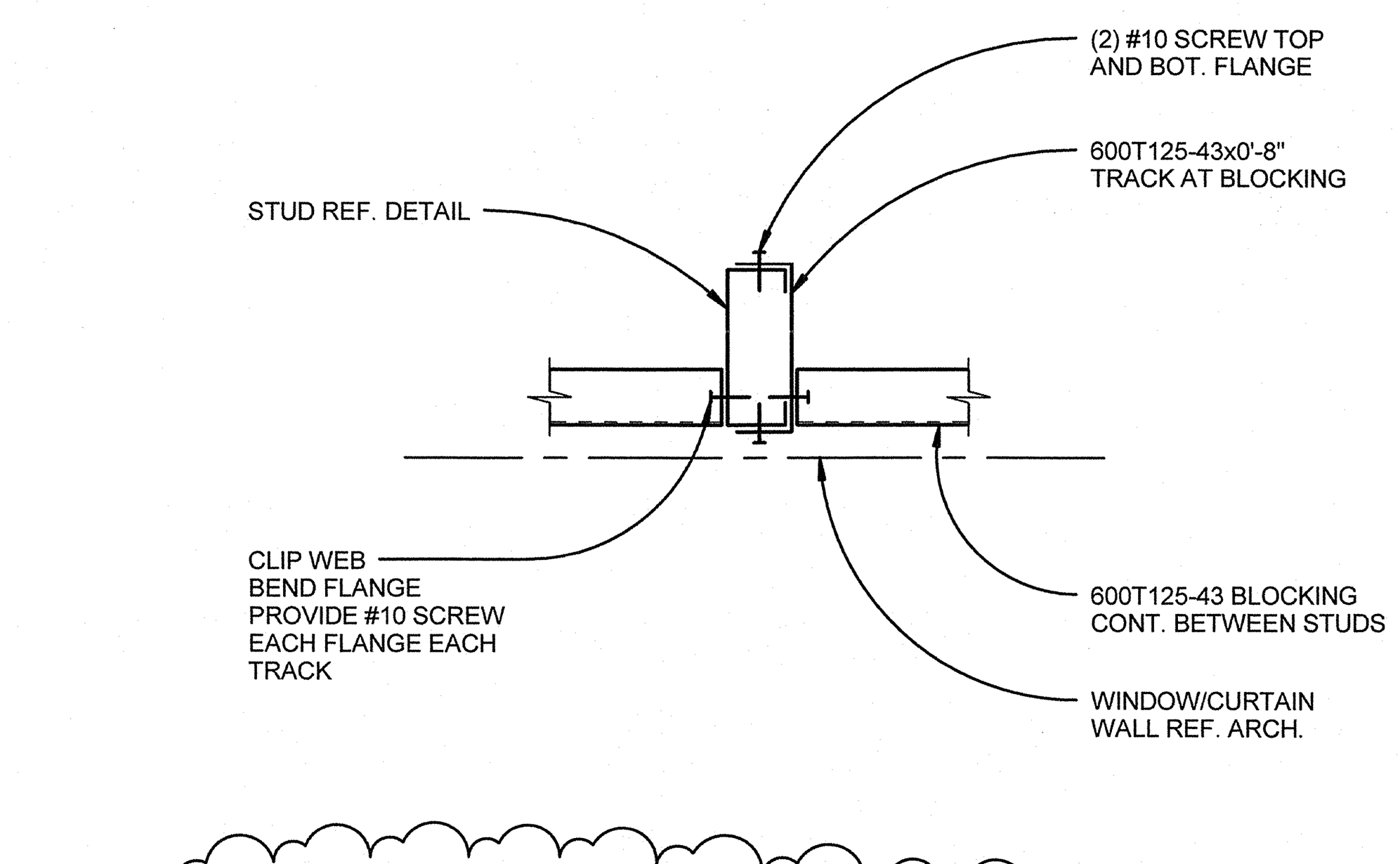
S-223



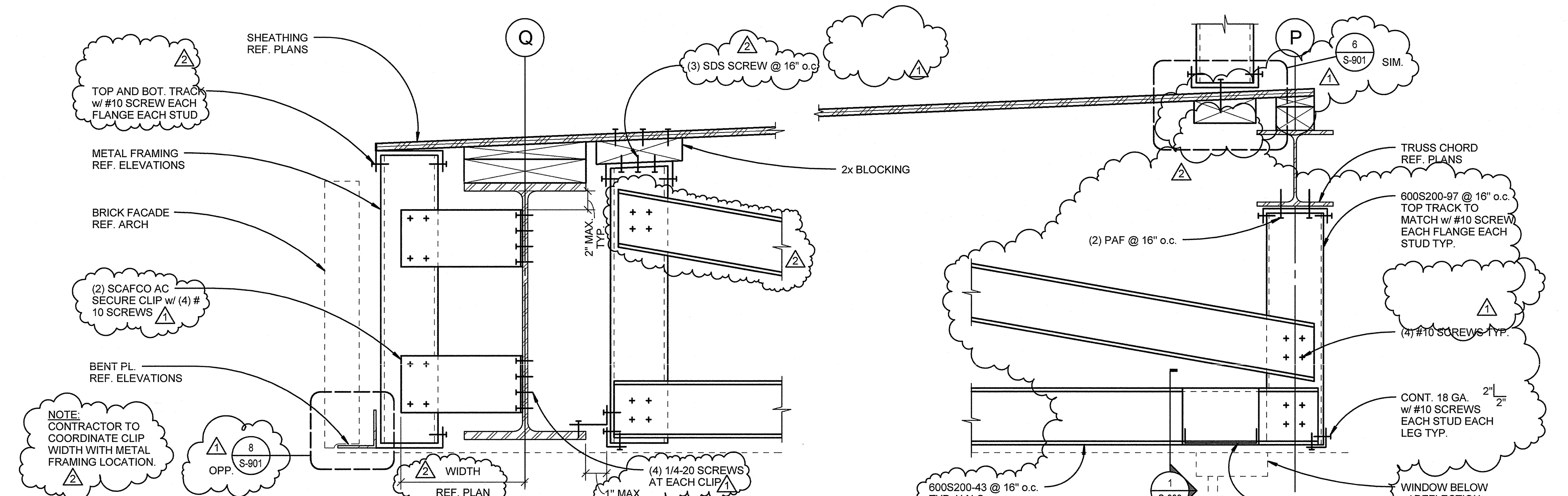
5 COMMONS NORTH VESTIBULE - STUD AT GL BEAM
1 1/2" = 1'-0" S-223



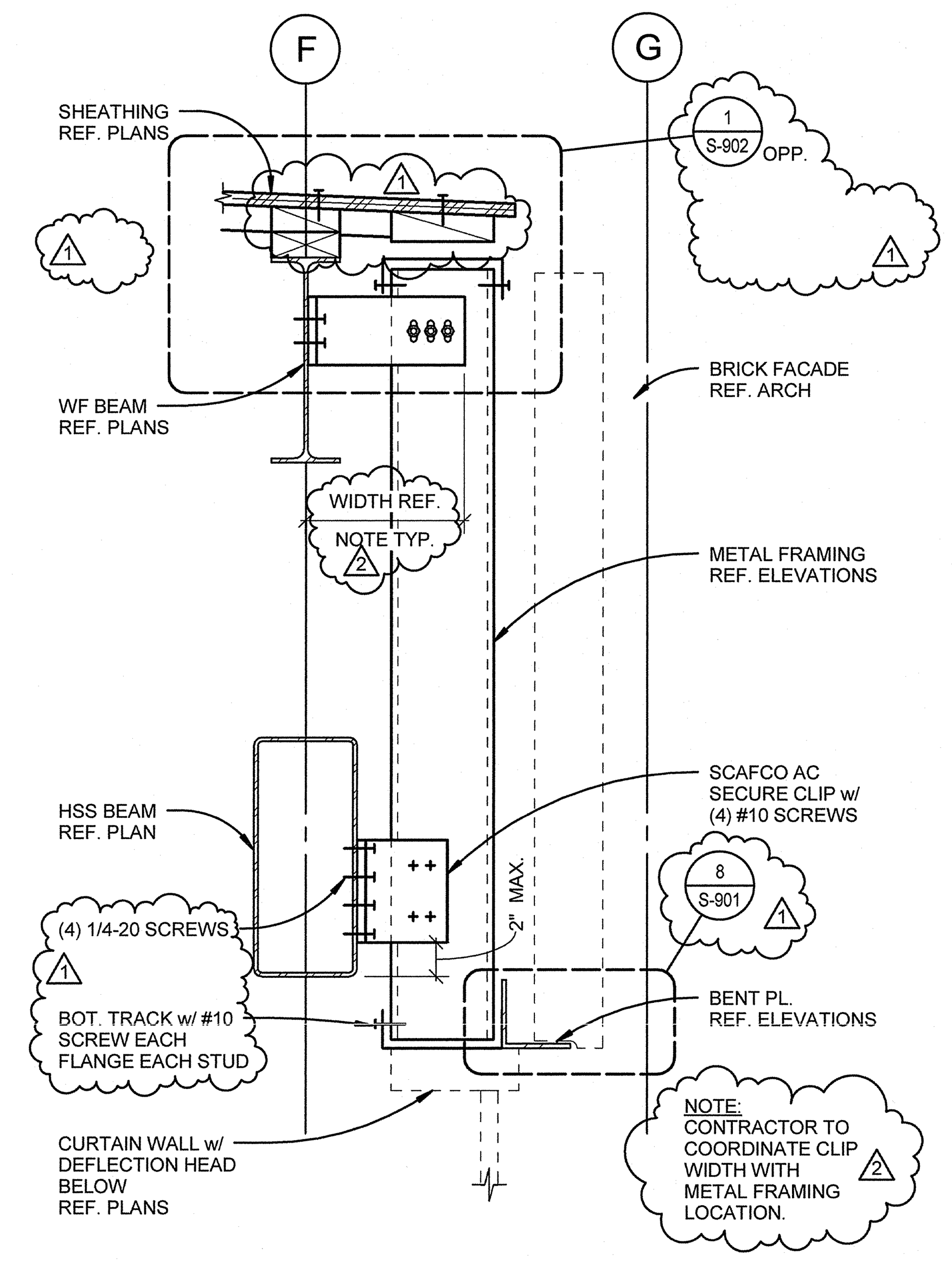
4 MAIN ENTRY STUD FRAMING
1 1/2" = 1'-0" S-221



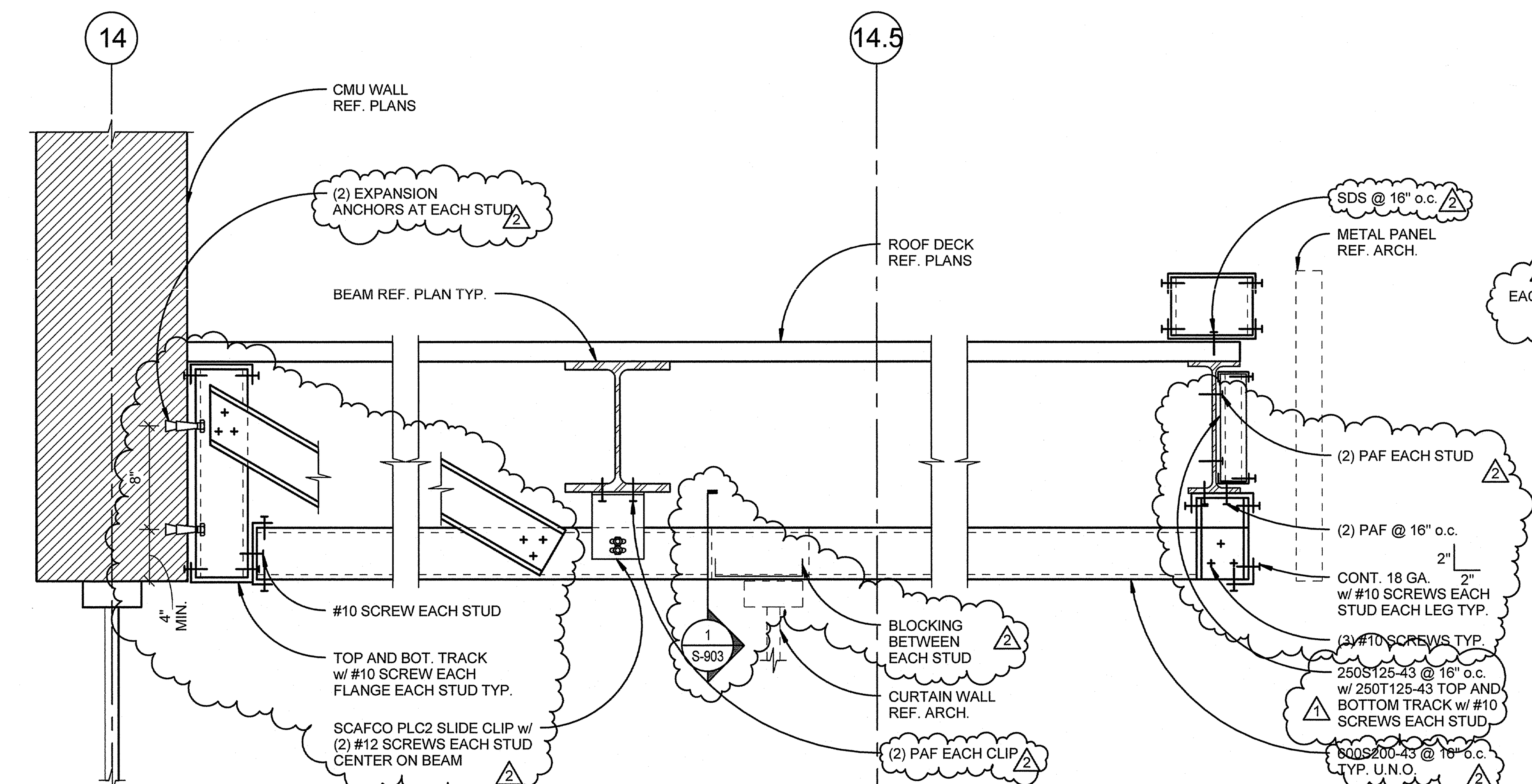
1 BLOCKING AT WINDOW/CURTAIN WALL
1 1/2" = 1'-0" S-903



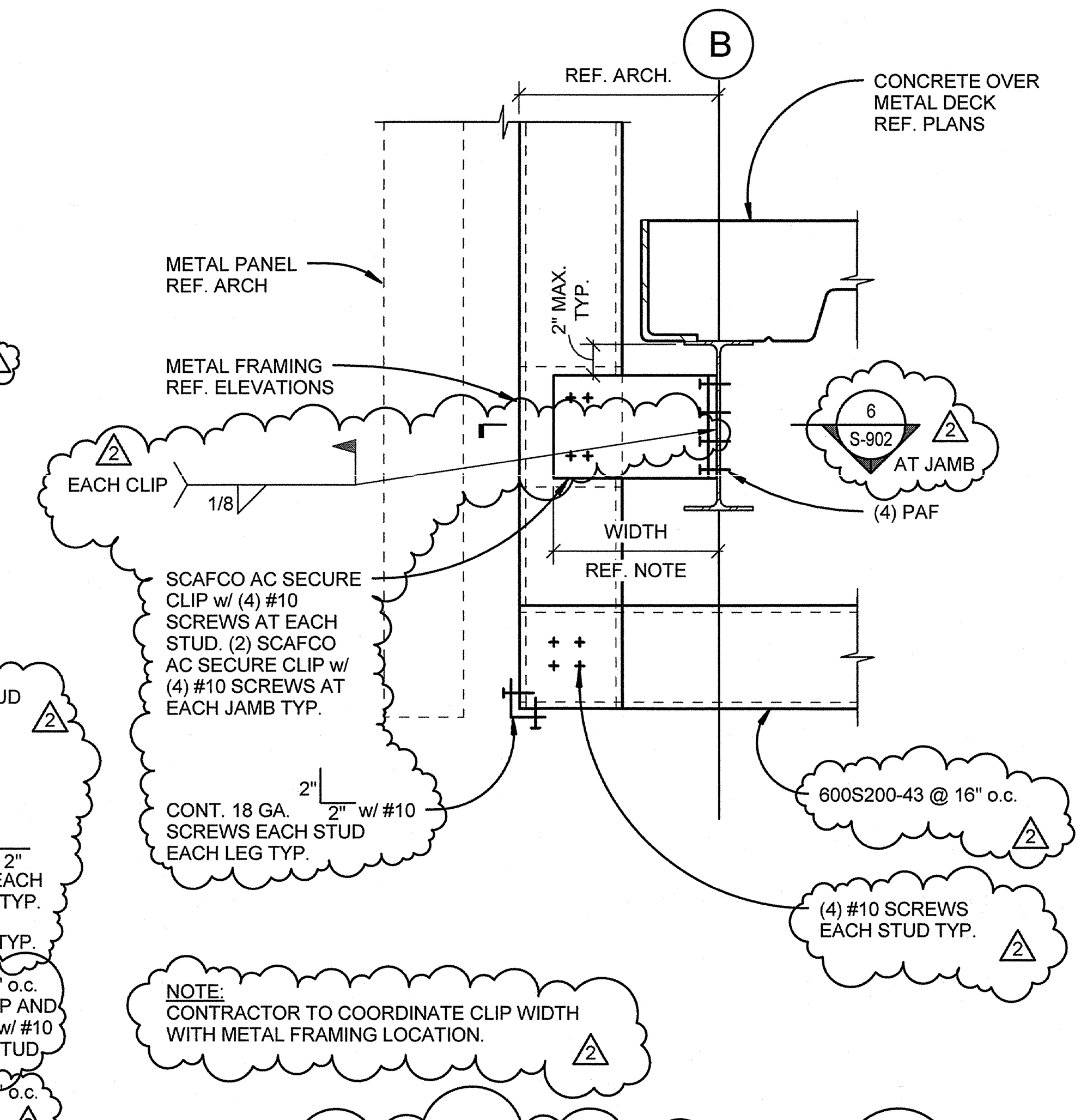
6 COMMONS SOUTH STUD FRAMING
1 1/2" = 1'-0" S-222



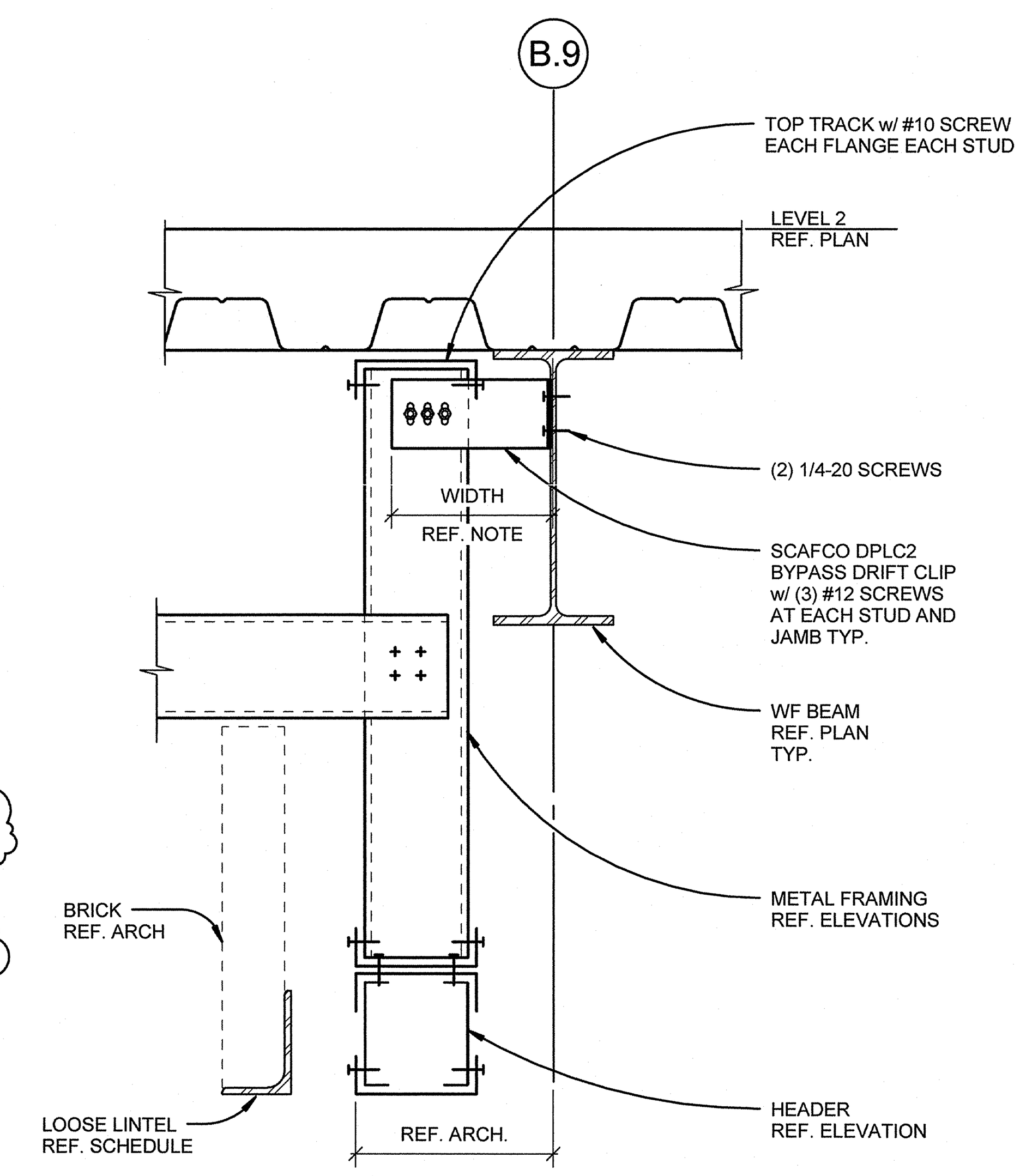
2 FORUM SOUTH STUD FRAMING
1 1/2" = 1'-0" S-223



7 EAST GYM ENTRANCE STUD FRAMING
1 1/2" = 1'-0" S-221



3 MAIN ENTRY STUD FRAMING
1 1/2" = 1'-0" S-221



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F: 503.227.7980
www.kpff.com

REGISTERED PROFESSIONAL ENGINEER
OREGON
BLAKE D. PATSY
EXPIRES 12-13-16

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
2	3-13-2015	ADDENDUM 6
1	3-6-2015	ADDENDUM 3

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 1
PROJECT NO: 213417
DRAWN BY: MF
CHECKED BY: MT

EXTERIOR CLADDING DETAILS

S-903

PLAN GENERAL NOTES

A. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO ANY WORK.

B. UNLESS OTHERWISE NOTED, PLAN DIMENSIONS SHOWN ARE:
-AT INTERIOR PARTITIONS: TO THE FACE OF STUD
-AT COLUMNS: TO THE CENTERLINE OF COLUMNS, IF WALL AT COLUMN CENTER WALL ON COLUMN
-AT CONCRETE: TO THE FACE OF CONCRETE
-AT EXTERIOR WALLS: TO THE FACE OF STUD (TO THE EDGE OF SLAB) (TO THE FACE OF FOUNDATION WALL)
-CMU WALLS ARE CENTERED ON GRID & DIMENSIONED TO INDICATE FULL BLOCK
CLR = CLEAR DIMENSIONS ARE TO FACE OF FINISHED MATERIAL.
FOR WALLS AT GRIDLINES, CENTERLINE OF STUDS ARE AT CENTERLINE OF GRID / COLUMN UNLESS DIMENSIONED OTHERWISE.

C. REFER TO ENLARGED PLANS OR DETAILS FOR ANY DIMENSIONS NOT INDICATED ON THESE PLANS.

D. EXTERIOR DOOR AND WINDOW OPENING DIMENSIONS ARE TO FOM OR FACE OF STUD FRAMING (EDGE OF OPENING - NOT INCLUDING SEALANT JOINTS) UNLESS OTHERWISE NOTED.

E. PROVIDE BACKING AS REQUIRED TO SUPPORT WALL AND CEILING MOUNTED CASEWORK, GRAB BARS, HANDRAILS, MIRRORS, EQUIPMENT AND OTHER ACCESSORIES THAT REQUIRE SUPPORT. VERIFY LOCATIONS PRIOR TO INSTALLATION OF GYPSUM BOARD. COORDINATE REQUIREMENTS FOR INCREASED STUD SIZES.

F. SEE SHEET A-601 FOR EXTERIOR WALL ASSEMBLIES, A-602 FOR INTERIOR WALL ASSEMBLIES, AND A-603 FOR HORIZONTAL ASSEMBLIES.

G. MULTIPLE LAYERS GWB WALLS TO HAVE MULTIPLE LAYERS ON SAME FACE AS WALL TAG UNLESS OTHERWISE NOTED. ALIGN FACE OF FINISHES AT ALL ADJACENT WALL TYPES U.N.O.

H. CONTRACTOR TO VERIFY ALL INDICATED RECESS SLAB DEPTH WITH FINISH PRODUCT MANUFACTURER.

I. ALL DOORS SHALL BE 6" FROM FACE OF STUD TO EDGE OF DOOR OPENING UNLESS OTHERWISE NOTED.

J. SEE FINISH SCHEDULE FOR FLOOR FINISH INFORMATION.

K. EXTERIOR STUD WALLS TO HAVE (1) LAYER OF GWB ON THE INTERIOR SIDE U.N.O.

M. ASSEMBLIES FOR FIRE RATED WALLS AND COLUMNS SHALL EXTEND FROM STRUCTURAL FLOOR TO UNDERSIDE OF FLOOR DECK OR ROOF ABOVE, UNLESS SPECIFICALLY NOTED OTHERWISE. ALL OPENINGS AND JOINTS SHALL BE PROTECTED AS REQUIRED BY CODE.

N. MAINTAIN FIRE RESISTANCE RATING FOR ALL CONSTRUCTION INDICATED AT THROUGH-WALL PENETRATIONS, BUILT-IN WALL FIXTURES, ACCESSORIES, AND BEHIND MAILBOXES, FIRE EXTINGUISHER CABINETS, PLUMBING FIXTURES, ELECTRIC PANELS AND SIMILAR ITEMS, IN COMPLIANCE WITH REQUIREMENTS OF APPLICABLE CODES. COORDINATE CONSTRUCTION OF FIRE-RATED ASSEMBLIES WITH DESIGNATED DESIGN NUMBER.

O. COMPLETELY SEAL AROUND PENETRATIONS THROUGH ACOUSTICAL WALLS. FILL DEPTH OF GAPS AROUND CUT-OUTS FOR ELECTRICAL BOXES, PIPES AND PLUMBING, AND OTHER PENETRATIONS. PROVIDE INSULATION BETWEEN THE CONCEALED FACE OF FINISH MATERIALS (WITHIN THE STUD OR JOIST CAVITY) AND PIPES, PLUMBING, THE BACK OF BOXES, OR OTHER RECESSED FIXTURES.

P. FRAME AND FINISH OPENINGS FOR MECHANICAL AND ELECTRICAL SYSTEMS AS REQUIRED BY MECHANICAL/ELECTRICAL DOCUMENTS.

Q. COORDINATE WITH STRUCTURAL DRAWINGS FOR REQUIRED SHEARWALL SHEATHING. PROVIDE IN ADDITION TO COMPONENTS INDICATED ON WALL TYPE DETAILS AS REQUIRED.

KEYNOTES 01

A- KEYNOTES FLOOR PLAN

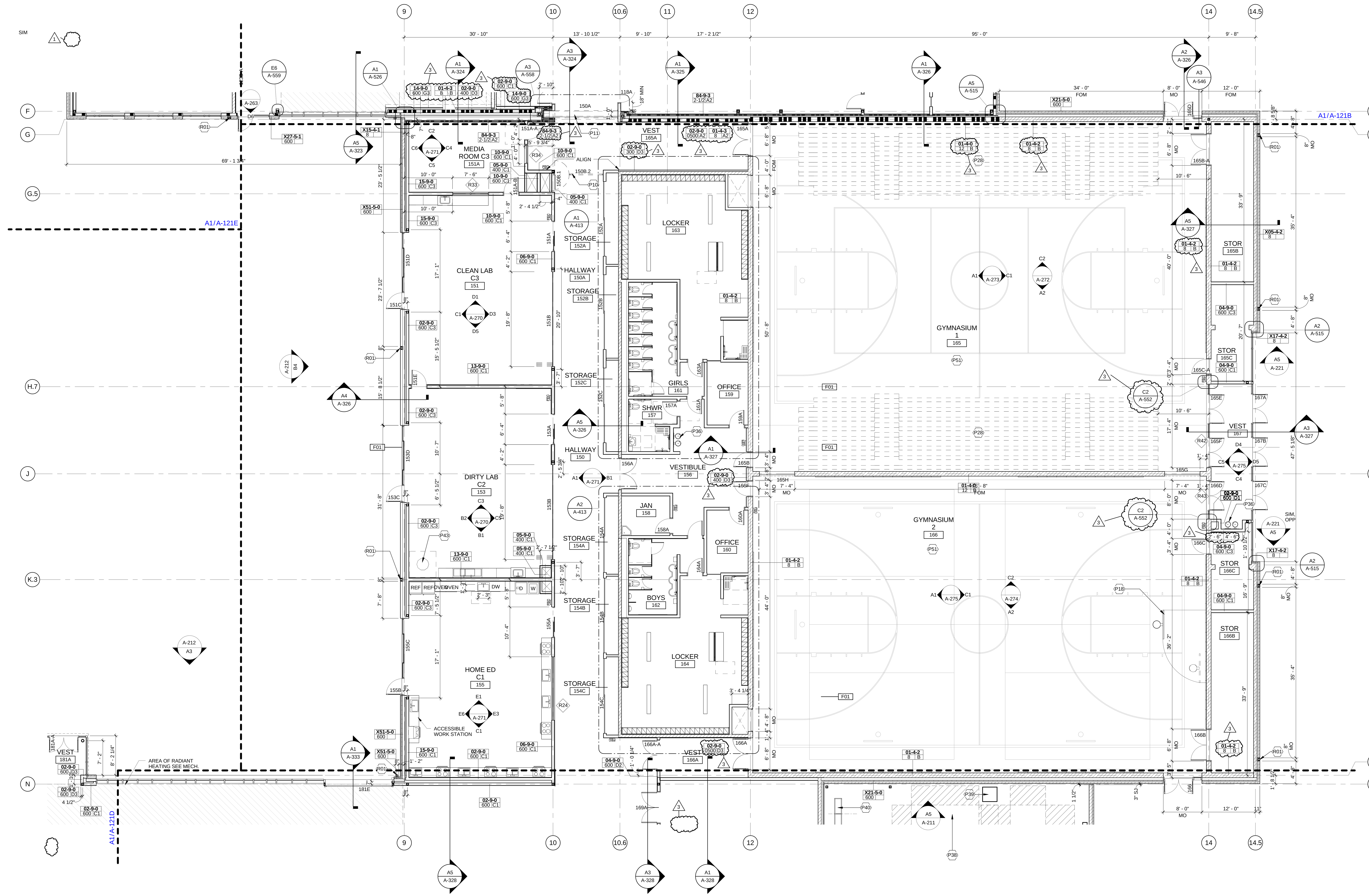
Key Value	Keynote Text
P10	08 33 28 OVERHEAD COILING GRILLS/ DEPLOYABLE EXIT DOORS
P11	08 33 45 VERTICAL ACTING FIRE DOOR SYSTEM
P12	10 51 00 HALLWAY LOCKERS
P18	11 66 23 WALL MOUNTED BACKSTOP, COORDINATE LOCATION WITH MANUFACTURER, COORDINATE WITH GAME LINES IN FINISH FLOOR PLANS.
P28	12 66 13 TELESCOPING BLECHERS
P36	DIV 22 WATER FOUTAIN
P38	DIV 26 GENERATOR, VERIFY MIN. CLEARANCES WITH MANUFACTERER
P39	DIV 26 FUTURE GENERATOR, VERIFY MIN. CLEARANCES WITH MANUFACTERER
P40	BIKE RACKS

A- KEYNOTES FLOOR PLAN

Key Value	Keynote Text
P43	OFCI KILN
P51	SEE A1/A-173 FOR COURT LINE LAYOUT
R01	DOWNSPOUT

PLAN SYMBOL LEGEND

(line)	NON RATED WALL
(line)	1-HOUR RATED WALL
(line)	2-HOUR RATED WALL
(line)	3-HOUR RATED WALL
RO	ROUGH OPENING
MO	MASONRY OPENING



A1 FIRST FLOOR PLAN - ZONE C
1/8" = 1'-0"

PLAN NORTH

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REGISTERED ARCHITECT 5594 LEROY A. LANDERS PORTLAND, OREGON STATE OF OREGON

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
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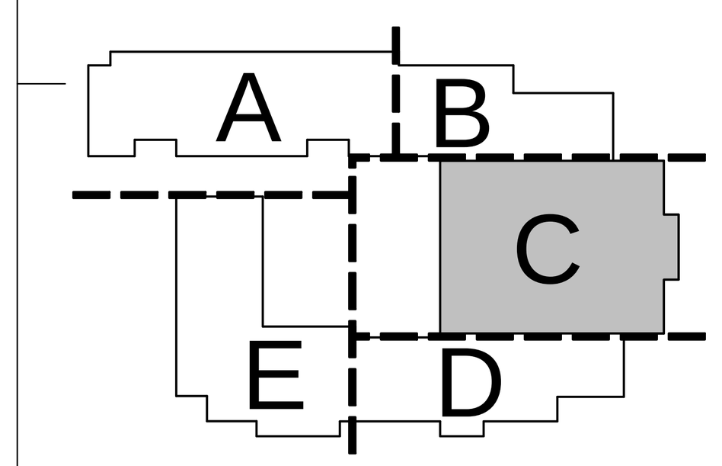

MARK	DATE	DESCRIPTION
3	3-13-2015	ADDENDUM 6
2	3-11-2015	ADDENDUM 5
1	2-27-2015	ADDENDUM 1

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 1
PROJECT NO: 2013912.00
DRAWN BY: AC
CHECKED BY: DE

FIRST FLOOR PLAN - ZONE C

A-121C

PLAN GENERAL NOTES

A. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO ANY WORK.

B. UNLESS OTHERWISE NOTED, PLAN DIMENSIONS SHOWN ARE:
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-AT COLUMNS: TO THE CENTERLINE OF COLUMNS, IF WALL AT COLUMN CENTER WALL ON COLUMN
-AT CONCRETE: TO THE FACE OF CONCRETE
-AT EXTERIOR WALLS: TO THE FACE OF STUD (TO THE EDGE OF SLAB) (TO THE FACE OF FOUNDATION WALL)
-CMU WALLS ARE CENTERED ON GRID & DIMENSIONED TO INDICATE FULL BLOCK
CLR = CLEAR DIMENSIONS ARE TO FACE OF FINISHED MATERIAL.
FOR WALLS AT GRIDLINES, CENTERLINE OF STUDS ARE AT CENTERLINE OF GRID / COLUMN UNLESS DIMENSIONED OTHERWISE.

C. REFER TO ENLARGED PLANS OR DETAILS FOR ANY DIMENSIONS NOT INDICATED ON THESE PLANS.

D. EXTERIOR DOOR AND WINDOW OPENING DIMENSIONS ARE TO FOM OR FACE OF STUD FRAMING (EDGE OF OPENING - NOT INCLUDING SEALANT JOINTS) UNLESS OTHERWISE NOTED.

E. PROVIDE BACKING AS REQUIRED TO SUPPORT WALL AND CEILING MOUNTED CASEWORK, GRAB BARS, HANDRAILS, MIRRORS, EQUIPMENT AND OTHER ACCESSORIES THAT REQUIRE SUPPORT. VERIFY LOCATIONS PRIOR TO INSTALLATION OF GYPSUM BOARD. COORDINATE REQUIREMENTS FOR INCREASED STUD SIZES.

F. SEE SHEET A-601 FOR EXTERIOR WALL ASSEMBLIES, A-602 FOR INTERIOR WALL ASSEMBLIES, AND A-603 FOR HORIZONTAL ASSEMBLIES.

G. MULTIPLE LAYERS GWB WALLS TO HAVE MULTIPLE LAYERS ON SAME FACE AS WALL TAG UNLESS OTHERWISE NOTED. ALIGN FACE OF FINISHES AT ALL ADJACENT WALL TYPES U.N.O.

H. CONTRACTOR TO VERIFY ALL INDICATED RECESS SLAB DEPTH WITH FINISH PRODUCT MANUFACTURER.

I. ALL DOORS SHALL BE 6" FROM FACE OF STUD TO EDGE OF DOOR OPENING UNLESS OTHERWISE NOTED.

J. SEE FINISH SCHEDULE FOR FLOOR FINISH INFORMATION.

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M. ASSEMBLIES FOR FIRE RATED WALLS AND COLUMNS SHALL EXTEND FROM STRUCTURAL FLOOR TO UNDERSIDE OF FLOOR DECK OR ROOF ABOVE, UNLESS SPECIFICALLY NOTED OTHERWISE. ALL OPENINGS AND JOINTS SHALL BE PROTECTED AS REQUIRED BY CODE.

N. MAINTAIN FIRE RESISTANCE RATING FOR ALL CONSTRUCTION INDICATED AT THROUGH-WALL PENETRATIONS, BUILT-IN WALL FIXTURES, ACCESSORIES, AND BEHIND MAILBOXES, FIRE EXTINGUISHER CABINETS, PLUMBING FIXTURES, ELECTRIC PANELS AND SIMILAR ITEMS, IN COMPLIANCE WITH REQUIREMENTS OF APPLICABLE CODES. COORDINATE CONSTRUCTION OF FIRE-RATED ASSEMBLIES WITH DESIGNATED DESIGN NUMBER.

O. COMPLETELY SEAL AROUND PENETRATIONS THROUGH ACOUSTICAL WALLS. FILL DEPTH OF GAPS AROUND CUT-OUTS FOR ELECTRICAL BOXES, PIPES AND PLUMBING, AND OTHER PENETRATIONS. PROVIDE INSULATION BETWEEN THE CONCEALED FACE OF FINISH MATERIALS (WITHIN THE STUD OR JOIST CAVITY) AND PIPES, PLUMBING, THE BACK OF BOXES, OR OTHER RECESSED FIXTURES.

P. FRAME AND FINISH OPENINGS FOR MECHANICAL AND ELECTRICAL SYSTEMS AS REQUIRED BY MECHANICAL/ELECTRICAL DOCUMENTS.

Q. COORDINATE WITH STRUCTURAL DRAWINGS FOR REQUIRED SHEARWALL SHEATHING. PROVIDE IN ADDITION TO COMPONENTS INDICATED ON WALL TYPE DETAILS AS REQUIRED.

KEYNOTES 01

A- KEYNOTES FLOOR PLAN

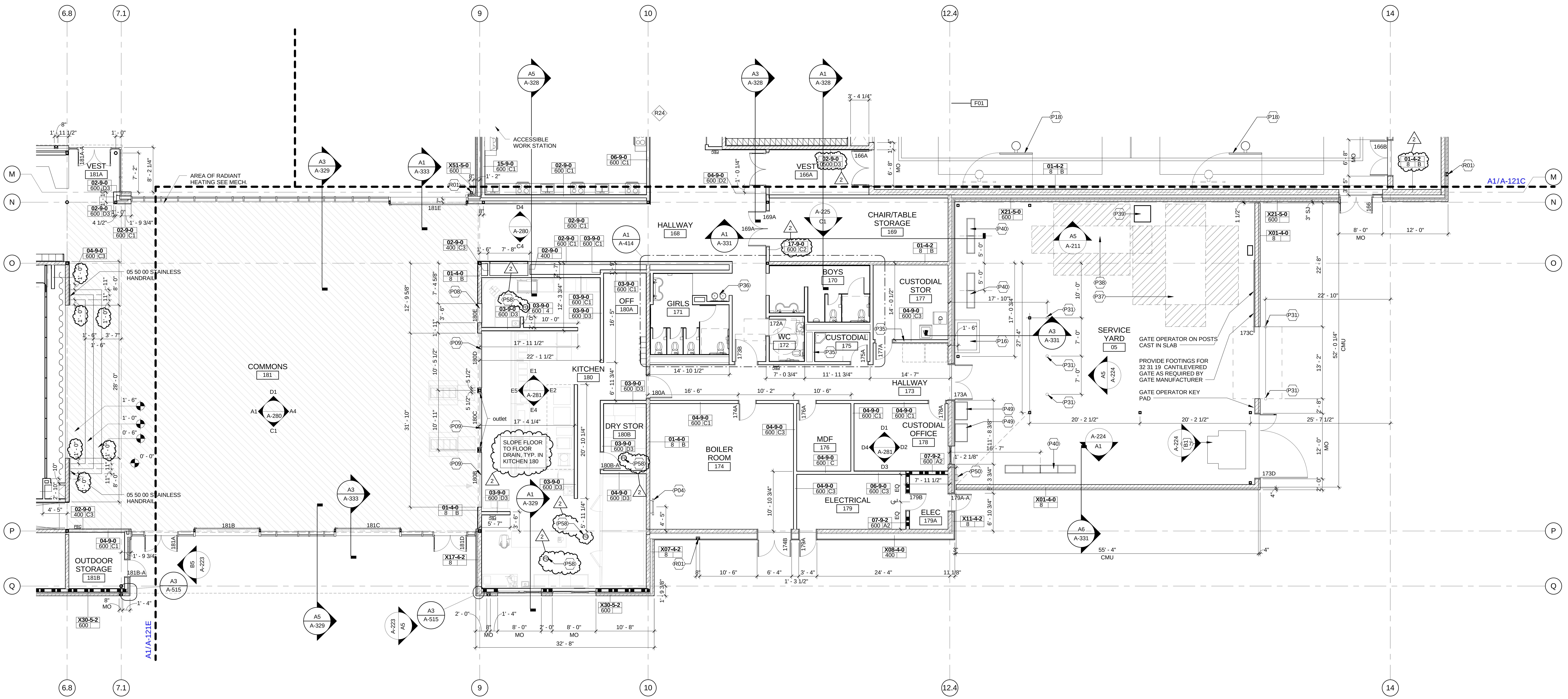
Key Value	Keynote Text
P04	05 51 33 WALL LADDER WITH EXTENSIONS
P08	08 33 13 COILING COUNTER DOOR
P09	08 33 23 OVERHEAD COILING DOOR
P16	11 40 00 CAN WASH
P18	11 66 23 WALL MOUNTED BACKSTOP, COORDINATE LOCATION WITH MANUFACTURER, COORDINATE WITH GAME LINES IN FINISH FLOOR PLANS.
P31	BOLLARD, SEE 2/I-106.3
P35	PROVIDE BLOCKING FOR MOP HOLDERS
P36	DIV 22 WATER FOUTAIN
P37	DIV 23 CHILLER, VERIFY MIN. CLEARANCES WITH MANUFACTERER
P38	DIV 26 GENERATOR, VERIFY MIN. CLEARANCES WITH MANUFACTERER

A- KEYNOTES FLOOR PLAN

Key Value	Keynote Text
P39	DIV 26 FUTURE GENERATOR, VERIFY MIN. CLEARANCES WITH MANUFACTERER
P40	BIKE RACKS
P47	OFCI TRASH COMPACTOR
P49	11 40 00 REFRIGERANT SKID
P50	DIV 26 ELECTRICAL METER
P58	DIV 22 FLOOR DRAIN
R01	DOWNSPOUT

PLAN SYMBOL LEGEND

NON RATED WALL
1-HOUR RATED WALL
2-HOUR RATED WALL
3-HOUR RATED WALL
RO ROUGH OPENING
MO MASONRY OPENING



A1 FIRST FLOOR PLAN - ZONE D
1/8" = 1'-0"

PLAN NORTH

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REGISTERED ARCHITECT
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LEROY L LANDERS
STATE OF OREGON

EUGENE SCHOOL DISTRICT 4J

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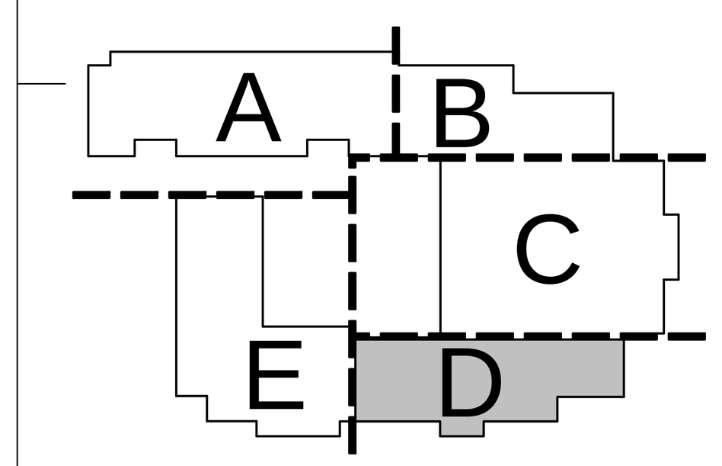

MARK	DATE	DESCRIPTION
2	3-13-2015	ADDENDUM 6
1	3-11-2015	ADDENDUM 5

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 1

PROJECT NO: 2013912.00
DRAWN BY: AC
CHECKED BY: Checker

 ORIGINAL SHEET SIZE: 30"x42"

FIRST FLOOR PLAN - ZONE D

A-121D

PLAN GENERAL NOTES

A. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO ANY WORK.

B. UNLESS OTHERWISE NOTED, PLAN DIMENSIONS SHOWN ARE:
-AT INTERIOR PARTITIONS: TO THE FACE OF STUD
-AT COLUMNS: TO THE CENTERLINE OF COLUMNS, IF WALL AT COLUMN CENTER WALL ON COLUMN
-AT CONCRETE: TO THE FACE OF CONCRETE
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FOR WALLS AT GRIDLINES, CENTERLINE OF STUDS ARE AT CENTERLINE OF GRID / COLUMN UNLESS DIMENSIONED OTHERWISE.

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E. PROVIDE BACKING AS REQUIRED TO SUPPORT WALL AND CEILING MOUNTED CASEWORK, GRAB BARS, HANDRAILS, MIRRORS, EQUIPMENT AND OTHER ACCESSORIES THAT REQUIRE SUPPORT. VERIFY LOCATIONS PRIOR TO INSTALLATION OF GYPSUM BOARD. COORDINATE REQUIREMENTS FOR INCREASED STUD SIZES.

F. SEE SHEET A-601 FOR EXTERIOR WALL ASSEMBLIES, A-602 FOR INTERIOR WALL ASSEMBLIES, AND A-603 FOR HORIZONTAL ASSEMBLIES.

G. MULTIPLE LAYERS GWB WALLS TO HAVE MULTIPLE LAYERS ON SAME FACE AS WALL TAG UNLESS OTHERWISE NOTED. ALIGN FACE OF FINISHES AT ALL ADJACENT WALL TYPES U.N.O.

H. CONTRACTOR TO VERIFY ALL INDICATED RECESS SLAB DEPTH WITH FINISH PRODUCT MANUFACTURER.

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J. SEE FINISH SCHEDULE FOR FLOOR FINISH INFORMATION.

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O. COMPLETELY SEAL AROUND PENETRATIONS THROUGH ACOUSTICAL WALLS. FILL DEPTH OF GAPS AROUND CUT-OUTS FOR ELECTRICAL BOXES, PIPES AND PLUMBING, AND OTHER PENETRATIONS. PROVIDE INSULATION BETWEEN THE CONCEALED FACE OF FINISH MATERIALS (WITHIN THE STUD OR JOIST CAVITY) AND PIPES, PLUMBING, THE BACK OF BOXES, OR OTHER RECESSED FIXTURES.

P. FRAME AND FINISH OPENINGS FOR MECHANICAL AND ELECTRICAL SYSTEMS AS REQUIRED BY MECHANICAL/ELECTRICAL DOCUMENTS.

Q. COORDINATE WITH STRUCTURAL DRAWINGS FOR REQUIRED SHEARWALL SHEATHING. PROVIDE IN ADDITION TO COMPONENTS INDICATED ON WALL TYPE DETAILS AS REQUIRED.

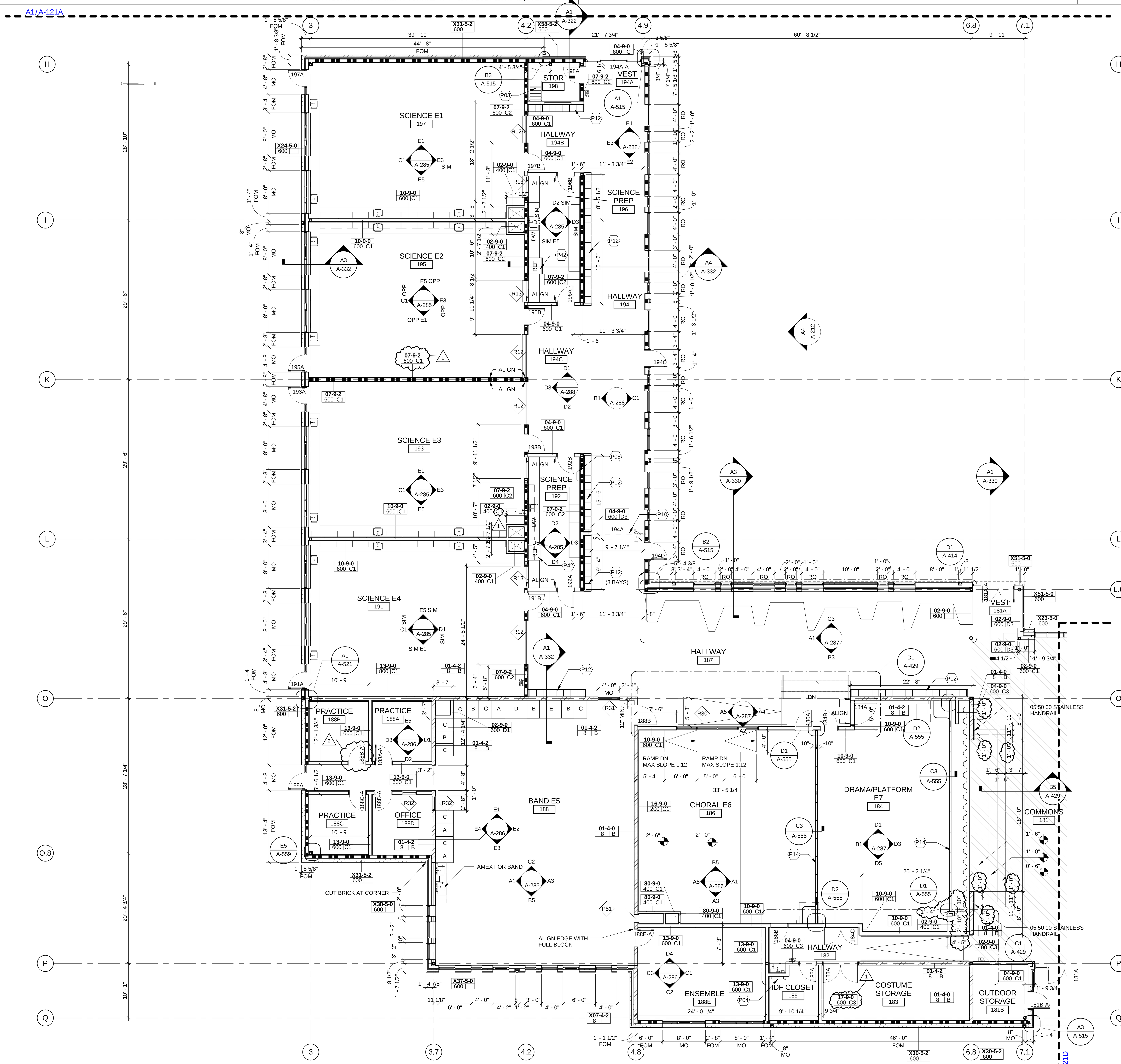
KEYNOTES (01)

A- KEYNOTES FLOOR PLAN

Key Value	Keynote Text
P03	05 51 33 SHIPS LADDER
P04	05 51 33 WALL LADDER WITH EXTENSIONS
P05	05 51 33 WALL LADDER NO EXTENSIONS
P10	08 33 28 OVERHEAD COILING GRILLS/ DEPLOYABLE EXIT DOORS
P12	10 51 00 HALLWAY LOCKERS
P14	10 22 26.33 SLIDING PANEL PARTITION
P42	OFCI REFRIGERATOR

PLAN SYMBOL LEGEND

- NON RATED WALL
- 1-HOUR RATED WALL
- 2-HOUR RATED WALL
- 3-HOUR RATED WALL
- RO — ROUGH OPENING
- MO — MASONRY OPENING



A1 FIRST FLOOR PLAN - ZONE E
1/8" = 1'-0"

PLAN NORTH

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EUGENE SCHOOL DISTRICT 4J

4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405

A | B | C | D | E

MARK	DATE	DESCRIPTION
2	3-13-2015	ADDENDUM 6
1	3-11-2015	ADDENDUM 5

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 1

PROJECT NO: 2013912.00
DRAWN BY: AC
CHECKED BY: DE

ORIGINAL SHEET SIZE: 30"x42"

FIRST FLOOR PLAN - ZONE E

A-121E

PLAN GENERAL NOTES

A. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO ANY WORK.

B. UNLESS OTHERWISE NOTED, PLAN DIMENSIONS SHOWN ARE:
-AT INTERIOR PARTITIONS: TO THE FACE OF STUD
-AT COLUMNS: TO THE CENTERLINE OF COLUMNS, IF WALL AT COLUMN CENTER WALL ON COLUMN
-AT CONCRETE: TO THE FACE OF CONCRETE
-AT EXTERIOR WALLS: TO THE FACE OF STUD (TO THE EDGE OF SLAB) (TO THE FACE OF FOUNDATION WALL)
-CMU WALLS ARE CENTERED ON GRID & DIMENSIONED TO INDICATE FULL BLOCK
CLR = CLEAR DIMENSIONS ARE TO FACE OF FINISHED MATERIAL.
FOR WALLS AT GRIDLINES, CENTERLINE OF STUDS ARE AT CENTERLINE OF GRID / COLUMN UNLESS DIMENSIONED OTHERWISE.

C. REFER TO ENLARGED PLANS OR DETAILS FOR ANY DIMENSIONS NOT INDICATED ON THESE PLANS.

D. EXTERIOR DOOR AND WINDOW OPENING DIMENSIONS ARE TO FOM OR FACE OF STUD FRAMING (EDGE OF OPENING - NOT INCLUDING SEALANT JOINTS) UNLESS OTHERWISE NOTED.

E. PROVIDE BACKING AS REQUIRED TO SUPPORT WALL AND CEILING MOUNTED CASEWORK, GRAB BARS, HANDRAILS, MIRRORS, EQUIPMENT AND OTHER ACCESSORIES THAT REQUIRE SUPPORT. VERIFY LOCATIONS PRIOR TO INSTALLATION OF GYPSUM BOARD. COORDINATE REQUIREMENTS FOR INCREASED STUD SIZES.

F. SEE SHEET A-601 FOR EXTERIOR WALL ASSEMBLIES, A-602 FOR INTERIOR WALL ASSEMBLIES, AND A-603 FOR HORIZONTAL ASSEMBLIES.

G. MULTIPLE LAYERS GWB WALLS TO HAVE MULTIPLE LAYERS ON SAME FACE AS WALL TAG UNLESS OTHERWISE NOTED. ALIGN FACE OF FINISHES AT ALL ADJACENT WALL TYPES U.N.O.

H. CONTRACTOR TO VERIFY ALL INDICATED RECESS SLAB DEPTH WITH FINISH PRODUCT MANUFACTURER.

I. ALL DOORS SHALL BE 6" FROM FACE OF STUD TO EDGE OF DOOR OPENING UNLESS OTHERWISE NOTED.

J. SEE FINISH SCHEDULE FOR FLOOR FINISH INFORMATION.

K. EXTERIOR STUD WALLS TO HAVE (1) LAYER OF GWB ON THE INTERIOR SIDE U.N.O.

M. ASSEMBLIES FOR FIRE RATED WALLS AND COLUMNS SHALL EXTEND FROM STRUCTURAL FLOOR TO UNDERSIDE OF FLOOR DECK OR ROOF ABOVE, UNLESS SPECIFICALLY NOTED OTHERWISE. ALL OPENINGS AND JOINTS SHALL BE PROTECTED AS REQUIRED BY CODE.

N. MAINTAIN FIRE RESISTANCE RATING FOR ALL CONSTRUCTION INDICATED AT THROUGH-WALL PENETRATIONS, BUILT-IN WALL FIXTURES, ACCESSORIES, AND BEHIND MAILBOXES, FIRE EXTINGUISHER CABINETS, PLUMBING FIXTURES, ELECTRIC PANELS AND SIMILAR ITEMS, IN COMPLIANCE WITH REQUIREMENTS OF APPLICABLE CODES. COORDINATE CONSTRUCTION OF FIRE-RATED ASSEMBLIES WITH DESIGNATED DESIGN NUMBER.

O. COMPLETELY SEAL AROUND PENETRATIONS THROUGH ACOUSTICAL WALLS. FILL DEPTH OF GAPS AROUND CUT-OUTS FOR ELECTRICAL BOXES, PIPES AND PLUMBING, AND OTHER PENETRATIONS. PROVIDE INSULATION BETWEEN THE CONCEALED FACE OF FINISH MATERIALS (WITHIN THE STUD OR JOIST CAVITY) AND PIPES, PLUMBING, THE BACK OF BOXES, OR OTHER RECESSED FIXTURES.

P. FRAME AND FINISH OPENINGS FOR MECHANICAL AND ELECTRICAL SYSTEMS AS REQUIRED BY MECHANICAL/ELECTRICAL DOCUMENTS.

Q. COORDINATE WITH STRUCTURAL DRAWINGS FOR REQUIRED SHEARWALL SHEATHING. PROVIDE IN ADDITION TO COMPONENTS INDICATED ON WALL TYPE DETAILS AS REQUIRED.

KEYNOTES 01

A- KEYNOTES FLOOR PLAN

Key Value	Keynote Text
P04	05 51 33 WALL LADDER WITH EXTENSIONS
P36	DIV 22 WATER FOUTAIN
P54	FULLY RECESSED FIRE EXTINGUISHER CABINET
P57	SURFACE MOUNT FIRE EXTINGUISHER BRACKET

PLAN SYMBOL LEGEND

- NON RATED WALL
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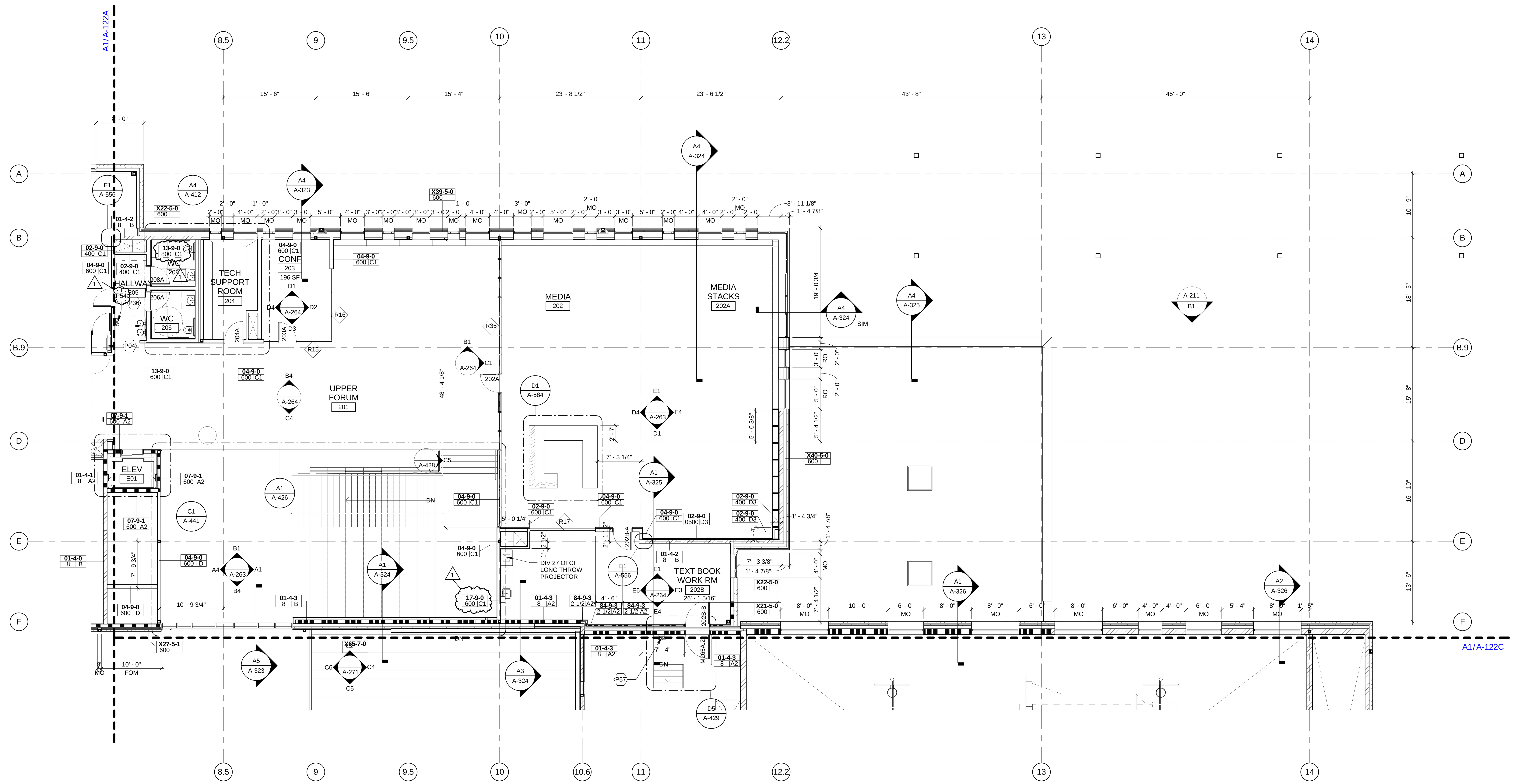
- 2-HOUR RATED WALL
- 3-HOUR RATED WALL
- RO — ROUGH OPENING
- MO — MASONRY OPENING



A1 SECOND FLOOR PLAN - ZONE B
1/8" = 1'-0"

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EUGENE SCHOOL DISTRICT 4J

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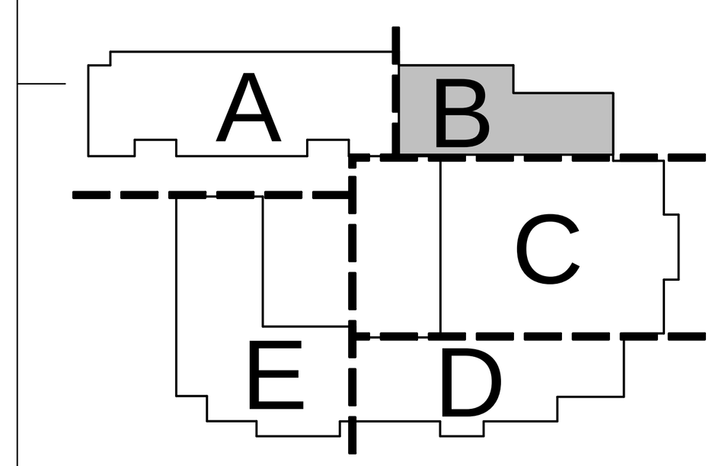

MARK	DATE	DESCRIPTION
1	2-27-2015	ADDENDUM 1

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 1
PROJECT NO: 2013912.00
DRAWN BY: AC
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SECOND FLOOR PLAN - ZONE B

A-122B

ROOF PLAN GENERAL NOTES

A. REFERENCE STRUCTURAL AND MECHANICAL DRAWINGS FOR ROOF PENETRATIONS.

B. VERIFY ALL ROOF PENETRATIONS AND ROOFING DETAILS COMPLY WITH MANUFACTURERS STANDARD DETAILS BEFORE INSTALLING.

C. COORDINATE ROOFTOP WALKWAYS WITH MECHANICAL UNITS AND ACCESS PATHWAY, ALL UNITS ON MEMBRANE ROOFS TO HAVE PERIMETER WALKWAYS.

D. ALL SHEET METAL ROOF FLASHING TO BE COLOR SM 1 UNLESS NOTED OTHERWISE ON THE ROOFING DETAILS.

E. PROVIDE EXPANSION JOINTS @ ALL GUTTERS AND GUTTER COVERES. REFER EXPANSION JOINT DETAILS ON A2 & A3/A-532.

KEYNOTES 01

ROOF PLAN LEGEND	
Key Value	Keynote Text
R01	DOWNSPOUT
R02	SCUPPER AND DOWNSPOUT
R03	ROOF DRAIN AND DOWNSPOUT
R04	KITCHEN EXHAUST
R05	FUME HOOD EXHAUST
R06	SKYLIGHT, TYP
R07	SUNSHADE, TYP
R09	ROOF-MOUNTED ANTENNAE - REFER TO TECHNOLOGY DRAWINGS
R10	ROOF HATCH
R11	SOLAR PANELS W/ BRACKETS MOUNTED ON STEEL FRAME
R12	EXPANSION JOINT
R13	REFER TO MECHANICAL

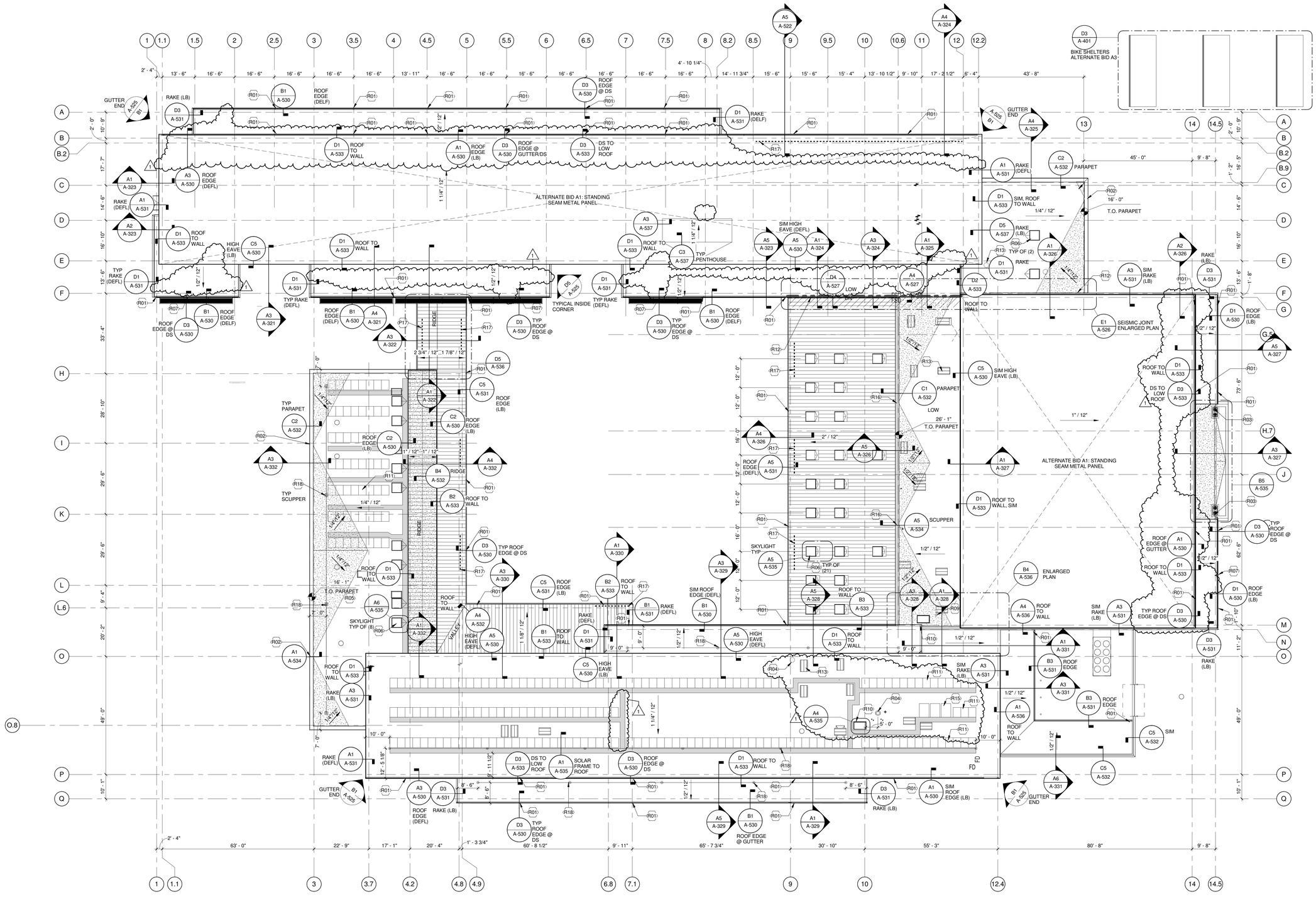
ROOF PLAN LEGEND	
Key Value	Keynote Text
R15	SOLAR THERMAL PANEL W/ BRACKETS MOUNTED ON STEEL FRAME
R16	SCUPPER
R17	SNOW GUARD
R18	FALL PROTECTION ANCHOR

ROOF PLAN MATERIAL LEGEND

- 07 41 13 STANDING SEAM METAL ROOFING
- 07 54 00 MEMBRANE ROOFING
- 07 54 00 TAPERED INSULATION
- 07 54 00 WALKWAY PAD
- FALL PROTECTION ANCHOR

ROOF PLAN SYMBOL LEGEND

- FOUR FOOT WIDE ROOF ZONE SOUTH OF GRID F & BETWEEN GRIDS 9 & 12 THAT REQUIRES FIRE RETARDANT TREATED PLYWOOD & NO ROOF PENETRATIONS ZONE.
- SNOWGUARDS ABOVE ALL ENTRIES AT METAL ROOFS ONLY



A1 ROOF PLAN
1/16" = 1'-0"

PLAN NORTH

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MARK	DATE	DESCRIPTION
1	3-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 1
PROJECT NO: 2013912.00
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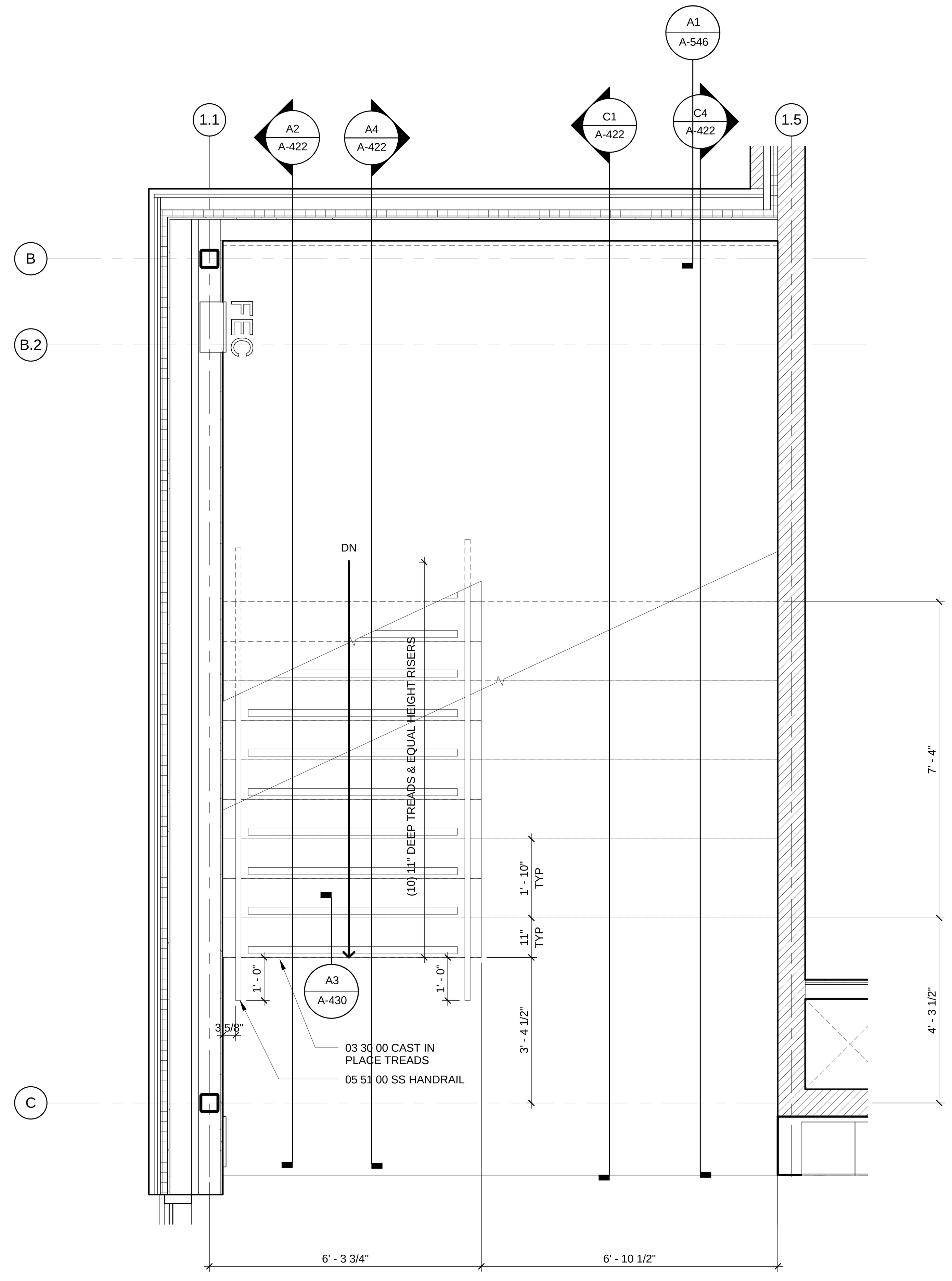
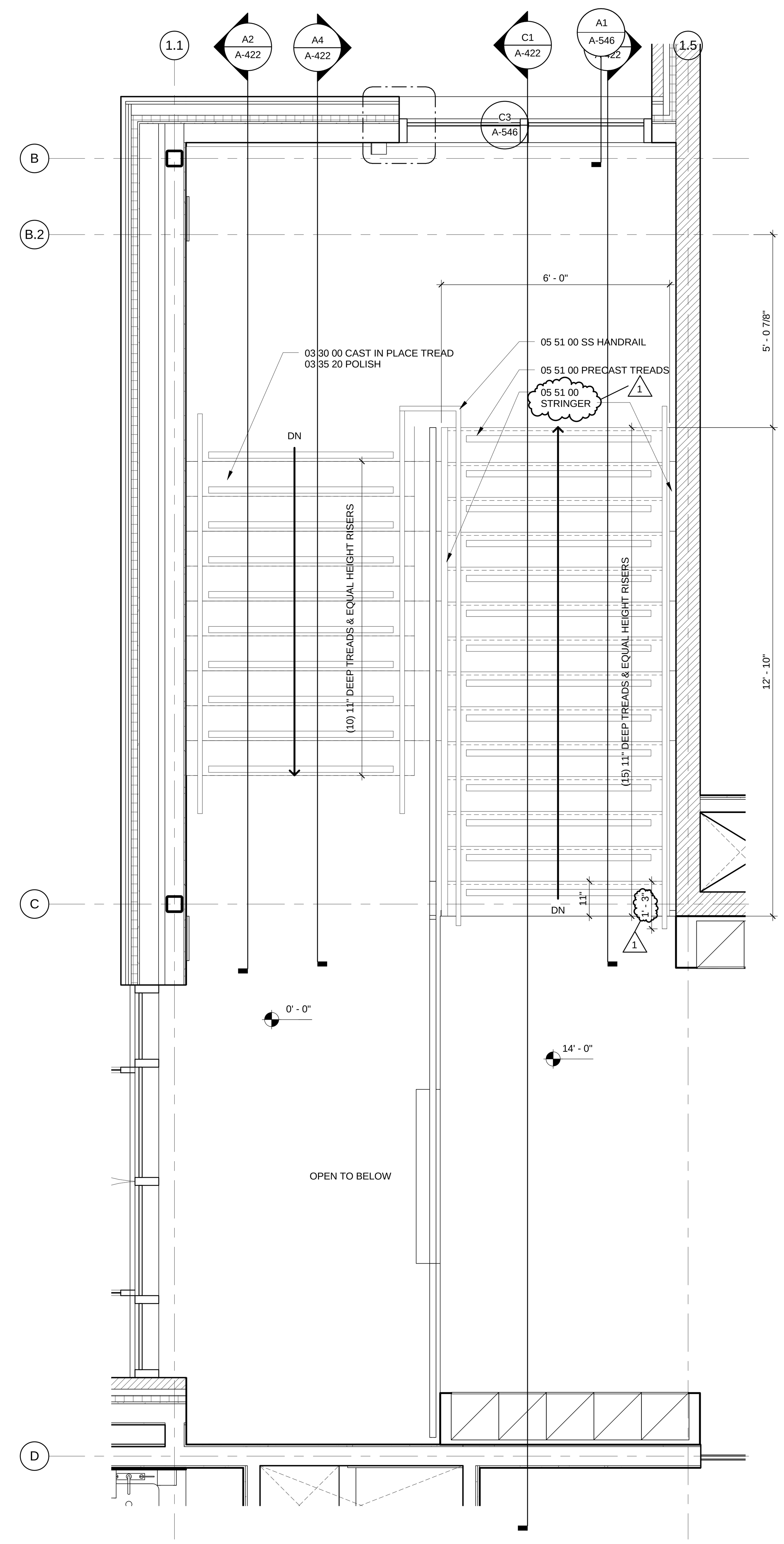
CHECKED BY: DG

ROOF PLAN

A-141



C3 STAIR 1 - FIRST FLOOR PLAN
1/2" = 1'-0"



B5 STAIR 1 - SECOND FLOOR PLAN
1/2" = 1'-0"

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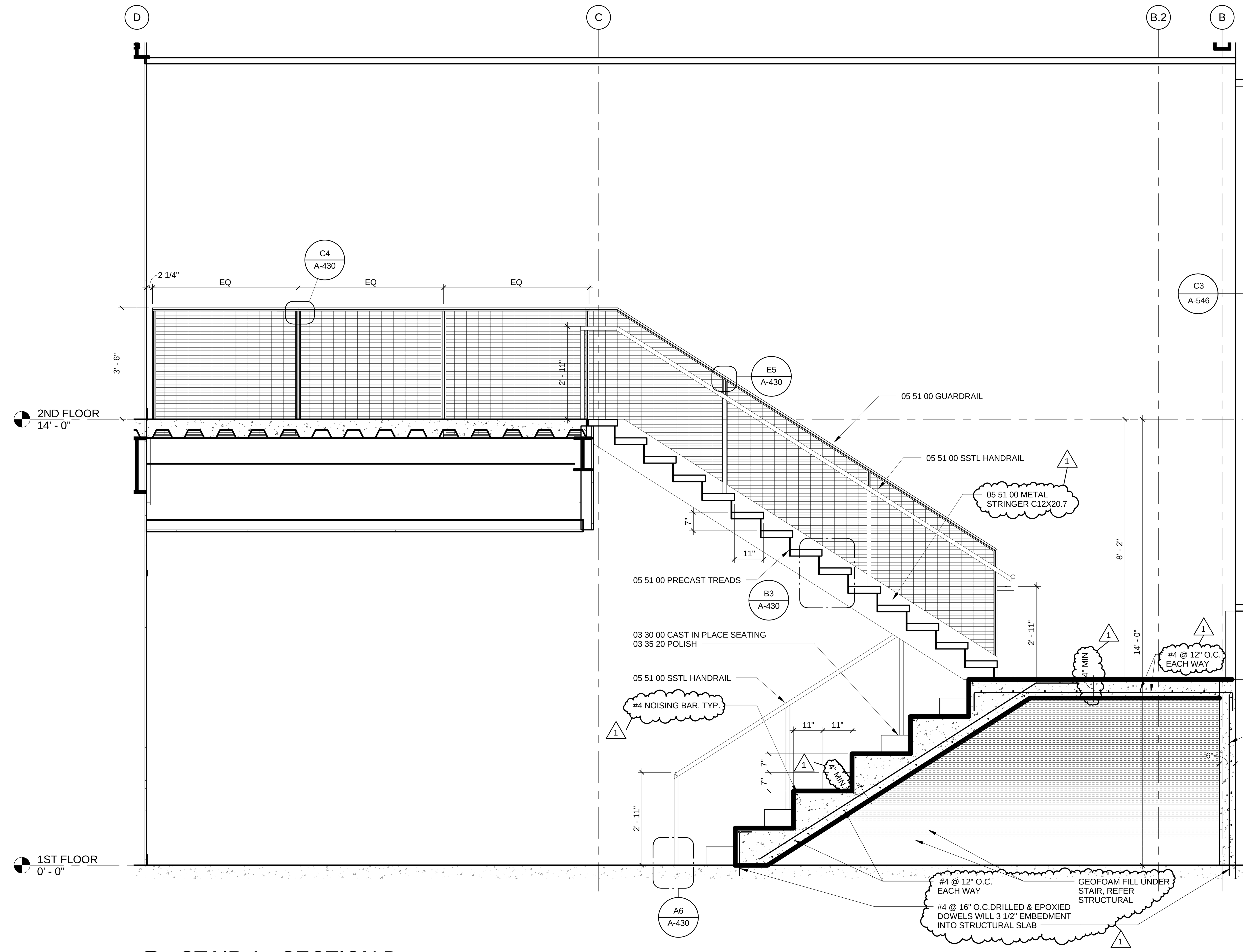
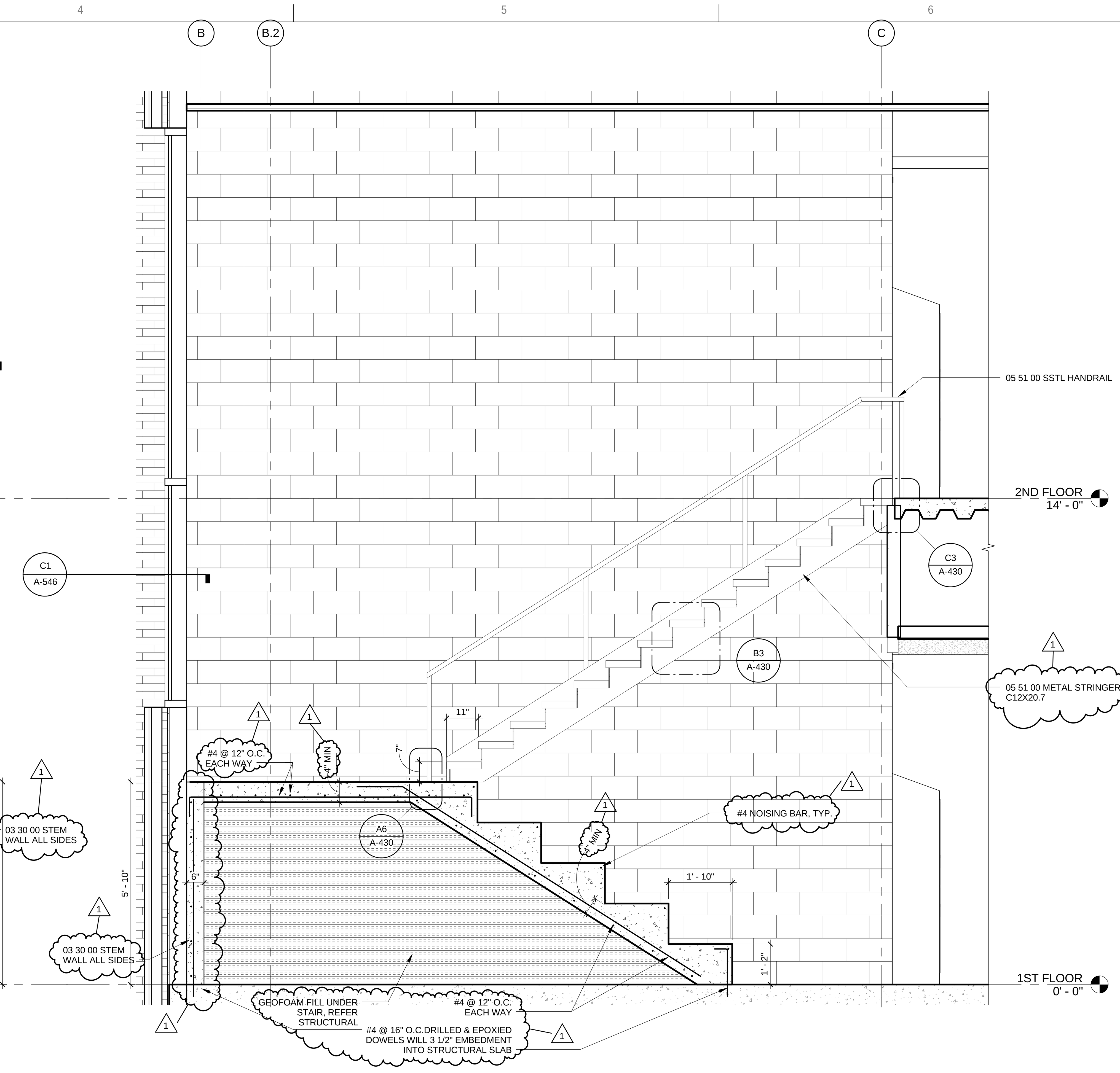
STAIR 1 - ENLARGED PLANS

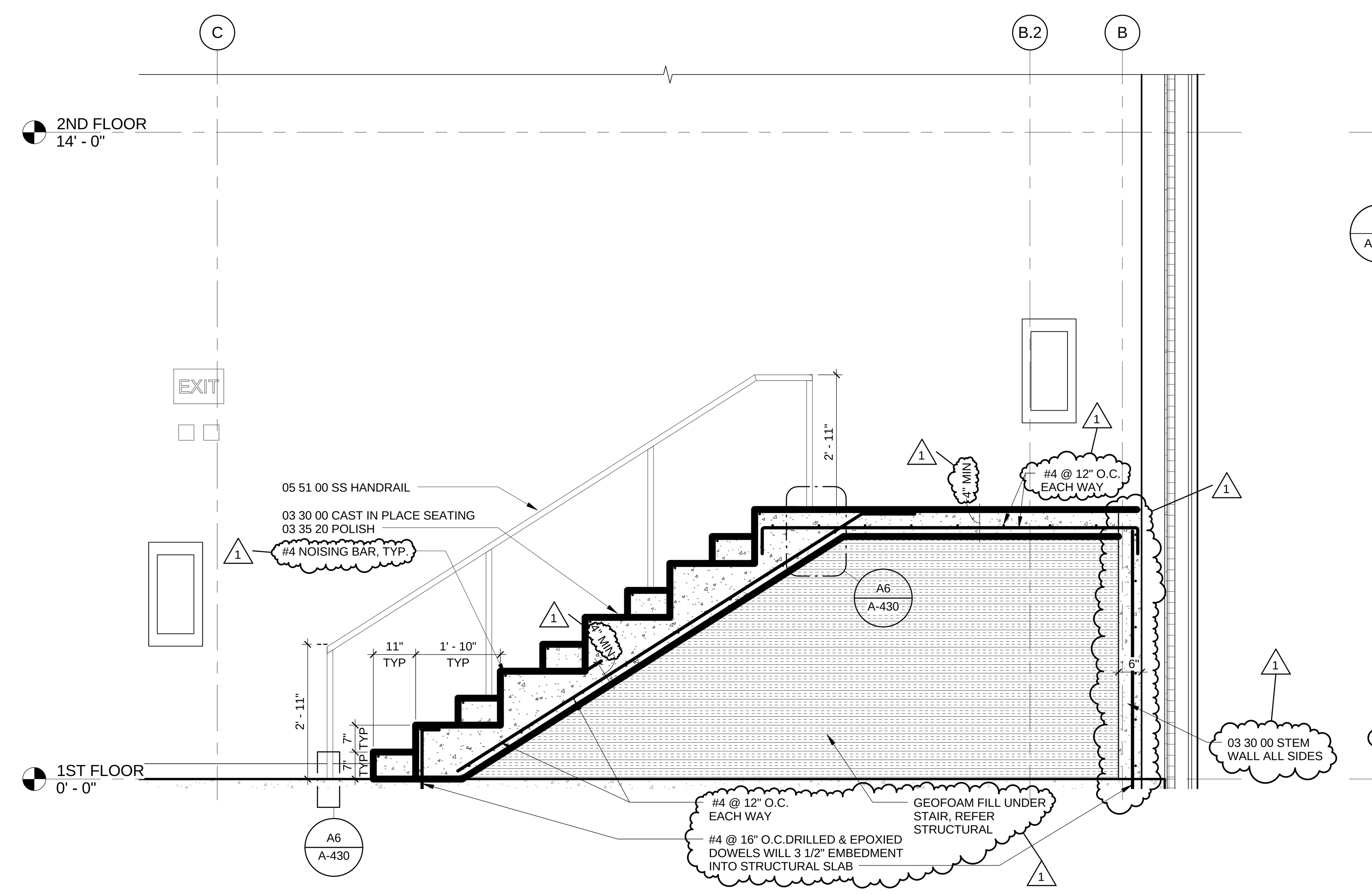
A-421



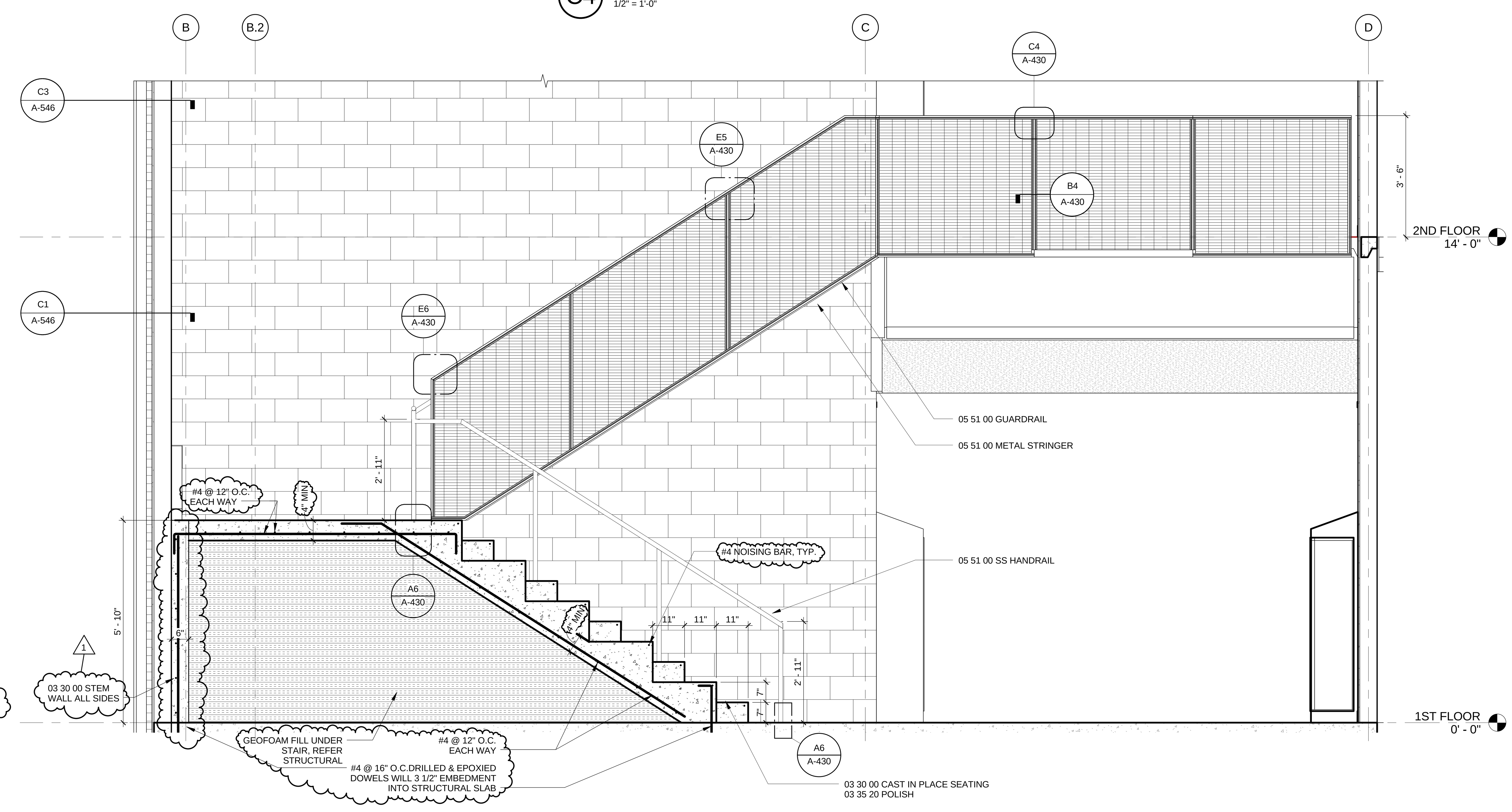
C1 STAIR 1 - SECTION D
1/2" = 1'-0"



C4 ZONE A STAIR SECTION UPPER RUN
1/2" = 1'-0"



A2 STAIR 1 - SECTION C
1/2" = 1'-0"



A4 ZONE A STAIR SECTION LOWER RUN
1/2" = 1'-0"

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1	3-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
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VOLUME: PACKAGE 2 VOLUME 1
PROJECT NO: 2013912.00
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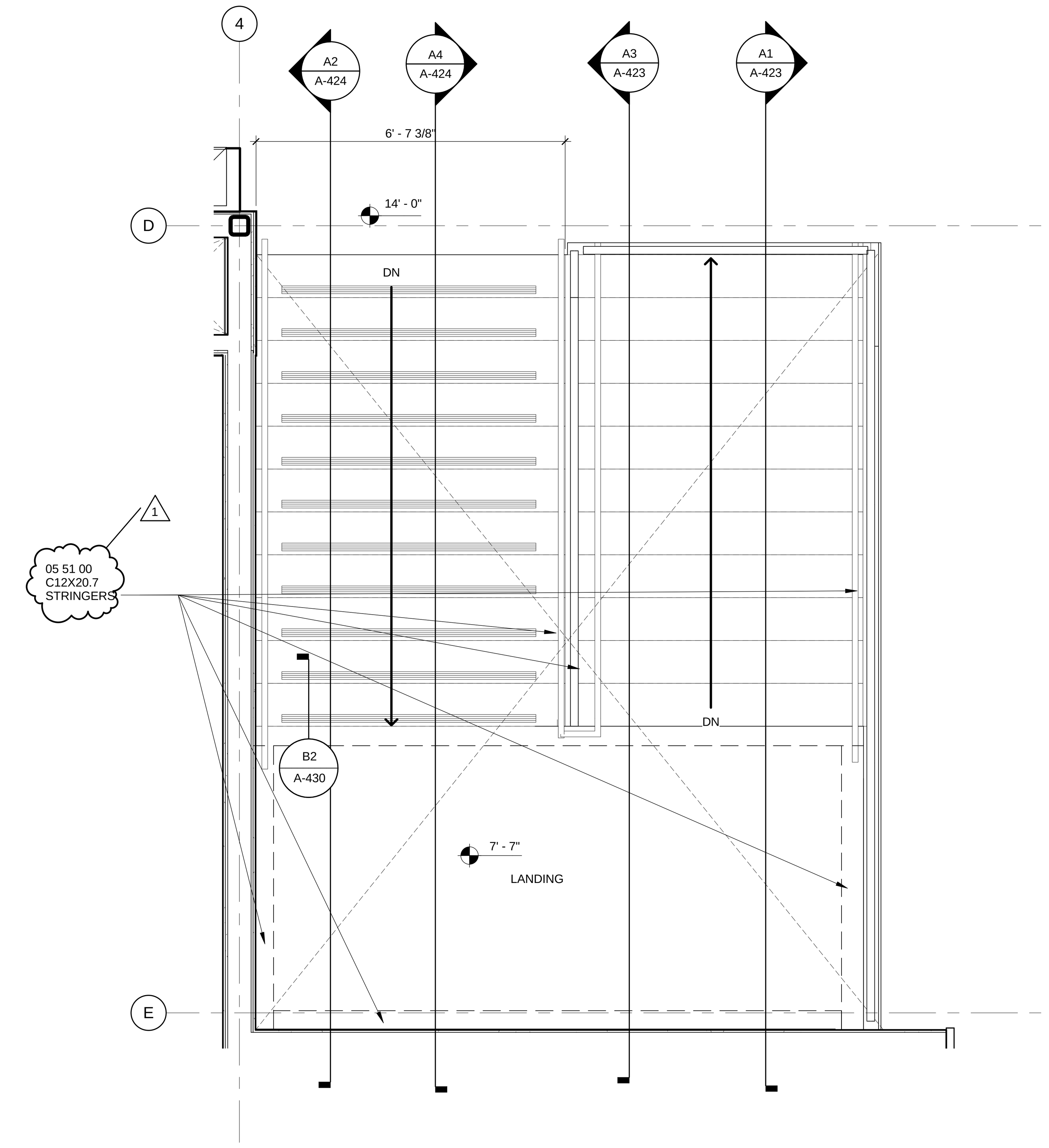
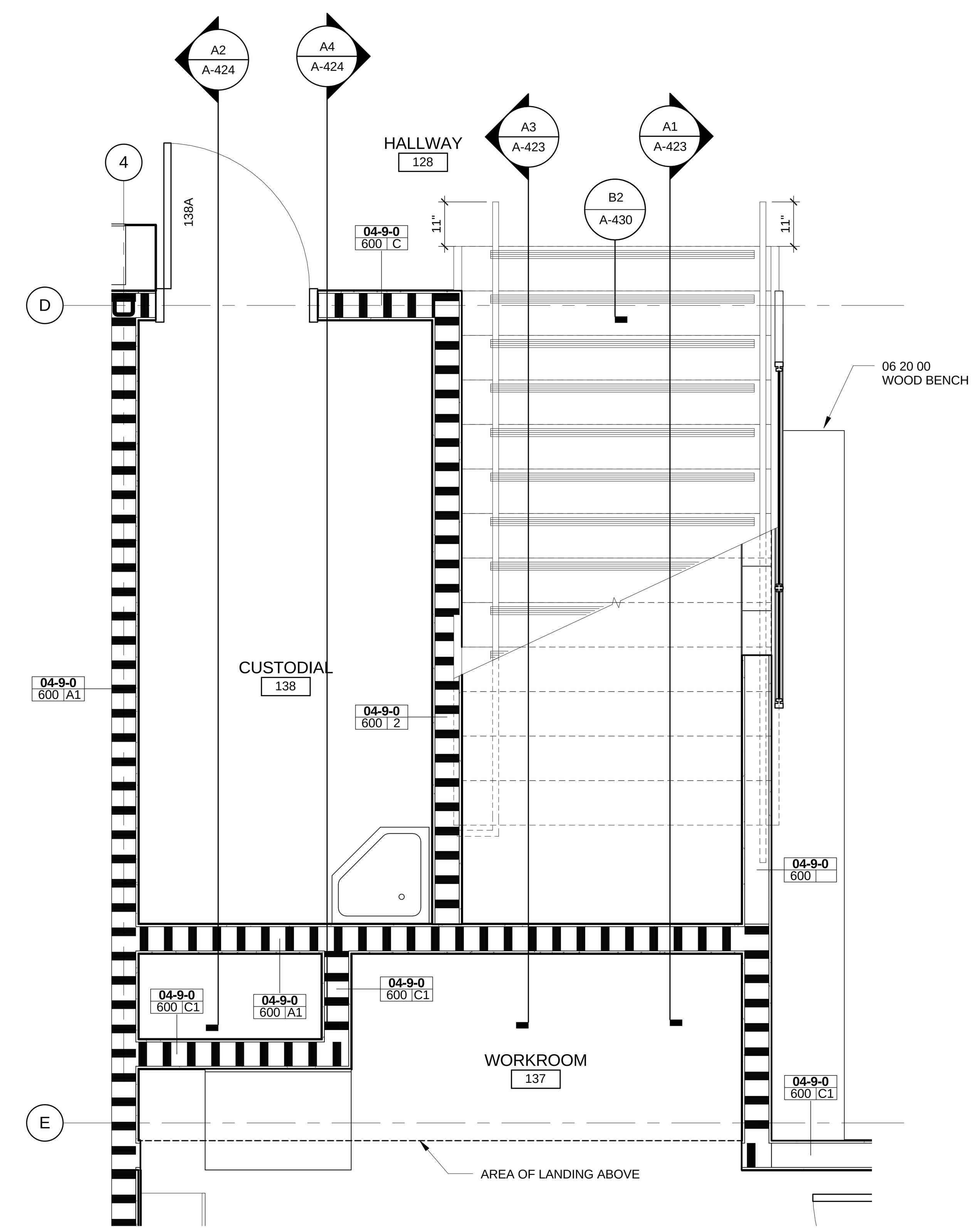
STAIR 1 - SECTIONS

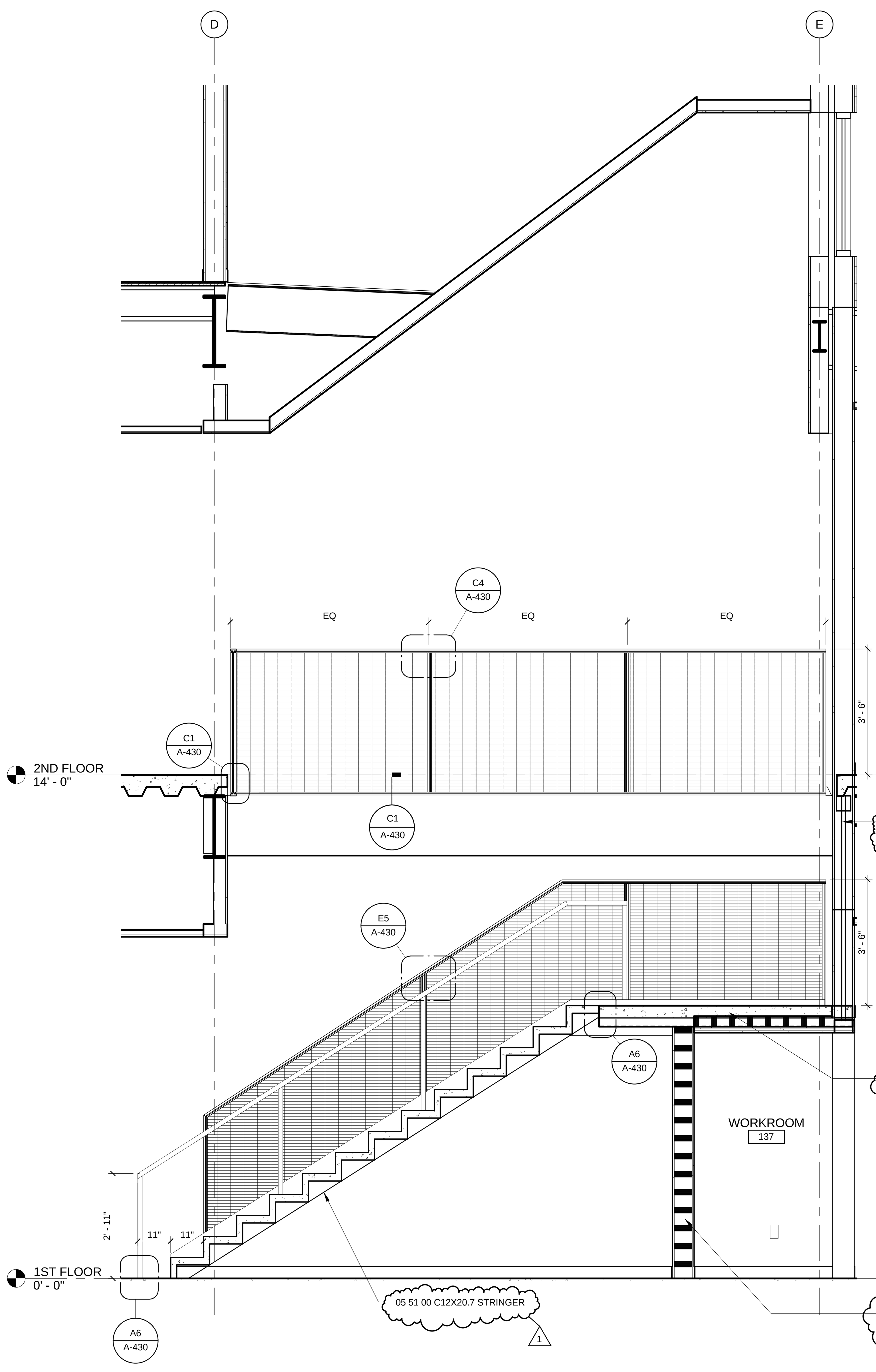
A-422



C5 STAIR 2 - SECOND FLOOR PLAN
1/2" = 1'-0"



A5 STAIR 2 - FIRST FLOOR PLAN
1/2" = 1'-0"



A1 STAIR 2 - SECTION A
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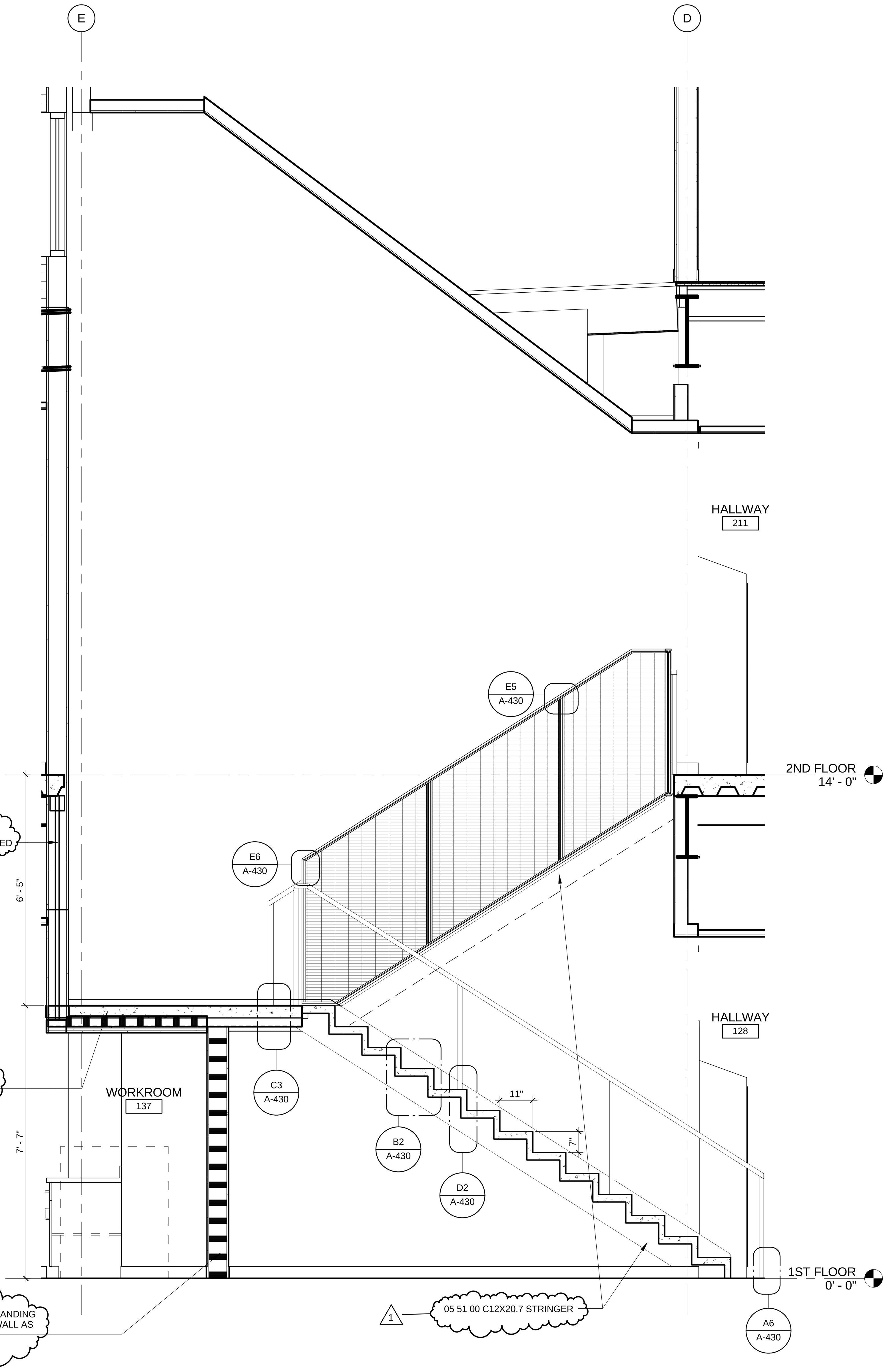

A3 STAIR 2 - SECTION D
1/2" = 1'-0"

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DRAWN BY: JB
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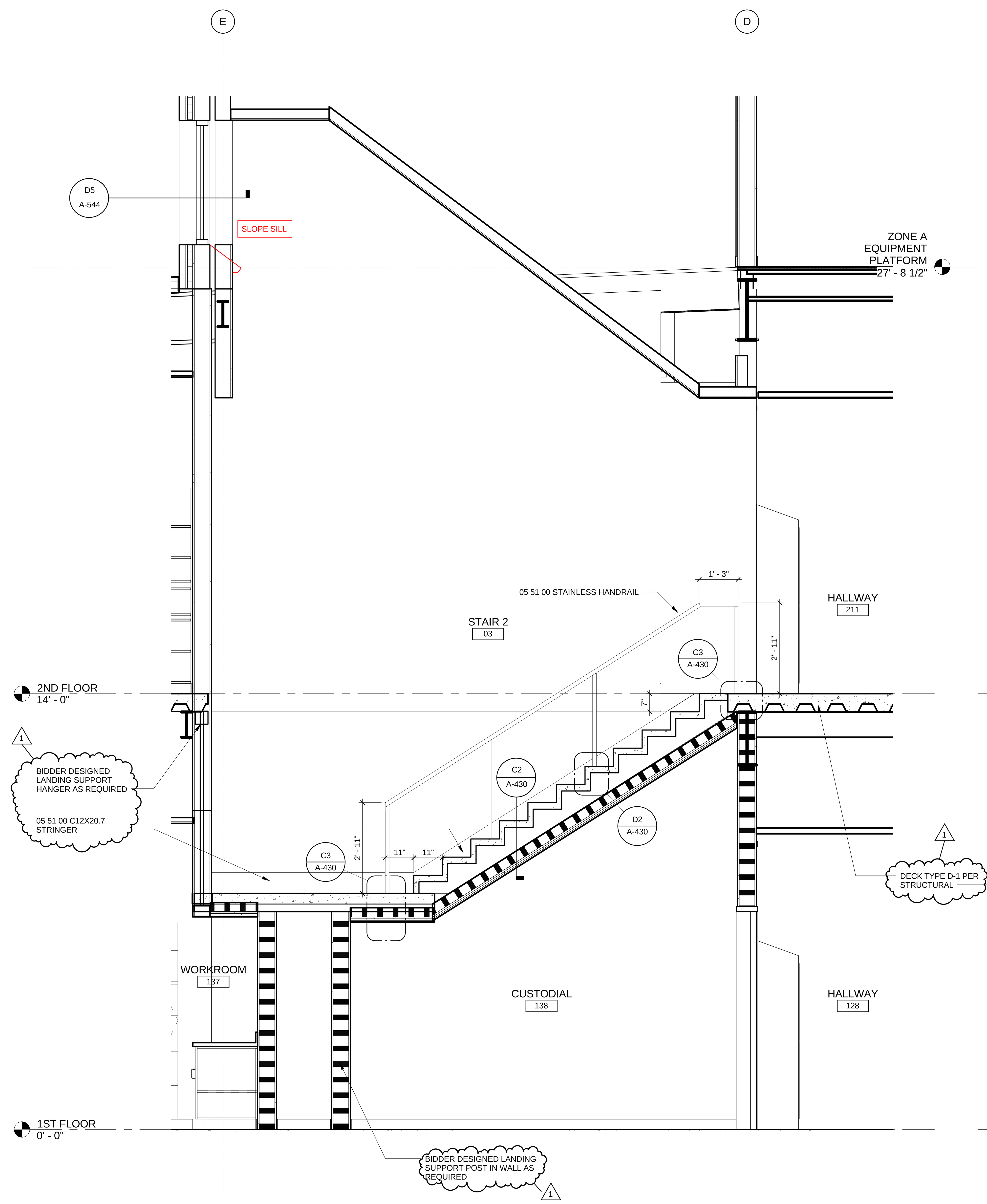
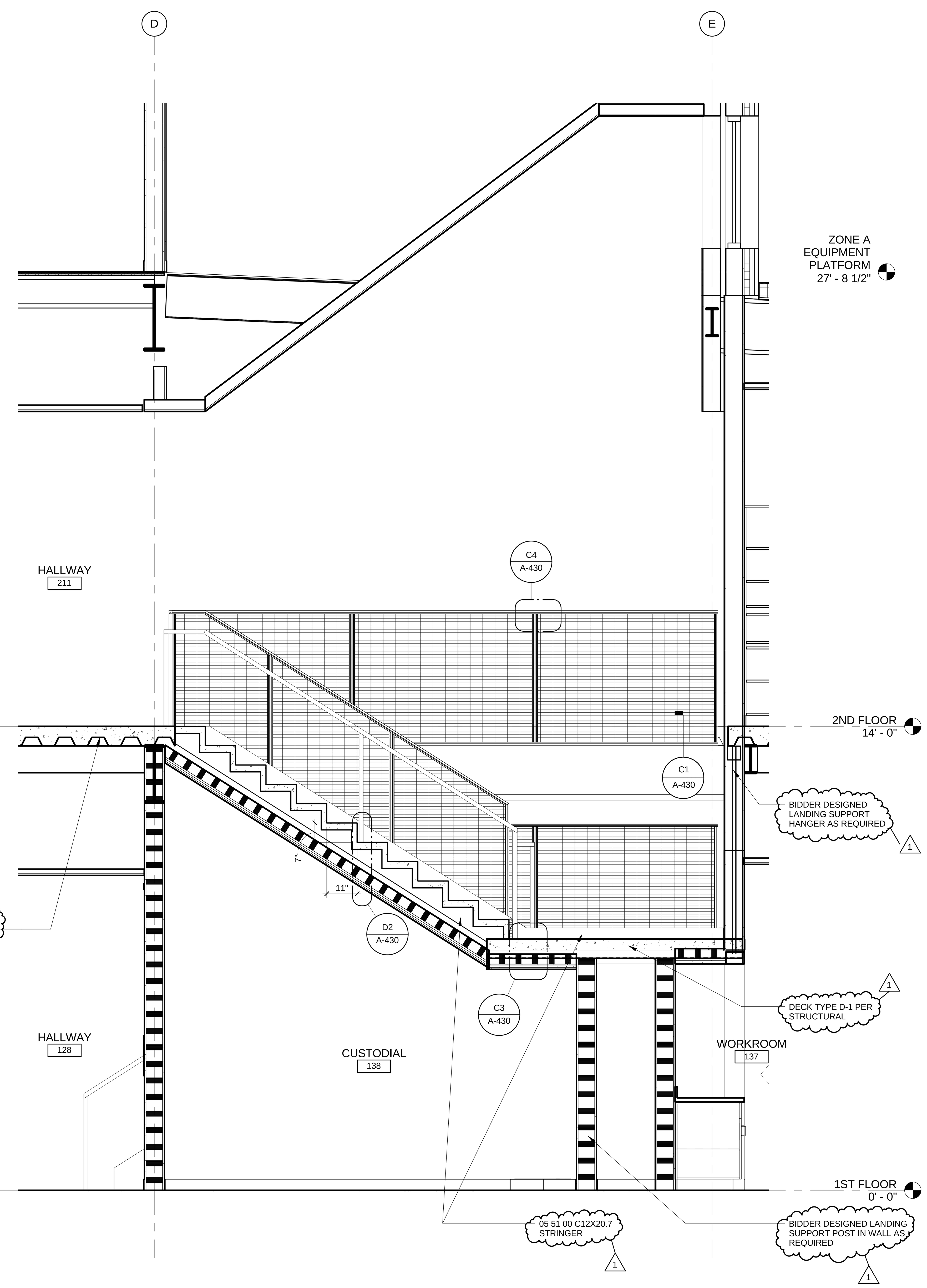
ORIGINAL SHEET SIZE: 30"x42"

STAIR 2 - ENLARGED PLANS & SECTIONS

A-423



A2 STAIR 2 - SECTION B
1/2" = 1'-0"



A4 STAIR 2 - SECTION C
1/2" = 1'-0"

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PROJECT NO: 2013912.00
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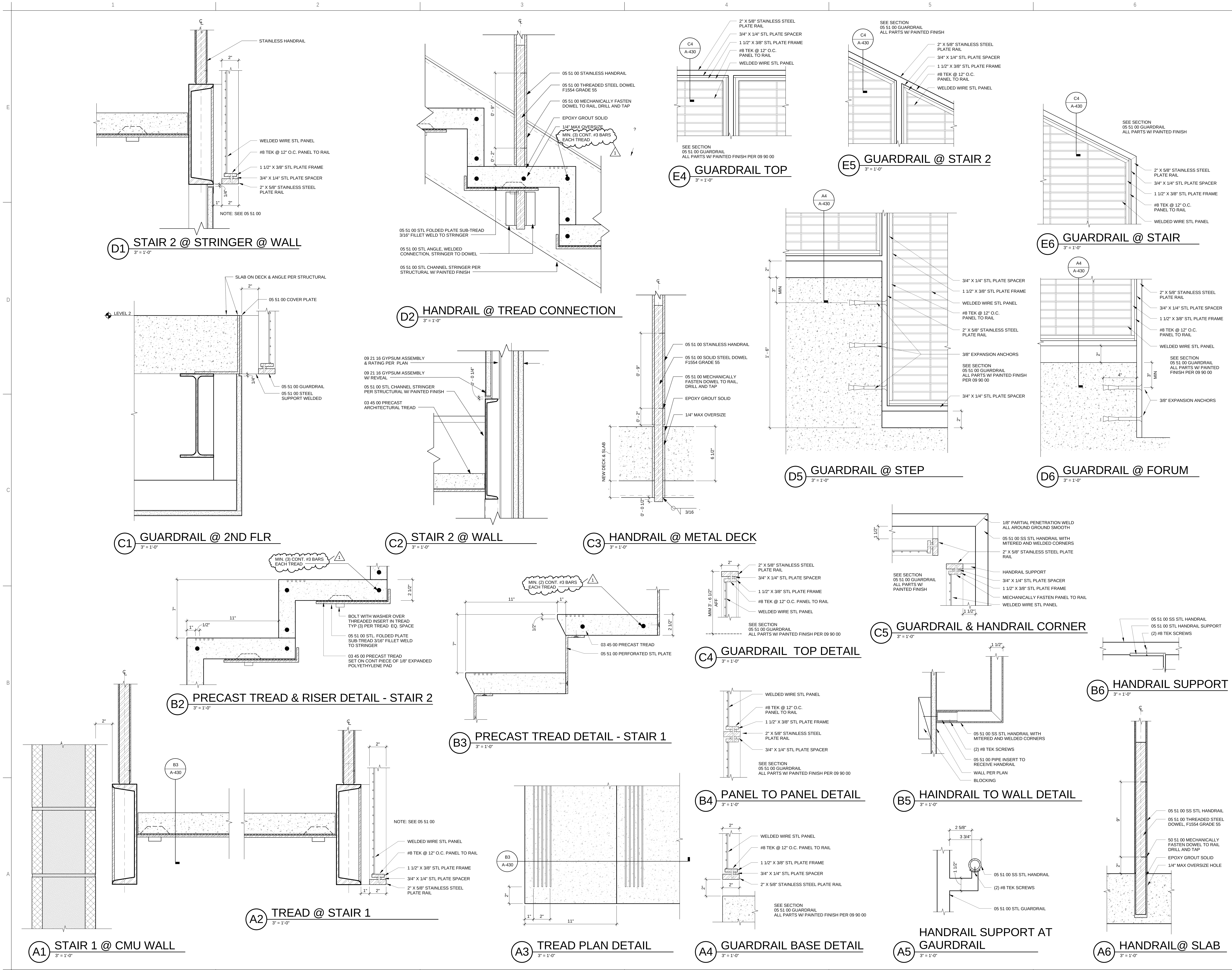
STAIR 2 - SECTIONS

A-424



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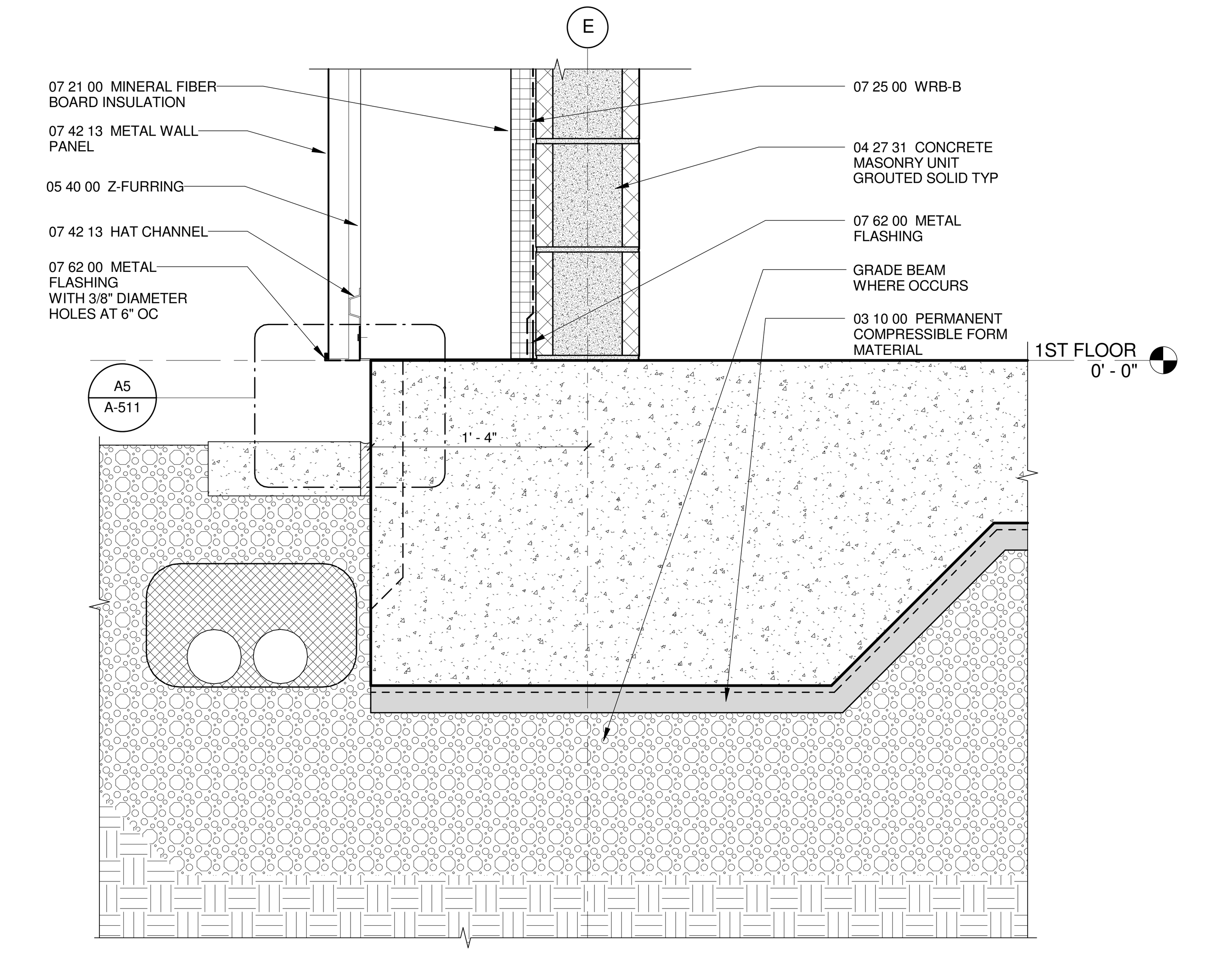
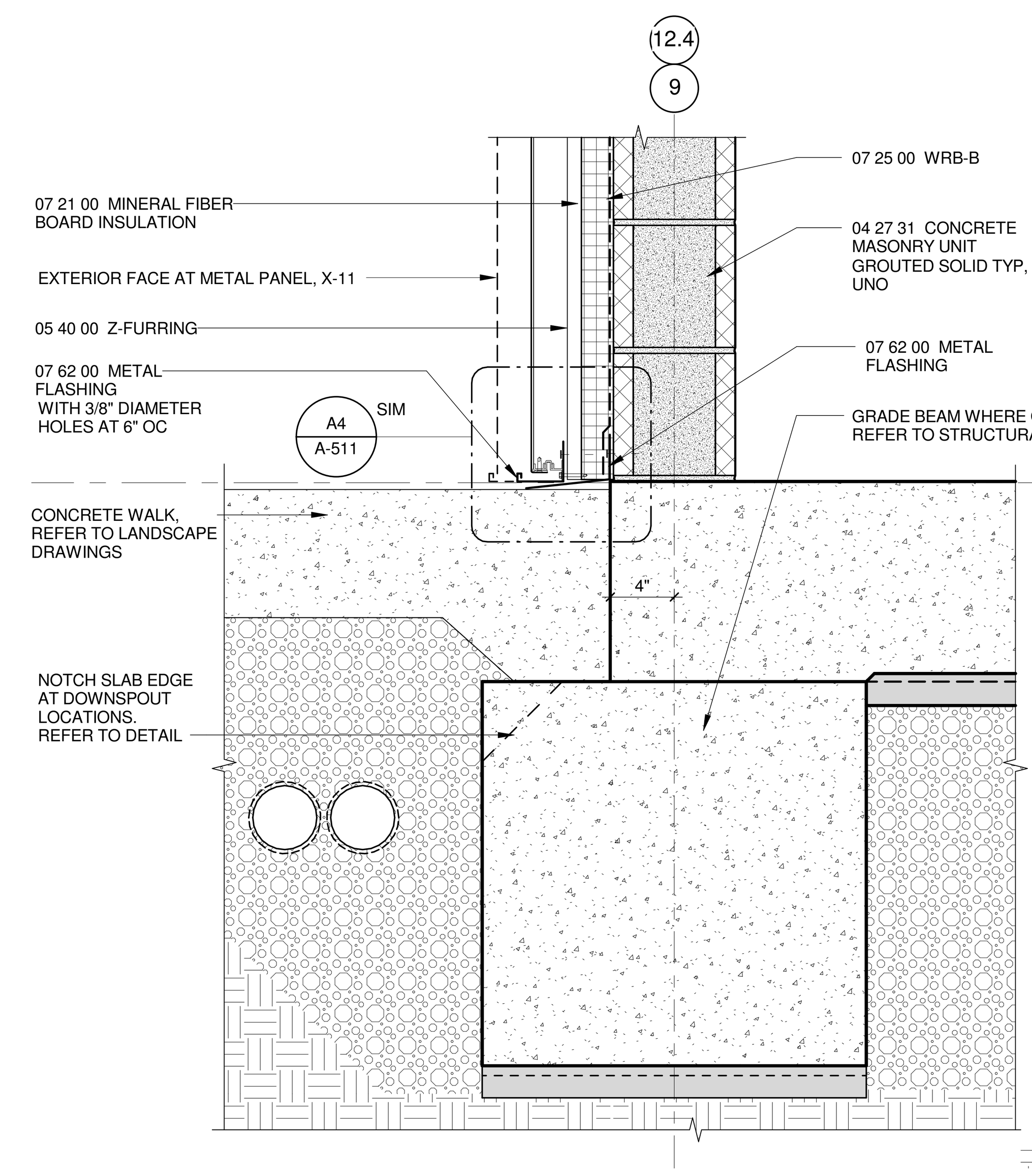
STAIR DETAILS

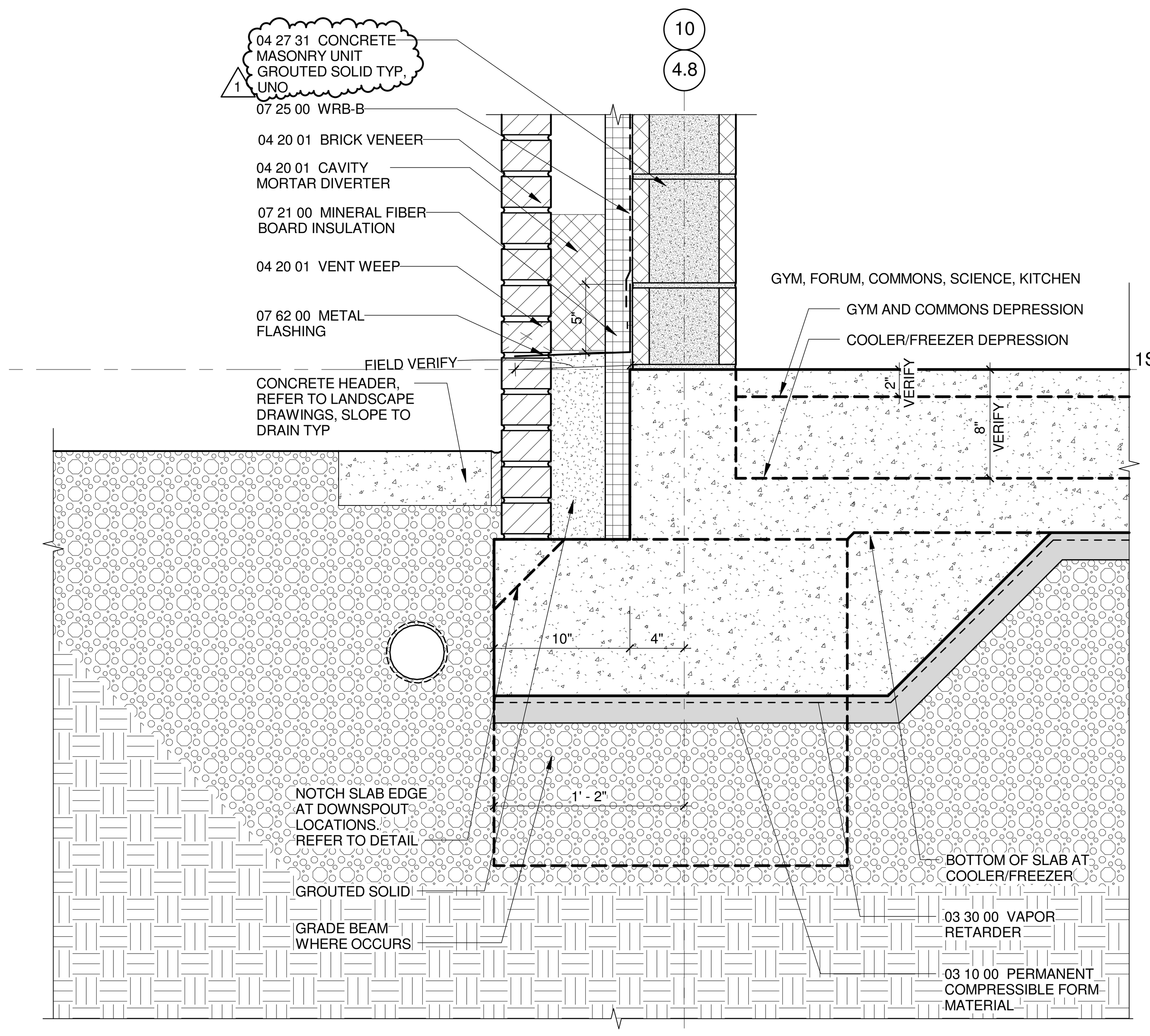
A-430



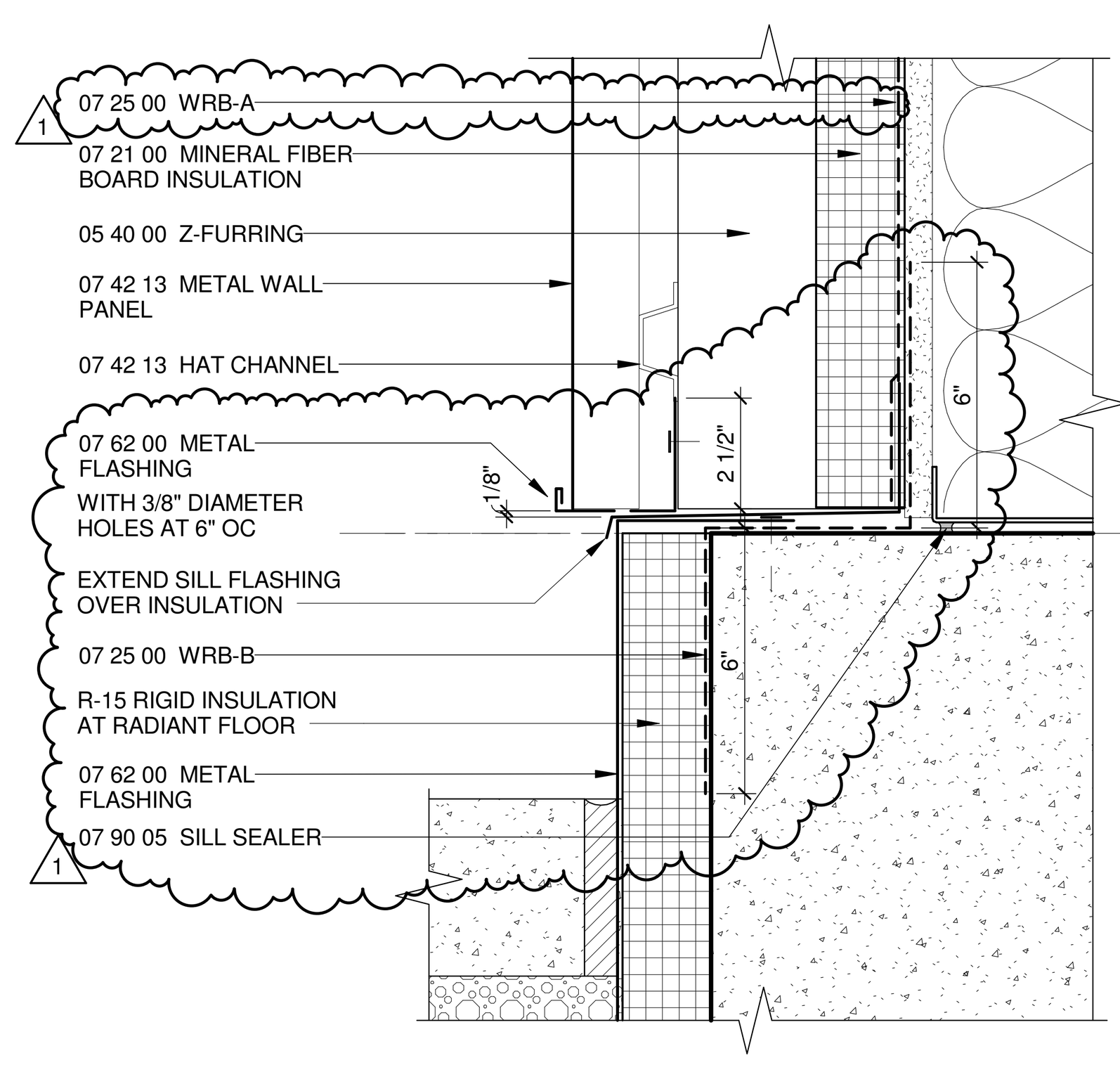
D1 SLAB EDGE AT X-08
1 1/2" = 1'-0"



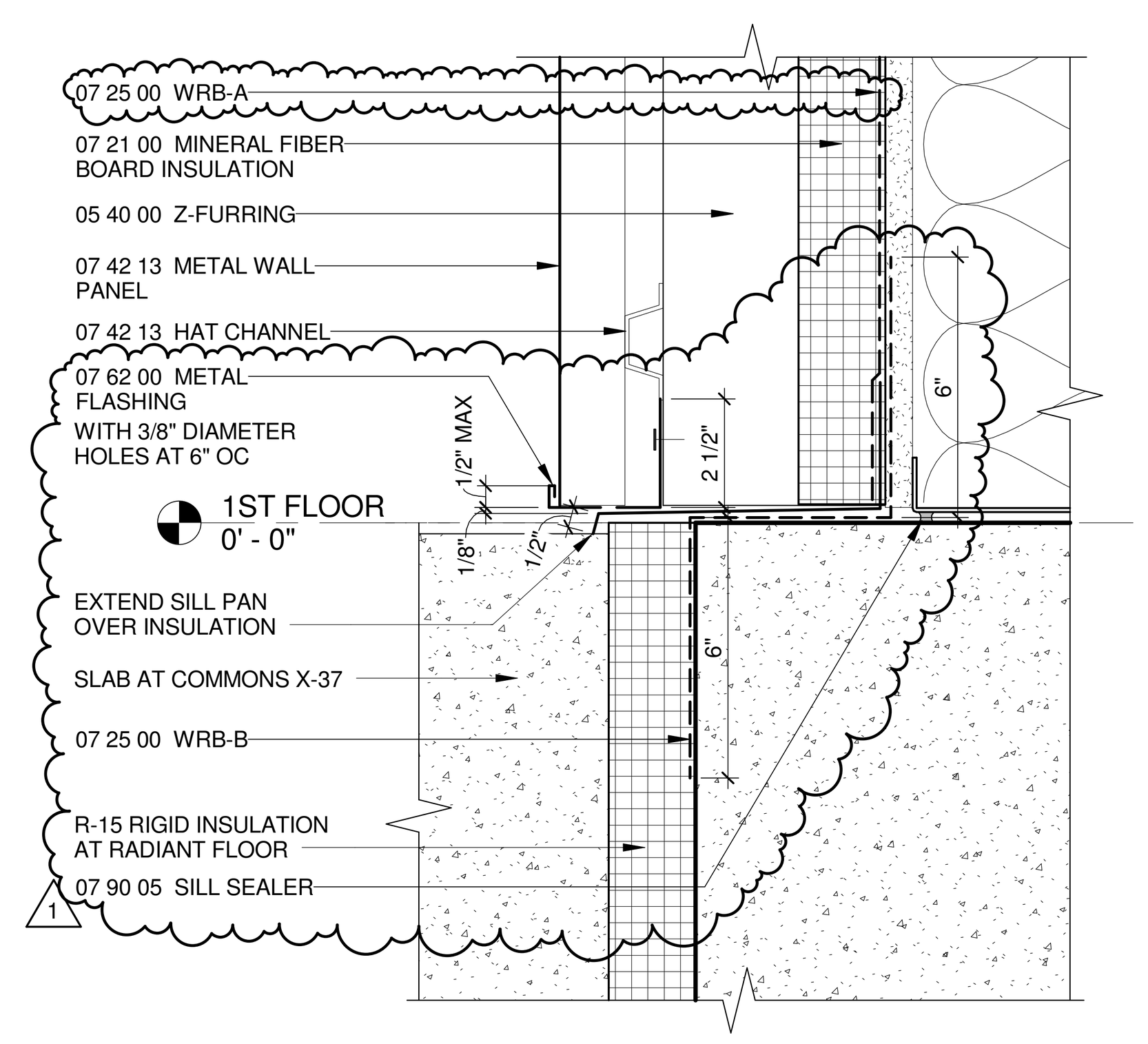
D3 SLAB EDGE AT X-11
X-17
1 1/2" = 1'-0"



D5 SLAB EDGE AT X-07
1 1/2" = 1'-0"



B4 SLAB EDGE AT METAL PANEL AT CONCRETE HEADER
3" = 1'-0"



B5 SLAB EDGE AT METAL PANEL AT CONCRETE WALK
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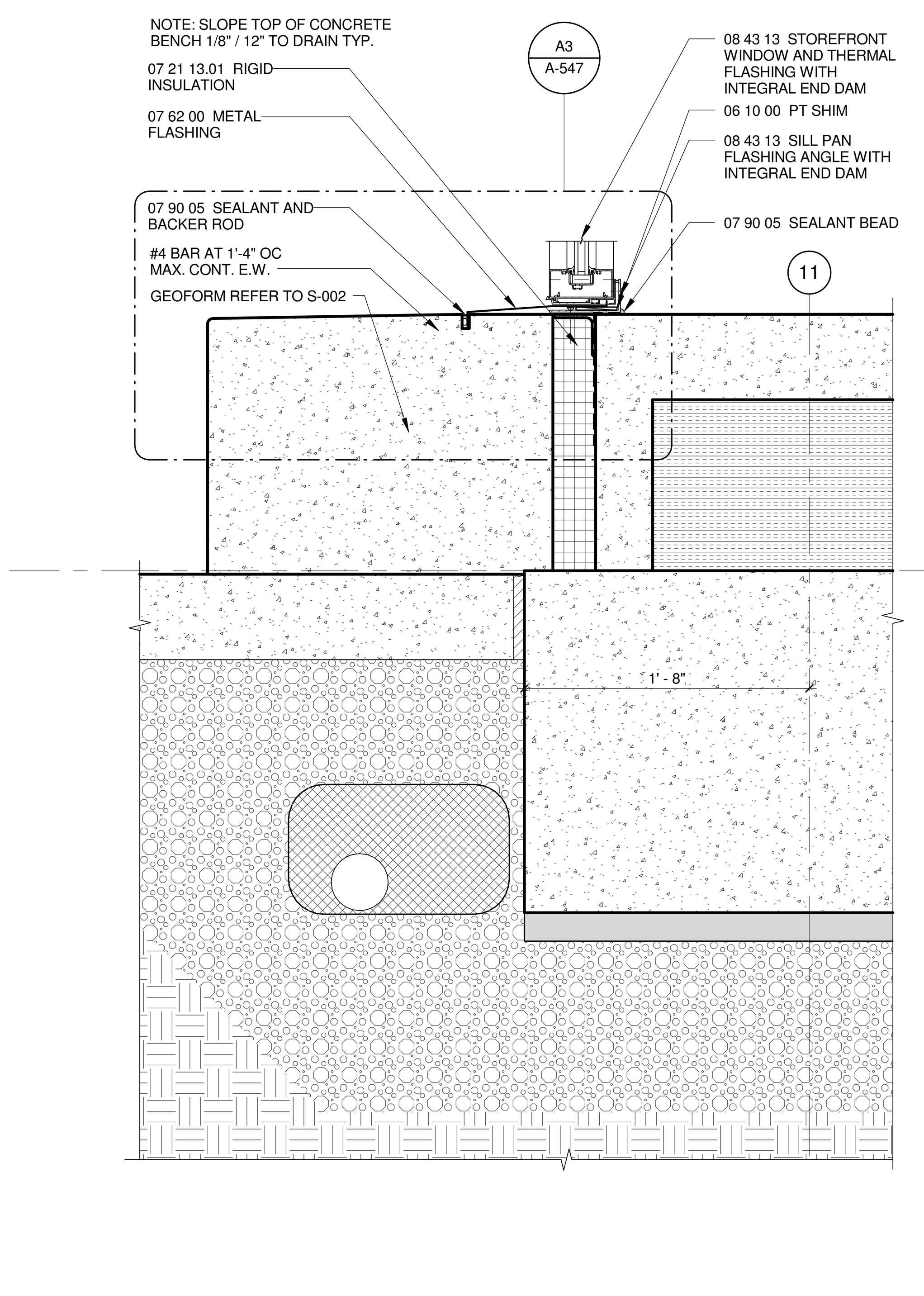
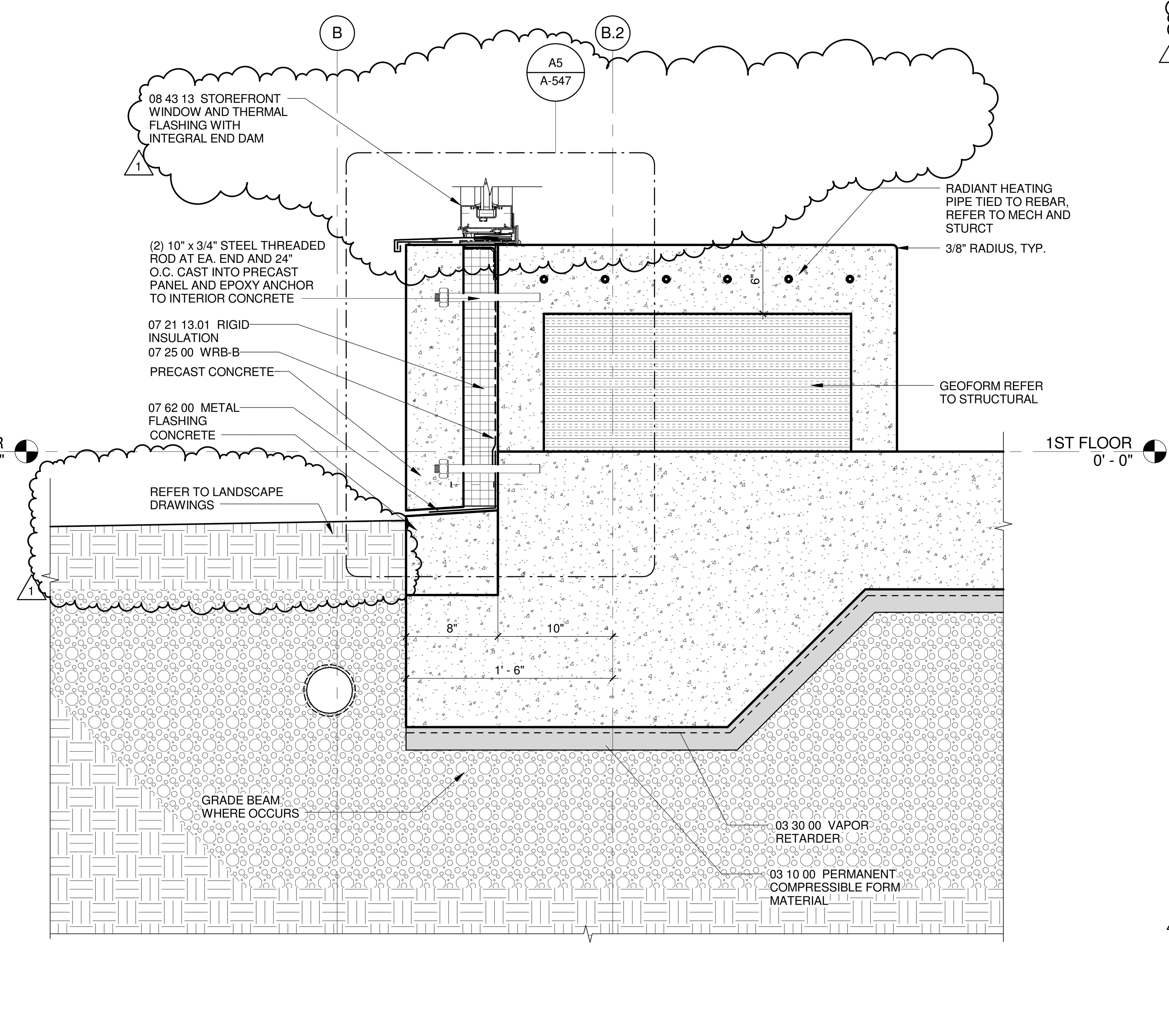
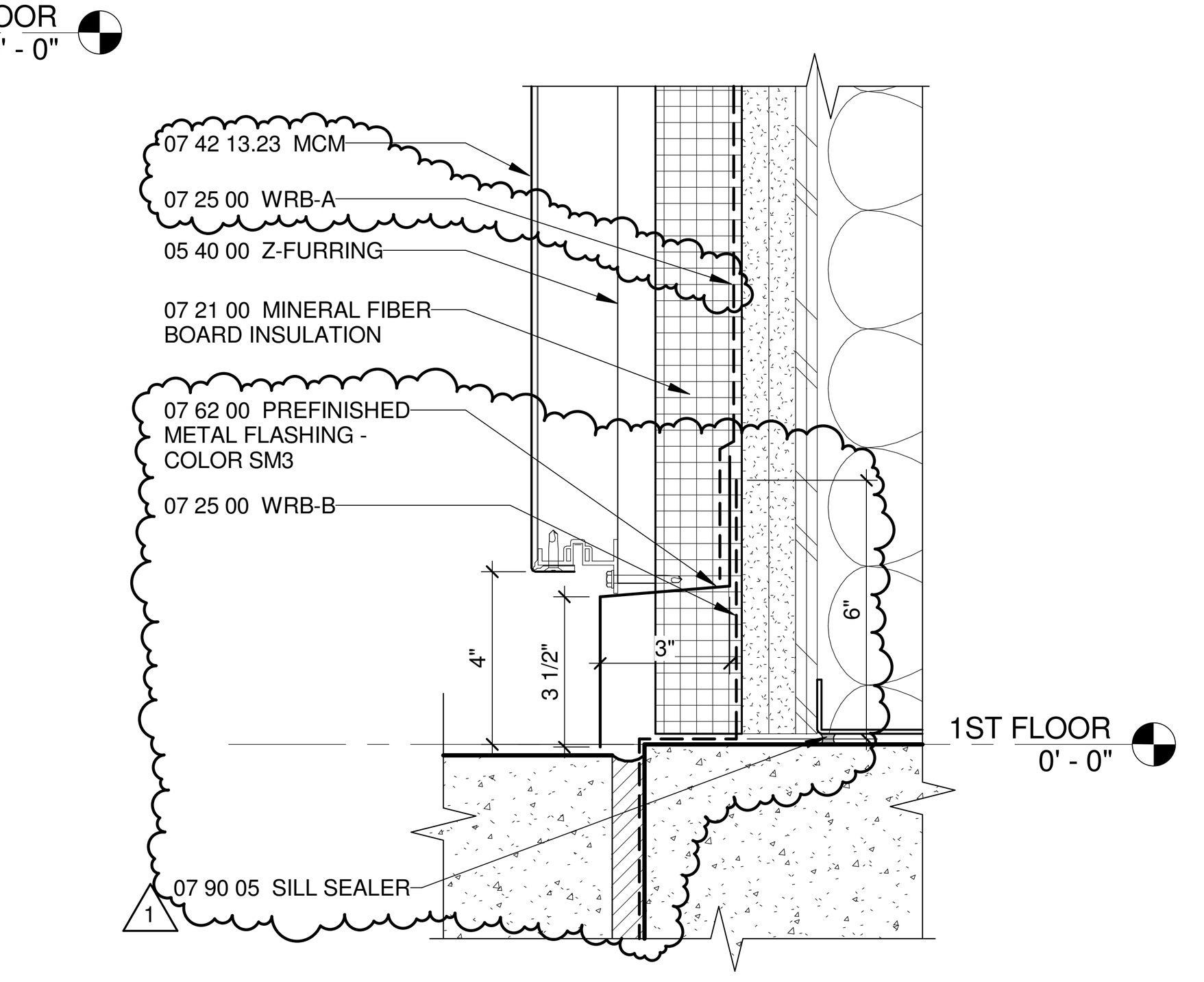


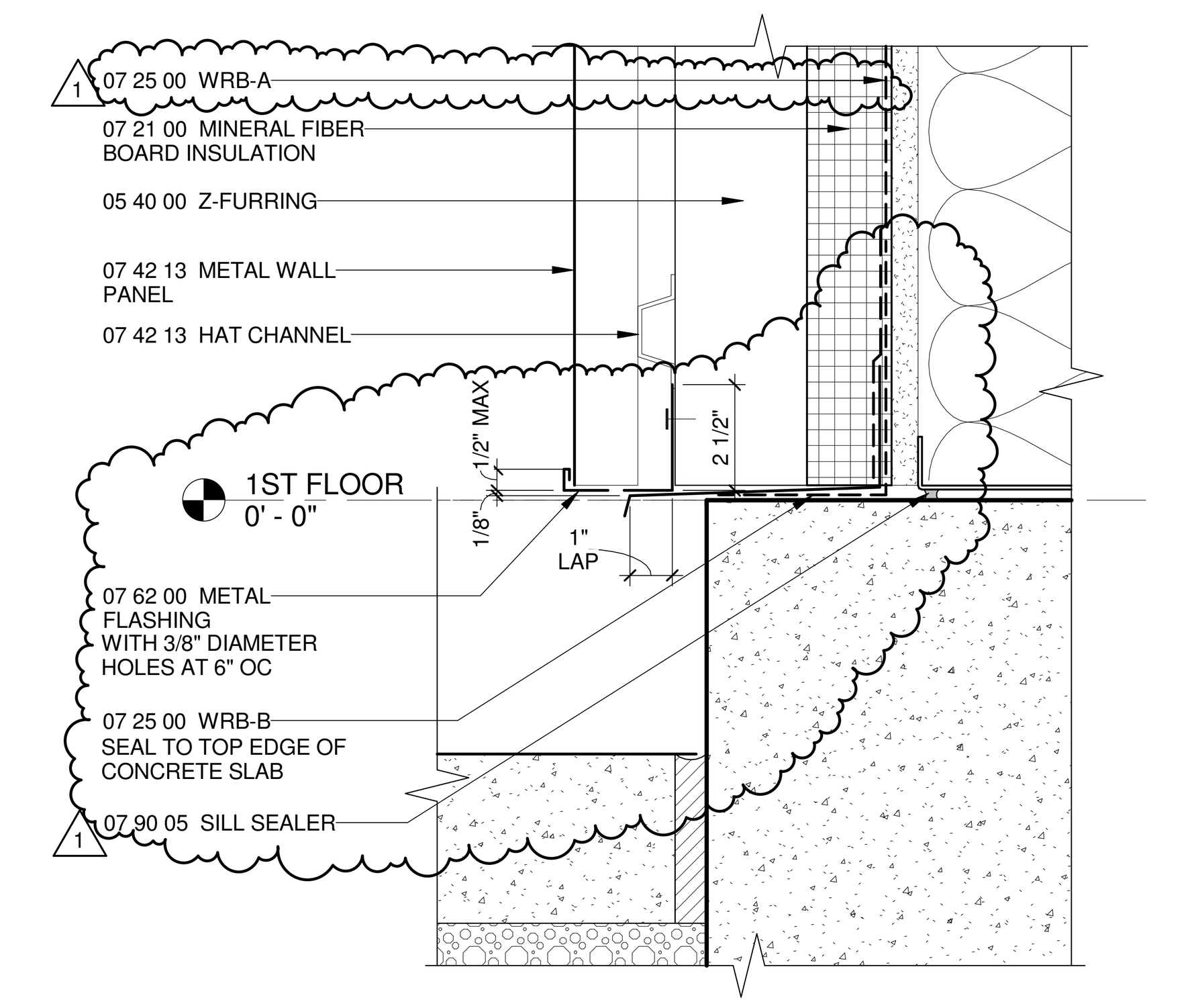
A1 SLAB EDGE AT ENTRY BENCH E/W
1 1/2" = 1'-0"



A2 SLAB EDGE AT ENTRY CONCRETE BENCH
1 1/2" = 1'-0"



A4 SLAB EDGE AT MCM AT CONCRETE WALK
3" = 1'-0"



A5 SLAB EDGE AT METAL PANEL
3" = 1'-0"

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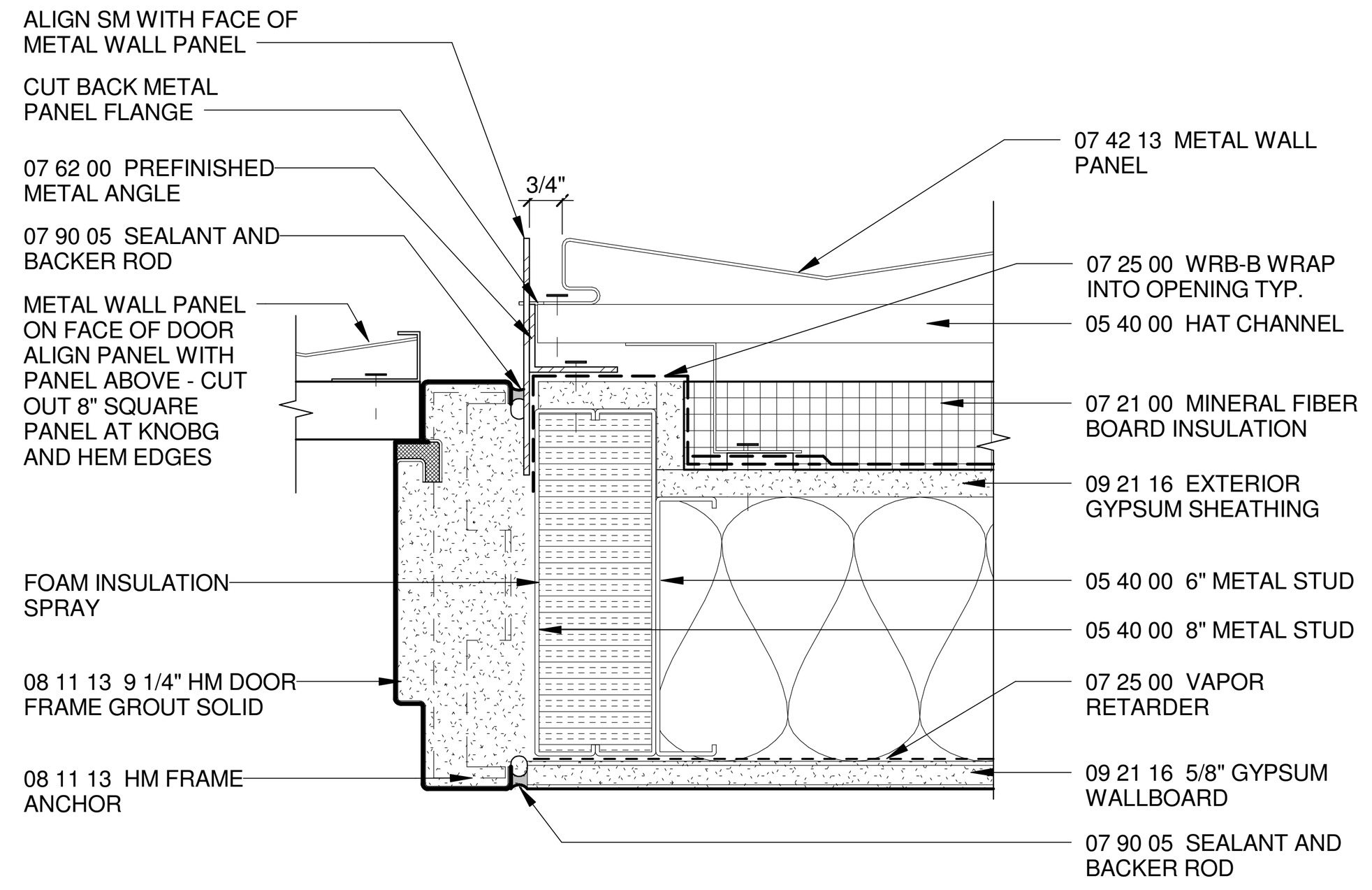
MARK	DATE	DESCRIPTION
1	3-13-2015	ADDENDUM 6

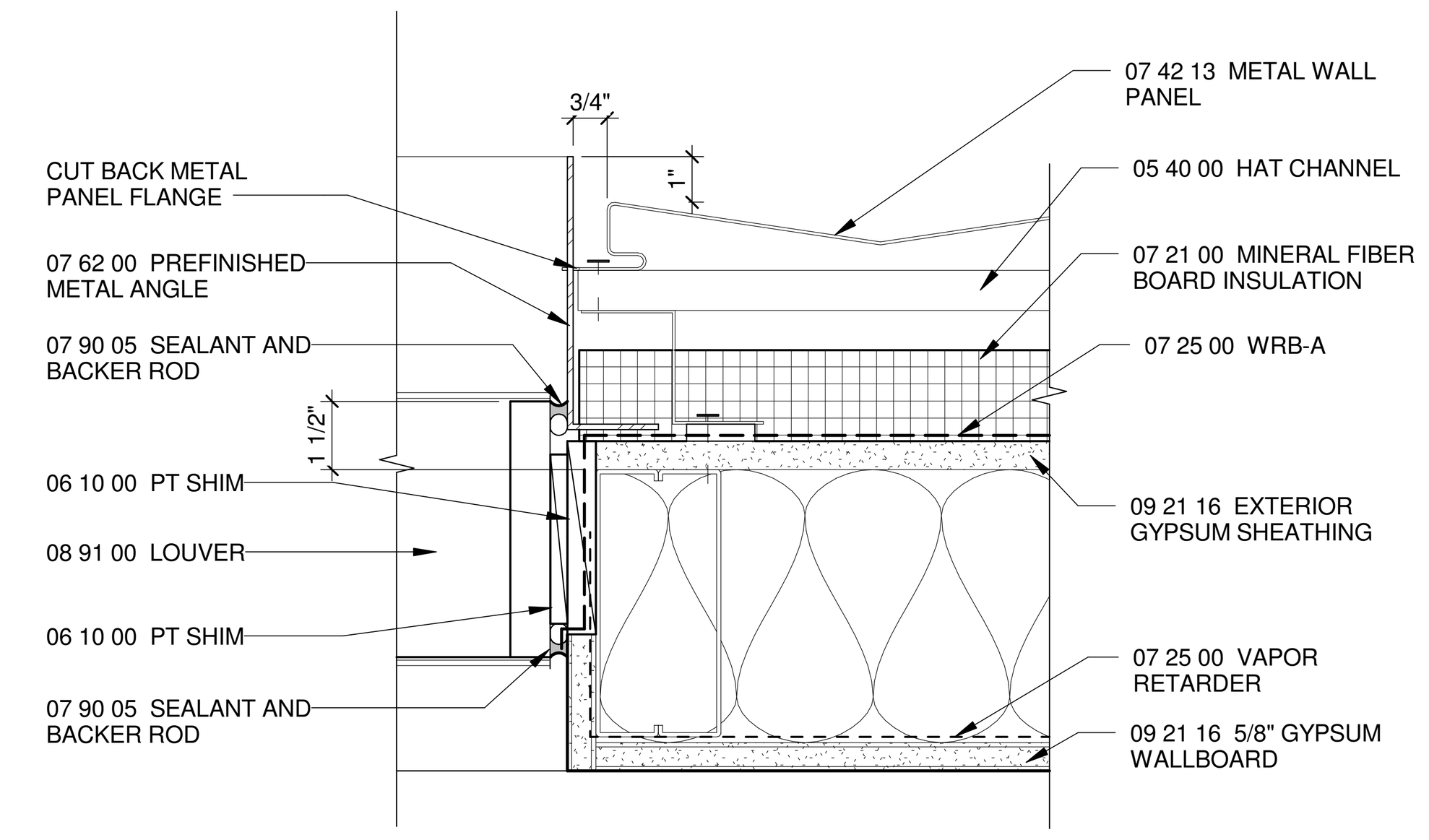
ISSUE DATE:	FEBRUARY 18, 2015
ISSUE:	CONSTRUCTION DOCUMENTS
VOLUME:	PACKAGE 2 VOLUME 1
PROJECT NO:	2013912.00
DRAWN BY:	MEB
CHECKED BY:	DG

EXTERIOR DETAILS - FOUNDATION

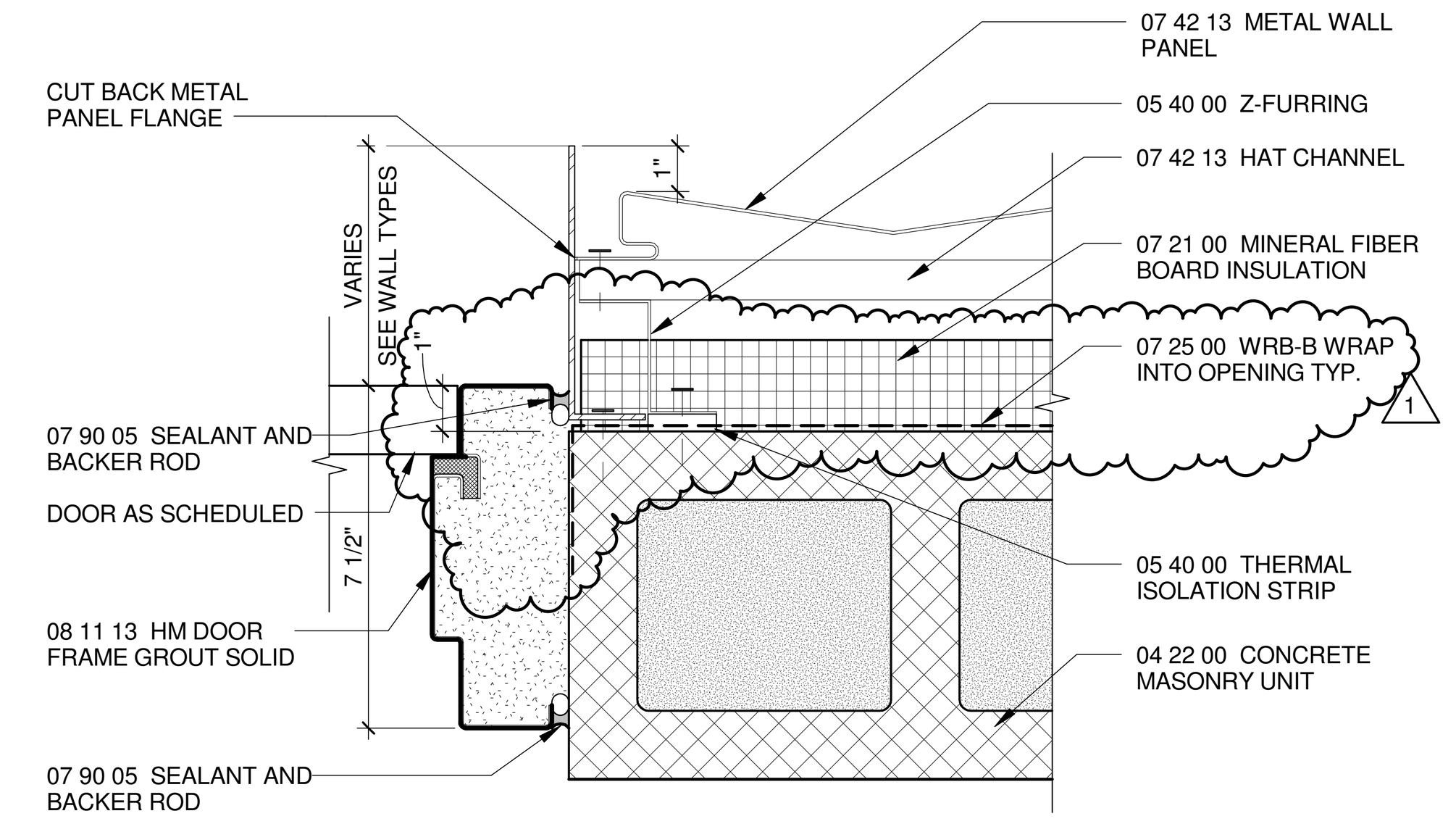
A-511



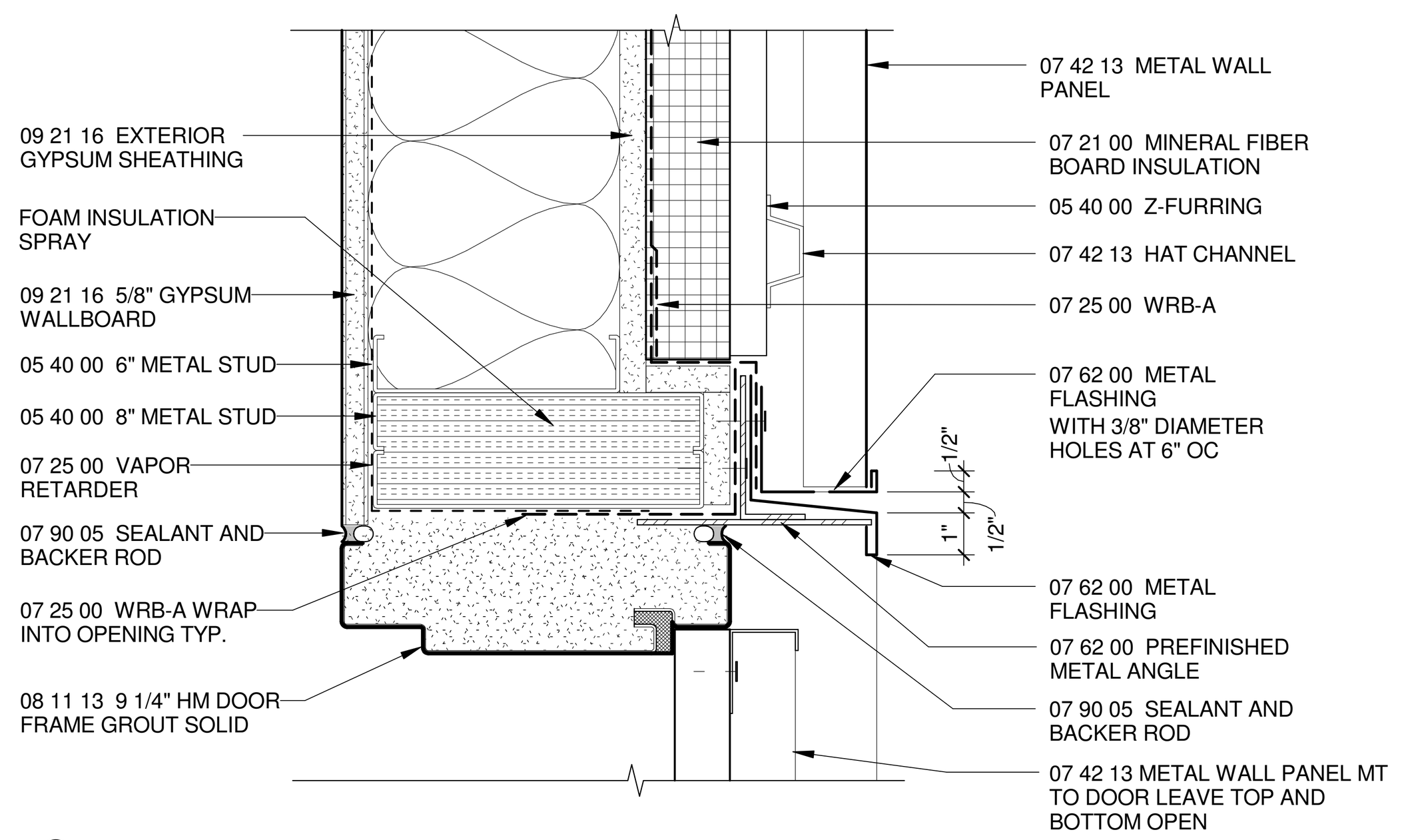
D2 HM DOOR JAMB AT ROOF ACCESS
3" = 1'-0"



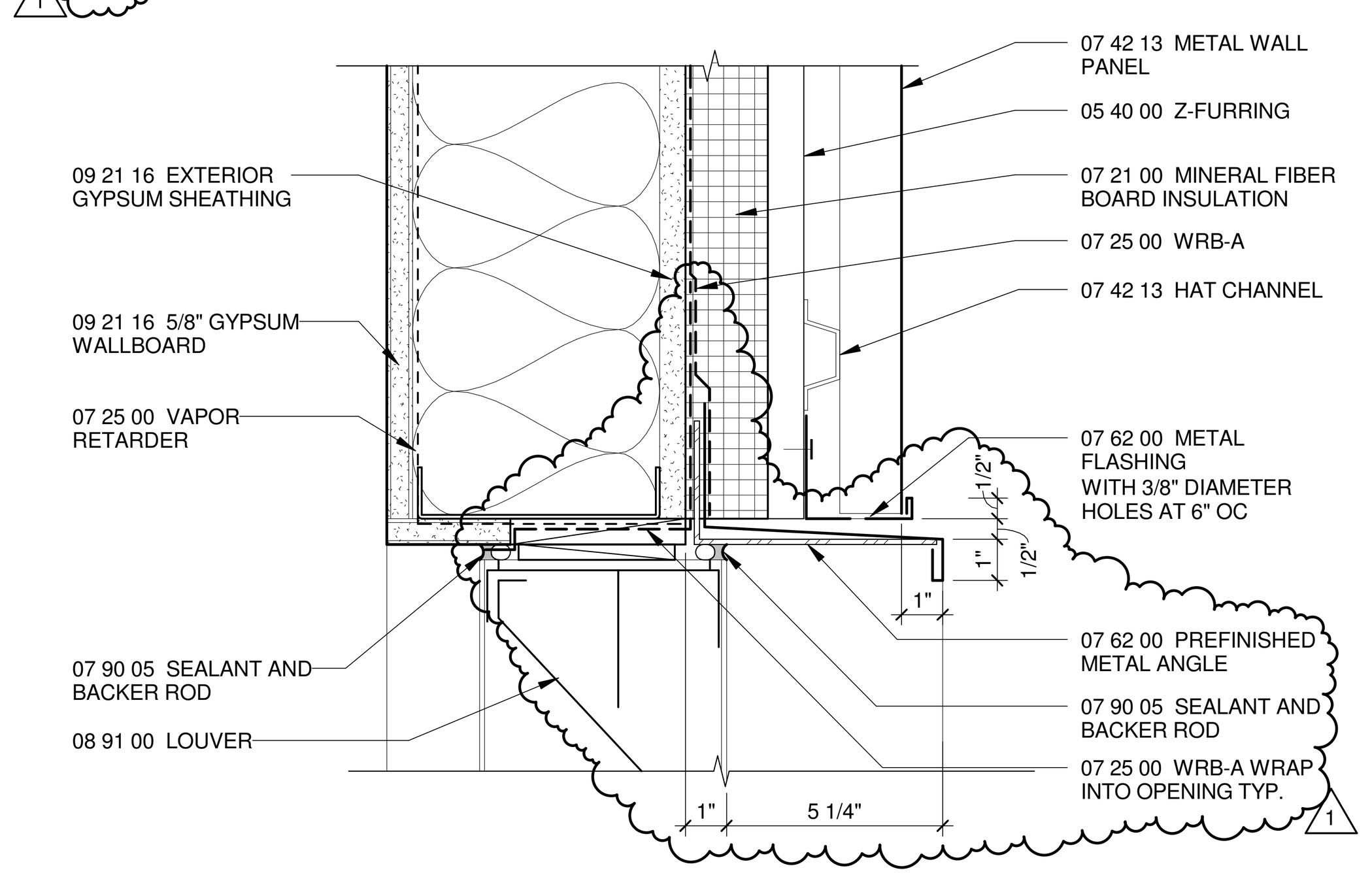
D4 LOUVER JAMB AT METAL WALL PANEL
3" = 1'-0"



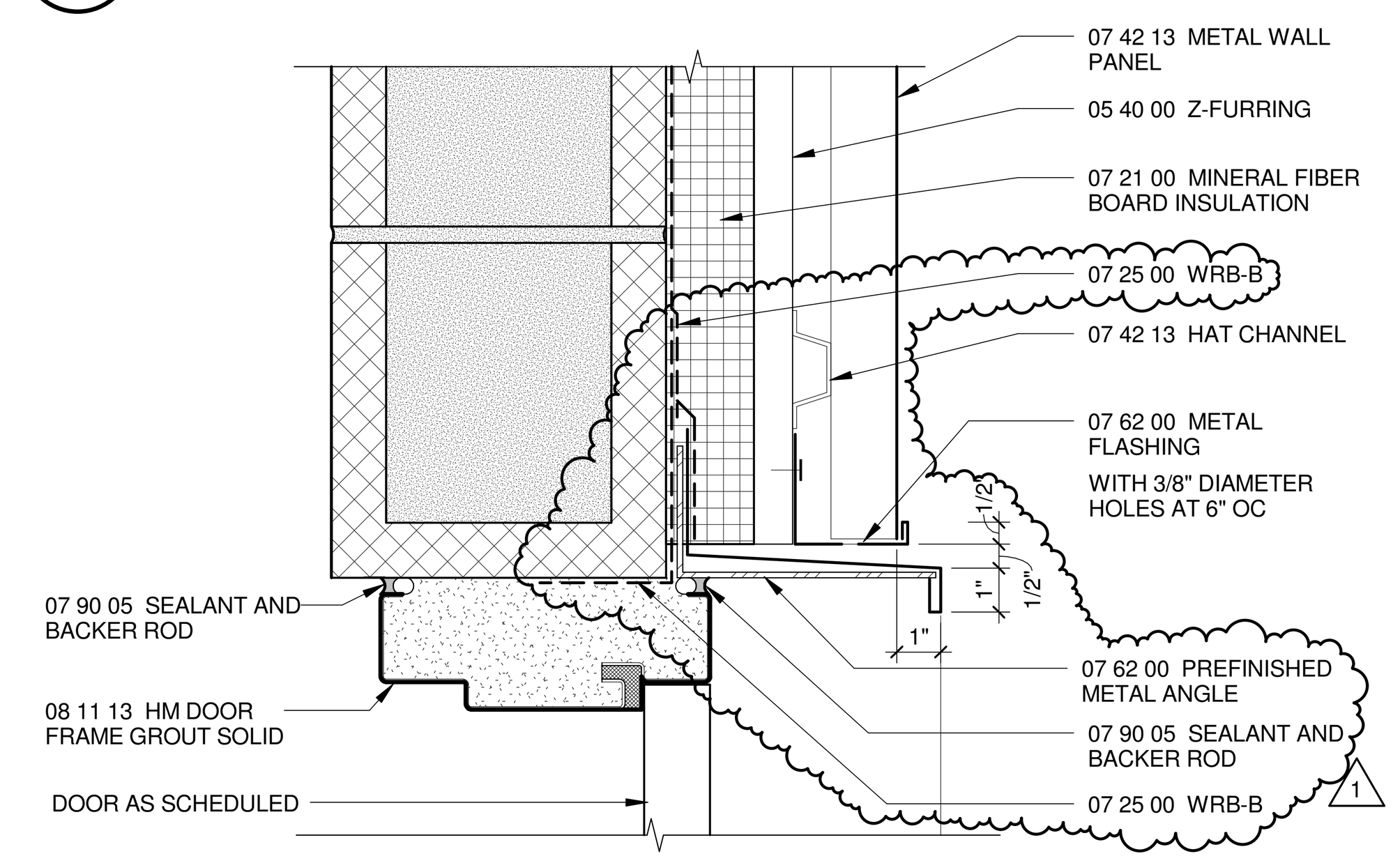
D5 HM DOOR JAMB AT METAL WALL PANEL
3" = 1'-0"



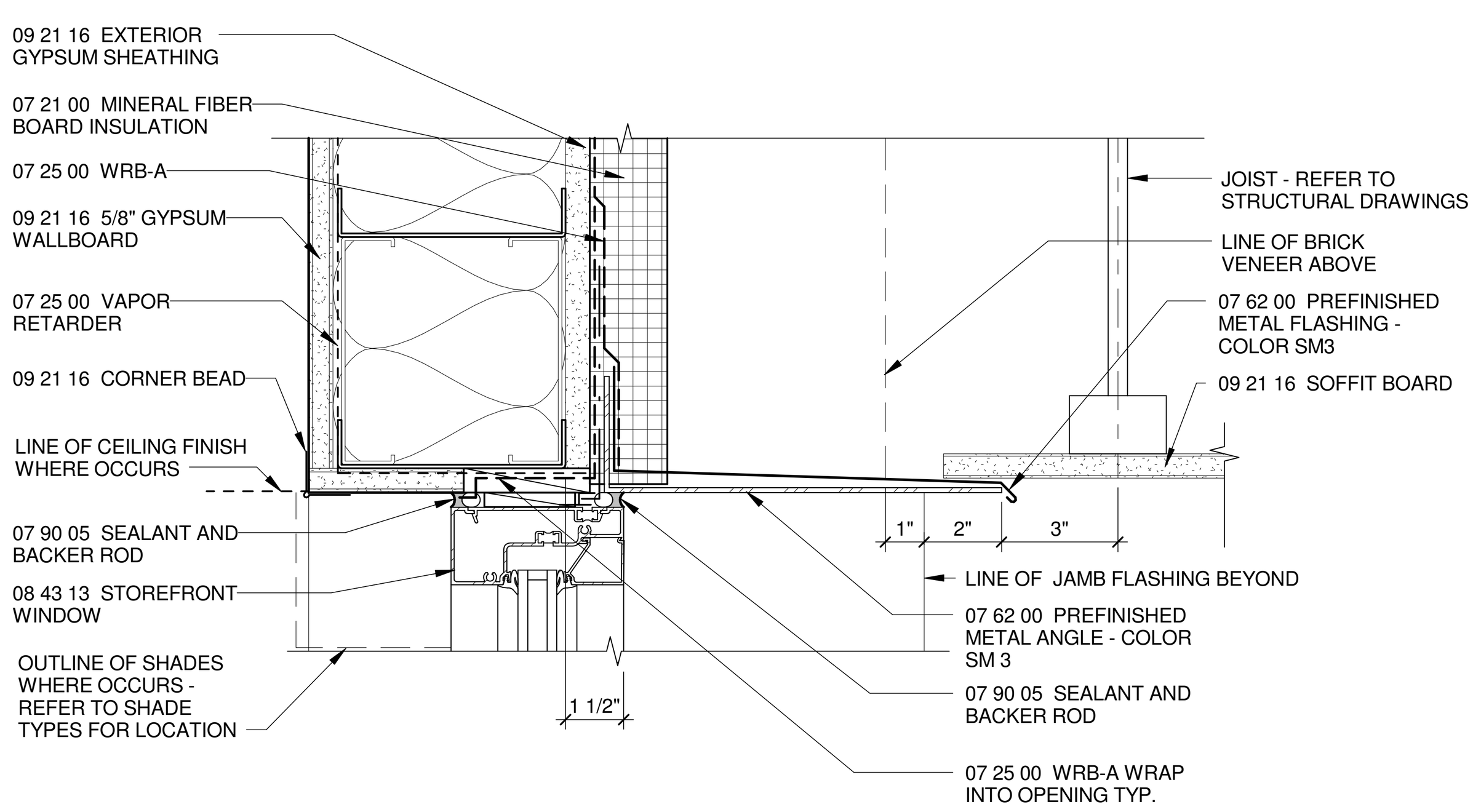
C2 HM DOOR HEAD AT ROOF ACCESS
3" = 1'-0"



C4 LOUVER HEAD AT METAL WALL PANEL
3" = 1'-0"

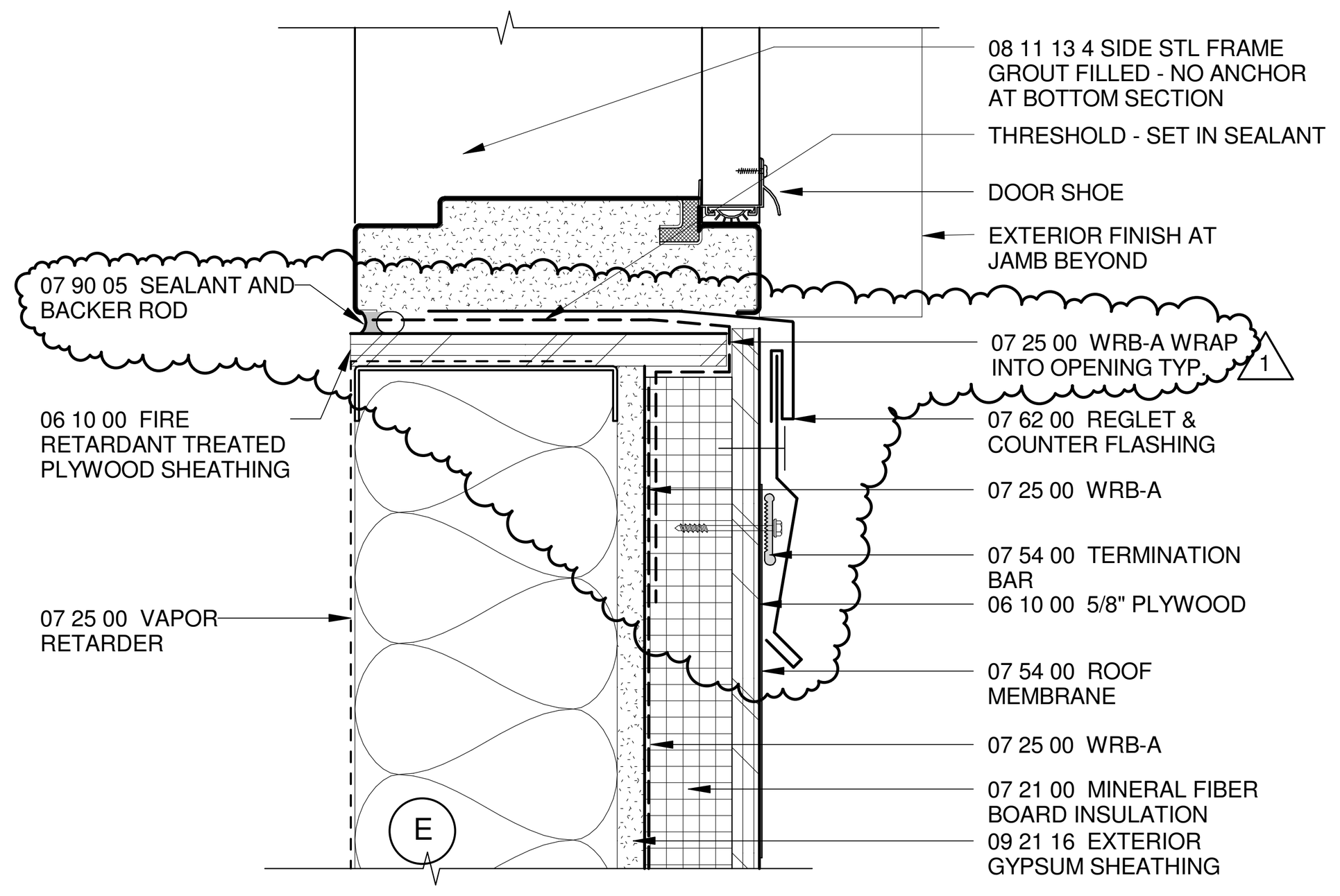


C5 HM DOOR HEAD AT METAL WALL PANEL
3" = 1'-0"

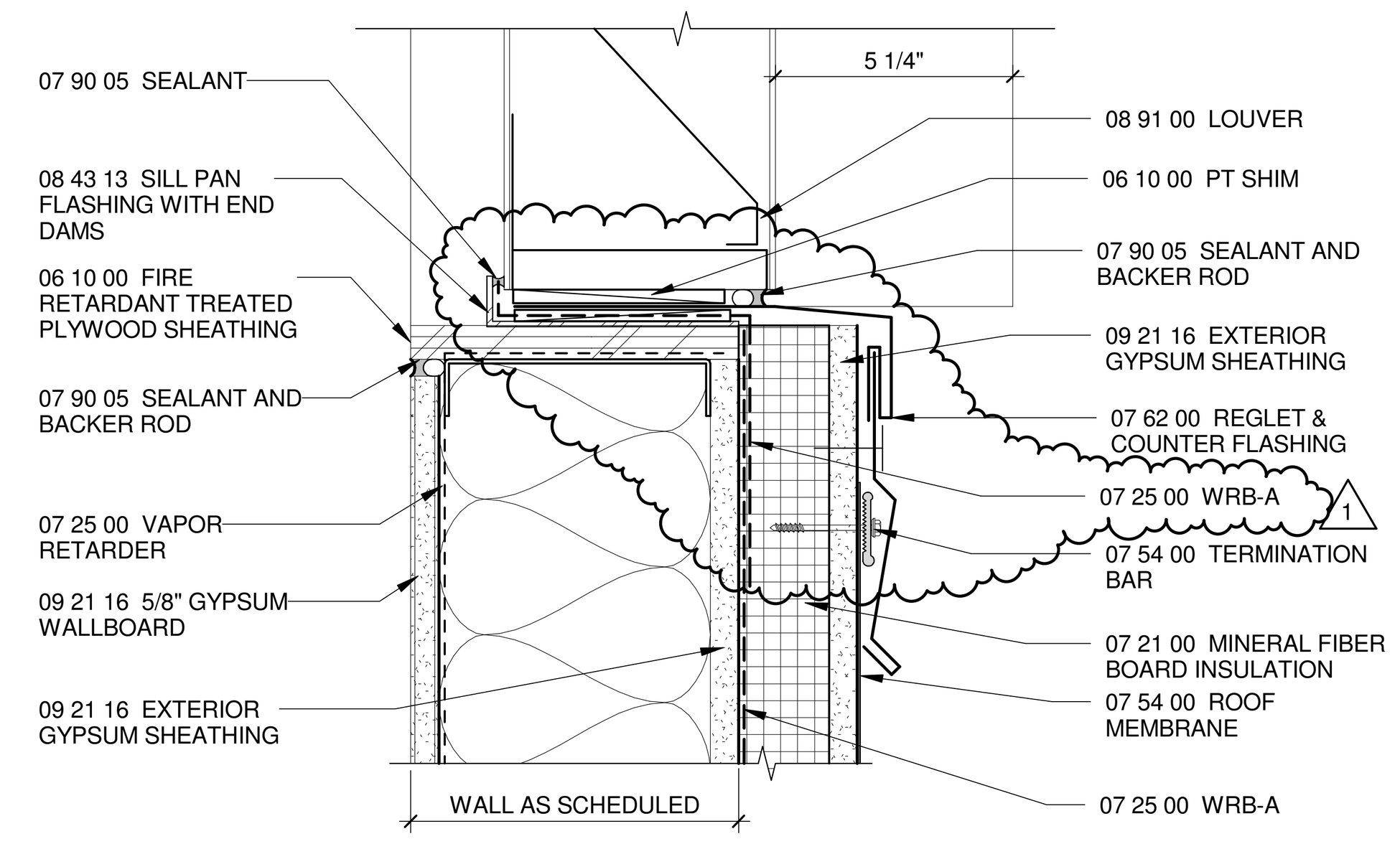


B1 STOREFRONT HEAD AT COVERED WALK
3" = 1'-0"

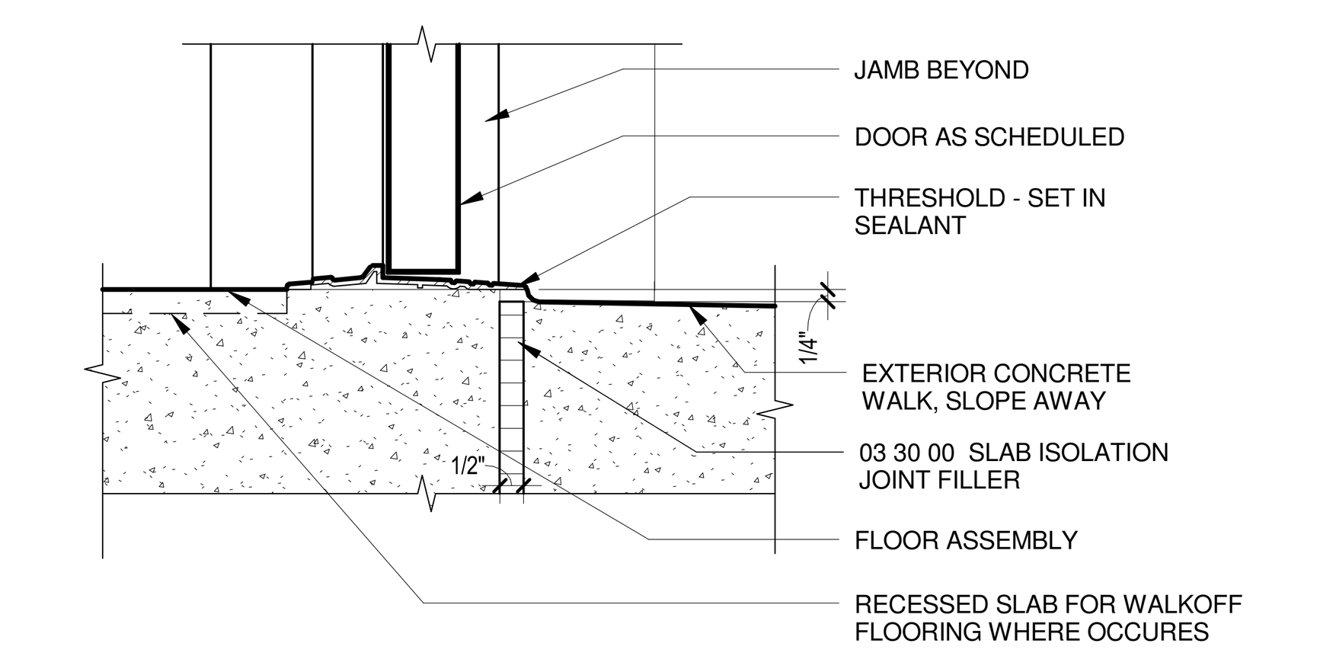
DOOR SIM



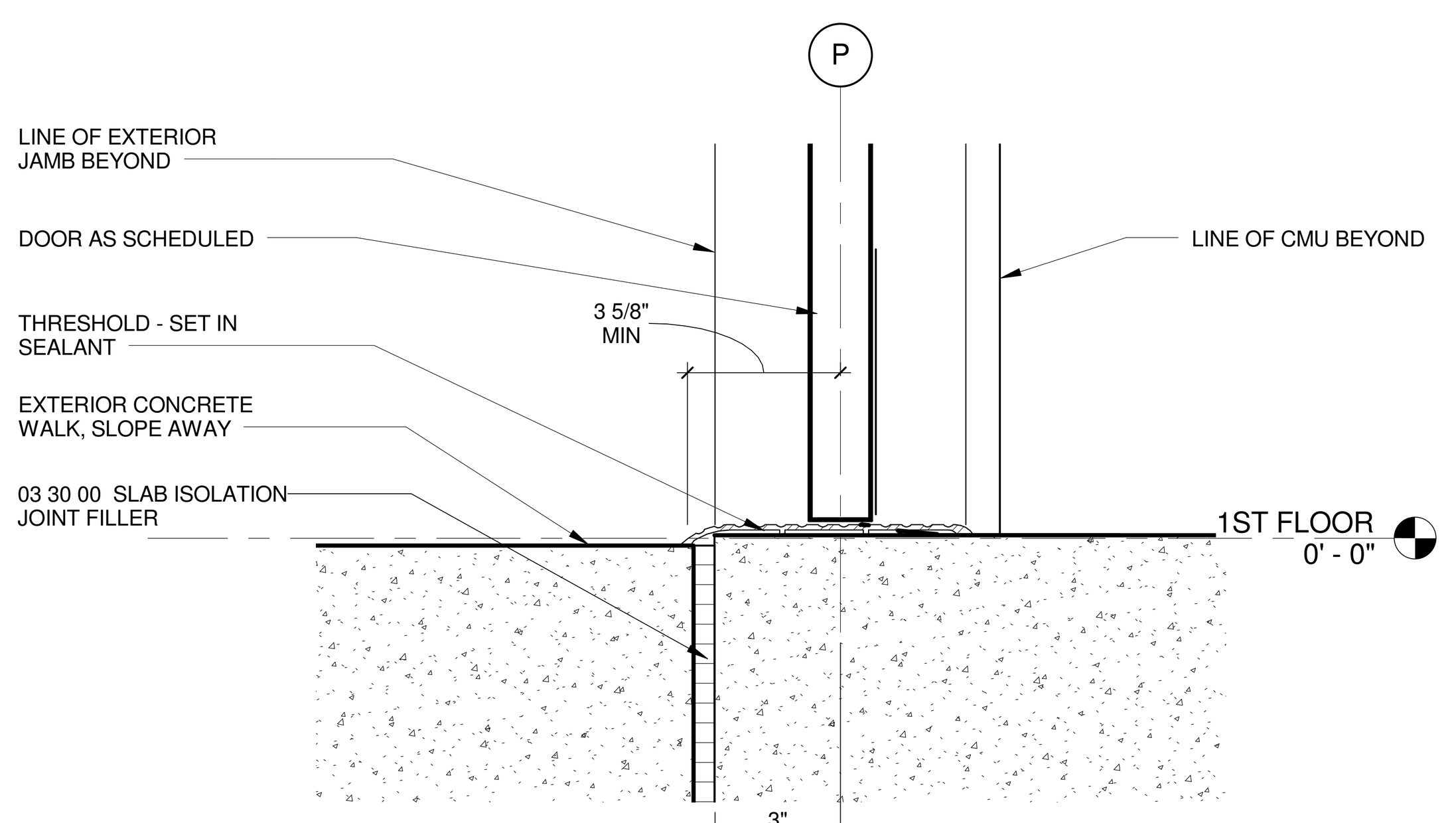
B2 HM THRESHOLD AT ACCESS DOOR
3" = 1'-0"



B4 LOUVER SILL AT METAL WALL PANEL
3" = 1'-0"



B5 EXTERIOR DOOR THRESHOLD
3" = 1'-0"



A2 SLAB EDGE AT DOOR B3 (ELEC AND MECH)
3" = 1'-0"

DETAIL NOT USED

DETAIL NOT USED

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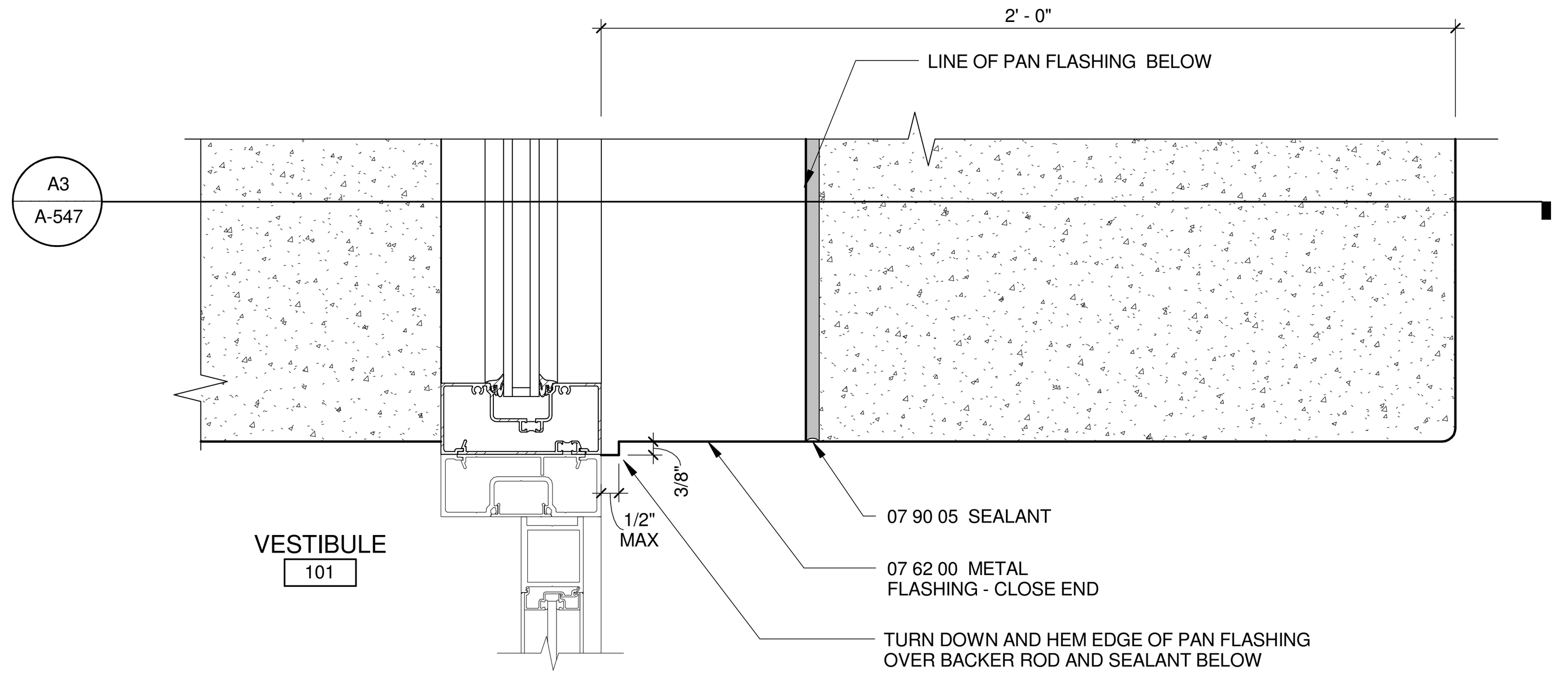
1	3-13-2015	ADDENDUM 6

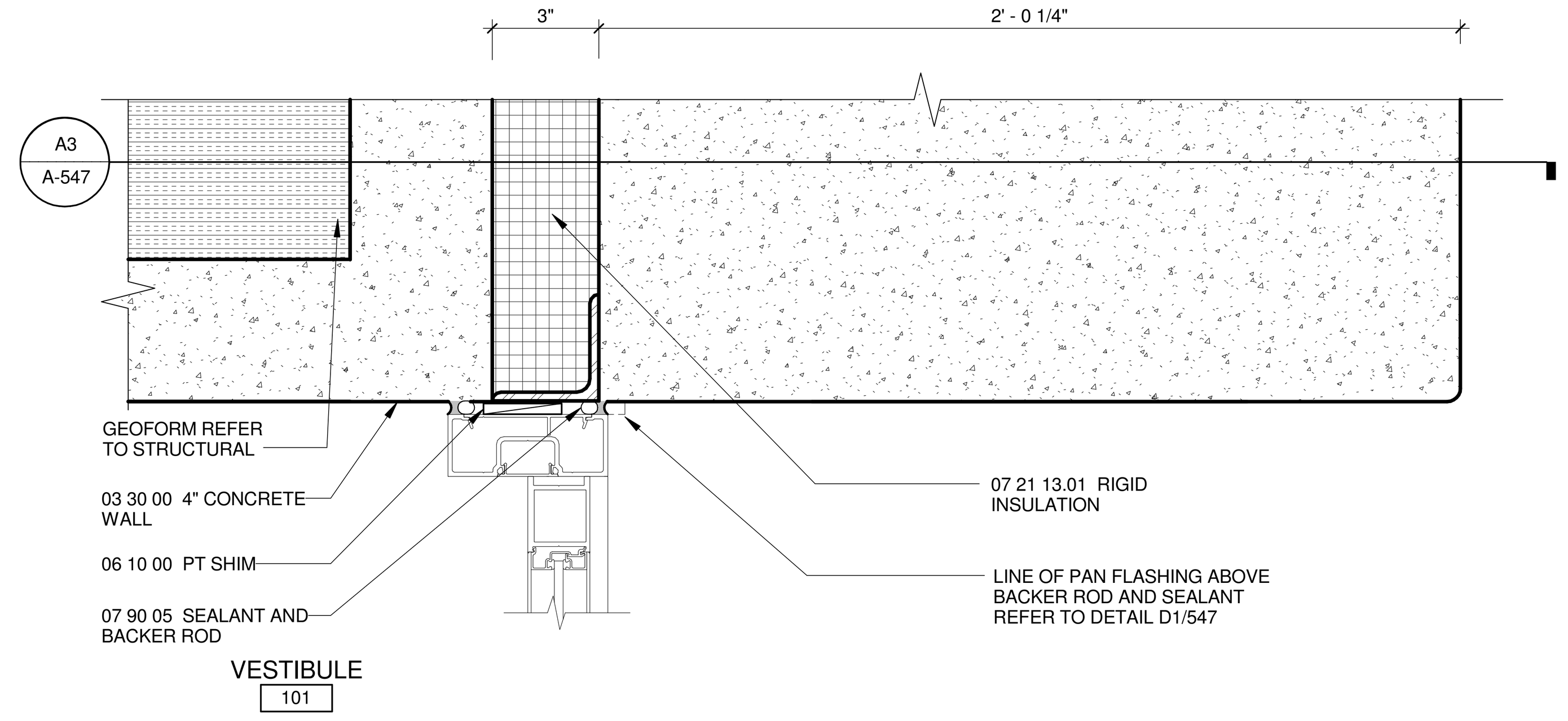
ISSUE DATE:	FEBRUARY 18, 2015
ISSUE:	CONSTRUCTION DOCUMENTS
VOLUME:	PACKAGE 2 VOLUME 1
PROJECT NO:	2013912.00
DRAWN BY:	LS
CHECKED BY:	DG

EXTERIOR DOOR AND LOUVER DETAILS

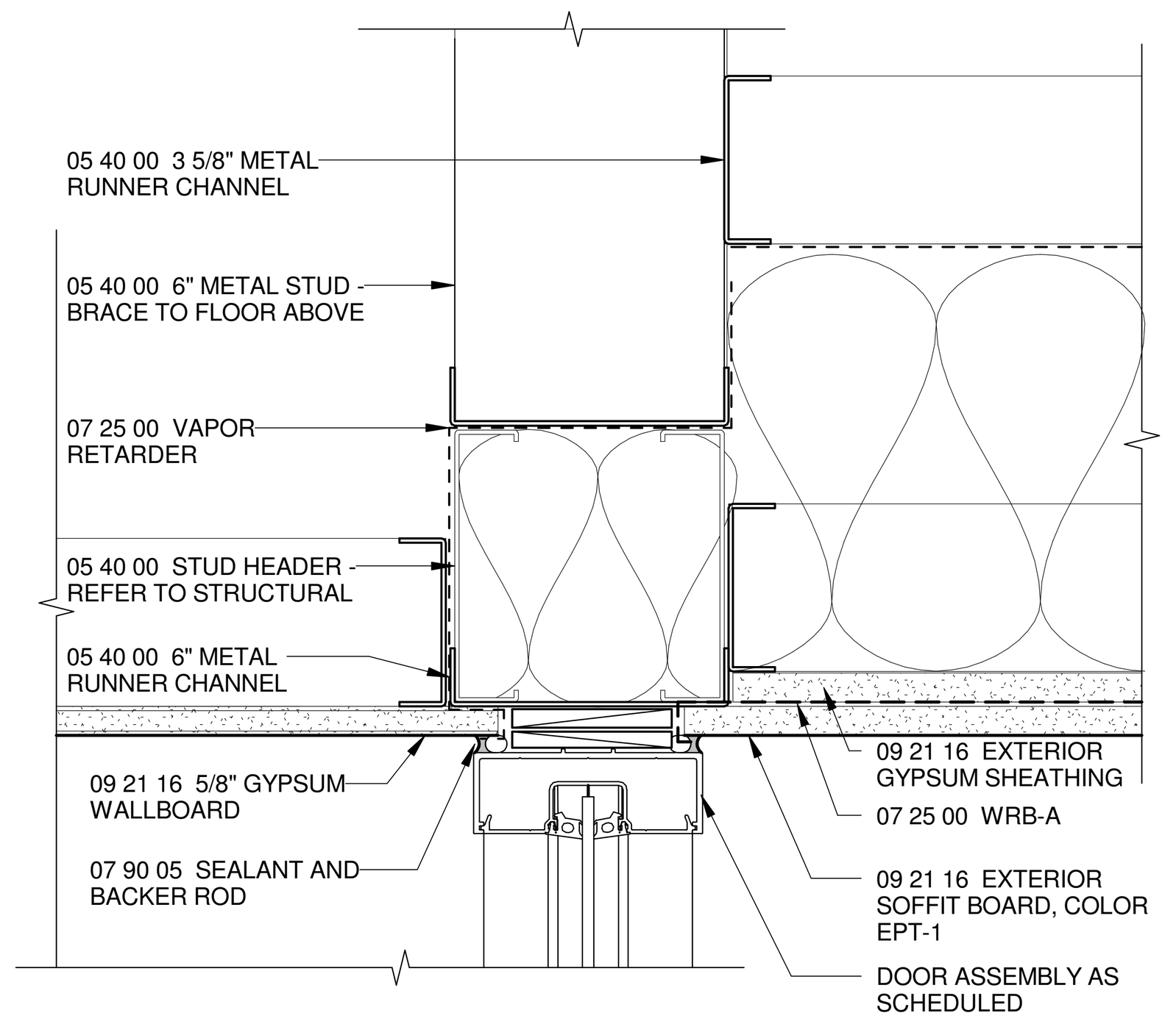
A-541



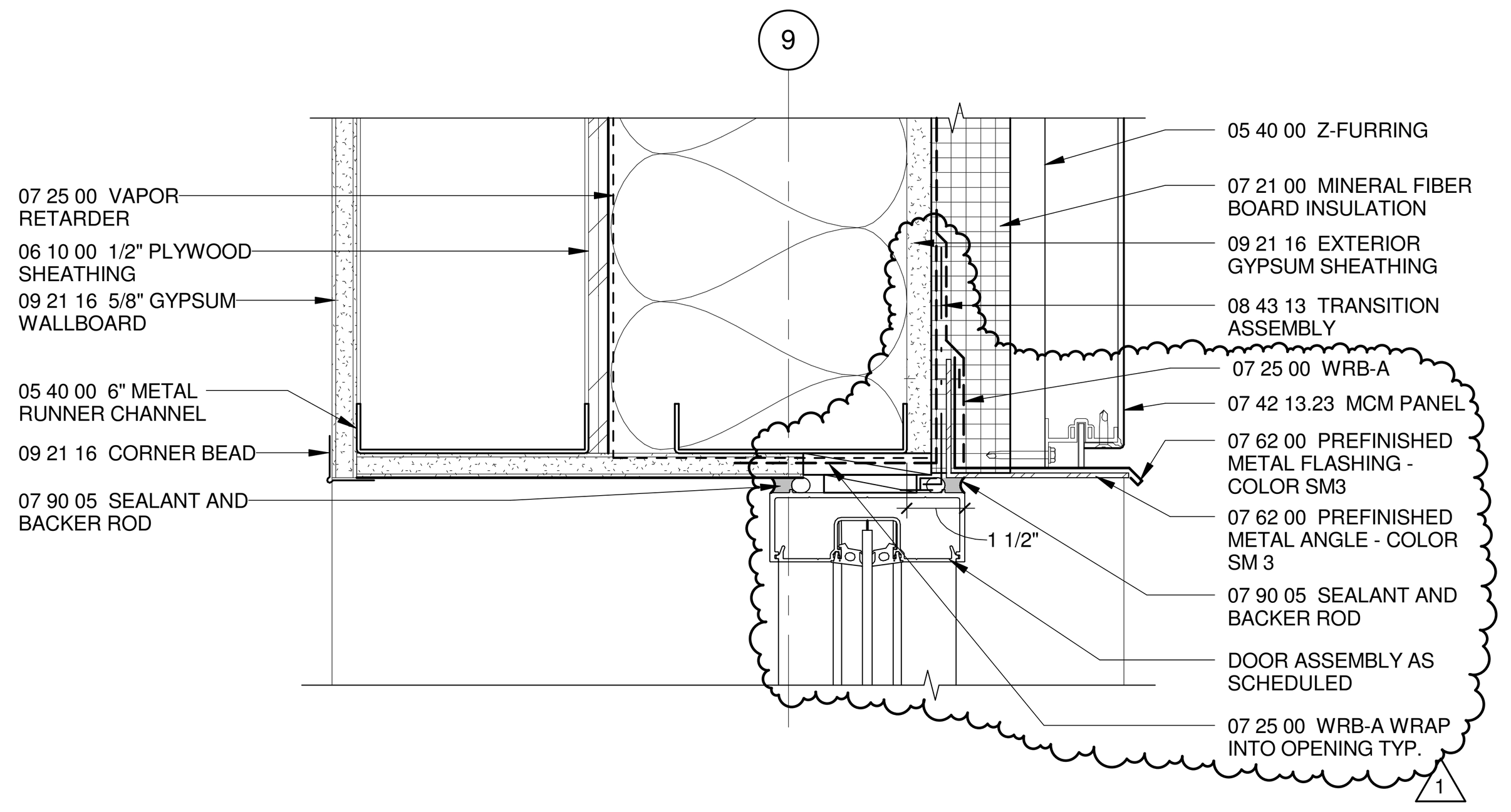
D1 ENTRY DOOR JAMB AT WINDOW
3" = 1'-0"



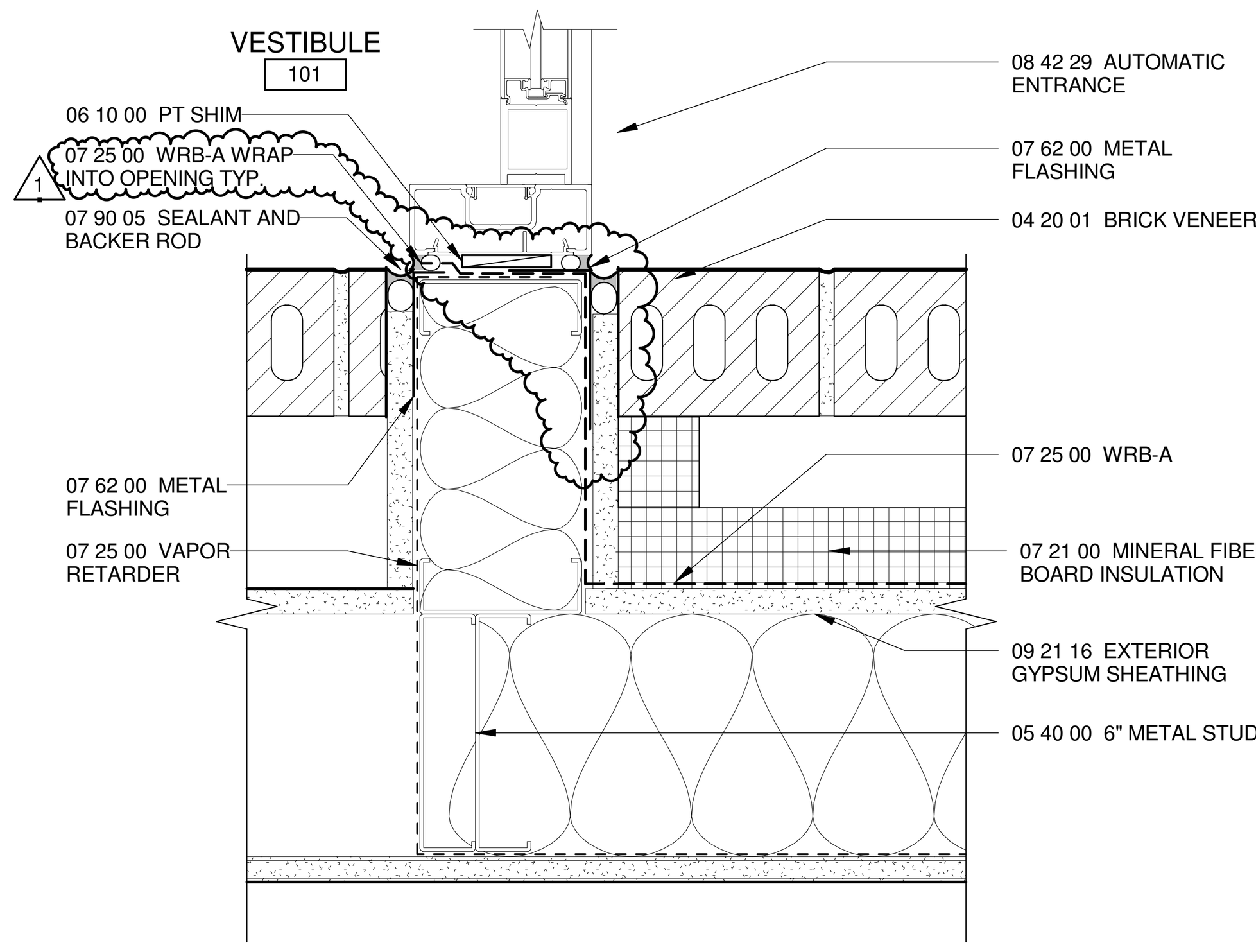
D3 ENTRY DOOR JAMB AT CONCRETE BENCH
3" = 1'-0"



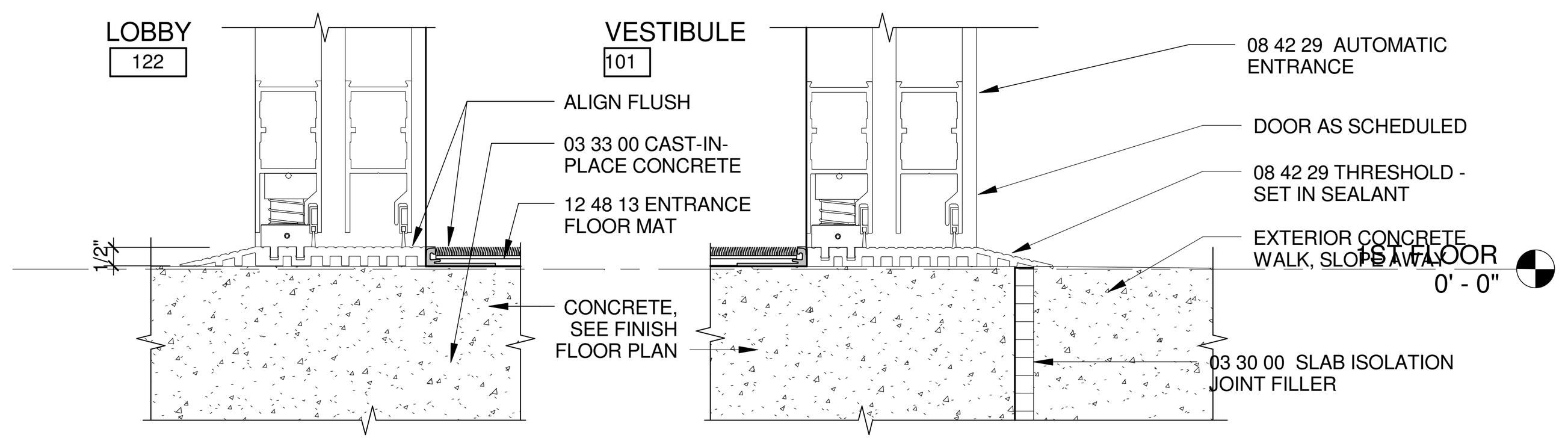
D5 ENTRY DOOR HEAD
3" = 1'-0"



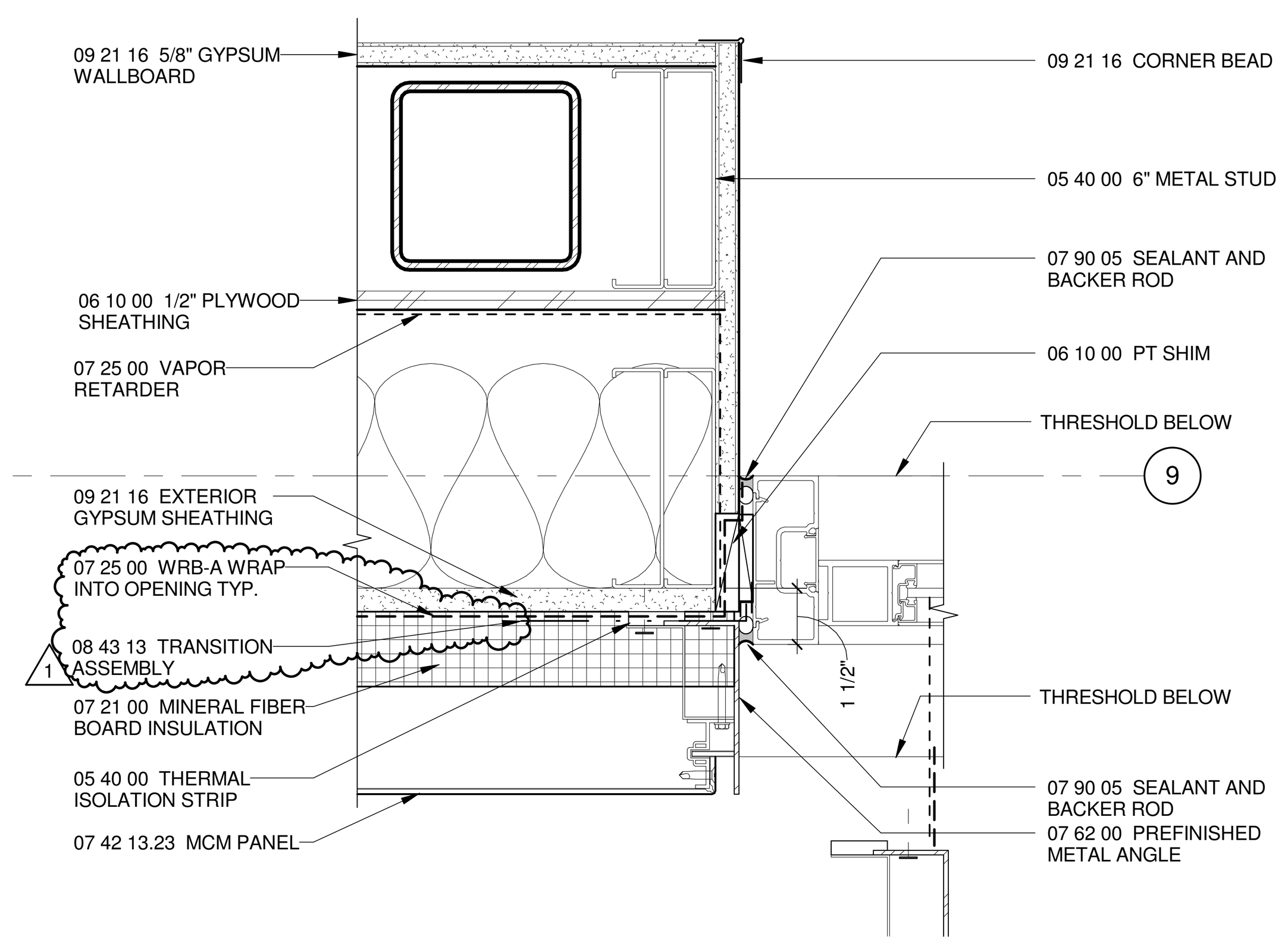
C1 AUTOMATIC DOOR HEAD AT MCM
3" = 1'-0"



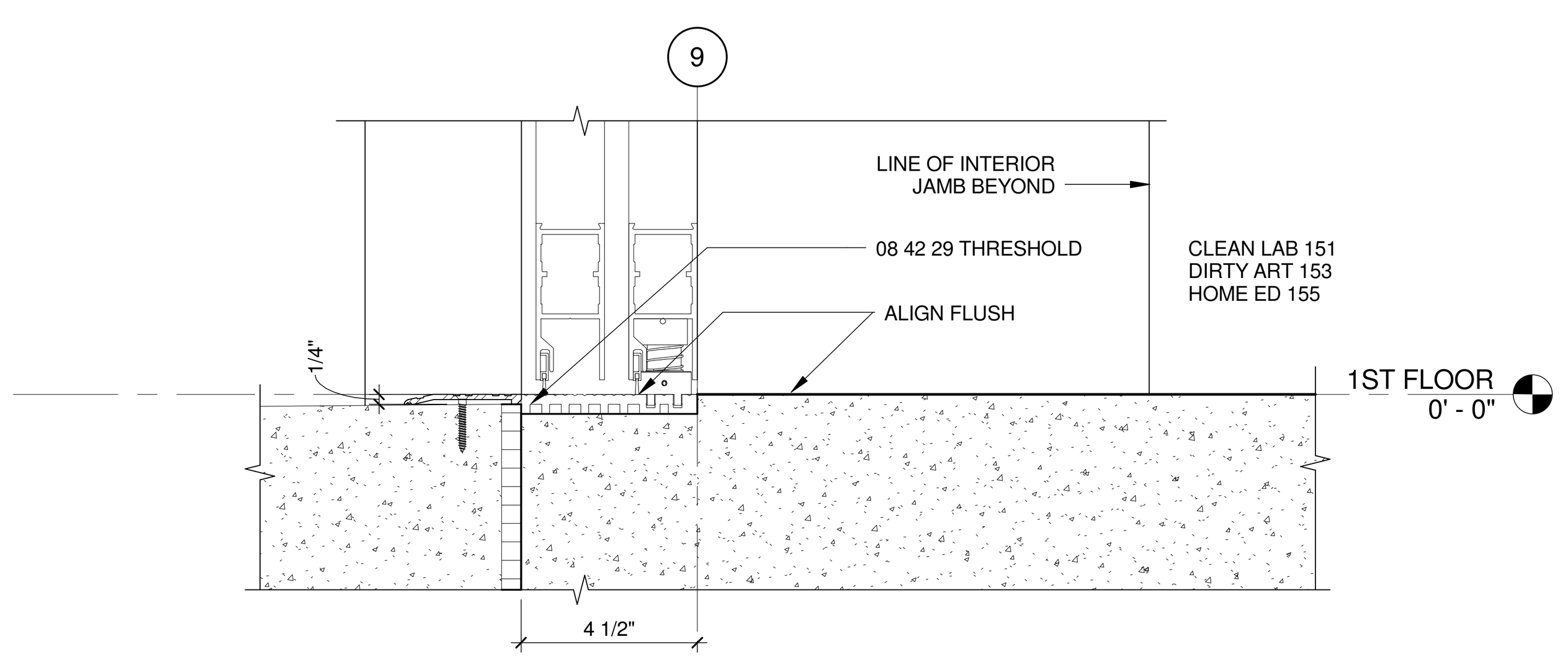
C3 ENTRY DOOR JAMB AT BRICK
3" = 1'-0"



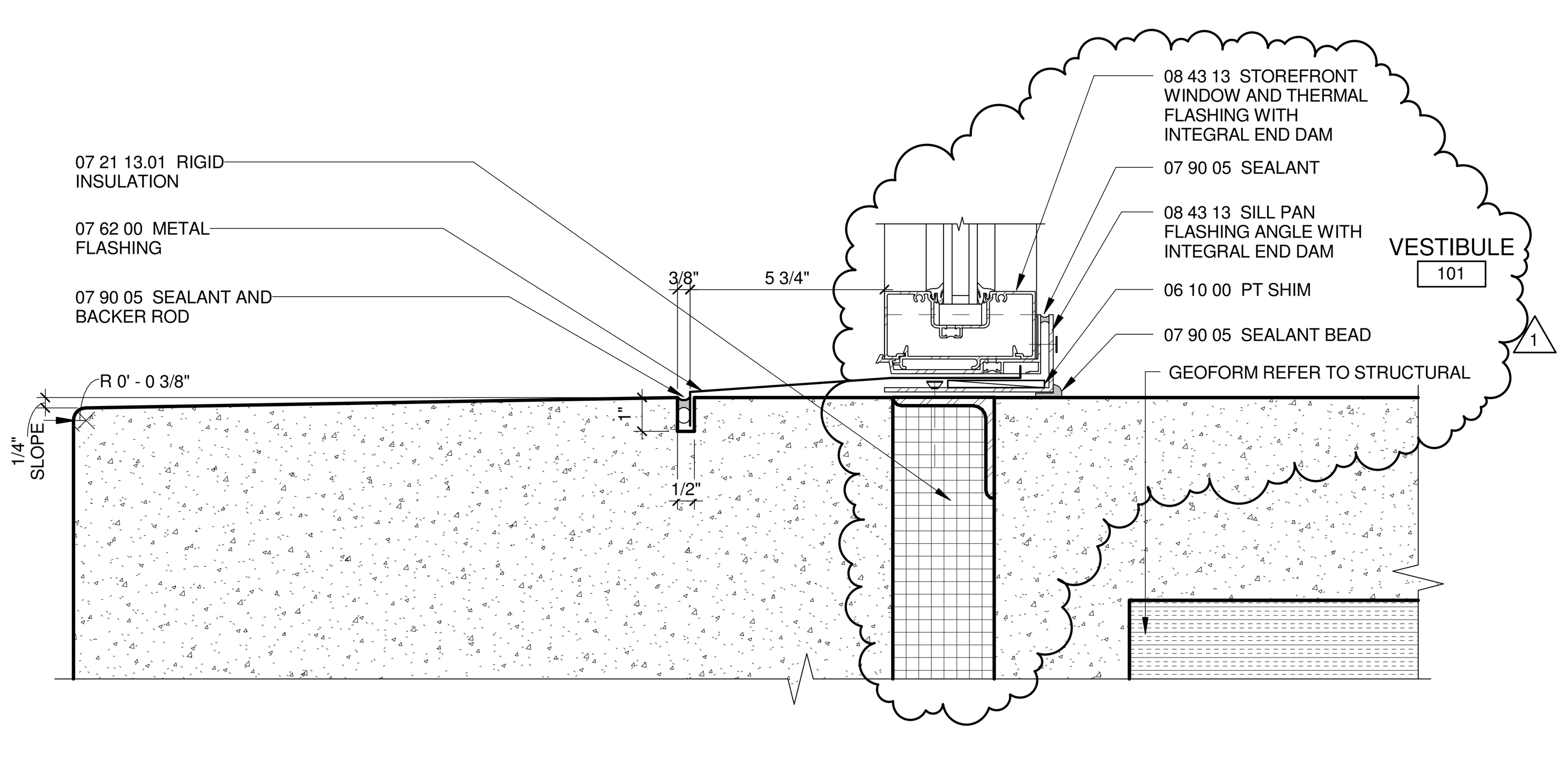
C5 ENTRY DOOR THRESHOLD
3" = 1'-0"



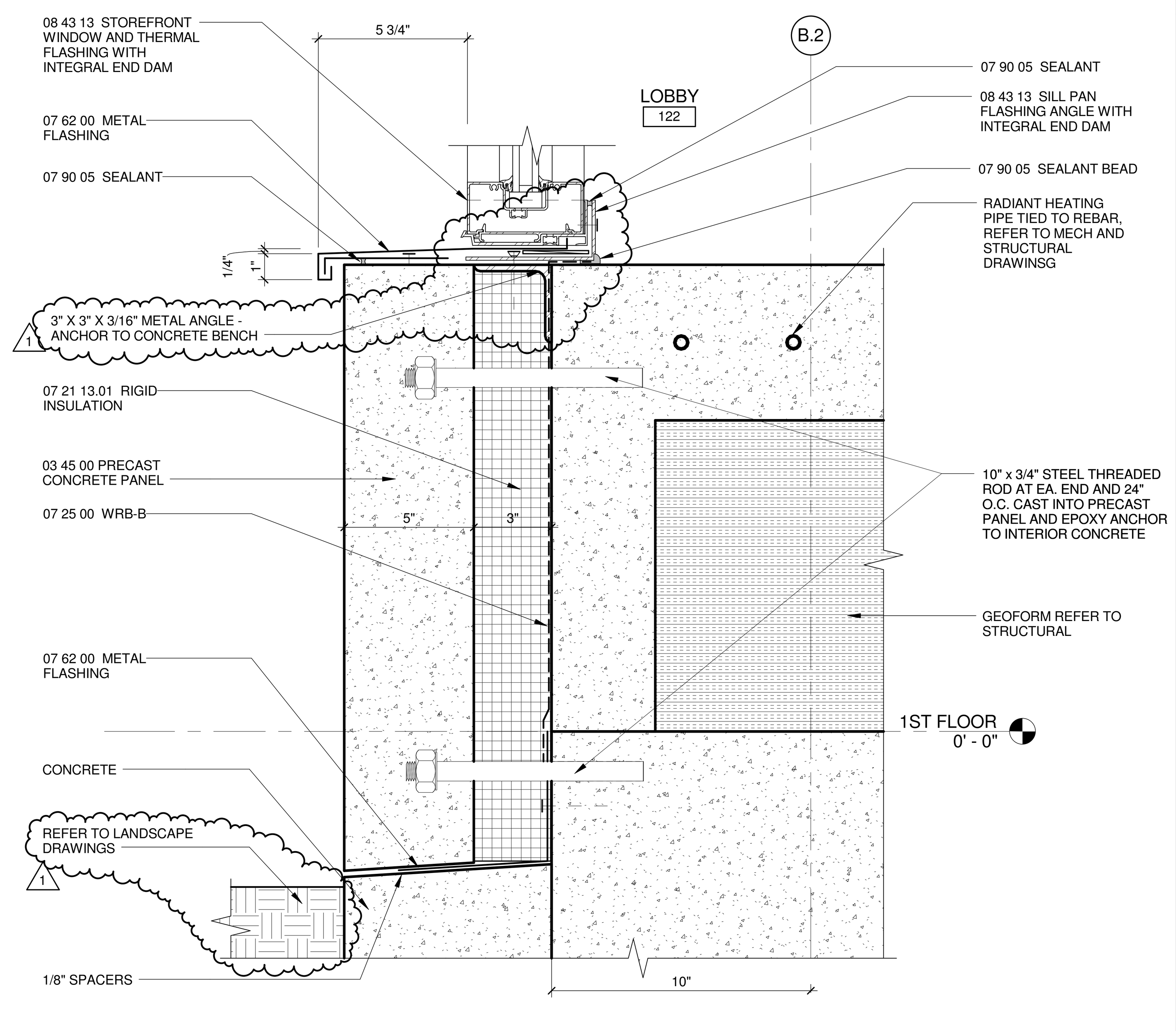
B1 AUTOMATIC DOOR JAMB AT MCM
3" = 1'-0"



A1 DOOR THRESHOLD AT MAKER'S LAB
3" = 1'-0"



A3 STOREFRONTSILL AT ENTRY CONCRETE BENCH E/W
3" = 1'-0"



A5 STOREFRONT SILL AT ENTRY CONCRETE BENCH N/S
3" = 1'-0"

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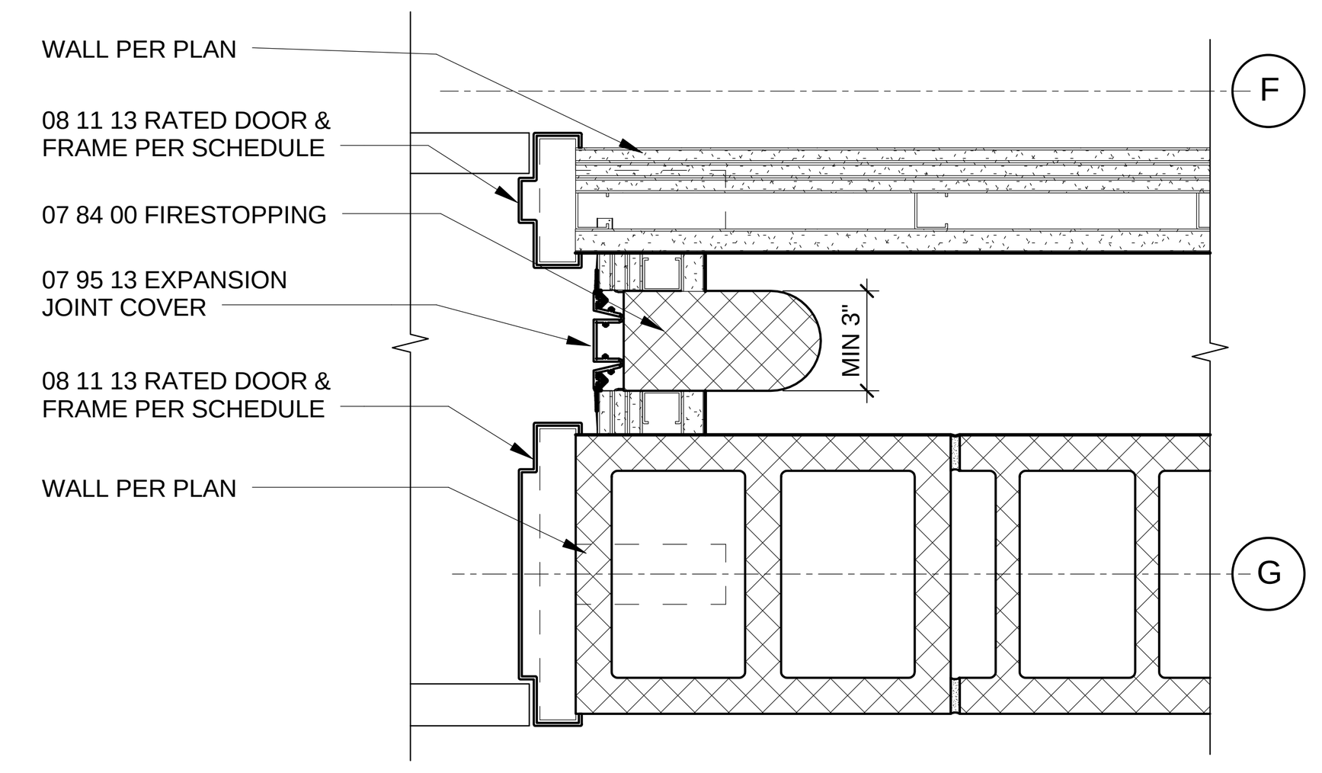
MARK	DATE	DESCRIPTION
1	3-13-2015	ADDENDUM 6

ISSUE DATE:	FEBRUARY 18, 2015
ISSUE:	CONSTRUCTION DOCUMENTS
VOLUME:	PACKAGE 2 VOLUME 1
PROJECT NO:	2013912.00
DRAWN BY:	LS
CHECKED BY:	DG

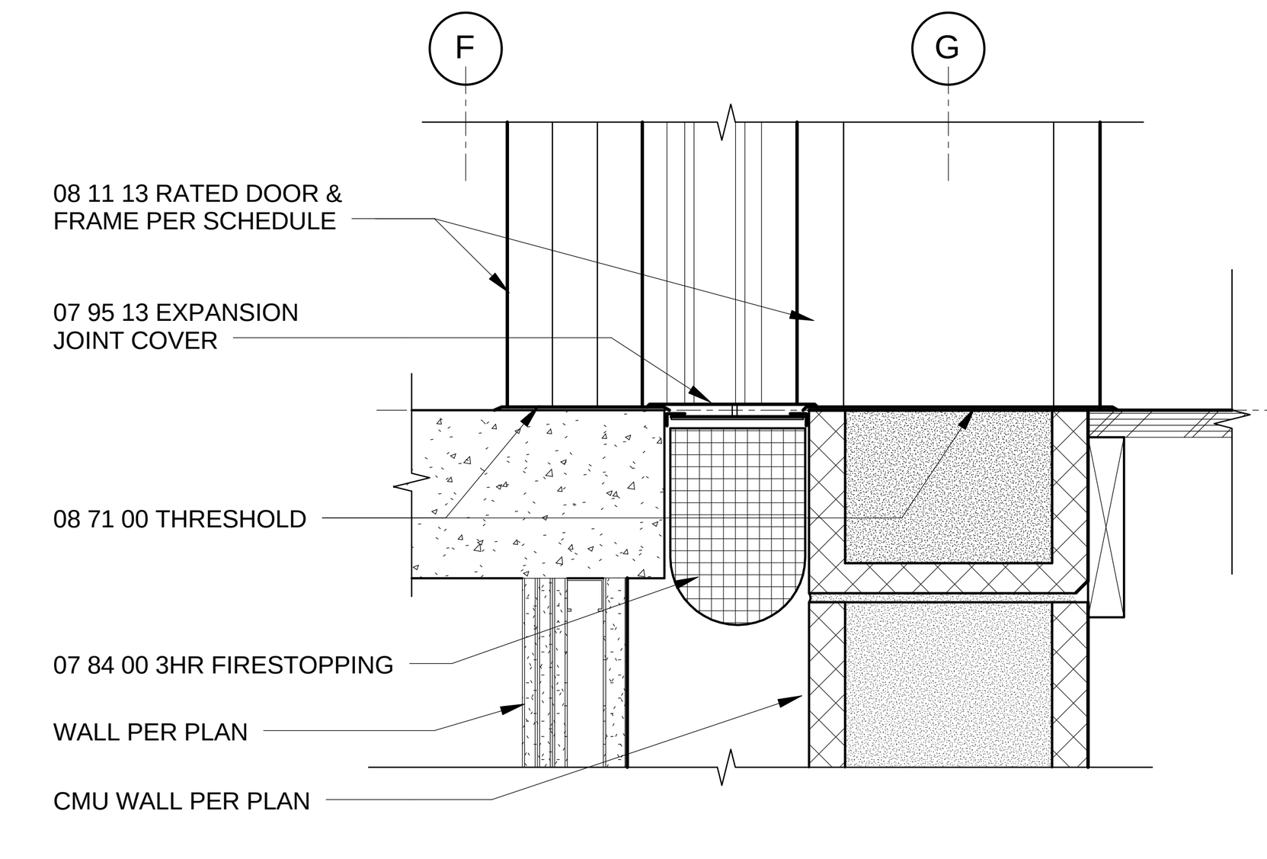
EXTERIOR ENTRY DOOR AND WINDOW DETAILS

A-547



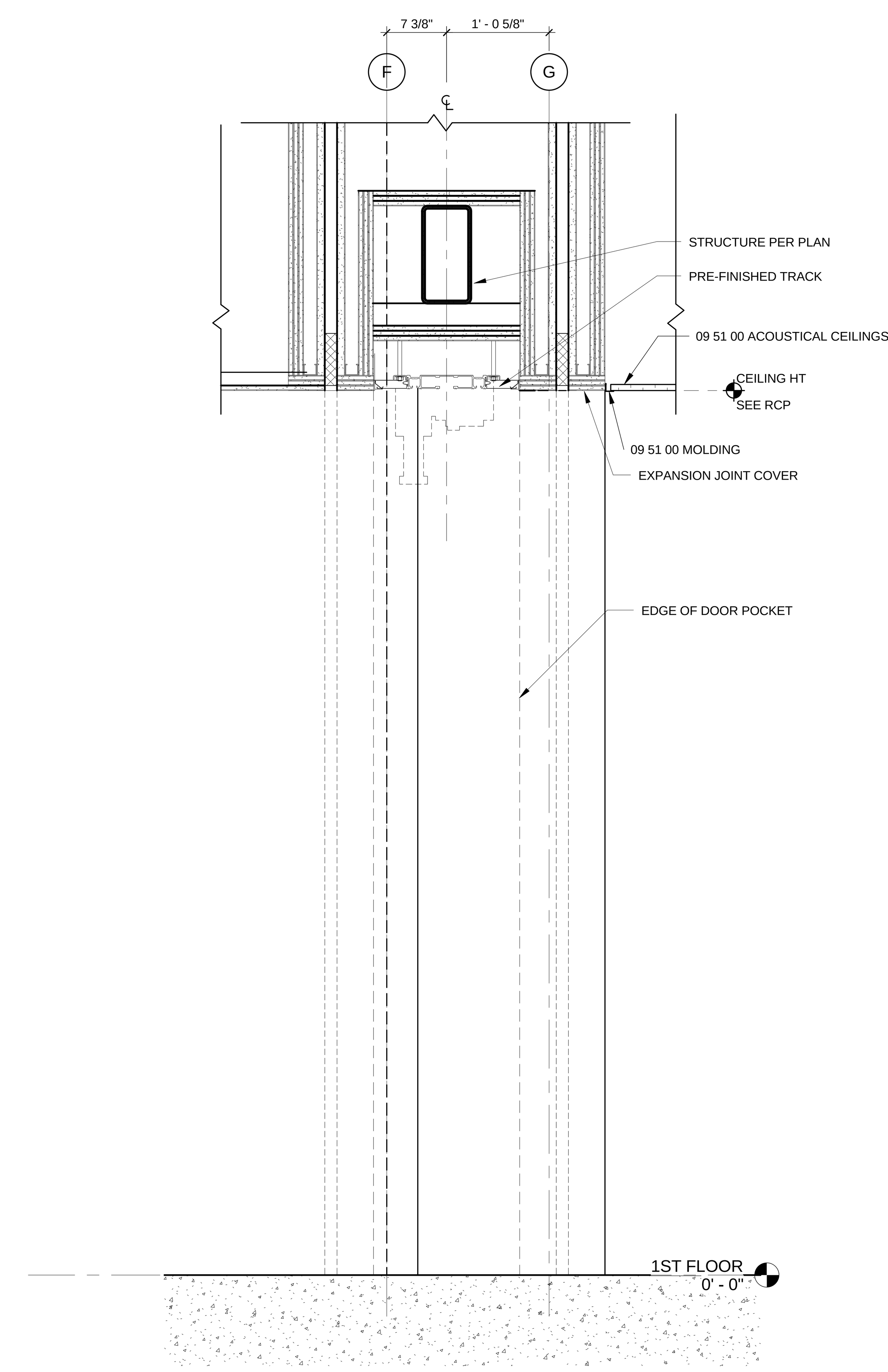
D5 HOLLOW MTL DOOR HEAD & JAMB @ 3 HOUR WALL

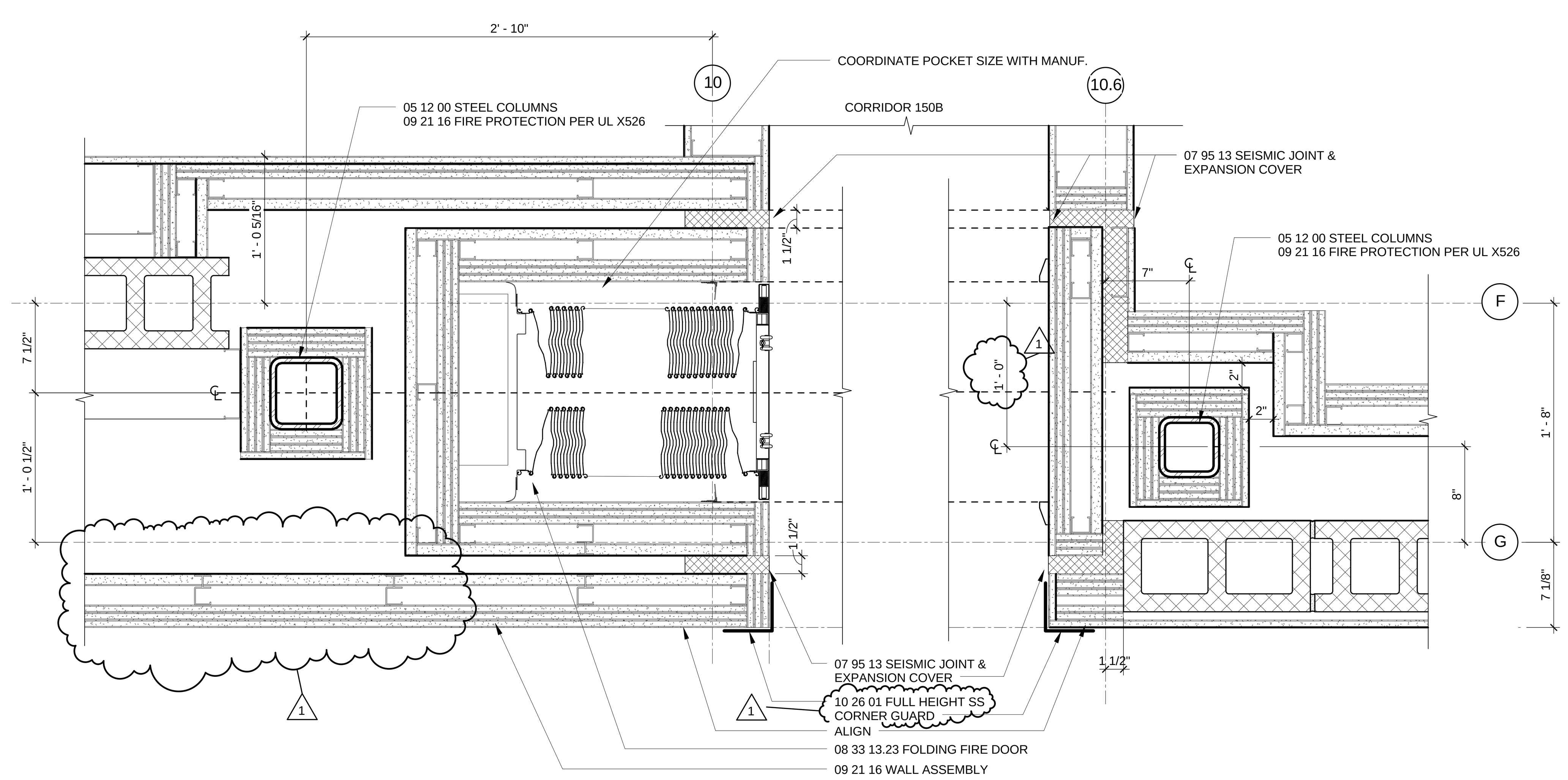
1 1/2" = 1'-0"



C5 DOOR SILL @ 3 HOUR WALL

1 1/2" = 1'-0"





A3 3-HR COILING DOOR JAMB

1 1/2" = 1'-0"

A5 SECTION @ 3-HR FIRE DOOR

1" = 1'-0"

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MARK	DATE	DESCRIPTION
1	3-11-2015	ADDENDUM 5

ISSUE DATE:	FEBRUARY 18, 2015
ISSUE:	CONSTRUCTION DOCUMENTS
VOLUME:	PACKAGE 2 VOLUME 1
PROJECT NO:	2013912.00
DRAWN BY:	JB
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INTERIOR 3 HOUR DOOR DETAILS

A-558

STANDARD PLUMBING ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATIVE
AL	ALUMINUM
APPROX	APPROXIMATELY
ARCH	ARCHITECT(URAL)
AUTO	AUTOMATIC
BLDG	BUILDING
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
CFH	CUBIC FEET PER HOUR
CFS	CUBIC FEET PER SECOND
CLG	CEILING OR COOLING
CONC	CONCRETE
CONN	CONNECT(ION)
CONT	CONTINUE(ED)(UATION)
CL	CENTERLINE
CTG	CLEANOUT TO GRADE
DDC	DIRECT DIGITAL CONTROL
DEFL	DEFLECTION
DN	DOWN
DP	DEW POINT
DWG	DRAWING
EFF	EFFICIENCY
EFT	ENTERING FLUID TEMPERATURE
ELEC	ELECTRIC(AL)
ELEV	ELEVATION
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
F	DEGREES FAHRENHEIT
FIG	FIGURE
FILT	FILTER
FLEX	FLEXIBLE
FPD	FLUID PRESSURE DROP
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET/FOOT
FTR	FINNED TUBE RADIATOR
FU	FIXTURE UNIT
FUT	FUTURE
FV	FACE VELOCITY
GA	GAGE/GAUGE
GAL	GALLON
GALV	GALVANIZED
GLY	GLYCOL
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HEIGHT
HORIZ	HORIZONTAL
HP	HORSEPOWER
HTG	HEATING
ID	INSIDE(DIAMETER/DIMENSION)
IE	INVERT ELEVATION
IN	INCH(ES)
INSUL	INSULATION
ISOL	ISOLAT(OR)(ION)
KW	KILOWATT
KWH	KILOWATT HOUR
L	LENGTH
LB	POUND
LDB	LEAVING DRY BULB
LF	LINEAR FEET
LFT	LEAVING FLUID TEMPERATURE
LVG	LEAVING
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
OC	ON CENTER DISTANCE
PH	PHASE
PP	POLYPROPYLENE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PVS	PVC COATED STEEL
R (RAD)	RADIUS
REV	REVISION
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
SCFM	STANDARD CUBIC FEET PER MINUTE
SECT	SECTION
SENS	SENSIBLE
SIM	SIMILAR
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SF	SQUARE FOOT/(FEET)
SQ IN	SQUARE INCH(ES)
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTUR(E)(AL)
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
V	VOLTS
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WIDTH
WG	WATER GAUGE
WPD	WATER PRESSURE DROP
WTD	WATER TEMPERATURE DROP
WTR	WATER TEMPERATURE RISE
W/	WITH
W/O	WITHOUT

PLUMBING PIPING

W	W	WASTE (ABOVE GRADE OR FLOOR)
W	W	WASTE (BELOW GRADE OR FLOOR)
PW	PW	PUMPED WASTE (ABOVE GRADE OR FLOOR)
PW	PW	PUMPED WASTE (BELOW GRADE OR FLOOR)
SD	SD	STORM DRAIN (ABOVE GRADE OR FLOOR)
SD	SD	STORM DRAIN (BELOW GRADE OR FLOOR)
PSD	PSD	PUMPED STORM DRAIN (ABOVE GRADE OR FLOOR)
PSD	PSD	PUMPED STORM DRAIN (BELOW GRADE OR FLOOR)
OD	OD	OVERFLOW DRAIN (ABOVE GRADE OR FLOOR)
OD	OD	OVERFLOW DRAIN (BELOW GRADE OR FLOOR)
D	D	DRAIN (CONDENSATE/INDIRECT)
	V	VENT
	CW	COLD WATER
	HW	HOT WATER
	RHW	RECIRCULATING HOT WATER
TW	TW	TEMPERED WATER
HTW	HTW	140° HOT WATER
RHTW	RHTW	140° RECIRCULATING HOT WATER
RTW	RTW	RECIRCULATING TEMPERED WATER
ICW	ICW	INDUSTRIAL COLD WATER
G	G	NATURAL GAS (LOW PRESSURE)
MG	MG	NATURAL GAS (MEDIUM PRESSURE)
GV	GV	GAS VENT
SHWS	SHWS	SOLAR HOT WATER SUPPLY
SHWR	SHWR	SOLAR HOT WATER RETURN

SPECIALTY PIPING

AV	AV	ACID VENT
AW	AW	ACID WASTE (ABOVE GRADE OR FLOOR)
AW	AW	ACID WASTE (BELOW GRADE OR FLOOR)
NPW	NPW	NON-POTABLE WATER
PW	PW	PUMPED WASTE

PLUMBING SYMBOLS

TB	THRUST BLOCK
CO	CLEANOUT
WCO	WALL CLEANOUT
FCO	FLOOR CLEANOUT
CTG	CLEANOUT TO GRADE
FD	FLOOR DRAIN
AD	AREA DRAIN
CB	CATCH BASIN
FS	FLOOR SINK
RD	ROOF DRAIN
OD	OVERFLOW DRAIN
TD	TRENCH DRAIN

SYMBOLS

A	ACCESS PANEL	C	POINT OF CONNECTION
B	BELOW GRADE / FLOOR	1	NOTE

MISC. FITTINGS & SYMBOLS

	DIRECTION OF FLOW
	DIRECTION OF SLOPE
	PIPE SLEEVE
	REDUCER
	ANCHOR
	ELBOW (90°)
	ELBOW (45°)
	TEE
	CROSS
	PIPING CONNECTIONS
	JOINT OR COUPLING POINT
	UNION
	FLANGED CONNECTION
	CAP
	PLUG OR BLIND FLANGE
	RISER
	ELBOW UP
	ELBOW DOWN
	TEE UP
	TEE DOWN
	HORIZONTAL TEE
	FLEXIBLE CONNECTION
	BALL JOINT
MC	MECHANICAL COUPLING

GENERAL NOTE

THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.

MISC. VALVES & COCKS

	SHUT-OFF VALVE
	GLOBE VALVE
S	SHUT-OFF VALVE W/ TAMPER SWITCH
	TRIPLE DUTY VALVE
	CHECK VALVE
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	BALANCING VALVE
FC	FLOW CONTROL VALVE
	SOLENOID VALVE
	PRESSURE REDUCING VALVE
MAV AAV	AIR VENT (MANUAL/AUTOMATIC)
	RELIEF VALVE
	STRAINER
	STRAINER W/ BLOWDOWN
DV	DRAIN VALVE
HB	HOSE BIBB
WH	WALL HYDRANT
G GH	GROUND HYDRANT
F&T/TB	STEAM TRAP
	PRESSURE GAUGE
	PRESSURE/TEMPERATURE TEST PLUG
	THERMOMETER
F	FLOW SWITCH
T	TEMPERATURE TRANSMITTER
S (SIZE)	SHOCK ARRESTOR
V	VACUUM BREAKER
WFM	WATER FLOW METER
RPBA	REDUCED PRESSURE BACKFLOW ASSEMBLY
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
BWV	BACKWATER VALVE
UG PIV	UNDERGROUND GATE VALVE W/BOX
	UNDERGROUND GATE W/POST INDICATOR
	OUTSIDE SCREW & YOKE
	Y PATTERN BOILER BLOWDOWN VALVE
	NON-RETURN STOP VALVE
	QUICK OPENING BOILER BLOWDOWN VALVE

PLUMBING DRAWING LIST - PACKAGE 2

Sheet Number	Sheet Name
P-001	SYMBOLS, LEGENDS AND ABBREVIATIONS - PLUMBING
P-002	EQUIPMENT SCHEDULE - PLUMBING
P-121A	FIRST FLOOR PLAN - ZONE A - PLUMBING
P-121B	FIRST FLOOR PLAN - ZONE B - PLUMBING
P-121C	FIRST FLOOR PLAN - ZONE C - PLUMBING
P-121D	FIRST FLOOR PLAN - ZONE D - PLUMBING
P-121E	FIRST FLOOR PLAN - ZONE E - PLUMBING
P-122A	SECOND FLOOR PLAN - ZONE A - PLUMBING
P-122B	SECOND FLOOR PLAN - ZONE B - PLUMBING
P-131	ROOF PLAN - PLUMBING
P-401A	MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE A - PLUMBING
P-401C	MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE C - PLUMBING
P-401D	PARTIAL PLANS - ZONE D - PLUMBING
P-401E	MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E - PLUMBING
P-501	DETAILS - PLUMBING
P-601	FLOW DIAGRAMS - PLUMBING
P-602	RISER DIAGRAM - WASTE & VENT
P-603	RISER DIAGRAM - WASTE & VENT
P-604	RISER DIAGRAM - HOT & COLD WATER
P-605	RISER DIAGRAM - NONPOTABLE WATER AND KITCHEN W&V
P-606	RISER DIAGRAM - GAS

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REGISTERED PROFESSIONAL ENGINEER
18329PE
OREGON
JANUARY 19, 1979
DOUGLAS R. COLONNEY
EXPIRES: 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

SYMBOLS, LEGENDS AND ABBREVIATIONS - PLUMBING

P-001

PLUMBING FIXTURE SCHEDULE

ITEM	DESCRIPTION	ROUGH-IN SIZE (INCHES) W	V	NPW	CW	HW	NOTES
WC-1	WATER CLOSET	4	2	1 1/2	-	-	WALL HUNG 1.28 GPF, ELONGATED BOWL SENSOR OPERATED
WC-2	WATER CLOSET	4	2	1 1/2	-	-	WALL HUNG 1.28 GPF, ELONGATED BOWL, SENSOR OPERATED, ADA
U-1	URINAL	2	2	3/4	-	-	WALL HUNG 0.5 GPF, ADA, SENSOR OPERATED
L-1	LAVATORY	2	1-1/2	-	1/2	1/2	WALL HUNG, METERING PUSH HANDLE, 21-1/4 X 18-1/8 INCH, ADA
WS-1	WASH STATION	2	1-1/2	-	1/2	1/2	WALL HUNG, TWO PERSON STATION 0.5 GPM, ADA
WS-2	WASH STATION	2	1-1/2	-	1/2	1/2	WALL HUNG, THREE PERSON STATION 0.5 GPM, ADA
S-1	SINK	2	1-1/2	-	1/2	1/2	STAINLESS STEEL UNDER MOUNT, ADA
S-2	SINK	2	1-1/2	-	1/2	1/2	STAINLESS STEEL UNDER MOUNT, ADA
S-3	SINK	3	2	-	3/4	3/4	TWO COMPARTMENT FREE STANDING SINK
S-4	SINK	2	1-1/2	-	1/2	1/2	STAINLESS STEEL TOP MOUNT SINK
DF-1	DRINKING FOUNTAIN	2	1-1/2	-	1/2	-	DUAL HEIGHT, STAINLESS STEEL WALL MOUNTED INTEGRAL BOTTLE FILLER, ADA
SH-1	SHOWER	2	1-1/2	-	3/4	3/4	FIBERGLASS ENCLOSURE, PRESSURE BALANCE MIXING VALVE, 1.5 GPM SHOWER HEAD
MS-1	MOP SINK	3	2	-	3/4	3/4	FLOOR/CORNER MOUNTED, WALL MOUNTED FAUCET W/VACUUM BREAKER & HOSE THREAD OUTLET
WH-1	WALL HYDRANT	-	-	-	3/4	-	REMOVABLE HANDLE, FREEZE PROOF, W/VACUUM BREAKER
PH-1	POST HYDRANT	-	-	-	3/4	-	REMOVABLE HANDLE, FREEZE PROOF, FED FROM RPBA-3.
DW	DISH WASHER	2	1-1/2	-	-	3/4	EQUIPMENT PROVIDED BY OTHERS

2

KITCHEN EQUIPMENT CONNECTION SCHEDULE

ITEM	DESCRIPTION	ROUGH-IN SIZE (INCHES) W	V	CW	HW	G	IW	NOTES
13	PRE-RINSE	2	2	3/4	3/4	-	-	
14	VEGETABLE PREP SINK	-	-	1/2	1/2	-	(2) 2	2
15	DISPOSER	2	-	1/2	-	-	-	
16	TABLE W/ SINK	-	-	1/2	1/2	-	2	
18	HAND SINK	2	1 1/2	1/2	1/2	-	-	3
27	CONVECTION STEAMER	-	-	(2) 1/2	-	-	2	1
29	TILTING KETTLE / STAND (40QT)	-	-	1/2	1/2	-	2	
35	HAND SINK	2	1 1/2	1/2	1/2	-	-	3
65	DISPOSER	2	2	1/2	-	-	-	
66	PRE-RINSE	2	2	3/4	3/4	-	-	
68	DISHWASHER/BOOSTER	-	-	-	1/2	-	2	
71	3-COMPARTMENT SINK	-	2	(2) 3/4	(2) 3/4	-	(3) 2	
73	HAND SINK	2	1 1/2	1/2	1/2	-	-	3

NOTES:

1. PROVIDE AGA APPROVED FLEXIBLE CONNECTOR WITH QUICK-DISCONNECT AT POINT OF CONNECTION. COORDINATE WITH FOOD SERVICE CONTRACTOR FOR EXACT TYPE AND SIZE.
2. PROVIDE INDIRECT WASTE TO FLOOR SINK.
3. ALL KITCHEN FIXTURES PROVIDED WITH 140°F HOT WATER. PROVIDE SYMMONS 410-B MIXING VALVE AT CW & HW SUPPLIES TO TEMPER OUTLET WATER TO 110 F AT HAND WASH LOCATIONS. SEE KITCHEN PLUMBING PLAN FOR LOCATIONS.

PLUMBING DESIGN CRITERIA

DOMESTIC/RAINWATER PIPING SYSTEM
BASIS OF DESIGN: 2011 OREGON PLUMBING SPECIALTY CODE, APPENDIX A "RECOMMENDED RULES FOR SIZING THE WATER SUPPLY SYSTEM". PIPING SIZED ON 3 PSI/100 FT. DROP, VELOCITIES NOT TO EXCEED 8 FT/SEC. (COLD WATER) AND NOT TO EXCEED 5 FT/SEC. (HOT WATER).

WASTE AND VENT PIPING SYSTEM
BASIS OF DESIGN: 2011 OREGON PLUMBING SPECIALTY CODE, CHAPTER 7 "SANITARY DRAINAGE". ALL WASTE PIPING SIZED AT 1/4" PER FT SLOPE UNLESS OTHERWISE NOTED.

ROOF DRAIN/STORM DRAIN PIPING SYSTEMS
BASIS OF DESIGN: 2011 OREGON PLUMBING SPECIALTY CODE, CHAPTER 11 "STORM DRAINAGE". STORM DRAIN PIPING SIZED AT 1/8" PER FT SLOPE UNLESS OTHERWISE NOTED AND A RAINFALL RATE OF 1.3"/HR.

NATURAL GAS SYSTEM
BASIS OF DESIGN: 2014 OREGON MECHANICAL SPECIALTY CODE, APPENDIX C, "FUEL GAS" SECTION C402 "PIPE SIZING". EQUIVALENT LENGTH OF PIPE: 170 FT (MPG), 25 FT (G)

PLUMBING EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	ELECTRICAL
GWH-101 (DOMESTIC SYSTEM)	GAS WATER HEATER 285 CFH INPUT, 120 GALLON STORAGE 332 GPH RECOVERY @ 100°F RISE BASED ON: LOCHINVAR SHIELD SNA 286-125	120 V, 1 PH
GWH-102 (REDUNDANT)	GAS WATER HEATER 285 CFH INPUT, 120 GALLON STORAGE 332 GPH RECOVERY @ 100°F RISE BASED ON: LOCHINVAR SHIELD SNA 286-125	120 V, 1 PH
DET-101 (DOMESTIC SYSTEM)	DOMESTIC WATER EXPANSION TANK 12 GALLONS ACCEPTANCE VOLUME 14 GALLONS TANK VOLUME BASED ON: AMTROL ST-30V	-
MMV-101 (DOMESTIC SYSTEM)	MASTER MIXING VALVE 59 GPM FLOW RATE, WITH 17 PSI LOSS 140 F INLET TEMPERATURE 120 F OUTLET TEMPERATURE BASED ON: LEONARD NEW GENERATION MIXING VALVE	-
RHWP-101 (DOMESTIC SYSTEM)	RECIRCULATING HOT WATER PUMP IN-LINE CENTRIFUGAL PUMP 15 GPM @ 38' TDH BASED ON: BELL & GOSSETT PL-55B	2/5 HP 120 V, 1 PH
RHTWP-101 (KITCHEN SYSTEM)	RECIRCULATING HIGH TEMPERATURE HOT WATER PUMP IN-LINE CENTRIFUGAL PUMP 1 GPM @ 5 FT HEAD BASED ON: BELL & GOSSETT NBF-8S/LW	39 WATTS 120 V, 1 PH
TP-1 THRU TP-7	ELECTRONIC TRAP PRIMER 1-20 OPENING MANIFOLD CALIBRATED FOR EQUAL WATER DISTRIBUTION, 1/2" OUTLET CONNECTION, TIME CLOCK, SOLENOID VALVE AND VACUUM BREAKER, RECESSED STAINLESS STEEL ENCLOSURE WITH DOOR. BASED ON: PRECISION PLUMBING PRODUCTS PRIMETIME ELECTRONIC TRAP PRIMER, PTS SERIES	120 V, 1 PH
RPBA-1 HVAC MAKE UP)	REDUCED PRESSURE BACKFLOW ASSEMBLY 20 GPM @ 10 PSIG LOSS BASED ON: FEBCO 860 (1")	-
SDBT-201	SOLAR DRAINKBACK TANK (SOLAR THERMAL HOT WATER SYSTEM) 10 GALLONS TANK VOLUME BASED ON: SUNEARTH DBT 10 SS	-
SHX-201	SOLAR HEAT EXCHANGER (SOLAR THERMAL HOT WATER SYSTEM) BASED ON: BELL & GOSSETT BPX COLLECTOR SIDE: 160F INLET, 145F OUTLET, 3.0 GPM DOMESTIC SIDE: 125F INLET, 140F OUTLET, 2.98 GPM TOTAL HEAT EXCHANGED: 22,000 BTU/H	-
SHEP-201	SOLAR HEAT EXCHANGER PUMP (SOLAR THERMAL HOT WATER SYSTEM) IN-LINE CENTRIFUGAL PUMP 3.0 GPM @ 20 FT HEAD BASED ON: BELL & GOSSET NFR-36, 3 SPEED CIRCULATOR.	270 WATTS 120 V, 1 PH
SCP-101	SOLAR CIRCULATOR PUMP (SOLAR THERMAL HOT WATER SYSTEM) IN-LINE CENTRIFUGAL PUMP 3 GPM @ 8 FT HEAD BASED ON: BELL & GOSSETT NBF-10 S/LW	52 WATTS 120 V, 1 PH
SST-101	SOLAR HOT WATER STORAGE TANK (SOLAR THERMAL HOT WATER SYSTEM) 119 GALLONS BASED ON: NILES JS-28-120	-
RCP-101 (ALT 5)	RAINWATER CISTERN PUMP IN-LINE CENTRIFUGAL PUMP 100 GPM @ 35 FT HEAD BASED ON: BELL & GOSSETT 2EC1534	1.5 HP 460 V, 3 PH
RWS-101 (2) (RAINWATER SYSTEM) (ALT 5)	RAINWATER SKID SYSTEM: (2) RAINWATER PUMP/FILTER SKID SYSTEM: PREPACKAGED SKID BASED ON FLOW THERM MODEL FTSS-RW-CL VIBRATION ISOLATION: TYPE 5, 2"MIN. DEFLECTION. ELECTRICAL CONNECTIONS AND CONTROLS BY OTHERS. SINGLE POINT ELECTRICAL CONNECTION RAIN WATER RECLAMATION STORAGE TANK 540 GALLON CAPACITY 48"DIAMETER x 86-1/2"TALL, 17"DIAMETER ACCESS WAY BASED ON: POLYPROCESSING RAIN WATER HYPO TREATMENT: CHEMICAL FEED PUMP, DUPLEX DELIVERY PUMPS SIMPLEX MAGNETIC DRIVE RECIRCULATION PUMP WITH NEMA 4 PANEL. ORP CONTROLLER. BASIS OF DESIGN: WATER CONTROL CORP. DISINFECTIONS SYSTEM	(2) 5 HP 480 V, 3 PH SINGLE POINT OF CONNECTION
SP-1	SUMP PUMP 50 GPM @ 12 FT HEAD BASED ON: BELL & GOSSETT	1/2 HP 120 V, 1 PH

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March 19 1996
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EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

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REPLACEMENT ROOSEVELT MIDDLE SCHOOL
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680 EAST 24TH AVENUE
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CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
2	03-13-2015	ADDENDUM 6
1	03-06-2015	ADDENDUM 4

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

EQUIPMENT SCHEDULE - PLUMBING

GENERAL NOTES:

A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES, INCLUDING BUT NOT LIMITED TO: ELECTRICAL, HVAC, FIRE SPRINKLER, PLUMBING, STRUCTURAL, AND GENERAL ARCHITECTURE.

B. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC. INSTALLED IN HVAC PLENUM AND ATTIC SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.

C. VERIFY EXACT SIZES, LOCATIONS, INVERTS, AND ELEVATIONS PRIOR TO RUNNING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT. REFER TO KITCHEN LAYOUT DRAWING FOR EXACT LOCATION AND ROUGH-IN REQUIREMENTS OF ALL KITCHEN FIXTURES AND EQUIPMENT.

D. PLUMBING CONTRACTOR IS RESPONSIBLE FOR EXTENDING ALL REGULATOR VENTS TO ATMOSPHERE. REGULATORS ARE PART OF EQUIPMENT GAS TRAIN.

E. WATER HEATERS SHALL BE INSTALLED WITH DRAIN PANS UNDER HEATERS. ROUTE PAN DRAINS TO NEAREST FLOOR DRAIN OR SAFE DRAIN.

F. PIPING SHALL NOT RUN OVER ELECTRICAL PANELS AND SHALLED BE COORDINATED WITH WORK OF OTHER TRADES.

G. NPW PIPING FROM RAINWATER SYSTEM SHALL BE ROUTED FROM BOILER ROOM 174 PARALLEL TO CW PIPING AND SHALL SERVE ALL FLUSH FIXTURES.

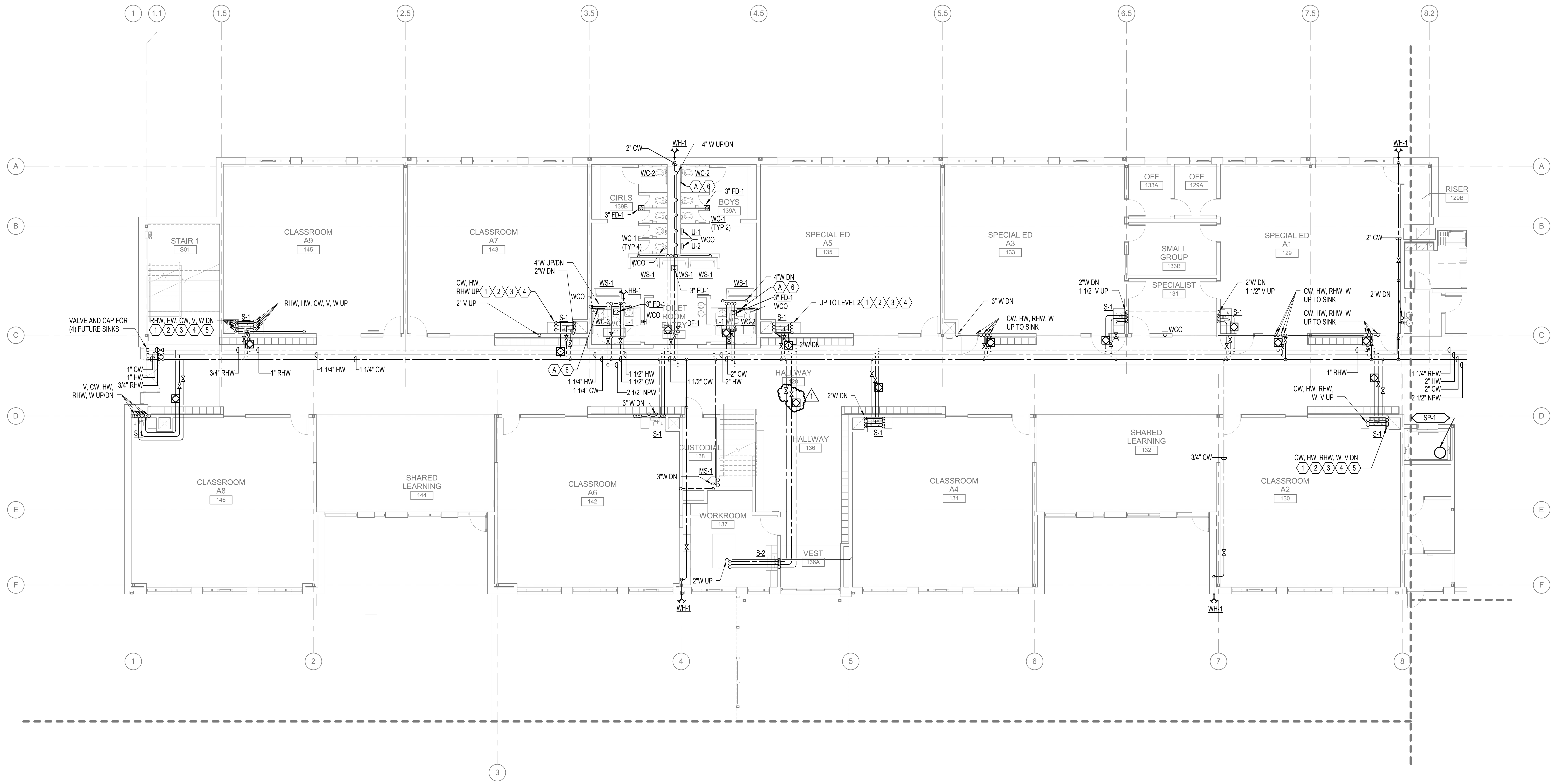
H. PROVIDE WALL CLEANOUTS ON WASTE PIPE SYSTEM EVERY 100 FT. FOR STRAIGHT RUNS, AT 90 DEGREE TURNS IN MAINS, AND AT ANY TURN EXCEEDING 135 DEGREES.

I. PROVIDE EXTERIOR CTG'S ON WASTE PIPE SYSTEM AT BEGINNINGS AND ENDS OF WASTE PIPING MAINS.

J. IN RESTROOMS PROVIDE WALL CLEANOUTS, SHOCK ARRESTORS AND SHUT-OFF VALVES BEHIND ACCESS PANELS AS APPROPRIATE. PROVIDE HOSE BIBB IN EACH RESTROOM.

NOTES:

1. PROVIDE CW/HW/RHW ANGLE STOPS IN FRAMED WALL BELOW COUNTER.
2. CONNECT RWH LINE WITHIN 12" OF ANGLE STOP VALVE. REFER TO RISER DIAGRAM.
3. PROVIDE RIGID RISERS HELD TIGHT TO BOTTOM OF COUNTER, FOR ADA COMPLIANCE, TO CONNECT TO PLUMBING FIXTURES.
4. INSULATE HW AND W LINES BELOW SINK FOR ADA COMPLIANCE.
5. CONNECT WASTE PIPING INTO FRAMED WALL.



A1 FIRST FLOOR PLAN - ZONE A - PLUMBING
1/8" = 1'-0"

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EXPIRES 12-31-15

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CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: SG
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ORIGINAL SHEET SIZE: 30"x42"

FIRST FLOOR PLAN - ZONE A - PLUMBING

P-121A

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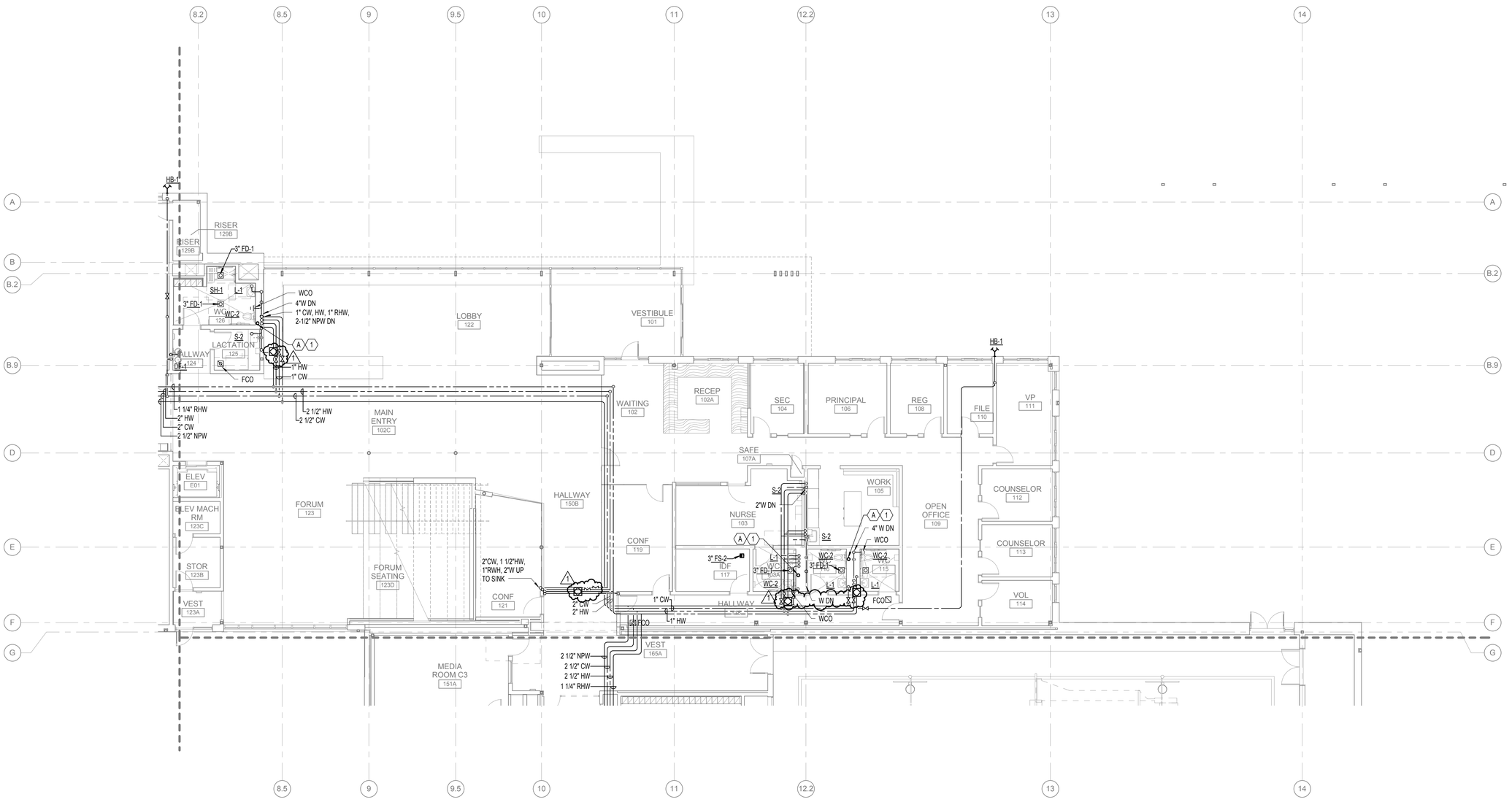
NOTES:

1. LOCATE SHOCK ARRESTOR BEHIND ACCESS PANEL.



A1 FIRST FLOOR PLAN - ZONE B - PLUMBING

1/8" = 1'-0"

PLAN NORTH

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REGISTERED PROFESSIONAL ENGINEER 18329PE OREGON JANUARY 19, 1995 DOUGLAS R. COLEMAN EXPIRES 12-31-15 2-18-2015

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MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

FIRST FLOOR PLAN - ZONE B - PLUMBING

P-121B

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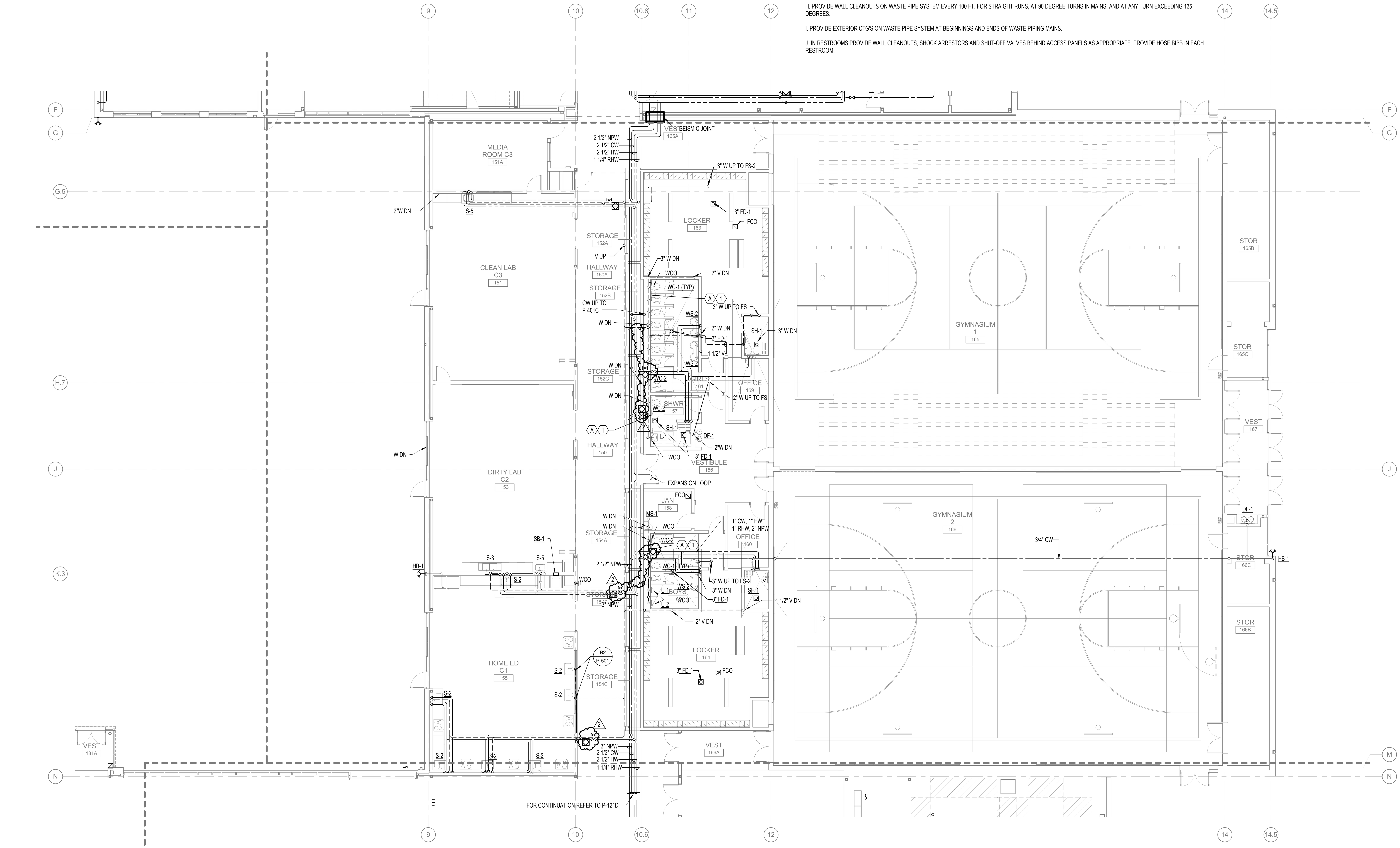
NOTES:

1. LOCATE SHOCK ARRESSTOR BEHIND ACCESS PANEL.

2. LOCATE SHUT OFF VALVES BEHIND ACCESS PANEL



A1 FIRST FLOOR PLAN - ZONE C - PLUMBING

1/8" = 1'-0"

PLAN NORTH

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MARK	DATE	DESCRIPTION
2	03-13-2015	ADDENDUM 6
1	2-27-2015	ADDENDUM 1

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: SG
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FIRST FLOOR PLAN - ZONE C - PLUMBING

P-121C

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NOTES:

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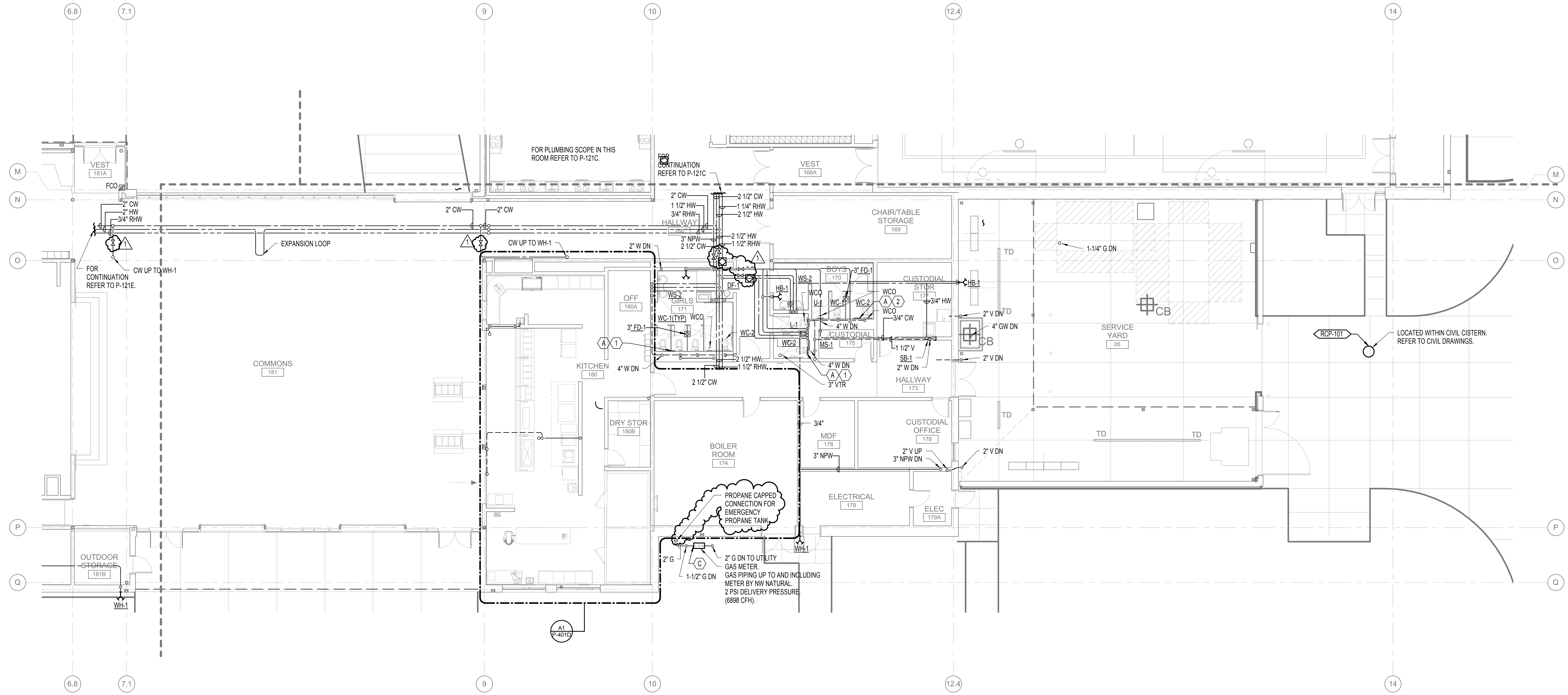

A1 FIRST FLOOR PLAN - ZONE D - PLUMBING

1/8" = 1'-0"

PLAN NORTH

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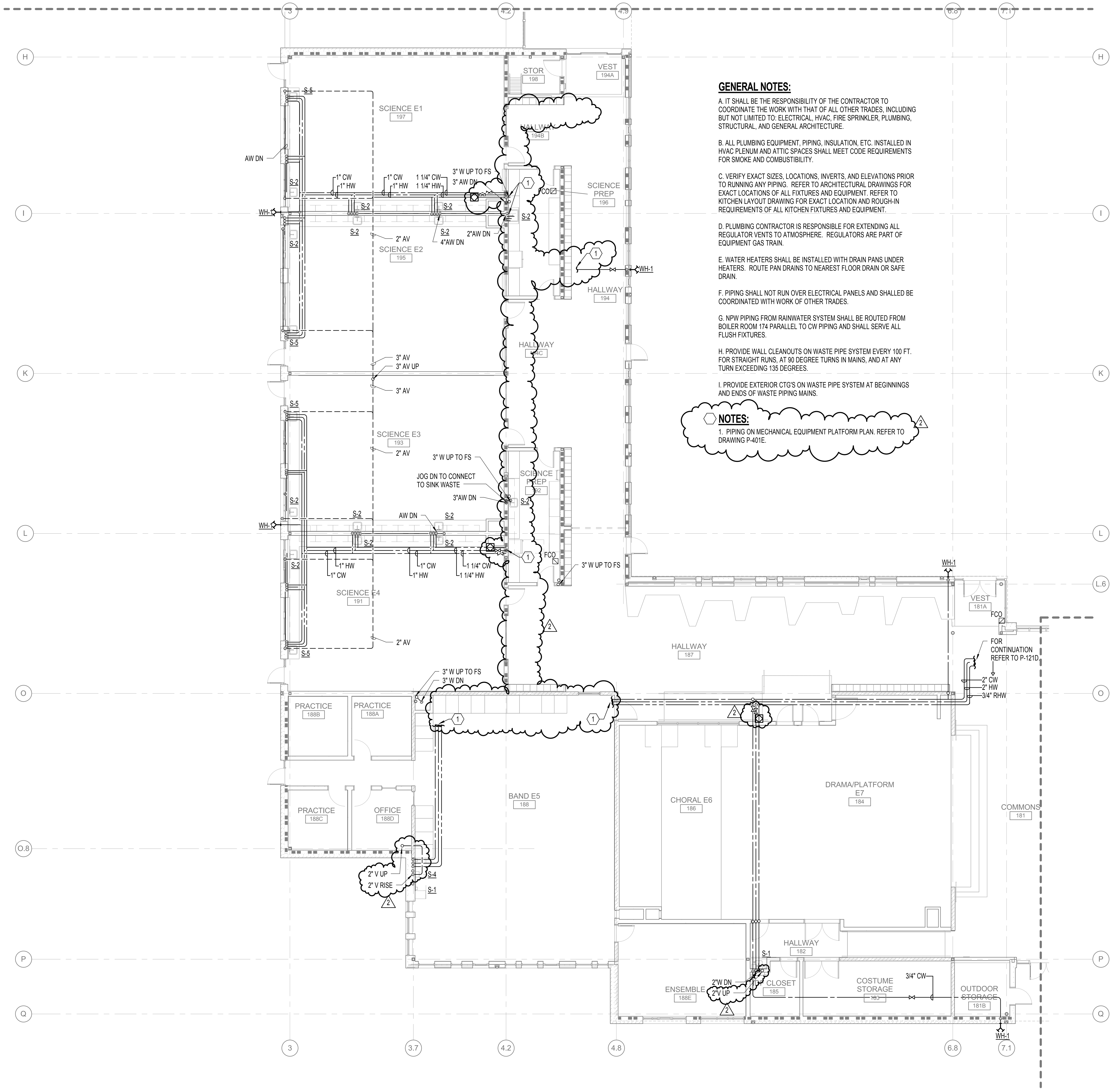
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE:	FEBRUARY 18, 2015
ISSUE:	CONSTRUCTION DOCUMENTS
VOLUME:	PACKAGE 2 VOLUME 2
PROJECT NO:	2013912.00
DRAWN BY:	SG
CHECKED BY:	JCY

FIRST FLOOR PLAN - ZONE D - PLUMBING

P-121D



GENERAL NOTES:

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B. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC. INSTALLED IN HVAC PLENUM AND ATTIC SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.

C. VERIFY EXACT SIZES, LOCATIONS, INVERTS, AND ELEVATIONS PRIOR TO RUNNING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT. REFER TO KITCHEN LAYOUT DRAWING FOR EXACT LOCATION AND ROUGH-IN REQUIREMENTS OF ALL KITCHEN FIXTURES AND EQUIPMENT.

D. PLUMBING CONTRACTOR IS RESPONSIBLE FOR EXTENDING ALL REGULATOR VENTS TO ATMOSPHERE. REGULATORS ARE PART OF EQUIPMENT GAS TRAIN.

E. WATER HEATERS SHALL BE INSTALLED WITH DRAIN PANS UNDER HEATERS. ROUTE PAN DRAINS TO NEAREST FLOOR DRAIN OR SAFE DRAIN.

F. PIPING SHALL NOT RUN OVER ELECTRICAL PANELS AND SHALLED BE COORDINATED WITH WORK OF OTHER TRADES.

G. NPW PIPING FROM RAINWATER SYSTEM SHALL BE ROUTED FROM BOILER ROOM 174 PARALLEL TO CW PIPING AND SHALL SERVE ALL FLUSH FIXTURES.

H. PROVIDE WALL CLEANOUTS ON WASTE PIPE SYSTEM EVERY 100 FT. FOR STRAIGHT RUNS, AT 90 DEGREE TURNS IN MAINS, AND AT ANY TURN EXCEEDING 135 DEGREES.

I. PROVIDE EXTERIOR CTG'S ON WASTE PIPE SYSTEM AT BEGINNINGS AND ENDS OF WASTE PIPING MAINS.

NOTES:

1. PIPING ON MECHANICAL EQUIPMENT PLATFORM PLAN. REFER TO DRAWING P-401E.

A1 FIRST FLOOR PLAN - ZONE E - PLUMBING
1/8" = 1'-0"

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2	03-13-2015	ADDENDUM 6
1	2-27-2015	ADDENDUM 1

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

 ORIGINAL SHEET SIZE: 30"x42"

FIRST FLOOR PLAN - ZONE E - PLUMBING

P-121E

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I. PROVIDE EXTERIOR CTG'S ON WASTE PIPE SYSTEM AT BEGINNINGS AND ENDS OF WASTE PIPING MAINS.

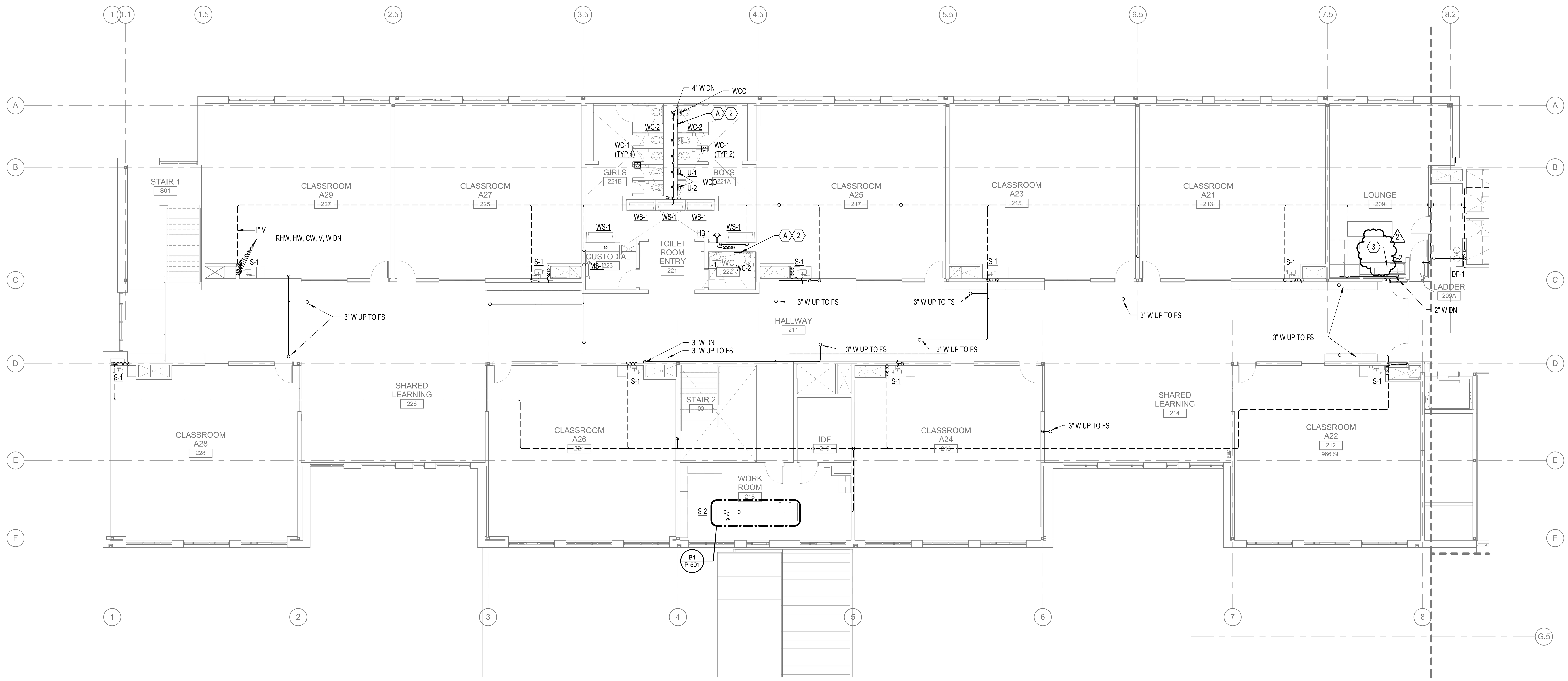
J. IN RESTROOMS PROVIDE WALL CLEANOUTS, SHOCK ARRESTORS AND SHUT-OFF VALVES BEHIND ACCESS PANELS AS APPROPRIATE. PROVIDE HOSE BIBB IN EACH RESTROOM.

NOTES:

1. THESE ANNOTATIONS ARE TYPICAL FOR ALL "SECTOR A" CLASSROOM SINKS.

2. LOCATE SHOCK ARRESTOR BEHIND ACCESS PANEL

3. DISHWASHER - PROVIDE 1/2" HW CONNECTION & CONNECT DRAIN LINE FROM DISHWASHER TO THE SINK WASTE PIPE. (2)



A1 SECOND FLOOR PLAN - ZONE A -PLUMBING
1/8" = 1'-0"

PLAN NORTH

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PROJECT NO: 2013912.00
DRAWN BY: SG
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SECOND FLOOR PLAN - ZONE A - PLUMBING

P-122A

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F. PIPING SHALL NOT RUN OVER ELECTRICAL PANELS AND SHALLED BE COORDINATED WITH WORK OF OTHER TRADES.

G. NPW PIPING FROM RAINWATER SYSTEM SHALL BE ROUTED FROM BOILER ROOM 174 PARALLEL TO CW PIPING AND SHALL SERVE ALL FLUSH FIXTURES.

NOTES:

1. (3) 48" x 98" SOLAR THERMAL WATER HEATING PANELS. MOUNT PANELS 45 DEGREES ABOVE HORIZONTAL, PER MANUFACTURER'S INSTALLATION RECOMMENDATIONS. REFER TO SPECIFICATIONS.

REFER TO ARCHITECTURAL DRAWINGS FOR ROOF DRAIN LOCATIONS.

VTR
VTR
VTR
VTR
VTR
2" VTR
2" VTR
2" VTR
2" VTR
2" VTR
2" VTR
1-1/2" VTR
1-1/2" VTR
PROVIDE SWING JOINT
PROVIDE SWING JOINT
SHWR DN
SHWS DN
WH-1
WH-1
WH-1
WH-1
PH-1
PH-1

A1 ROOF PLAN OVERALL - PLUMBING
1/16" = 1'-0"

PLAN NORTH

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PROJECT NO: 2013912.00
DRAWN BY: SG
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ROOF PLAN - PLUMBING

P-131

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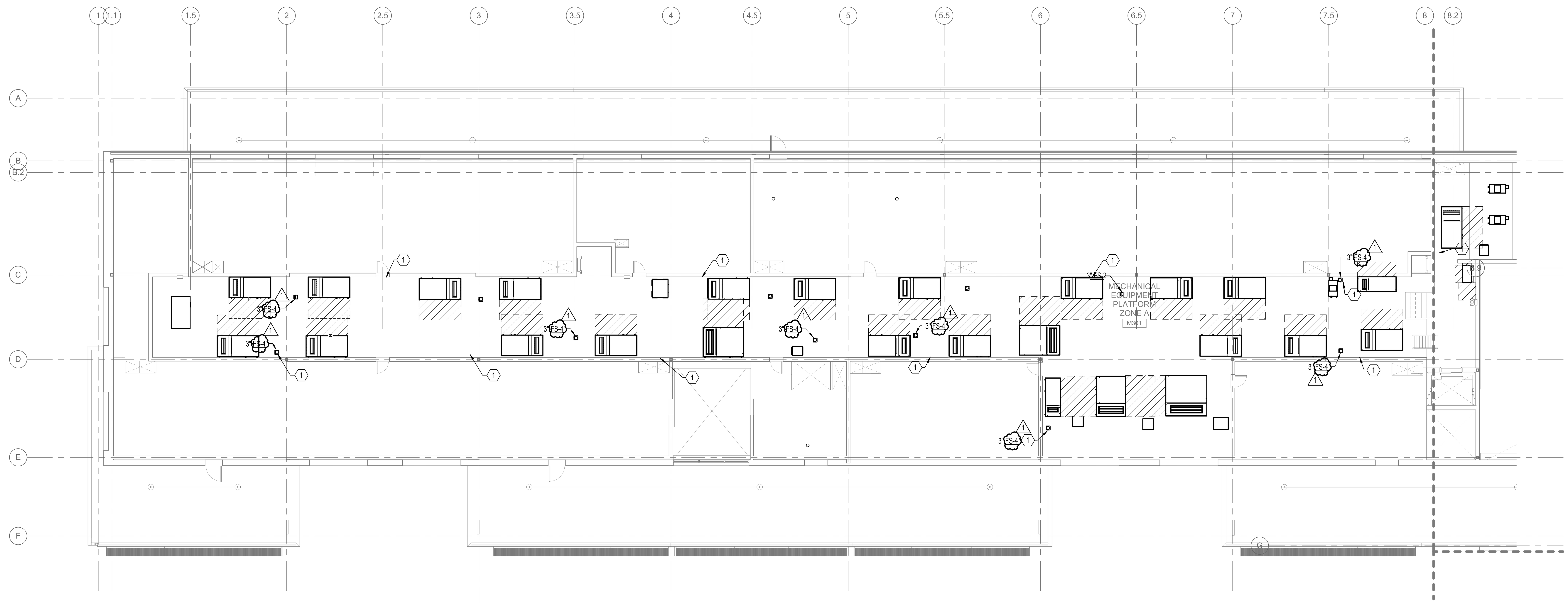
NOTES:

1. FLOOR SINK FOR AHU CONDENSATE DRAINAGE.



A1 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE A - PLUMBING

1/8" = 1'-0"

PLAN NORTH

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PROJECT NO: 2013912.00
DRAWN BY: SG
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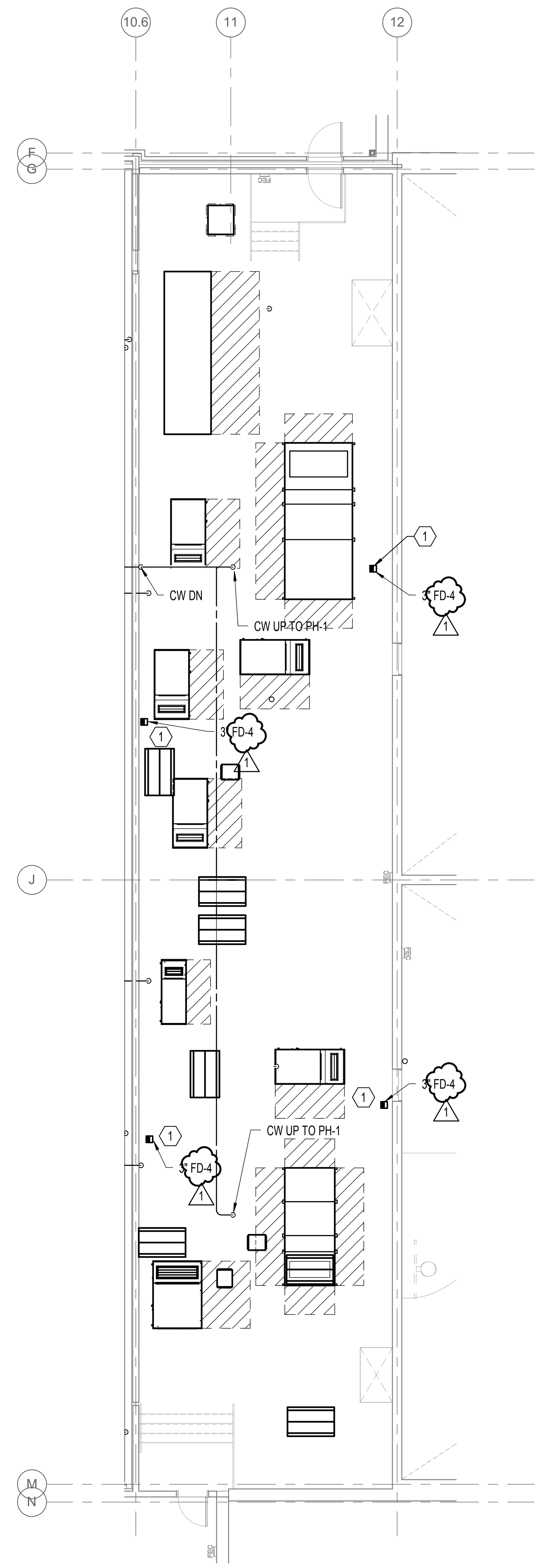
ORIGINAL SHEET SIZE: 30"x42"

MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE A - PLUMBING

P-401A

NOTES:

1. FLOOR SINK FOR AHU CONDENSATE DRAINAGE.



A1 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE C - PLUMBING

1/8" = 1'-0"

PLAN NORTH

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MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE C - PLUMBING

P-401C

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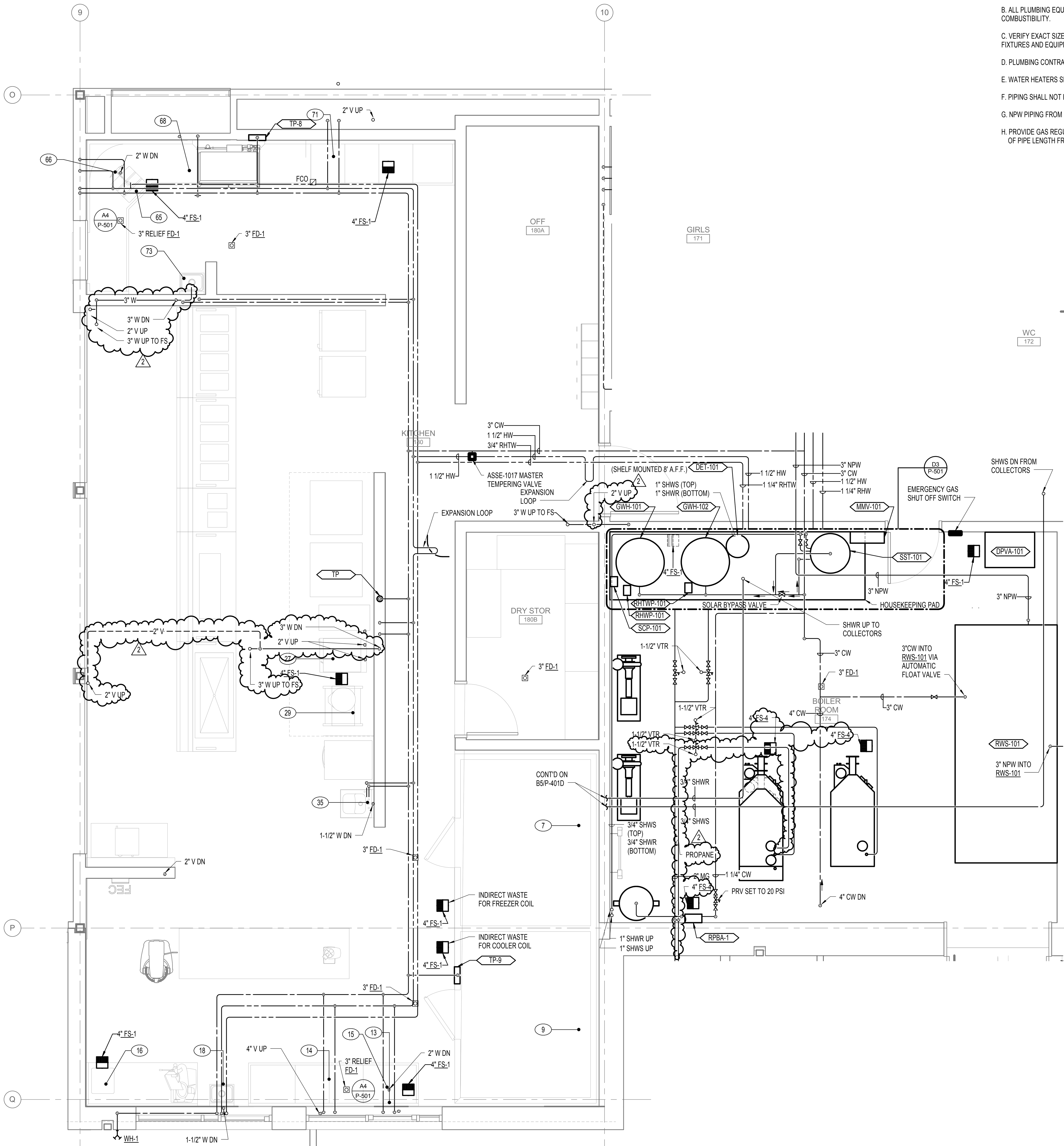
F. PIPING SHALL NOT RUN OVER ELECTRICAL PANELS AND SHALLED BE COORDINATED WITH WORK OF OTHER TRADES.

G. NPW PIPING FROM RAINWATER SYSTEM SHALL BE ROUTED FROM BOILER ROOM 174 PARALLEL TO CW PIPING AND SHALL SERVE ALL FLUSH FIXTURES.

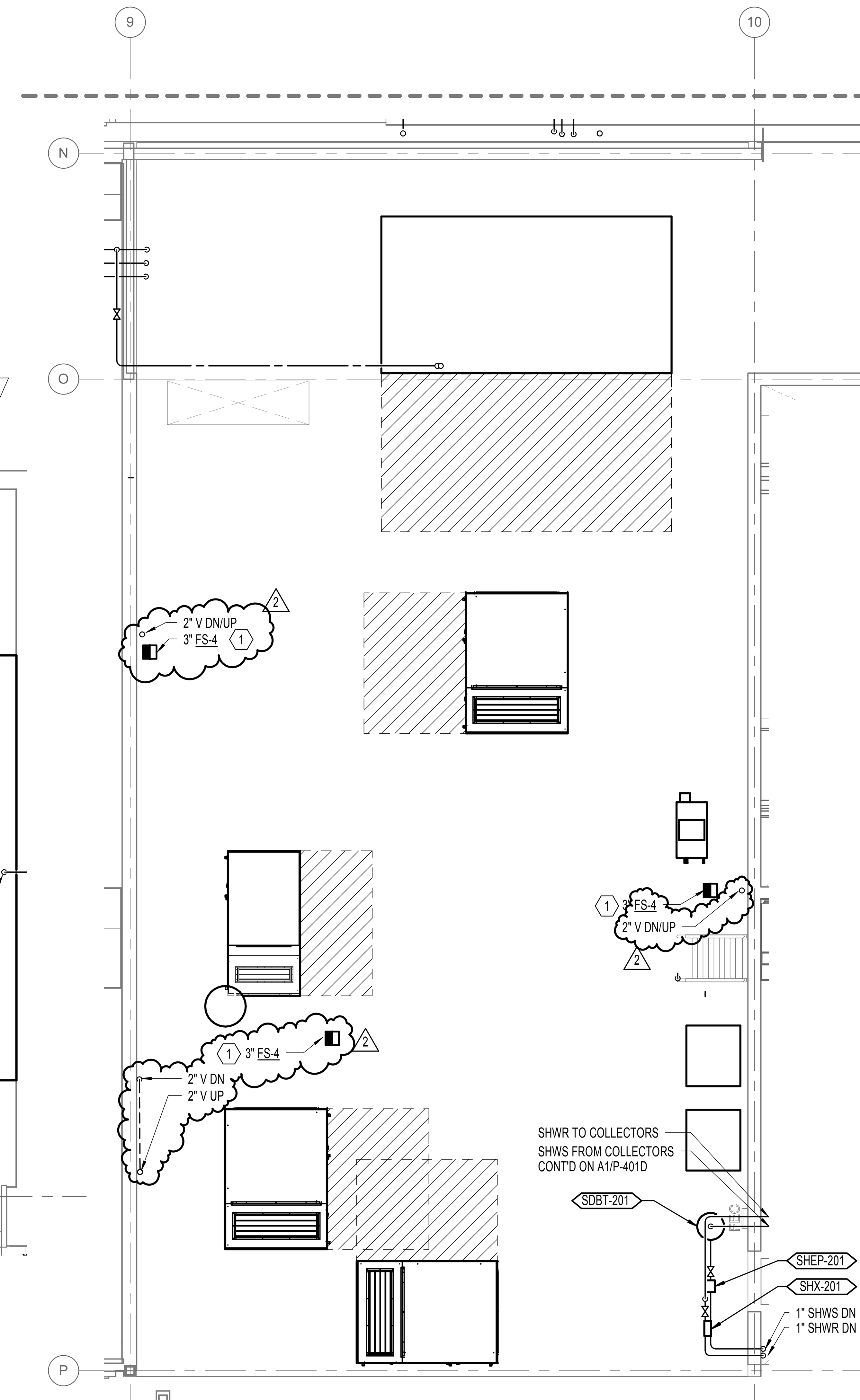
H. PROVIDE GAS REGULATORS (2 PSI TO EACH REGULATOR) TO BOILERS AND DOMESTIC WATER HEATERS. REGULATORS ON BOILERS SHALL BE NO CLOSER THAN 10 FEET OF PIPE LENGTH FROM BOILER.

NOTES:

1. FLOOR SINK FOR AHU CONDENSATE DRAINAGE.



A1 PARTIAL PLAN - KITCHEN AND BOILER ROOM - PLUMBING
3/8" = 1'-0"



B5 MECHANICAL EQUIPMENT PLATFORM PLAN- ZONE D - PLUMBING
1/4" = 1'-0"

PLAN NORTH

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2	03-13-2015	ADDENDUM 6
1	03-06-2015	ADDENDUM 4

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ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: SG
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PARTIAL PLANS - ZONE D - PLUMBING

P-401D

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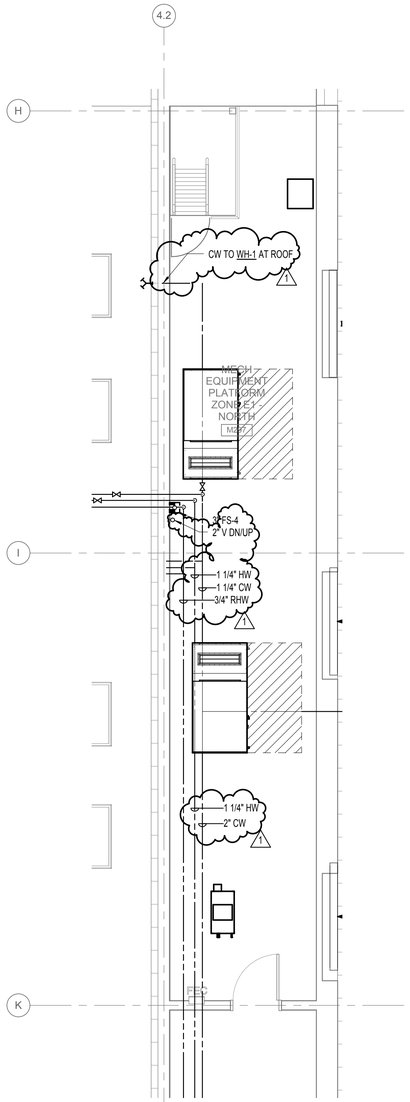
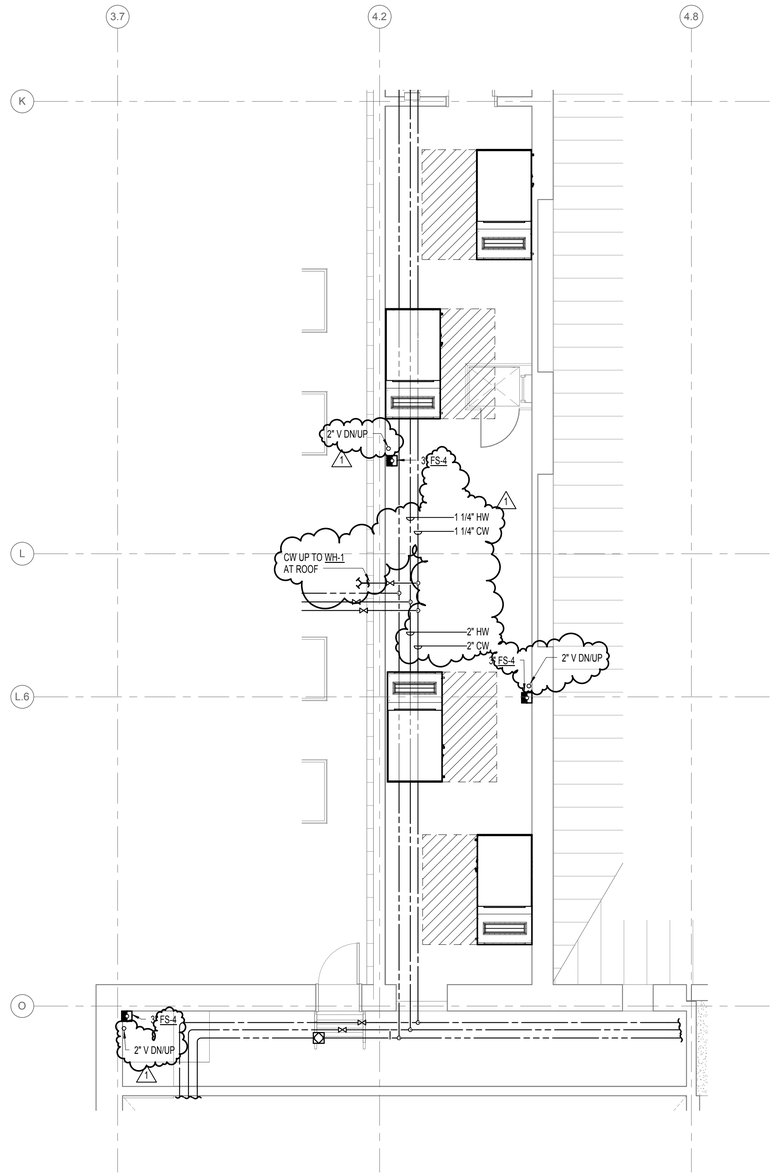
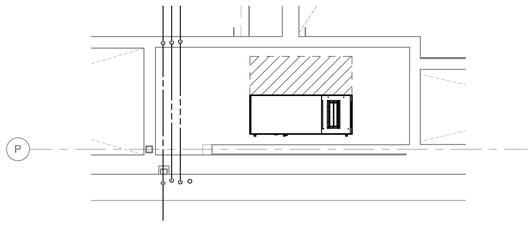


1 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E NORTH - MECHANICAL
1/4" = 1'-0"



2 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E SOUTH - MECHANICAL
1/4" = 1'-0"



3 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E EAST - MECHANICAL
1/4" = 1'-0"

PLAN NORTH

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OREGON
JANUARY 19, 1988
THOMAS R. COLONNA
2-18-2015
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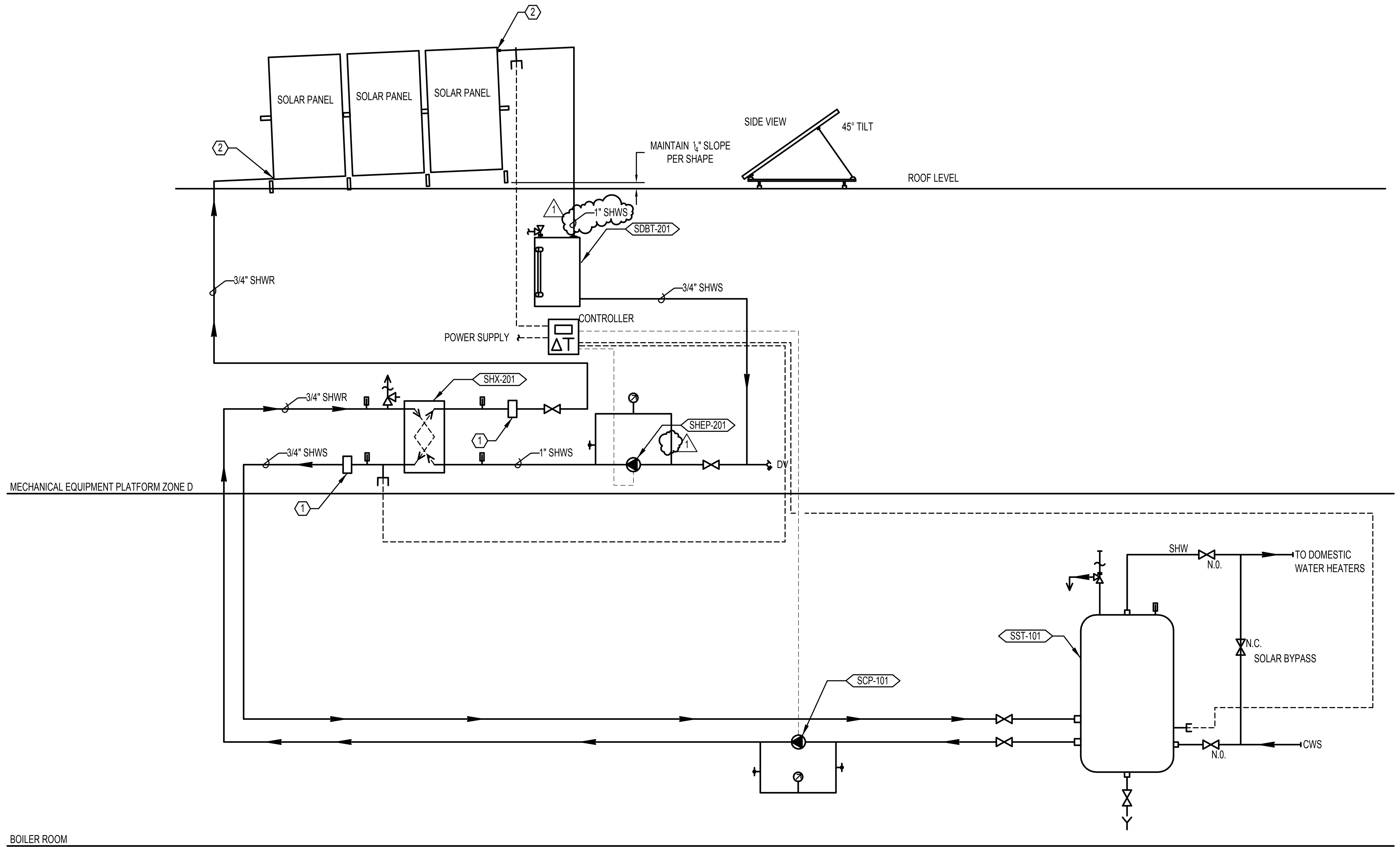
MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E - PLUMBING

P-401E



C2 SOLAR THERMAL DRAINBACK DIAGRAM

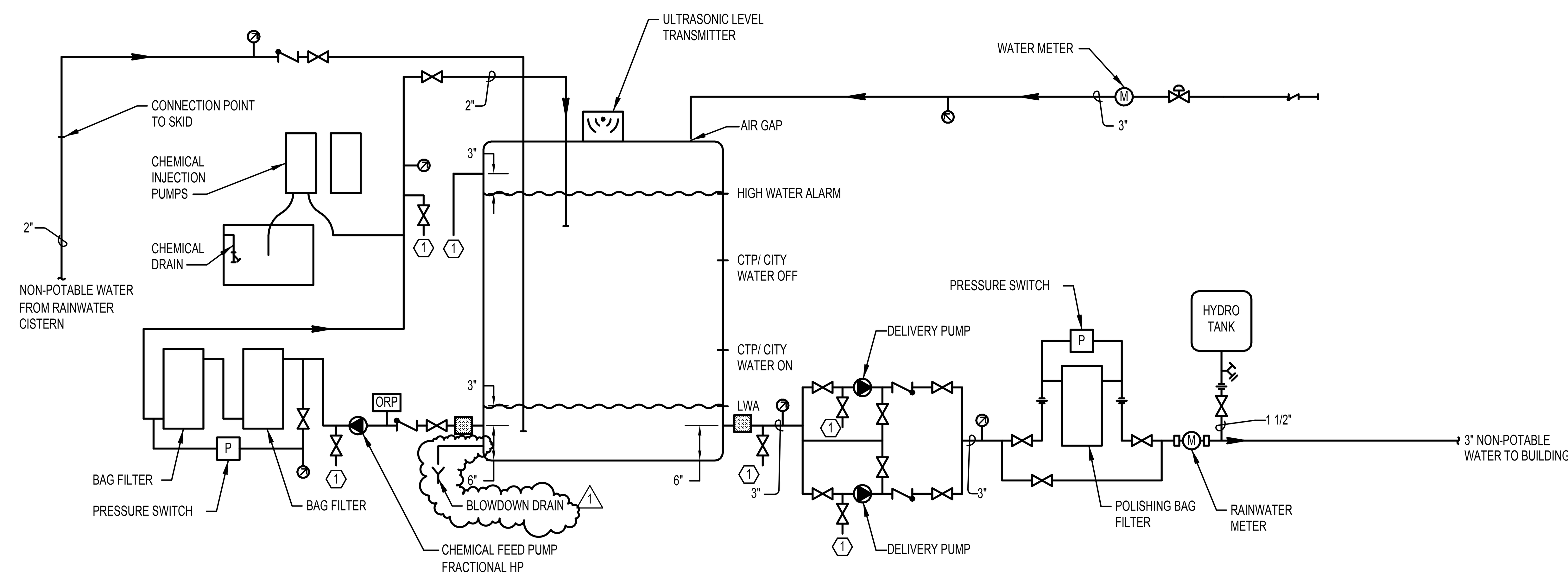
SCALE: NONE

GENERAL NOTES:

A. ALL EXPOSED PIPING AND COLLECTORS MUST SLOPE 1/4" PER FOOT BACK TO DRAIN BACK TANK.
B. REFER TO PLANS FOR SPECIFIC EQUIPMENT LOCATIONS.
C. DRAINBACK TANK MUST DOUBLE VOLUME OF PIPE AND COLLECTORS ABOVE PLANNED TANK LEVEL.

NOTES:

1. PROVIDE INLINE VISUAL FLOW INDICATOR/BALANCING VALVE. REFER TO SPECIFICATIONS.
2. PROVIDE SWING JOINT AT INLET AND OUTLET OF COLLECTOR ARRAY.



GENERAL NOTES:

A. LOCATE RAINWATER TREATMENT SKID ON TOP OF HOUSEKEEPING PAD.

NOTES:

1. ROUTE TO FLOOR SINK. DRAIN INDIRECTLY.

A2 RAINWATER HARVESTING SYSTEM DIAGRAM

12" = 1'-0"

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EUGENE SCHOOL DISTRICT 4J

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CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

FLOW DIAGRAMS - PLUMBING

P-601

PIPE SIZING TABLE FOR GAS PRESSURE 2 PSIG FOR SCHEDULE 40 PIPE

LENGTH OF PIPE(FEET)	PIPE SIZE(INCHES) CFH		
	1"	1 1/4"	1 1/2"
10	4568	9379	14052
20	3140	6446	9658
30	2522	5176	7756
40	2158	4430	6638
50	1913	3927	5883
60	1733	3558	5331
70	1594	3273	4904
80	1483	3045	4562
90	1392	2857	4281
100	1315	2669	4044
125	1165	2392	3584
150	1056	2167	3247
175	972	1994	2987
200	904	1855	2779
250	801	1490	2463
300	726	1315	2232

BASIS OF DESIGN

NATURAL GAS SYSTEM
BASIS OF DESIGN: 2010 OREGON MECHANICAL SPECIALTY CODE, APPENDIX C, 'FUEL GAS', SECTION C402, 'PIPE SIZING'. REFER TO TABLE C402.4(3) FOR MEDIUM PRESSURE NATURAL GAS (MPG) PIPE SIZING AND TABLE C402.4(2) FOR LOW PRESSURE NATURAL GAS (G) PIPE SIZING. MEDIUM PRESSURE GAS TO BE 2.0 PSI WITH 1.0 PSI PRESSURE DROP. LOW PRESSURE GAS TO BE LESS THAN 2.0 PSI WITH A 0.5 IN. W.C. PRESSURE DROP.
EQUIVALENT LENGTH OF PIPE: 170 FT (MPG), 25 FT (G)

BASIS OF DESIGN

NATURAL GAS SYSTEM
BASIS OF DESIGN : 2012 INTERNATIONAL FUEL GAS CODE, CHAPTER 4, "FUEL-GAS PIPING".
EQUIVALENT LENGTH OF PIPE: 103 FT (2 PSI MPG)

GENERAL NOTES:

A. EQUIVALENT LENGTH OF PIPE FOR "2 PSI MPG" WAS MEASURED FROM GAS METERS TO EMERGENCY GENERATOR'S GPRV.

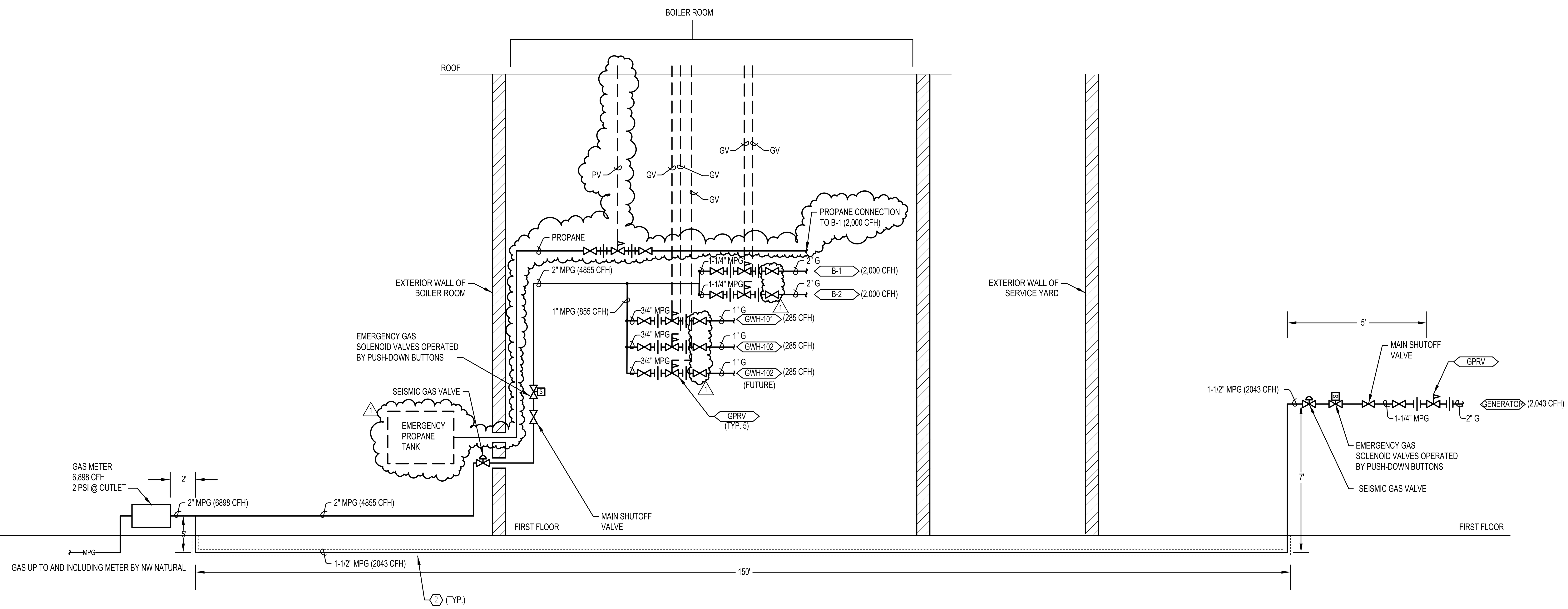
B. EQUIVALENT LENGTH OF PIPE FOR "G" WAS MEASURED FROM BOILER'S GPRV TO BOILER.

C. PROVIDE GAS VENT THROUGH ROOF FROM EACH GAS PRESSURE REGULATOR. TERMINATE WITH TURN DOWN ELBOW AND BUG SCREEN.

NOTES:

1. PROVIDE SLEEVE ON BURIED PIPING BELOW CONCRETE OR ASPHALT. PROVIDE VENT TO ATMOSPHERE AT ENDS OF SLEEVES IN ACCORDANCE WITH AHJ & LOCAL GAS COMPANY.

2. BURIED GAS PIPING (POLYETHYLENE) BELOW CONCRETE SHALL BE INSTALLED WITHIN A SLEEVE. VENT BOTH ENDS OF BURIED SLEEVES IN ACCORDANCE WITH CODE & LOCAL AUTHORITY HAVING JURISDICTION.



A1 GAS PIPING DIAGRAM
12" = 1'-0"

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EXPIRES 12-31-15

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 ORIGINAL SHEET SIZE: 30"x42"

RISER DIAGRAM - GAS

P-606

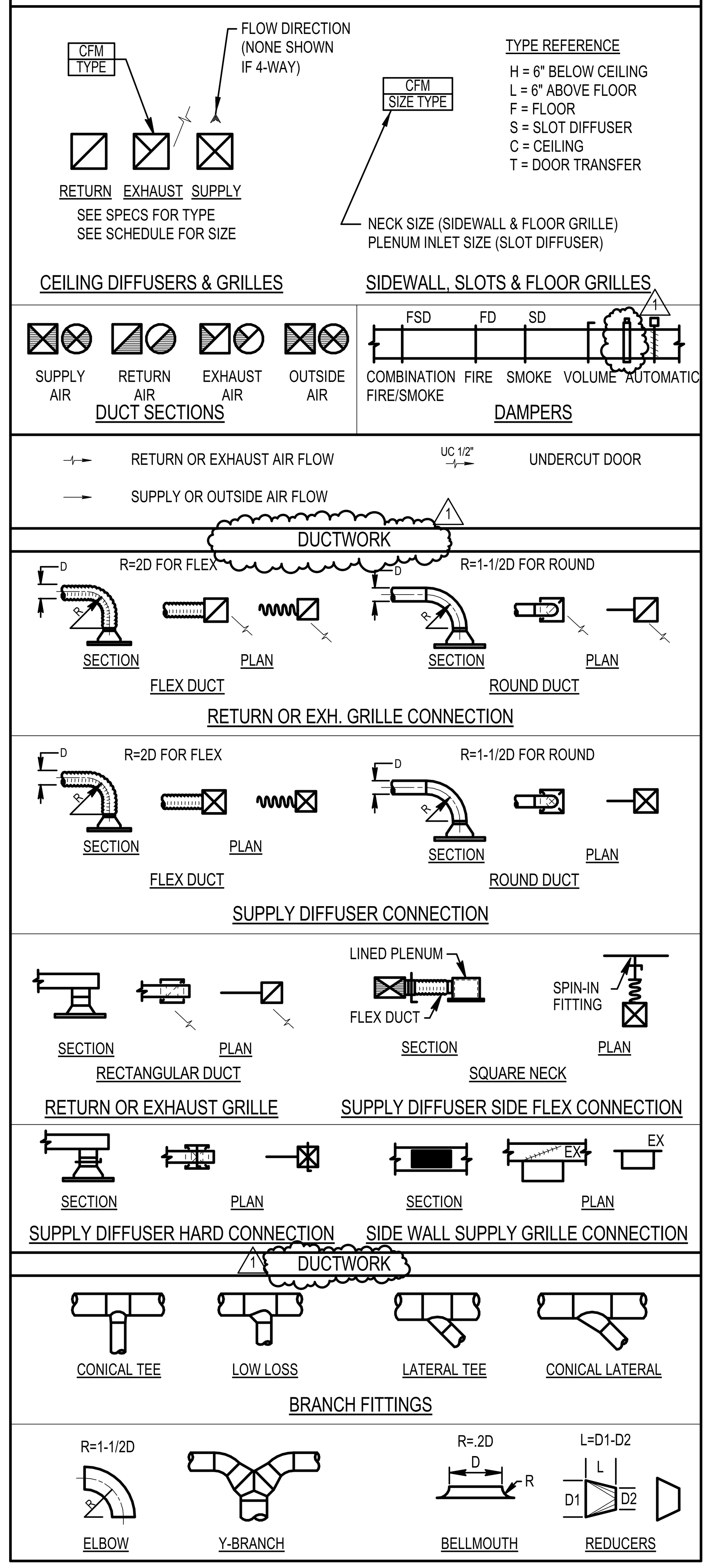
STANDARD MECHANICAL ABBREVIATIONS

AF	AIRFOIL	IE	INVERT ELEVATION
AFF	ABOVE FINISHED FLOOR	IN	INCH(ES)
AHP	APPARATUS HOUSING PLENUM	INSUL	INSULATION
ALT	ALTERNATIVE	ISOL	ISOLAT(OR)(ION)
AL	ALUMINUM	KW	KILOWATT
APD	AIR PRESSURE DROP	KWH	KILOWATT HOUR
APPROX	APPROXIMATELY	L	LENGTH
ARCH	ARCHITECT(URAL)	LAT	LEAVING AIR TEMP
AUTO	AUTOMATIC	LB	POUND
BDD	BACKDRAFT DAMPER	LDB	LEAVING DRY BULB
BI	BACKWARD INCLINED	LF	LINEAR FEET
BLDG	BUILDING	LFT	LEAVING FLUID TEMPERATURE
BSMT	BASEMENT	LVG	LEAVING
BTU	BRITISH THERMAL UNIT	LWB	LEAVING WET BULB
BTUH	BRITISH THERMAL UNITS PER HOUR	LWT	LEAVING WATER TEMPERATURE
CFH	CUBIC FEET PER HOUR	MAX	MAXIMUM
CFM	CUBIC FEET PER MINUTE	MBH	THOUSAND BTU PER HOUR
CFS	CUBIC FEET PER SECOND	MECH	MECHANICAL
CLG	CEILING OR COOLING	MFR	MANUFACTURER
CONC	CONCRETE	MIN	MINIMUM
CONN	CONNECT(ION)	MISC	MISCELLANEOUS
CONT	CONTINUE(ED)(UATION)	MTD	MOUNTED
CL	CENTERLINE	NC	NORMALLY CLOSED
DDC	DIRECT DIGITAL CONTROL	NIC	NOT IN CONTRACT
DEFL	DEFLECTION	NO	NORMALLY OPEN
DN	DOWN	OAD	OUTSIDE AIR DAMPER
DP	DEW POINT	OC	ON CENTER DISTANCE
DWDI	DOUBLE WIDTH DOUBLE INLET	OSA	OUTSIDE AIR
DWG	DRAWING	PH	PHASE
EA	EXHAUST AIR	PP	POLYPROPYLENE
EAD	EXHAUST AIR DAMPER	PSI	POUNDS PER SQUARE INCH
EAT	ENTERING AIR TEMPERATURE	PVC	POLYVINYL CHLORIDE
EDB	ENTERING DRY BULB	PVS	PVC COATED STEEL
EFF	EFFICIENCY	R (RAD)	RADIUS
EFT	ENTERING FLUID TEMPERATURE	RA	RETURN AIR
ELEC	ELECTRIC(AL)	RAD	RETURN AIR DAMPER
ELEV	ELEVATION	REV	REVISION
ENGR	ENGINEER	RH	RELATIVE HUMIDITY
EQ	EQUAL	RPM	REVOLUTIONS PER MINUTE
EQUIP	EQUIPMENT	SA	SUPPLY AIR
ESP	EXTERNAL STATIC PRESSURE	SCFM	STANDARD CUBIC FEET PER MINUTE
EWB	ENTERING WET BULB	SD	SMOKE DAMPER
EWT	ENTERING WATER TEMPERATURE	SECT	SECTION
EX	EXTRACTOR	SENS	SENSIBLE
EXH	EXHAUST	SIM	SIMILAR
EXIST	EXISTING	SP	STATIC PRESSURE
EXP	EXPANSION	SPEC	SPECIFICATION
F	DEGREES FAHRENHEIT	SQ	SQUARE
FC	FORWARD CURVED	SF	SQUARE FOOT(FEET)
FIG	FIGURE	SQ IN	SQUARE INCH(ES)
FILT	FILTER	SS	STAINLESS STEEL
FLEX	FLEXIBLE	STL	STEEL
FPD	FLUID PRESSURE DROP	STRUCT	STRUCTURE(E)(AL)
FPM	FEET PER MINUTE	SWP	SINGLE WALL PLENUM
FPS	FEET PER SECOND	SWSI	SINGLE WIDTH SINGLE INLET
FT	FEET/FOOT	TEMP	TEMPERATURE
FTR	FINNED TUBE RADIATOR	TSP	TOTAL STATIC PRESSURE
FU	FIXTURE UNIT	TYP	TYPICAL
FUT	FUTURE	V	VOLTS
FV	FACE VELOCITY	VD	VOLUME DAMPER
GA	GAGE/GAUGE	VEL	VELOCITY
GAL	GALLON	VERT	VERTICAL
GALV	GALVANIZED	VFD	VARIABLE FREQUENCY DRIVE
GLY	GLYCOL	VTR	VENT THROUGH ROOF
GPH	GALLONS PER HOUR	W	WIDTH
GPM	GALLONS PER MINUTE	WG	WATER GAUGE
H	HEIGHT	WPD	WATER PRESSURE DROP
HORIZ	HORIZONTAL	WTD	WATER TEMPERATURE DROP
HP	HORSEPOWER	WTR	WATER TEMPERATURE RISE
HTG	HEATING	W/	WITH
ID	INSIDE(DIAMETER/DIMENSION)	W/O	WITHOUT

MECHANICAL DRAWING LIST - PACKAGE 2

Sheet Number	Sheet Name
M-001	SYMBOLS, LEGENDS AND ABBREVIATIONS - MECHANICAL
M-002	EQUIPMENT SCHEDULE - MECHANICAL
M-003	EQUIPMENT SCHEDULE - MECHANICAL
M-004	EQUIPMENT SCHEDULE - MECHANICAL
M-121A	FIRST FLOOR PLAN - ZONE A - MECHANICAL
M-121B	FIRST FLOOR PLAN - ZONE B - MECHANICAL
M-121C	FIRST FLOOR PLAN - ZONE C - MECHANICAL
M-121D	FIRST FLOOR PLAN - ZONE D - MECHANICAL
M-121E	FIRST FLOOR PLAN - ZONE E - MECHANICAL
M-122A	SECOND FLOOR PLAN - ZONE A - MECHANICAL
M-122B	SECOND FLOOR PLAN - ZONE B - MECHANICAL
M-131	ROOF PLAN - MECHANICAL
M-301	SECTIONS- MECHANICAL
M-302A1	SECTIONS- MECHANICAL
M-302A2	SECTIONS- MECHANICAL
M-302B	SECTIONS - MECHANICAL
M-304C	SECTIONS- MECHANICAL
M-305D	SECTIONS - MECHANICAL
M-401A1	MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE A WEST - MECHANICAL
M-401A2	MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE A EAST - MECHANICAL
M-401B	PARTIAL PLANS - ZONE B - MECHANICAL
M-401C	MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE C - MECHANICAL
M-401D	PARTIAL PLANS - ZONE D - MECHANICAL
M-401E1	MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E NORTH - MECHANICAL
M-401E2	MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E SOUTH - MECHANICAL
M-501	DETAILS - MECHANICAL
M-502	DETAILS - MECHANICAL
M-503	DETAILS - MECHANICAL
M-601	DIAGRAMS - MECHANICAL

DUCT LEGEND



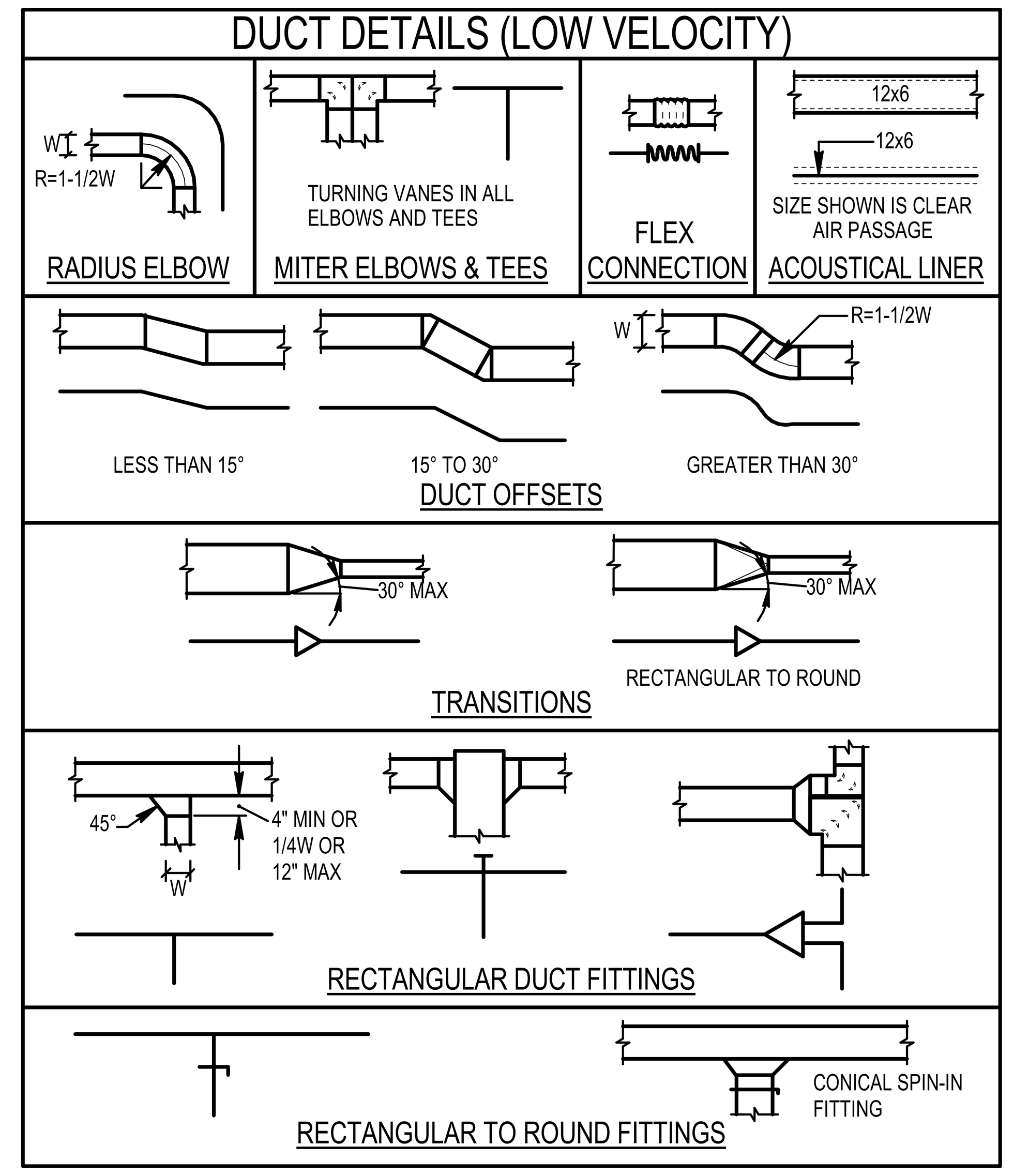
HVAC PIPING

Symbol	Abbreviation	Description
D	D	DRAIN (CONDENSATE/INDIRECT)
PC	PC	PUMPED CONDENSATE
ICW	ICW	INDUSTRIAL COLD WATER (MAKE-UP)
CHWS	CHWS	CHILLED WATER SUPPLY
CHWR	CHWR	CHILLED WATER RETURN
HWS	HWS	HEATING WATER SUPPLY
HWR	HWR	HEATING WATER RETURN
RS	RS	REFRIGERANT SUCTION
RL	RL	REFRIGERANT LIQUID
RHG	RHG	REFRIGERANT HOT GAS
DTS	DTS	DUAL TEMPERATURE SUPPLY
DTR	DTR	DUAL TEMPERATURE RETURN

CONTROL SYMBOLS

- DAMPER WITH OPERATOR
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- DO — DIGITAL OUTPUT FROM DDC PANEL
- DI — DIGITAL INPUT TO DDC PANEL
- AO — ANALOG OUTPUT FROM DDC PANEL
- AI — ANALOG INPUT TO DDC PANEL
- DP — DIFFERENTIAL PRESSURE SWITCH
- EP — EP VALVE
- SP — STATIC PRESSURE CONTROLLER
- VP — VELOCITY PRESSURE TRANSMITTER
- R — PNEUMATIC RELAY
- DAMPER END SWITCH
- CO — CARBON MONOXIDE SENSOR
- CO_2 — CARBON DIOXIDE SENSOR
- AMS — AIR MONITORING STATION
- VPP — VELOCITY PRESSURE PROBE
- PE — PE SWITCH
- SMK — DUCT SMOKE DETECTOR
- WFM — WATER FLOW METER WITH ELECTRONIC TRANSMITTER
- PB — PUSH BUTTON SWITCH
- SM — SWITCHED MAIN AIR
- PT — PRESSURE TRANSMITTER
- M — MAIN AIR
- H — ELECTRONIC HUMIDITY TRANSMITTER
- H HL — DUCT MOUNTED HIGH LIMIT HUMIDISTAT
- T — ELECTRONIC TEMPERATURE SENSOR
- FS — FLOW SWITCH
- T — ELECTRONIC SENSOR WITH AVERAGING

DUCT DETAILS (LOW VELOCITY)



TEMPERATURE CONTROLS NOTE

1

DIRECT DIGITAL CONTROL SYSTEM TO BE DESIGNED AND PROVIDED BY OWNER-DESIGNATED CONTRACTOR TO MEET REQUIREMENTS OF OREGON ENERGY CODE. DIVISION 23 CONTRACTOR SHALL COORDINATE WITH CONTROLS CONTRACTOR THE LOCATION OF CONTROLS DEVICES. CONTROL VALVES, TEMPERATURE WELLS, AND OTHER PIPING MOUNTED DEVICES SHALL BE FURNISHED BY CONTROLS CONTRACTOR AND INSTALLED BY DIV. 23 CONTRACTOR.

GENERAL NOTE

THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.

MISC. VALVES & COCKS

- SHUT-OFF VALVE
- GLOBE VALVE
- SHUT-OFF VALVE W/ TAMPER SWITCH
- TRIPLE DUTY VALVE
- CHECK VALVE
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- BALANCING VALVE
- FC — FLOW CONTROL VALVE
- SOLENOID VALVE
- PRESSURE REDUCING VALVE
- MAV AAV — AIR VENT (MANUAL/AUTOMATIC)
- RELIEF VALVE
- STRAINER
- STRAINER W/ BLOWDOWN
- DV — DRAIN VALVE
- HB — HOSE BIBB
- WH — WALL HYDRANT
- GH — GROUND HYDRANT
- F&T/IB — STEAM TRAP
- PRESSURE GAUGE
- PRESSURE/TEMPERATURE TEST PLUG
- THERMOMETER
- F — FLOW SWITCH
- T — TEMPERATURE TRANSMITTER
- S (SIZE) — SHOCK ARRESTOR
- V — VACUUM BREAKER
- WFM — WATER FLOW METER
- RPBA — REDUCED PRESSURE BACKFLOW ASSEMBLY
- DCVA — DOUBLE CHECK VALVE ASSEMBLY
- DCDA — DOUBLE CHECK DETECTOR ASSEMBLY
- BWV — BACKWATER VALVE
- UG — UNDERGROUND GATE VALVE W/BOX
- PIV — UNDERGROUND GATE VALVE W/POST INDICATOR
- OUTSIDE SCREW & YOKE
- Y PATTERN BOILER BLOWDOWN VALVE
- NON-RETURN STOP VALVE
- QUICK OPENING BOILER BLOWDOWN VALVE

MISC. FITTINGS & SYMBOLS

- DIRECTION OF FLOW
- DIRECTION OF SLOPE
- PIPE SLEEVE
- REDUCER
- ANCHOR
- ELBOW (90°)
- ELBOW (45°)
- TEE
- CROSS
- PIPING CONNECTIONS
- JOINT OR COUPLING POINT
- UNION
- FLANGED CONNECTION
- CAP
- PLUG OR BLIND FLANGE
- RISER
- ELBOW UP
- ELBOW DOWN
- TEE UP
- TEE DOWN
- HORIZONTAL TEE
- FLEXIBLE CONNECTION
- BALL JOINT
- MC — MECHANICAL COUPLING

SYMBOLS

- A — ACCESS PANEL
- 1 — NOTE
- B — BELOW GRADE / FLOOR

CALL OUT SYMBOLS

- WALL MOUNTED
- PENDANT MOUNTED
- TEMPERATURE
- CO_2 — CARBON DIOXIDE

ROOM SENSORS

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2-13-2015
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

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MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE:	FEBRUARY 18, 2015
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SYMBOLS, LEGENDS AND ABBREVIATIONS - MECHANICAL

M-001

AIR COOLED CHILLER SCHEDULE

TAG NUMBER	LOCATION	SERVICE	DESIGN CAPACITY (TONS)	EVAPORATOR						ELECTRICAL								DESIGN EFFICIENCY				CODE AHRI EFFICIENCY				REFRIGERANT		APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
				EWT (°F)	LWT (°F)	FLUID	DESIGN FLOW RATE (GPM)	MAX WPD (FT. WG.)	MINIMUM FLOW RATE (GPM)	COMPRESSORS			FANS			SINGLE POINT CONNECTION		FULL LOAD (EER)	NPLV (EER)	FULL LOAD (COP)	IPLV/ NPLV (COP)	FULL LOAD (EER)	NPLV (EER)	FULL LOAD (COP)	IPLV/ NPLV (COP)	TYPE	QUANTITY (LBS)			
										COUNT	RLA	VFD	COUNT	FLA PER FAN	VFD	MCA	VOLT/ PHASE													
ACC-1	SERVICE COURT	CHILLED WATER	130	60	44	WATER	200.0	8.8	119	4	237	N	8	3.6	N	284	460/3	10.1	15.4	2.95	15.4	10.1	-	-	15.4	R-410A	230	5,903	DAIKIN APPLIED AGZ130E	

GENERAL NOTES:
A. DESIGN EFFICIENCIES ARE AT DESIGN CONDITIONS LISTED IN THE SCHEDULE.
B. AHRI EFFICIENCIES ARE AT ARI STANDARD CONDITIONS.
C. CODE AHRI EFFICIENCY REQUIREMENTS PROVIDED FOR REFERENCE.
D. PROVIDE SCCR SUFFICIENT TO MEET THE AVAILABLE FAULT CURRENT AT THE PANELBOARD OR SWITCHBOARD FROM WHICH THE UNIT IS FED. COORDINATE WITH ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR.

NOTES:
1. NONE.

PUMP SCHEDULE

TAG NUMBER	LOCATION	SERVICE	TYPE	FLUID TYPE	PERFORMANCE					MOTOR					APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
					MAX FLOW (GPM)	MIN FLOW (GPM)	HEAD (FT. WC.)	SHUTOFF HEAD (FT. WC.)	PUMP EFFICIENCY %	TYPE	HP	RPM	VFD	VOLT/ PHASE			
CP-1	BOILER 174	DUAL TEMPERATURE WATER	BASE MOUNT	WATER	200	54	125	108	70	ODP	10	3550	Y	460/3	305	B&G 1510	
CP-2	BOILER 174	DUAL TEMPERATURE WATER	BASE MOUNT	WATER	200	54	125	108	70	ODP	10	3550	Y	460/3	305	B&G 1510	
RSP-B	MECH M301	SLAB HEAT, COOL	IN-LINE	WATER	9	9	25	-	-	PSC	1/4	3250	N	120/1	12	TACO 013	
RSP-D	MECH M281A	SLAB HEAT, COOL	IN-LINE	WATER	20	20	25	-	-	PSC	1/2	3250	N	120/1	12	TACO 00	

GENERAL NOTES:
A. NONE.

NOTES:
1. NONE.

AIR COOLED CONDENSER UNIT SCHEDULE

TAG NUMBER	LOCATION	SERVICE	ELECTRICAL		REFRIGERANT		MINIMUM EFFICIENCY		APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
			MCA	VOLT/ PHASE	TYPE	CHARGE (LBS)	(S)EER	COP			
ACCU-IDF-B	MECH PLATFORM M265	IDF B117	9.0	208/1	R-410A	8	17.0	-	200	CARRIER 24APA7-24	
ACCU-IDF-A	MECH PLATFORM 301	IDF A219	9.0	208/1	R-410A	8	17.0	-	200	CARRIER 24APA7-24	
ACCU-MDF-D	MECHL PLATFORM 281A	MDFD176	9.0	208/1	R-410A	8	17.0	-	200	CARRIER 24APA7-36	
ACCU-ELEC	MECH PLATFORM 281A	ELEC	9.0	208/1	R-410A	8	17.0	-	200	CARRIER 24APA7-24	
ACCU-ELEV	MECH PLATFORM M265	ELEV	13.0	208/1	R-410A	3	15.2	-	29	MITSUBISHI PUY-A12NHA4	

GENERAL NOTES:
A. MINIMUM EFFICIENCY IS AT ARI STANDARD CONDITIONS.
B. SIZE REFRIGERANT PIPING PER MANUFACTURER'S INSTRUCTIONS.
C. REFRIGERANT CHARGE INDICATED IS FOR THE EQUIPMENT ONLY. PROVIDE NECESSARY REFRIGERANT QUANTITY TO MEET THE REQUIREMENTS FOR THE SPECIFIC INSTALLATION.
D. PROVIDE SCCR SUFFICIENT TO MEET THE AVAILABLE FAULT CURRENT AT THE PANELBOARD OR SWITCHBOARD FROM WHICH THE UNIT IS FED. COORDINATE WITH ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR.

NOTES:
1. NONE.

DESIGN CONDITIONS - EUGENE, OR

SPACE	WINTER		SUMMER	
	TEMPERATURE	HUMIDITY	TEMPERATURE	HUMIDITY
OUTDOOR	17˚ F DB	16.1˚ F DP / 12.6 HR / 26.9 ˚ F MCDB	91.7˚ F DB / 66.5˚ F MCWB	62.2˚ F DP / 84.8 HR / 74.6˚ F MCDB
INDOOR	70˚ F ± 2˚ F DB	50% RH MAX, NO MINIMUM	75˚ F ± 2˚ F DB	50% RH MAX, NO MINIMUM

GENERAL NOTES:
1. OUTDOOR CONDITIONS BASED ON ASHRAE FUNDAMENTALS 2013 99.6% AND 0.4% DATA.

BOILER SCHEDULE

TAG NUMBER	LOCATION	SERVICE	TYPE	FUEL			FLUID					ELECTRICAL		MINIMUM EFFICIENCY (AFUE)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
				TYPE	INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)	SUPPLY TEMP (°F)	RETURN TEMP (°F)	DESIGN FLOW (GPM)	MIN FLOW (GPM)	MAX WPD (FT. WG)	FLA	VOLT/ PHASE				
B-1	BOILER 174	BUILDING HEAT	CONDENSING	NAT. GAS	2,000	1,840	130	112	200	25	4.0	7	120/1	92%	3,054	LOCHINVAR CREST	1
B-2	BOILER 174	BUILDING HEAT	CONDENSING	NAT. GAS/PROPANE	2,000	1,840	130	112	200	25	4.0	7	120/1	92%	3,054	LOCHINVAR CREST	1

GENERAL NOTES:
A. UNITS MOUNTED ON HOUSEKEEPING PAD.
B. MINIMUM EFFICIENCY IS AT 100% FIRE, 100 DEG F RETURN WATER TEMPERATURE AND 140 DEG F SUPPLY WATER TEMPERATURE.
C. PROVIDE 48 INCHES CLEAR BETWEEN MULTIPLE BOILERS.
D. PROVIDE A MINIMUM SIDE CLEARANCE OF 36 INCHES FOR EACH BOILER.
E. PROVIDE 36 INCHES TOP CLEARANCE ABOVE BOILER.

NOTES:
1. MINIMUM LOW LISTED IS ABSOLUTE MINIMUM, ALL LOADS.

FAN COIL UNIT SCHEDULE

TAG NUMBER	LOCATION	SERVICE	ACCU	TYPE	SUPPLY		COOLING (MBH)	ELECTRICAL		MANUFACTURER & MODEL	NOTES
					AIRFLOW CFM	ESP (IN WG)		FLA	VOLTS/ PHASE		
FCU-IDF-A	IDF ROOM A	IDF ROOM	ACCU-IDF-A	HORIZONTAL	800	0.3	18.0	4.3	208/1	CARRIER FV4C-002	1
FCU-IDF-B	IDF ROOM B	IDF ROOM	ACCU-IDF-B	HORIZONTAL	800	0.3	18.0	4.3	208/1	CARRIER FV4C-002	1
FCU-MDF-D	MDF ROOM D	MDF ROOM	ACCU-MDF-D	HORIZONTAL	1400	0.3	36.0	4.3	208/1	CARRIER FV4C-005	1
FCU - ELEC	ELEC RM	ELEC RM	ACCU-ELEC	HORIZONTAL	800	0.3	24.0	4.3	208/1	CARRIER FV4C-003	1
FCU-ELEV	ELEV RM	ELEV RM	ACCU-ELEV	WALL-MOUNT	400	-	12.0	13	208/1	MITSUBISHI PKA-A12	2,3

NOTES:
1. INCLUDE INTEGRAL MIXING BOX AND DAMPERS.
2. DUCTLESS INDOOR UNIT RECEIVES POWER FROM OUTDOOR UNIT.
3. COOLING ONLY UNIT.

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EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

EQUIPMENT SCHEDULE - MECHANICAL

M-002

AIR HANDLING UNIT

						SUPPLY FAN												INTREGRAL RETURN/EXHAUST FAN								HYDRONIC COIL - HEATING MODE					HYDRONIC COIL - COOLING MODE						ECON COIL				
TAG NUMBER	LOCATION	SERVICE	DESIGN OSA CFM	MIN CO2 OSA CFM	FILTER MERV RATING	DESIGN AIRFLOW CFM	ECONOMIZER AIRFLOW CFM	FAN TYPE	TSP (IN. WG.)	ESP (IN. WG.)	FAN QTY	FAN RPM	MOTOR BHP	MOTOR HP	VOLT/ PHASE	VFD	ECM	AIRFLOW CFM	FAN TYPE	TSP (IN. WG.)	FAN RPM	MOTOR BHP	MOTOR HP	VOLT/ PHASE	ECM	HEATING AIRFLOW CFM	EAT (°F)	LAT (°F)	GPM	EWT (°F)	COOLING AIRFLOW CFM	EAT (°F DB/WB)	LAT (°F DB/WB)	GPM	EWT (°F)	MIN WTD (°F)	FACE VELOCITY (FPM)	COIL RUNOUT PIPING (INCH)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
AH-A1	MECH PLATFORM ZONE A	SPECIAL ED A1	490	120	8	960	1500	BCKWD CURVED	1.6	0.8	1	2,011	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	960	43.0	104.4	4.5	130	960	83.9/64.4	53.9/53.1	4.5	44	12	425	1	544	AAON H3	7
AH-A2	MECH PLATFORM ZONE A	CLASSROOM A2	470	120	8	1250	1500	BCKWD CURVED	1.2	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1250	49.0	102.7	4.0	130	1250	81.8/63.8	54.0/53.4	4.0	44	18	425	1	544	AAON H3	1,7
AH-A3	MECH PLATFORM ZONE A	SPECIAL ED A3	490	120	8	960	1500	BCKWD CURVED	1.4	0.6	1	1,933	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	960	42.0	105.1	5.0	130	960	84.5/64.6	53.6/52.8	5.0	44	12	425	1	544	AAON H3	7
AH-A4	MECH PLATFORM ZONE A	CLASSROOM A4	470	120	8	1250	1500	BCKWD CURVED	1.2	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1250	49.0	102.7	4.0	130	1250	81.8/63.8	54.0/53.4	4.0	44	18	425	1	544	AAON H3	7
AH-A5	MECH PLATFORM ZONE A	SPECIAL ED A5	470	120	8	900	1500	BCKWD CURVED	1.3	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	900	41.0	107.1	4.5	130	900	84.0/64.5	53.6/52.8	4.5	44	12	425	1	544	AAON H3	7
AH-A6	MECH PLATFORM ZONE A	CLASSROOM A6	470	120	8	1250	1500	BCKWD CURVED	1.2	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1250	49.0	102.7	4.0	130	1250	81.8/63.8	54.0/53.4	4.0	44	18	425	1	544	AAON H3	7
AH-A7	MECH PLATFORM ZONE A	CLASSROOM A7	470	120	8	900	1500	BCKWD CURVED	1.3	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	900	41.0	107.1	4.5	130	900	84.0/64.5	53.6/52.8	4.5	44	12	425	1	544	AAON H3	7
AH-A8	MECH PLATFORM ZONE A	CLASSROOM A8	470	120	8	1250	1500	BCKWD CURVED	1.2	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1250	49.0	102.7	4.0	130	1250	81.8/63.8	54.0/53.4	4.0	44	18	425	1	544	AAON H3	7
AH-A9	MECH PLATFORM ZONE A	CLASSROOM A9	470	120	8	900	1500	BCKWD CURVED	1.3	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	900	41.0	107.1	4.5	130	900	84.0/64.5	53.6/52.8	4.5	44	12	425	1	544	AAON H3	7
AH-A21	MECH PLATFORM ZONE A	CLASSROOM A21	470	120	8	900	1500	BCKWD CURVED	1.3	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	900	41.0	107.1	4.5	130	900	84.0/64.5	53.6/52.8	4.5	44	12	425	1	544	AAON H3	7
AH-A22	MECH PLATFORM ZONE A	CLASSROOM A22	470	120	8	1250	1500	BCKWD CURVED	1.2	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1250	49.0	102.7	4.0	130	1250	81.8/63.8	54.0/53.4	4.0	44	18	425	1	544	AAON H3	7
AH-A23	MECH PLATFORM ZONE A	CLASSROOM A23	470	120	8	900	1500	BCKWD CURVED	1.3	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	900	41.0	107.1	4.5	130	900	84.0/64.5	53.6/52.8	4.5	44	12	425	1	544	AAON H3	7
AH-A24	MECH PLATFORM ZONE A	CLASSROOM A24	470	120	8	1250	1500	BCKWD CURVED	1.2	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1250	49.0	102.7	4.0	130	1250	81.8/63.8	54.0/53.4	4.0	44	18	425	1	544	AAON H3	7
AH-A25	MECH PLATFORM ZONE A	CLASSROOM A25	470	120	8	900	1500	BCKWD CURVED	1.3	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	900	41.0	107.1	4.5	130	900	84.0/64.5	53.6/52.8	4.5	44	12	425	1	544	AAON H3	7
AH-A26	MECH PLATFORM ZONE A	CLASSROOM A26	470	120	8	1250	1500	BCKWD CURVED	1.2	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1250	49.0	102.7	4.0	130	1250	81.8/63.8	54.0/53.4	4.0	44	18	425	1	544	AAON H3	7
AH-A27	MECH PLATFORM ZONE A	CLASSROOM A27	470	120	8	900	1500	BCKWD CURVED	1.3	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	900	41.0	107.1	4.5	130	900	84.0/64.5	53.6/52.8	4.5	44	12	425	1	544	AAON H3	7
AH-A28	MECH PLATFORM ZONE A	CLASSROOM A28	470	120	8	1250	1500	BCKWD CURVED	1.2	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1250	49.0	102.7	4.0	130	1250	81.8/63.8	54.0/53.4	4.0	44	18	425	1	544	AAON H3	7
AH-A29	MECH PLATFORM ZONE A	CLASSROOM A29	470	120	8	900	1500	BCKWD CURVED	1.3	0.6	1	1,947	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	900	41.0	107.1	4.5	130	900	84.0/64.5	53.6/52.8	4.5	44	12	425	1	544	AAON H3	7
AH-GROUP	MECH PLATFORM ZONE A	SPEC 131 / SMALL GRP 133B	80	80	8	220	440	FORWARD CURVED	-	0.8	1	-	-	1/6	115/1	N	Y	-	-	-	-	-	-	-	-	220	49.0	116.1	0.9	130	220	81.9/63.8	53.6/52.1	0.9	44	16	170	3/4	103	JCI FCCM04	8
AH-HALL1-A	MECH PLATFORM ZONE A	SHARED LEARNING 132/144	1060	460	8	3220	3220	BCKWD CURVED	1.8	0.9	2	2,220	0.9	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	vv	51.0	100.6	9.0	130	3220	81.0/63.5	54.7/53.8	9.0	44	18	450	1 1/4	835	AAON H3	1,6,7
AH-HALL2-A	MECH PLATFORM ZONE A	SHARED LEARNING 214/226	1000	460	8	3220	3220	BCKWD CURVED	1.8	0.9	2	2,208	0.9	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	3220	52.0	101.3	9.0	130	3220	80.8/63.5	54.3/53.6	9.0	44	20	450	1 1/4	835	AAON H3	4,6,7
AH-TECH	MECH PLATFORM ZONE A	TECH SUPPORT 204	50	50	8	300	480	FORWARD CURVED	-	0.5	1	-	-	1/6	115/1	N	Y	-	-	-	-	-	-	-	-	300	60.0	112.8	1.2	130	300	78.6/62.8	53.6/52.0	1.2	44	16	230	3/4	81	JCI FCCM04	8
AH-CONF	MECH PLATFORM ZONE A	CONFERENCE 203	100	50	8	230	460	FORWARD CURVED	-	0.5	1	-	-	1/6	115/1	N	Y	-	-	-	-	-	-	-	-	230	46.0	116.1	1.1	130	230	84.7/64.6	52.0/50.7	1.1	44	16	180	3/4	81	JCI FCCM04	8
AH-LOUNGE	MECH PLATFORM ZONE A	LOUNGE 209	230	60	8	440	800	BCKWD CURVED	1.1	0.5	1	1,518	0.3	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	440	44.0	109.7	3.0	130	440	84.1/64.5	52.2/51.4	3.0	44	16	170	3/4	405	AAON H3	7
AH-WORK	MECH PLATFORM ZONE A	WORK ROOM 137/218	280	280	8	680	850	BCKWD CURVED	1.1	0.5	1	1,552	0.3	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	680	47.0	102.6	3.0	130	680	82.3/64.0	54.7/53.5	3.0	44	12	390	3/4	405	AAON H3	7
AH-FORUM-N	MECH PLATFORM ZONE A	UPPER FORUM 201	600	130	8	990	1750	BCKWD CURVED	1.5	0.7	1	2,195	0.8	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	990	35.0	104.4	4.5	130	990	85.3/64.8	53.8/52.7	4.5	44	12	490	1	544	AAON H3	1,7
AH-LOBBY	MECH PLATFORM ZONE A	LOBBY 122	480	200	8	1200	1600	BCKWD CURVED	1.5	0.5	1	2,010	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1200	47.0	102.5	5.0	130	1200	82.2/63.9	54.1/53.2	5.0	44	12	450	1	544	AAON H3	3,7
AH-LIBR	MECH PLATFORM ZONE A	MEDIA 202	840	340	8	2840	4500	BCKWD CURVED	1.6	0.8	2	2,130	1.2	2.3	460/3	N	Y	-	-	-	-	-	-	-	-	2840	53.0	107.3	11.0	130	2840	79.0/62.9	53.7/52.6	11.0	44	12	440	1 1/2	1,011	AAON H3	1,4,6,7
AH-FORUM-S	MECH PLATFORM ZONE A	FORUM 123, 123D	560	100	8	2360	2360	BCKWD CURVED	1.2	0.7	1	1,732	0.4	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	2360	56.0	109.3	7.0	130	2360	79.0/63.5	53.9/53.4	7.0	44	18	290	1 1/4	835	AAON H3	6,7
AH-ADMIN	MECH PLATFORM ZONE C	ADMINISTRATION OFFICES	750	320	8	2680	3990	BCKWD CURVED	1.6	1.0	1	1,425	1.2	4.0	460/3	N	Y	3,990	BCKWD CURVED	1.6	1,425	1.2	4.0	460/3	Y	2680	53.2	84.4	7.0	130	2680	80.0/64.0	64.4/58.5	7.0	44	8	100	1 1/4	2,333	AAON M2	4,5,6
AH-GYM-N	MECH PLATFORM ZONE C	GYM 165	7550	520	8	13700	13700	BCKWD CURVED	1.7	0.6	1	815	6.4	15	460/3	Y	N	-	-	-	-	-	-	-	-	13700	40.0	98.3	55.0	130	13700	84.5/64.6	53.9/53.0	55.0	44	16	510	3	4,037	AAON M2	4
AH-GYM-S	MECH PLATFORM ZONE C	GYM 166	1560	440	8	5490	8740	BCKWD CURVED	1.6	0.6	2	1,711	2.0	4.0	460/3	N	Y	-	-	-	-	-	-	-	-	5490	53.0	104.6	20.0	130	5490	80.4/63.4	54.0/53.0	20.0	44	14	510	2	1,205	AAON H3	4,6,7
AH-ART-N	MECH PLATFORM ZONE C	CLEAN LAB C3	570	220	8	1430	1600	BCKWD CURVED	1.4	0.6	1	2,107	0.7	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1430	47.0	104.1	6.0	130	1430	82.1/63.9	53.2/52.6	6.0	44	14	450	1	544	AAON H3	7
AH-ART-S	MECH PLATFORM ZONE C	DIRTY LAB C2	570	220	8	1600	1600	BCKWD CURVED	1.5	0.6	1	2,107	0.7	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1600	49.0	96.3	6.0	130	1600	81.5/63.7	53.9/53.1	6.0	44	14	450	1	544	AAON H3	7
AH-HALL-C	MECH PLATFORM ZONE C	HALL 150, OFFICE 159,160	120	120	8	720	720	BCKWD CURVED	1.1	0.5	1	1,464	0.3	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	720	60.0	105.8	2.5	130	720	78.6/62.8	54.2/53.6	2.5	44	14	330	3/4	405	AAON H3	7
AH-HOMED	MECH PLATFORM ZONE C	HOME ED 155	570	220	8	1600	1600	BCKWD CURVED	1.5	0.6	1	2,107	0.7	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1600	49.0	99.5	6.0	130	1600	81.5/63.7	53.9/53.1	6.0	44	14	450	1	544	AAON H3	7
AH-MEDIA-C3	MECH PLATFORM ZONE C	MEDIA ROOM C3	80	80	8	780	1100	BCKWD CURVED	1.5	0.8	1	1,909	0.5	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	780	62.0	108.5	3.0	130	780	77.6/62.5	53.7/53.2	3.0	44	12	500	3/4	544	AAON H3	7
AH-LR-N	MECH PLATFORM ZONE C	GIRLS LOCKER 163	-	-	8	1400	1400	BCKWD CURVED	0.9	0.3	1	1,727	0.4	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1400	50.0	82.1	2.6	130	1400	-	-	-	-	-	340	3/4	544	AAON H3	7
AH-LR-S	MECH PLATFORM ZONE C	BOYS LOCKER 164	-	-	8	1400	1400	BCKWD CURVED	0.9	0.3	1	1,727	0.4	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1400	50.0	82.1	2.6	130	1400	-	-	-	-	-	340	3/4	544	AAON H3	7
AH-CUST	MECH PLATFORM ZONE D	CUST 178, HALL 173	60	60	8	250	250	FORWARD CURVED	-	0.6	1	-	-	1/6	115/1	N	Y	-	-	-	-	-	-	-	-	250	55.8	119.0	1.0	130	250	79.7/63.1	52.7/51.5	1.0	44	16	200	3/4	81	JCI FCCM04	8
AH-BAND	MECH PLATFORM ZONE D	BAND E5	1200	240	8	3200	3870	BCKWD CURVED	1.7	0.8	1	1,660	2.0	4.0	460/3	N	Y	-	-	-	-	-	-	-	-	3200	49.0	100.9	9.5	130	3200	81.8/63.8	54.1/53.4	9.5	44	18	530	1 1/4	785	AAON H3	4,7
AH-CHORAL	MECH PLATFORM ZONE D	CHORAL E6	730	150	8	1330	2350	BCKWD CURVED	1.4	0.8	1	1,779	0.5	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1330	40.0	107.9	6.0	130	1330	84.5/64.6	52.1/51.3	6.0	44	14	325	1	835	AAON H3	3,6,7
AH-COMM	MECH PLATFORM ZONE D	COMMONS 181	3150	320	8	8340	12700	BCKWD CURVED	1.6	0.7	2	1,086	6.0	7.5	460/3	Y	N	-	-	-	-	-	-	-	-	8340	48.0	105.1	35.0	130	8340	81.8/63.8	54.4/53.6	35.0	44	12	580	2	3,464	AAON M2	1,2,4
AH-DRAMA	MECH PLATFORM ZONE D	DRAMA/PLATFORM E7	900	150	8	4500	4500	BCKWD CURVED	1.6	0.7	2	2,089	1.1	2.3	460/3	N	Y	-	-	-	-	-	-	-	-	4500	57.9	106.0	16.0	130	4500	79.1/63.0	53.6/53.0	16.0	44	14	440	1 1/2	1,011	AAON H3	3,6,7
AH-KITCHEN	MECH PLATFORM ZONE D	KITCHEN 180	-	-	8	700	1200	BCKWD CURVED	1.1	0.5	1	1,473	0.2	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	700	50.0	94.5	2.5	130	700	76.0/62.0	56.2/54.4	2.5	44	12	550	3/4	405	AAON H3	7
AH-E1	MECH PLATFORM ZONE E	SCIENCE E1	560	210	8	1190	1500	BCKWD CURVED	1.1	0.5	1	1,682	0.4	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1190	44.0	104.8	5.0	130	1190	83.3/64.2	52.9/52.3	5.0	44	14	425	1	544	AAON H3	7
AH-E2	MECH PLATFORM ZONE E	SCIENCE E2	560	210	8	1260	1500	BCKWD CURVED	1.1	0.5	1	1,738	0.4	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1260	45.0	103.9	5.0	130	1260	82.8/64.1	53.2/52.6	5.0	44	16	425	1	544	AAON H3	1,7
AH-E3	MECH PLATFORM ZONE E	SCIENCE E3	560	210	8	1260	1500	BCKWD CURVED	1.1	0.5	1	1,738	0.4	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1260	45.0	103.9	5.0	130	1260	82.8/64.1	53.2/52.6	5.0	44	16	425	1	544	AAON H3	7
AH-E4	MECH PLATFORM ZONE E	SCIENCE E4	560	210	8	1260	1500	BCKWD CURVED	1.1	0.5	1	1,738	0.4	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1260	45.0	103.9	5.0	130	1260	82.8/64.1	53.2/52.6	5.0	44	16	425	1	544	AAON H3	7
AH-PREP	MECH PLATFORM ZONE E	SCIENCE PREP ROOMS	60	60	8	190	260	FORWARD CURVED	-	0.5	1	-	-	1/6	115/1	N	Y	-	-	-	-	-	-	-	-	190	52.0	124.1	1.3	130	190	80.9/61.5	48.2/47.4	1.3	44	10	150	3/4	81	JCI FCCM04	8
AH-HALL-EN	MECH PLATFORM ZONE E	HALL 194	70	70	8	1620	1620	BCKWD CURVED	1.2	0.5	1	2,580	0.6	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	1620	65.0	99.2	5.0	130	1620	76.7/62.2	54.1/53.4	5.0	44	16	460	1	544	AAON H3	7
AH-HALL-ES	MECH PLATFORM ZONE E	HALL 187	340	120	8	850	1500	BCKWD CURVED	1.2	0.5	1	1,568	0.3	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	850	47.0	108.6	3.5	130	850	82.2/63.9	53.5/52.7	3.5	44	12	425	1	544	AAON H3	7
AH-PRACT	MECH PLATFORM ZONE E	OFC 188D, PRACTICE 188A-C	170	170	8	600	600	BCKWD CURVED	1.0	0.6	1	1,406	0.2	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	600	55.1	108.5	3.0	130	600	79.8/63.8	53.0/52.5	3.0	44	12	275	3/4	405	AAON H3	7
AH-ENSEMBLE	MECH PLATFORM ZONE E	ENSEMBLE 188E	280	80	8	740	740	BCKWD CURVED	1.1	0.5	1	1,505	0.3	1.3	460/3	N	Y	-	-	-	-	-	-	-	-	740	48.0	104.2	3.0	130	740	81.8/63.8	53.8/53.2	3.0	44	14	340	3/4	405	AAON H3	7

GENERAL NOTES:

A. MINIMUM OSA CALCULATED BASED ON CODE AND ASHRAE STANDARD 62.

B. DUAL HEATING/COOLING COILS BASED ON MAXIMUM FACE VELOCITY OF 500 FPM, 0.5 IN WG MAXIMUM AIR PRESSURE DROP AND 12 FT WG MAXIMUM WATER PRESSURE DROP.

C. PROVIDE SCCR SUFFICIENT TO MEET THE AVAILABLE FAULT CURRENT AT THE PANELBOARD OR SWITCHBOARD FROM WHICH THE UNIT IS FED. COORDINATE WITH ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR.

D. ALL FANS TO BE DIRECT DRIVE UNLESS NOTED OTHERWISE.

NOTES:

1. UNIT TO HAVE TOP SA DISCHARGE.
2. UNIT TO HAVE TOP OSA INLET, RA INLET ON THE END.
3. UNIT TO HAVE TOP RA INLET, OSA INLET ON THE END.
4. UNIT TO BE MOUNTED ON 6" BASE RAIL.
5. PROVIDE POWERED RETURN AIR SECTION.
6. SINGLE UNIT WITH TWO SUPPLY FANS.
7. UNIT TO BE MOUNTED ON 4" WOOD SLEEPER.
8. MOUNT VERTICAL FAN COIL ON MIXING PLENUM.

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REGISTERED PROFESSIONAL ENGINEER 18329PE OREGON March 19 1996 NICHOLAS P. COLLINS, Jr. 2.13.2015
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

 ORIGINAL SHEET SIZE: 30"x42"

EQUIPMENT SCHEDULE - MECHANICAL

RADIANT SLAB MANIFOLD SCHEDULE

TAG NUMBER	SERVICE	FLOOR AREA (SF)	TUBE SPACING (IN. O.C.)	LOOP LENGTH (L.F.)	LOOP COUNT	TUBE DIA. (IN.)	FLUID	HEATING EWT (°F)	HEATING WTD (°F)	HEATING OUTPUT (BTUH/SF)	HEATING GPM	COOLING EWT (°F)	COOLING WTD (°F)	COOLING OUTPUT (BTUH/SF)	COOLING GPM	NOTES
RSM-B	FORUM, LOBBY SEATING	1700	9	2267	8	5/8	WATER	110	10	25	8.5	55	5	12	8.5	
RSM-D	COMMONS	4000	9	5333	18	5/8	WATER	110	10	25	20.0	55	5	12	20.0	

GENERAL NOTES:
A. HEATING: MAXIMUM ENTERING WATER TEMPERATURE = 110°F.
B. HEATING: MINIMUM WATER TEMPERATURE DIFFERENCE = 10°F.
C. COOLING: MINIMUM ENTERING WATER TEMPERATURE = 55°F.
D. COOLING: MINIMUM WATER TEMPERATURE DIFFERENCE = 5°F.
E. COOLING: MINIMUM SLAB SURFACE TEMPERATURE = 65 °F.
F. REFER TO DRAWINGS FOR SLAB TEMPERATURE SENSOR AND ROOM THERMOSTAT LOCATIONS.
G. REFER TO DRAWINGS FOR RADIANT ZONE LOCATIONS.

NOTES:
1. NONE.

ROOF VENTILATOR SCHEDULE

TAG NUMBER	LOCATION	SERVICE	TYPE	AIRFLOW CFM	AIRFLOW TSP (IN. WG)	THROAT SIZE (IN)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
RVE-B	ROOF ABOVE ADMIN	RESTROOMS, IDF-B	EXHAUST	1200	.034	16x16		COOK PR-20	1
RVE-LR-N	ROOF ABOVE C PLATFORM	LOCKER, SHOWERS	EXHAUST	1620	.062	14x16		COOK PR-20	1
RVE-LR-S	ROOF ABOVE C PLATFORM	LOCKER, SHOWERS, RANGE HOOD	EXHAUST	2800	.09	20x20		COOK PR-24	1
RVE-IDF-E	ROOF ABOVE CHORAL	IDF E	EXHAUST	800	.037	14x14		COOK PR-16	1
RVE-ELEC	ROOF ABOVE C PLATFORM	ELEC RM	EXHAUST	800	.011	14x14		COOK GR	1
RVE-MDF	ROOF ABOVE D PLATFORM	MDF	EXHAUST	1400	.046	16x16		COOK PR-20	1
RVI-B	ROOF ABOVE ADMIN	IDF-B	INTAKE	800	.017	26x12	167	COOK GI	
RVI-GYM-N	ROOF ABOVE C PLATFORM	NORTH GYM	INTAKE	13700	.14	30x60	277	COOK GI	
RVI-GYM-S	ROOF ABOVE C PLATFORM	SOUTH GYM	INTAKE	8740	.18	20x50	204	COOK GI	
RVI-CN	ROOF ABOVE C PLATFORM	ADMIN, HOME ED	INTAKE	6690	.134	30x30	175	COOK GI	
RVI-CS	ROOF ABOVE C PLATFORM	ART-S, HALL C, HOMED	INTAKE	3920	.162	22x22	139	COOK GI	
RVI-D	ROOF ABOVE D PLATFORM	ZONE D, E AHUS	INTAKE	10970	.091	42X60	363	COOK GI	
RVI-COMM1	ROOF ABOVE D PLATFORM	COMMONS	INTAKE	6350	.031	48x36	271	COOK GI	
RVI-COMM2	ROOF ABOVE D PLATFORM	COMMONS	INTAKE	6350	.031	48x36	271	COOK GI	
RVI-E1	ROOF ABOVE E1	SCIENCE ROOM E1	INTAKE	1500	.017	38x20	178	COOK GI	
RVI-E2	ROOF ABOVE E2	SCIENCE ROOM E2	INTAKE	1500	.017	38x20	178	COOK GI	
RVI-E3	ROOF ABOVE E3	SCIENCE ROOM E3	INTAKE	1500	.017	38x20	178	COOK GI	
RVI-E4	ROOF ABOVE E4	SCIENCE ROOM E4	INTAKE	1500	.017	38x20	178	COOK GI	
RVI-ENS	ROOF ABOVE DRAMA	ENSEMBLE	INTAKE	740	.017	20X20	125	COOK GI	
RVR-ADMIN	ROOF ABOVE C PLATFORM	ADMIN	RELIEF	3990	.017	38x20	240	COOK GR	1
RVR-GYM-N	ROOF ABOVE C PLATFORM	ZONE C NORTH	RELIEF	13700	.059	36X78	285	COOK GR	1
RVR-GYM-S	ROOF ABOVE C PLATFORM	ZONE C SOUTH	RELIEF	8740	.054	53x36	236	COOK GR	1
RVR-COMM1	ROOF ABOVE D PLATFORM	COMMONS	RELIEF	6350	.033	48X36	208	COOK GR	1
RVR-COMM2	ROOF ABOVE D PLATFORM	COMMONS	RELIEF	6350	.033	48X36	208	COOK GR	1
RVR-CN	ROOF ABOVE C PLATFORM	MEDIA C3, ART-N, ART-S	RELIEF	4300	.114	24x24	113	COOK GR	1
RVR-CS	ROOF ABOVE C PLATFORM	HOMED, HALL C	RELIEF	2320	.032	24x24	113	COOK GR	1
RVR-PRAC	ROOF ABOVE PRAC 188A	PRACTICE ROOMS	RELIEF	600	.011	14x14	112	COOK GR	1

GENERAL NOTES:
A. NONE

NOTES:
1. PROVIDE LOW LEAKAGE MOTORIZED DAMPER

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1

FAN SCHEDULE

TAG NUMBER	LOCATION	SERVICE	TYPE	AIRFLOW CFM	AIRFLOW TSP (IN WG)	AIRFLOW FAN RPM	MOTOR HP	MOTOR VOLT/ PHASE	VFD	EC	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
EF-E1	ROOF ABOVE E1	SCIENCE ROOM E1	DOWNBLAST	1500	0.5	1707	1/2	115/1	NO	YES	67	COOK 120 ACED-EC	
EF-E2	ROOF ABOVE E2	SCIENCE ROOM E2	DOWNBLAST	1500	0.5	1707	1/2	115/1	NO	YES	67	COOK 120 ACED-EC	
EF-E3	ROOF ABOVE E3	SCIENCE ROOM E3	DOWNBLAST	1500	0.5	1707	1/2	115/1	NO	YES	67	COOK 120 ACED-EC	
EF-E4	ROOF ABOVE E4	SCIENCE ROOM E4	DOWNBLAST	1500	0.5	1707	1/2	115/1	NO	YES	67	COOK 120 ACED-EC	
EF-PREP	ROOF ABOVE E2	SCIENCE PREP ROOMS	DOWNBLAST	500	0.8	1662	1/4	115/1	NO	YES	30	COOK 101C17DEC	
EF-DRAMA	ZONE D ROOF	DRAMA RELIEF	DOWNBLAST	4500	1.0	1192	2	460/3	YES	NO	168	COOK 195 ACE-B	
EF-A-RR	MECH PLATFORM ZONE A	ZONE A RESTROOMS	INLINE	2260	0.75	2517	1.5	460/3	NO	NO	133	COOK 120 SQN-B	
EF-ADMIN	ADMIN OPEN OFFICE	ADMIN RESTROOMS	INLINE	400	0.75	1679	1/4	115/1	NO	YES	103	COOK 100 SQND-EC	
EF-B-RR	MECH PLATFORM ZONE A	ZONE B RESTROOMS	INLINE	470	0.75	1711	1/4	115/1	NO	YES	100	COOK 100 SQND-EC	
EF-C-RRN	MECH PLATFORM ZONE C	GYM RESTROOMS, SHOWERS	INLINE	1950	0.75	1496	3/4	115/1	NO	YES	153	COOK 135 SQND-EC	
EF-C-RRS	MECH PLATFORM ZONE C	GYM RESTROOMS, SHOWERS	INLINE	1620	0.75	1388	3/4	115/1	NO	YES	128	COOK 135 SQND-EC	
EF-D-RR	CUSTODIAL 177	ZONE D RESTROOMS, CUST	INLINE	1000	0.75	1510	1/2	115/1	NO	YES	123	COOK 120 SQND-EC	
EF-RH	MECH PLATFORM ZONE C	HOME ED RANGE HOOD	INLINE	1400	0.75	1388	3/4	115/1	NO	YES	128	COOK 135 SQND-EC	
EF-KILN	MECH PLATFORM ZONE C	KILN EXHAUST	INLINE	150	-	-	-	115/1	-	-	-	ENVIROVENT	1
EF-HALL-E	MECH PLATFORM ZONE E	HALL ES / EN RELIEF	INLINE	3100	0.75	1649	1.5	460/3	YES	NO	250	COOK 150 SQN-B	
EF-IDF-A	IDF 219	IDF A HEAT RECOVERY	INLINE	800	0.25	1678	1/4	115/1	NO	YES	94	COOK 100 SQND-EC	2
EF-IDF-B	IDF 117	IDF B HEAT RECOVERY	INLINE	800	0.25	1678	1/4	115/1	NO	YES	94	COOK 100 SQND-EC	2
EF-IDF-E	IDF 185	IDF E EXHAUST	INLINE	800	0.25	1678	1/4	115/1	NO	YES	94	COOK 100 SQND-EC	2
EF-MDF	MDF 176	MDF HEAT RECOVERY	INLINE	1400	0.75	1388	3/4	115/1	NO	YES	128	COOK 135 SQND-EC	2
RF-FORUM-S	MECH PLATFORM ZONE A	AH-FORUM-S RETURN AIR	INLINE	2360	1.2	2110	1.5	460/3	YES	NO	158	COOK 135 SQN-B	
RF-LIBR	MECH PLATFORM ZONE A	AH-LIBR RETURN AIR	INLINE	4500	1.2	1500	2.1	460/3	YES	NO	294	COOK 180 SQN-B	
SF-ELEV	MECH PLATFORM ZONE A	ELEVATOR	INLINE	500	0.75	1510	1/2	115/1	NO	YES	100	COOK 120 SQND-EC	
RF-A	MECH PLATFORM ZONE A	ZONE A & B RELIEF AIR	PROP	44320	0.50	443	10	460/3	YES	NO	630	COOK 60 XLWH	
EF-GREASE	ROOF ABOVE M281A	GREASE HOOD	UPBLAST	3250	1.5	1168	1.5	460/3	NO	NO	143	COOK 195 VCR	
EF-DISH	ROOF ABOVE M281A	DISHWASHER	UPBLAST	550	1.0	1276	1/2	115/1	NO	YES	97	COOK 150 VCRHD-EC	
TF-STOR-CN	GYM-N STORAGE	GYM-N WALL	INLINE	100	0.1	1123	1/4	115/1	NO	YES	70	COOK 70SQN17DEC	
TF-STOR-CS	GYM-N STORAGE	GYM-S WALL	INLINE	100	0.1	1123	1/4	115/1	NO	YES	70	COOK 70SQN17DEC	

1

GENERAL NOTES:
A. ALL FANS TO BE PROVIDED WITH LOW LEAKAGE MOTORIZED BACKDRAFT DAMPERS EXCEPT GREASE EXHAUST, IDF AND MDF EXHAUST FANS.
B. FAN DAMPERS TO BE WIRED ACROSS FAN MOTOR WITH 120 VOLT ACTUATOR, BELIMO LMX-120-3 OR MNX-120-3.

NOTES:
1. OWNER FURNISHED CONTRACTOR INSTALLED
2. PROVIDE SCREEN AT INLET OF FAN.

SUPPLY AIR SLOT DIFFUSERS (S-1)

CFM RANGE	PLENUM INLET SIZE (BASED ON: TITUS TBDI-10)	# OF SLOTS	SLOT WIDTH (IN)	SLOT LENGTH (IN)	FACE SIZE
0-80	6 IN DIA OVAL	1	1	24	24x2
81-120	6 IN DIA OVAL	1	1	48	48x2
121-180	8 IN DIA OVAL	1	1	48	48x2
181-670	10 IN DIA OVAL	2	1	48	48x4

CEILING SUPPLY DIFFUSERS (C-1)

CFM RANGE	SQUARE NECK SIZE (BASED ON: TITUS MCD)	FACE SIZE T-BAR	FACE SIZE SURFACE
0-125	6x6	24x24	13x13
126-220	8x8	24x24	15x15
221-345	10x10	24x24	17x17
346-500	12x12	24x24	19x19
501-780	16x16	24x24	23x23

TERMINAL UNIT SCHEDULE

TAG NUMBER	LOCATION	SERVICE	TYPE	PRIMARY AIR INLET (IN)	PRIMARY AIR MAX CFM	PRIMARY AIR MIN CFM	MANUFACTURER & MODEL	NOTES
TU-PRIN	ADMIN	PRIN, SEC, REG, FILE	VV	10	800	160	TITUS DESV	
TU-VP	ADMIN	VICE PRINCIPAL	VV	8	440	90	TITUS DESV	
TU-COUN	ADMIN	COUNSELOR OFFICES, VOL	VV	10	1060	220	TITUS DESV	
TU-NURS	ADMIN	NURSE, WORK RM, HALL118	VV	6	380	90	TITUS DESV	
TU-TEXT	ADMIN	WORK TEXT BOOK 202B	VV	6	300	70	TITUS DESV	
TU-OFC	ADMIN	OPEN OFFICE	VV	8	580	140	TITUS DESV	
TU-CON-E	CONF	CONFERENCE 119	VV	8	500	100	TITUS DESV	1
TU-RECEP	RECEP	RECEPTION 102A	VV	8	580	120	TITUS DESV	
TU-CON-W	CONF	CONFERENCE 121	VV	8	500	100	TITUS DESV	1

GENERAL NOTES:
A. AIR PRESSURE DROP THROUGH TERMINAL UNIT TO BE NO GREATER THAN 0.15 IN.WG.
B. HYDRONIC COIL TO BE MOUNTED EXTERNALLY IN THE DUCTWORK DOWNSTREAM OF THE TERMINAL UNIT.

NOTES:
1. CO2 SENSOR LOCATED ADJACENT TO THERMOSTAT.

KEY:
VV = VARIABLE AIR VOLUME TERMINAL UNIT

RETURN/EXHAUST GRILLES (C-2)

CFM RANGE	SQUARE NECK SIZE (BASED ON: TITUS 50F)	FACE SIZE T-BAR	FACE SIZE SURFACE
0-340	10x10	24x24	12x12
341-520	12x12	24x24	14x14
521-700	14x14	24x24	16x16
701-950	16x16	24x24	18X18
951-1200	18x18	24x24	20X20
1201-1800	22x22	24x24	24x24
1801-4000	22X46	24X48	24X48

CEILING SUPPLY DIFFUSERS (C-3)

CFM RANGE	ROUND NECK SIZE (BASED ON: TITUS TMRA)	FACE SIZE SURFACE
0-175	8 IN DIA	16 IN DIA
176-275	10 IN DIA	20 IN DIA
275-400	12 IN DIA	24 IN DIA
400-550	14 IN DIA	28 IN DIA

DUCT MOUNTED COIL SCHEDULE

TAG NUMBER	LOCATION	SERVICE	SIZE HxW (IN)	ECONOMIZER AIRFLOW (CFM)	APD (IN WC)	VELOCITY (FPM)	LOW MIN CFM	COOLING CFM	HYDRONIC COIL - COOLING: TOTAL CAPACITY (BTUH)	SENS. CAPACITY (BTUH)	DB EAT (°F)	WB EAT (°F)	LAT (°F)	WB LAT (°F)	EWT (°F)	MIN WTD (°F)	FLOW RATE (GPM)	HYDRONIC COIL - HEATING: HEATING CFM	CAPACITY (BTUH)	EAT (°F)	LAT (°F)	EWT (°F)	WTD (°F)	FLOW RATE (GPM)	MANUFACTURER	NOTES
DC-PRIN	ADMIN	PRINICIPAL, SEC, REG, FILE	15x24	800	0.3	320	160	380	20320	12810	80	67	55	53	44	10	3.3	380	27395	60	127	130	30	3.3	USA COIL & AIR	
DC-VP	ADMIN	VICE PRINCIPAL	8.75x24	440	0.3	305	90	220	10950	7035	80	67	55	53	44	10	1.9	220	15565	60	125	130	30	1.9	USA COIL & AIR	
DC-COUN	ADMIN	COUNSELOR OFFICES, VOL	16.25x28	1060	0.3	340	220	530	27765	17560	80	67	55	53	44	10	4.6	530	37435	60	125	130	30	4.6	USA COIL & AIR	
DC-NURS	ADMIN	NURSE, WORK RM, HALL118	8.75x18	380	0.3	350	90	210	10275	6640	80	67	55	53	44	10	1.8	200	14000	60	125	130	30	1.8	USA COIL & AIR	
DC-TEXT	ADMIN	WORK TEXT BOOK	10x14	300	0.3	295	70	250	10860	7270	80	67	55	53	44	10	2.2	250	16460	60	121	130	30	2.2	USA COIL & AIR	
DC-OFC	ADMIN	OPEN OFFICE	13.75x24	580	0.2	290	140	350	16760	10840	80	67	55	53	44	10	3.0	350	23580	60	122	130	30	3.0	USA COIL & AIR	
DC-CON-E	CONF	CONFERENCE EAST	10x24	500	0.3	295	100	250	13230	8365	80	67	55	53	44	10	2.2	250	17910	60	126	130	30	2.2	USA COIL & AIR	
DC-RECEP	RECEP	RECEPTION	12.5x24	580	0.2	295	120	320	17600	11020	80	67	55	53	44	10	2.8	320	23280	60	127	130	30	2.8	USA COIL & AIR	
DC-CON-W	CONF	CONFERENCE WEST	10x24	500	0.3	295	100	250	13230	8365	80	67	55	53	44	10	2.2	250	17910	60	126	130	30	2.2	USA COIL & AIR	

GENERAL NOTES:
A. HYDRONIC COIL TO BE MOUNTED EXTERNALLY IN THE DUCTWORK DOWNSTREAM OF THE TERMINAL UNIT.
B. AIR PRESSURE DROP THROUGH COIL TO BE NO GREATER THAN 0.30 IN.WG.
C. WATER PRESSURE DROP THROUGH COIL NOT TO EXCEED 10 FT.
D. AIR VELOCITY ACROSS COIL NOT TO EXCEED 300 FPM.

NOTES:
1. NONE.

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OREGON
March 19 1996
NICHOLAS P. COLLINS, Jr.
2.13.2015
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

4J

REPLACEMENT ROOSEVELT
MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

EQUIPMENT SCHEDULE - MECHANICAL

M-004

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

C. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENTIONS BEFORE FABRICATION.

D. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

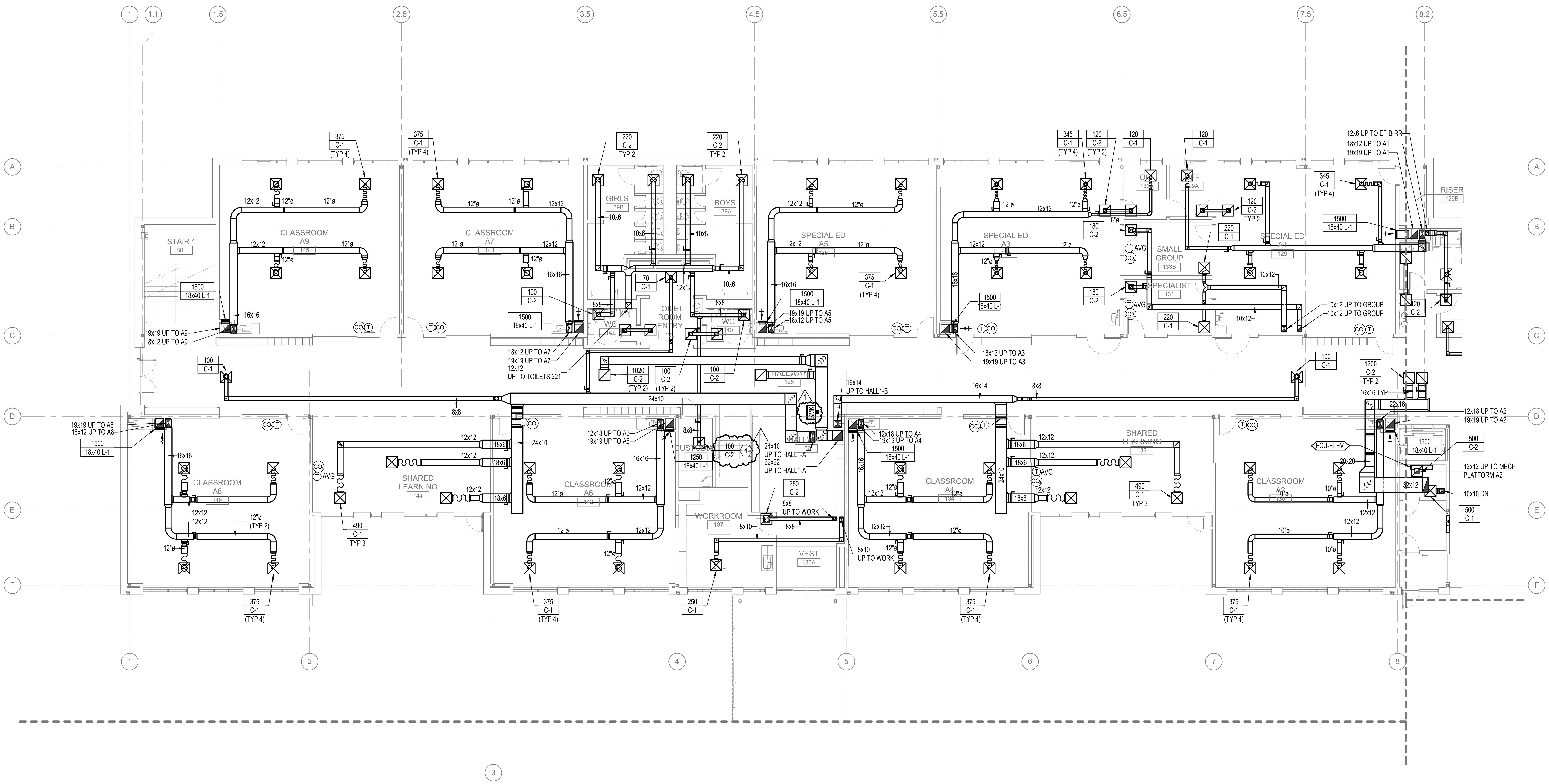
E. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OF NOT.

F. PIPING SHALL BE LARGEST SIZE SHOWN UNTIL SMALLER PIPE SIZE IS INDICATED INCLUDING MAINS AND BRANCH PIPING.

NOTES:

1. PROVIDE CEILING RADIATION DAMPER.

1



A1 FIRST FLOOR PLAN - ZONE A - MECHANICAL

1/8" = 1'-0"

PLAN NORTH

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CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015

ISSUE: CONSTRUCTION DOCUMENTS

VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00

DRAWN BY: SG

CHECKED BY: JCY

ORIGINAL SHEET SIZE: 30"x42"

FIRST FLOOR PLAN - ZONE A - MECHANICAL

M-121A

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

C. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENTIONS BEFORE FABRICATION.

D. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

E. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OF NOT.

F. PIPING SHALL BE LARGEST SIZE SHOWN UNTIL SMALLER PIPE SIZE IS INDICATED INCLUDING MAINS AND BRANCH PIPING.

G. PROVIDE CONDENSATE DRAIN PIPING FROM DUCT COILS TO FLOOR SINK IN IDF ROOM. WHERE GRAVITY DRAINAGE IS NOT FEASIBLE PROVIDE CONDENSATE PUMP.

NOTES:

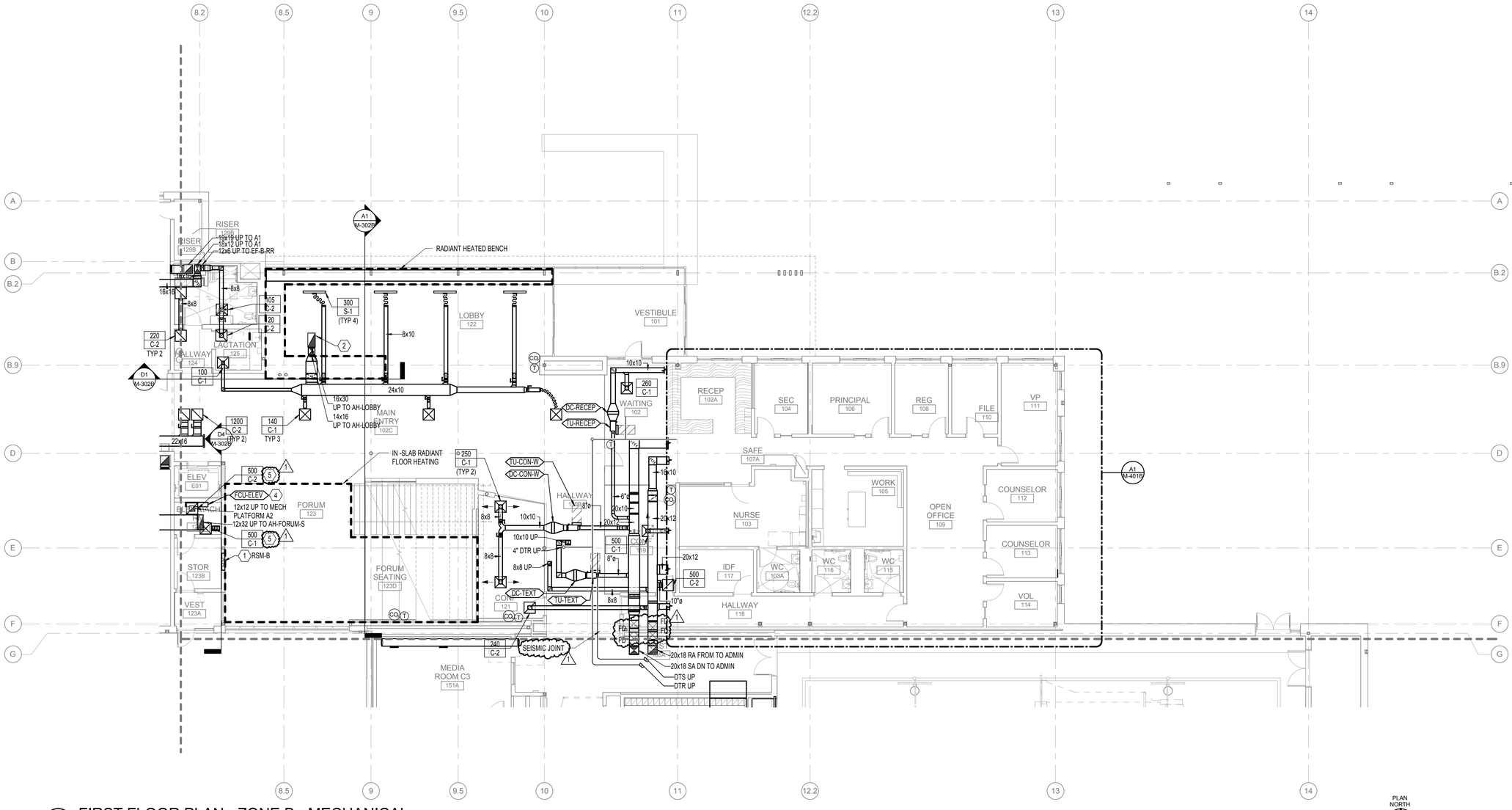
1. PANEL DOOR OPENS INTO STORAGE ROOM.

2. OPEN ENDED DUCT, EXTERIOR AND INTERIOR TO BE PAINTED BLACK. PERFORATED WOOD CEILING BELOW TO HAVE 9 SQ. FT. FREE AREA AND NO BACKING MATERIAL DIRECTLY BELOW END OF DUCT. BALANCE TO 1625 CFM.

3. CONTINUES ON M-401-A2.

4. PUMP CONDENSATE FROM FCU TO FLOOR SINK IN MECHANICAL PLATFORM.

5. PROVIDE CEILING RADIATION DAMPER. (1)



A1 FIRST FLOOR PLAN - ZONE B - MECHANICAL
1/8" = 1'-0"

PLAN NORTH

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REGISTERED PROFESSIONAL ENGINEER 18329PE OREGON JANUARY 19, 1996 THOMAS R. COLEMAN
EXPIRES 12-31-15
2-18-2015

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
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EUGENE, OREGON 97405
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PROJECT NO: 2013912.00
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FIRST FLOOR PLAN - ZONE B - MECHANICAL

M-121B

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

C. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENTIONS BEFORE FABRICATION.

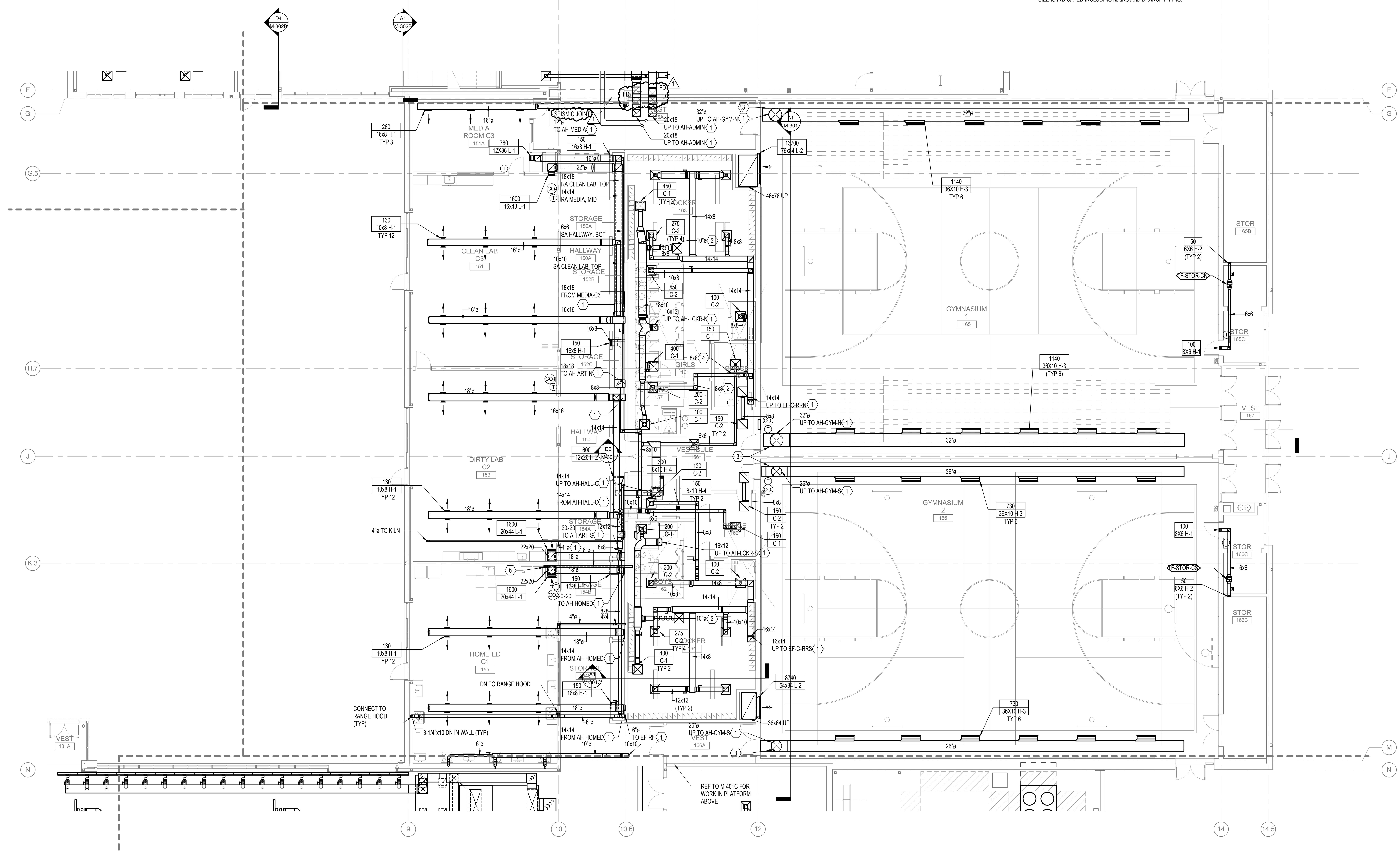
D. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

E. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OF NOT.

F. PIPING SHALL BE LARGEST SIZE SHOWN UNTIL SMALLER PIPE SIZE IS INDICATED INCLUDING MAINS AND BRANCH PIPING.

NOTES:

1. CONTINUES ON M-401C.
2. ROUTE ABOVE THROUGH TRUSS OPENINGS.
3. MINIMUM 18" CLEARANCE BETWEEN DUCT AND WALL.
4. ROUTE ABOVE BETWEEN TRUSSES.
5. UNDERCUT DOORS BY 1".
6. 4" CLOTHES DRYER EXHAUST UP IN WALL OF DUCT CHASE.



A1 FIRST FLOOR PLAN - ZONE C - MECHANICAL
1/8" = 1'-0"

PLAN NORTH

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REGISTERED PROFESSIONAL ENGINEER 18329PE OREGON March 19, 1996 NICHOLAS P. COLLINS
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

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DRAWN BY: SG
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FIRST FLOOR PLAN - ZONE C - MECHANICAL

M-121C

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

C. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENTIONS BEFORE FABRICATION.

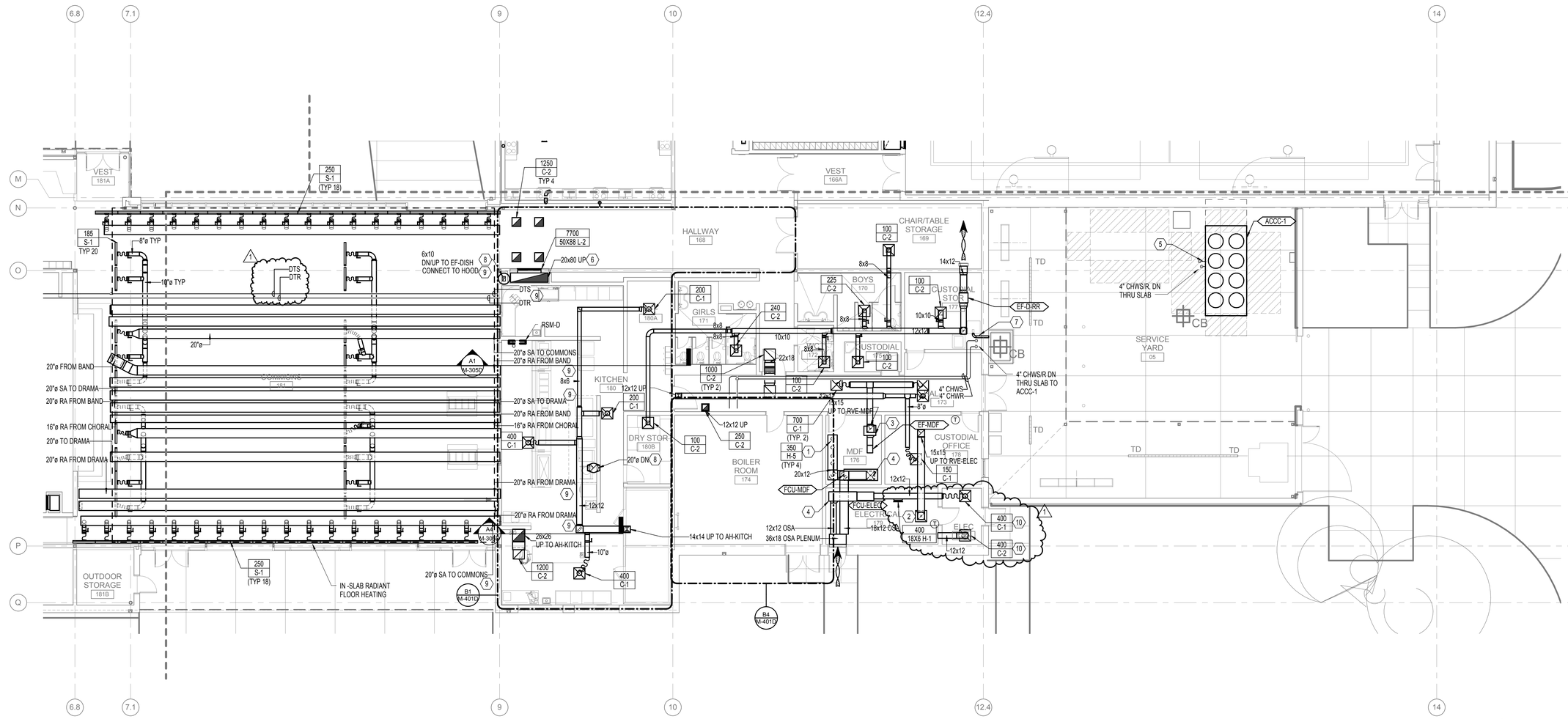
D. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

E. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OF NOT.

F. PIPING SHALL BE LARGEST SIZE SHOWN UNTIL SMALLER PIPE SIZE IS INDICATED INCLUDING MAINS AND BRANCH PIPING.

NOTES:

1. MOUNT ON BOTTOM OF DUCT, FACING DOWN.
2. ROUTE RELIEF DUCT TO ROOF VENTILATOR.
3. AUTO DAMPERS W/ RELIEF TO ROOF VENTILATOR AND SUPPLY TO HALL.
4. MIXING BOX W/ RETURN AND OSA DAMPERS.
5. PROVIDE HEAT TAPE ON EXPOSED CHWS/R FROM POINT WHERE PIPING DAYLIGHTS TO CHILLER CONNECTION.
6. OPEN ENDED DUCT TERMINATED ABOVE PERFORATED WOOD WALL PANEL. EXTERIOR AND INTERIOR TO BE PAINTED BLACK. PERFORATED WOOD PANEL TO HAVE 30 SQ. FT. FREE AREA.
7. 4" DRYER EXHAUST DUCT TO WALL CAP.
8. SEE FOOD SERVICE DRAWINGS FOR HOOD CONNECTION SIZE.
9. CONTINUES ON M-401D.
10. PROVIDE CEILING RADIATION DAMPER.



A1 FIRST FLOOR PLAN - ZONE D - MECHANICAL
1/8" = 1'-0"

PLAN NORTH

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REGISTERED PROFESSIONAL ENGINEER 18329PE OREGON DOUGLAS R. COLEMAN EXPIRES 12-31-15 2-13-2015

EUGENE SCHOOL DISTRICT 4J

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REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
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MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
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VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
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FIRST FLOOR PLAN - ZONE D - MECHANICAL

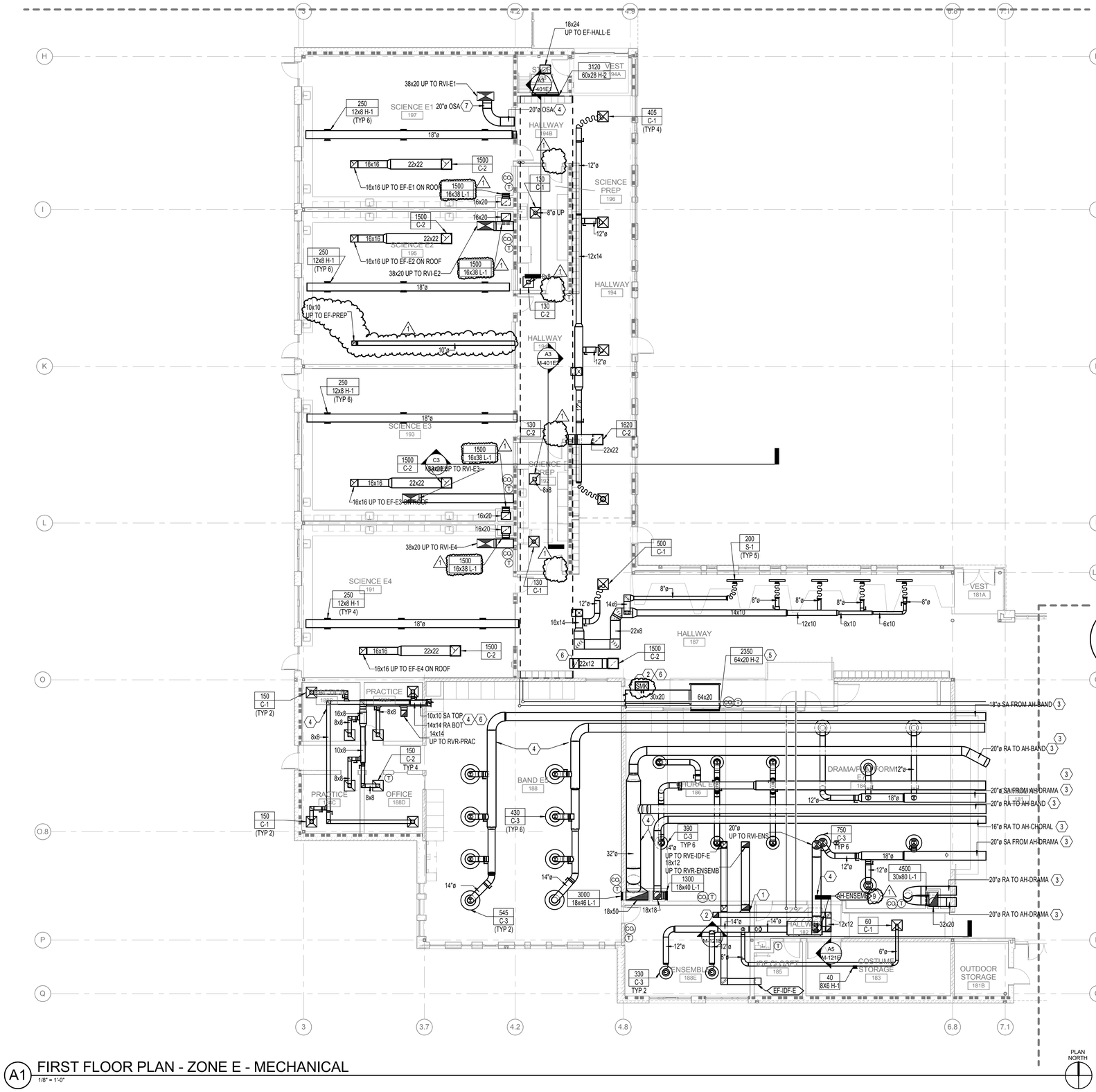
M-121D

GENERAL NOTES:

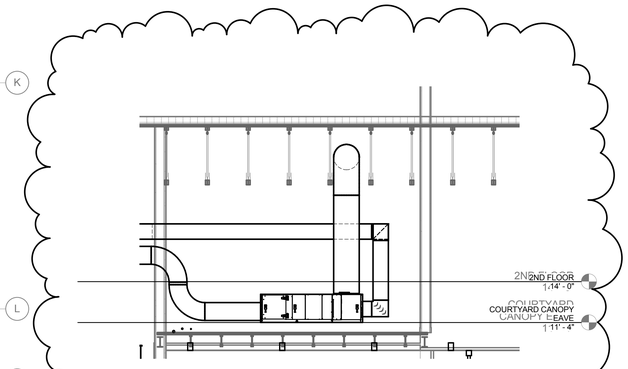
A.XX

NOTES:

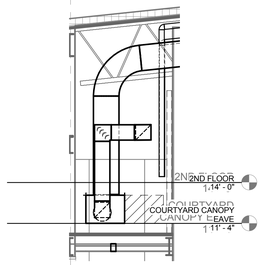
1. RELIEF DAMPER.
2. OPEN-ENDED RETURN DUCT ABOVE CEILING.
3. ROUTE ABOVE THROUGH TRUSS OPENINGS. COORDINATE W/ CMU SHEAR WALL PENETRATIONS AT COMMONS-DRAMA & CHORAL-BAND.
4. ROUTE ABOVE, BETWEEN TRUSSES.
5. SIDEWALL RELIEF GRILL TO BE MOUNTED 10" 6" AFF.
6. COORDINATE W/ STRUCTURAL PENETRATION, CONTINUED ON A4/M-401E.
7. ROUTE ABOVE THROUGH TRUSS OPENINGS.
8. NOT USED.
9. CONNECT CONDENSATE DRAIN TO TAILPIECE OF SINK.



A1 FIRST FLOOR PLAN - ZONE E - MECHANICAL
1/8" = 1'-0"



C5 HALLWAY AHU - LOOKING NORTH
1/4" = 1'-0"



A5 HALLWAY AHU - LOOKING WEST
1/4" = 1'-0"

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MARK	DATE	DESCRIPTION
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PROJECT NO: 2013912.00
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FIRST FLOOR PLAN - ZONE E - MECHANICAL

M-121E

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

C. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENTIONS BEFORE FABRICATION.

D. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

E. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OF NOT.

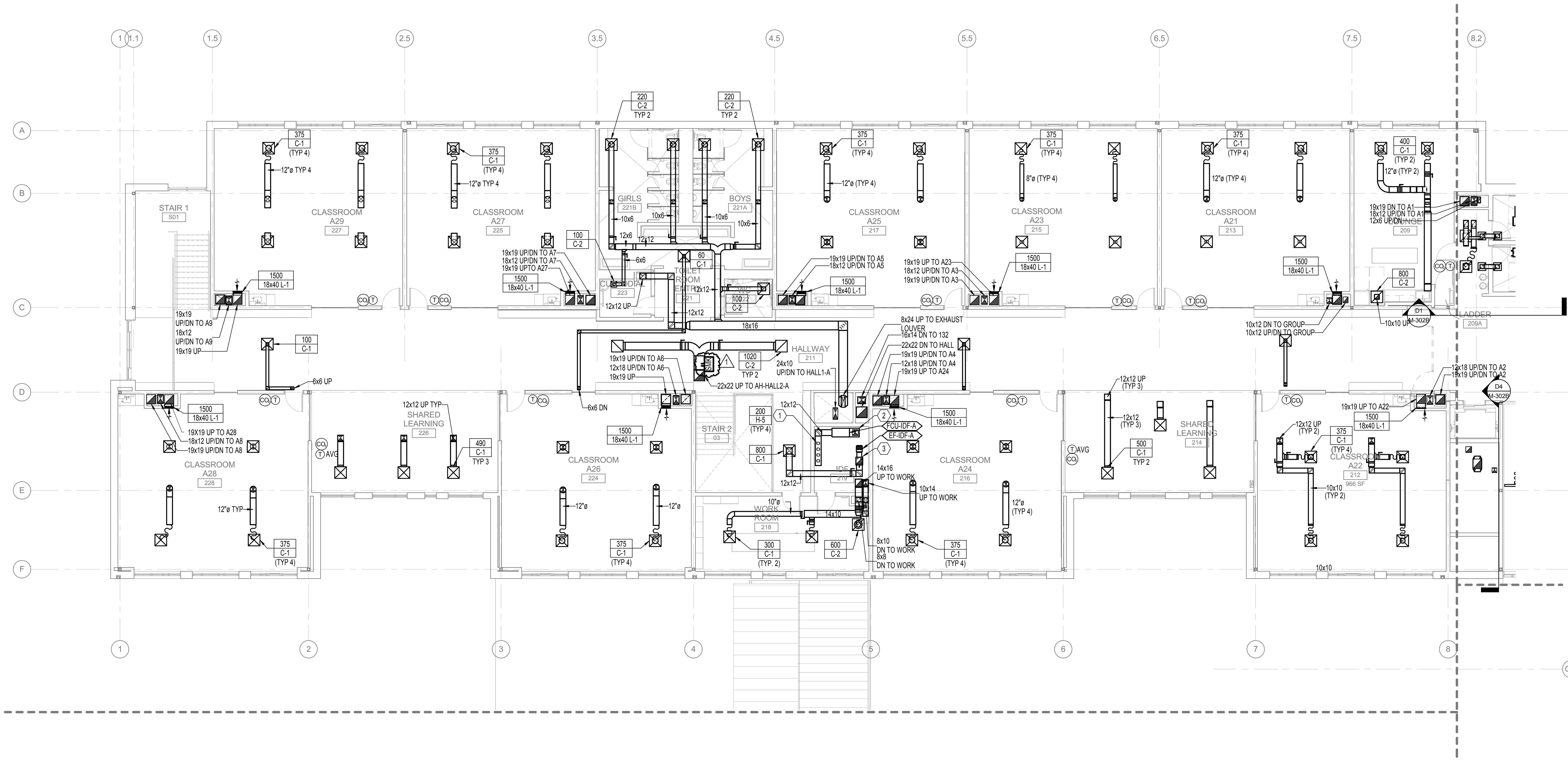
F. PIPING SHALL BE LARGEST SIZE SHOWN UNTIL SMALLER PIPE SIZE IS INDICATED INCLUDING MAINS AND BRANCH PIPING.

NOTES:

1. MOUNT NOZZLE GRILLE ON BOTTOM OF DUCT. COORDINATE LENGTH OF DUCT AND GRILLE SPACING WITH OWNER.

2. MIXING BOX W/ 12X12 OSAD AND RAD. 12X12 OSA UP TO MECH PLATFORM.

3. RELIEF DAMPER W/ 12X12 UP TO MECH PLATFORM. SAD TO HALLWAY.



A1 SECOND FLOOR PLAN - ZONE A - MECHANICAL

1/8" = 1'-0"

PLAN NORTH

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ISSUE: CONSTRUCTION DOCUMENTS
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SECOND FLOOR PLAN - ZONE A - MECHANICAL

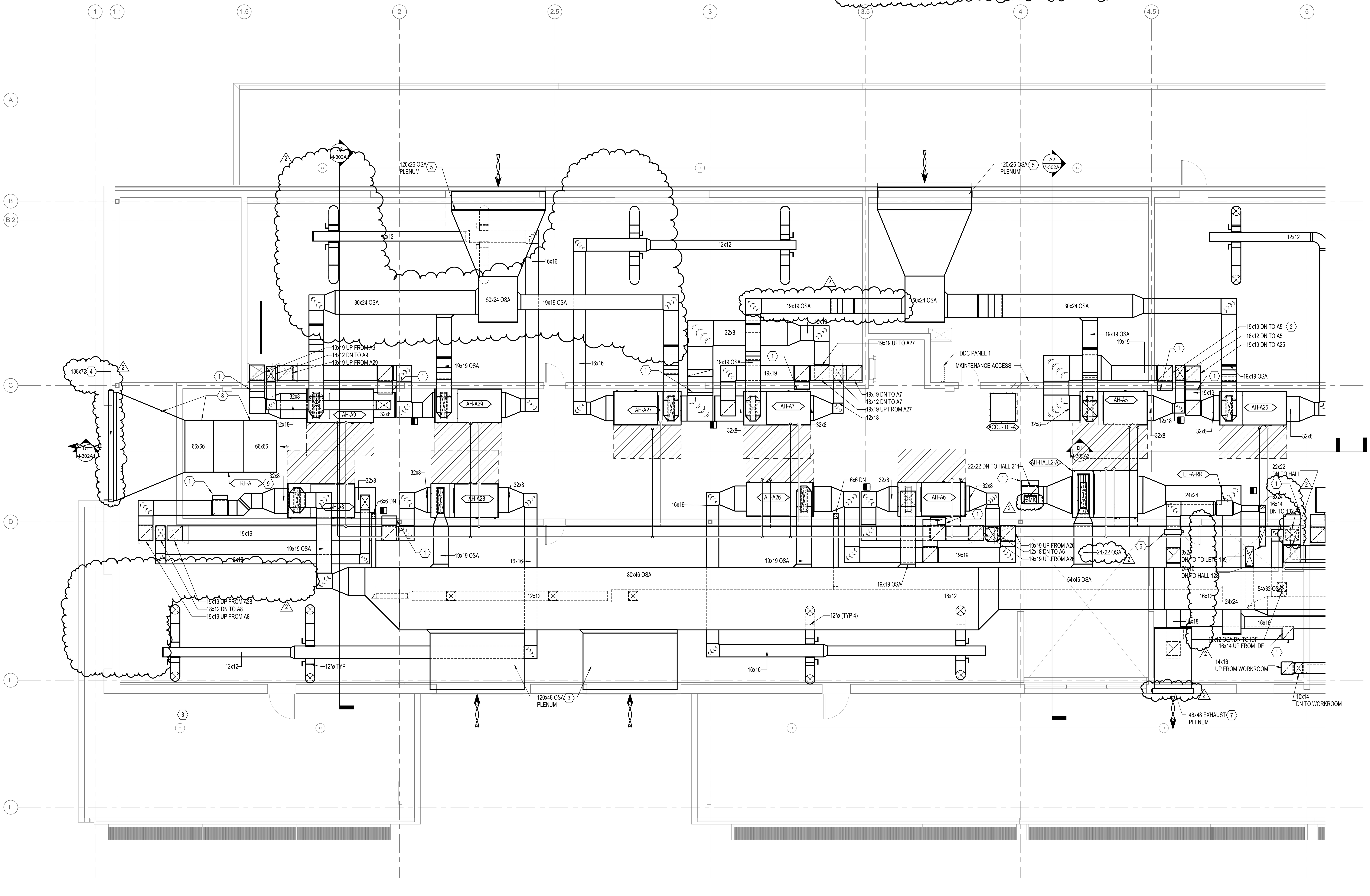
M-122A

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.
B. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
C. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENTIONS BEFORE FABRICATION.
D. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.
E. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OF NOT.
F. PIPING SHALL BE LARGEST SIZE SHOWN UNTIL SMALLER PIPE SIZE IS INDICATED INCLUDING MAINS AND BRANCH PIPING.
~~G. PROVIDE CONDENSATE DRAIN PIPING FROM AIR HANDLERS TO NEAREST FLOOR SINK.~~
H. ARRANGE EQUIPMETN, PIPING, AND DUCTWORK TO MAINTAIN A 3 FOOT WIDE MAINTENANCE PARTH THRU MECH PLATFORM WITH MIN 6' 8" HEAD CLEARANCE. (2)

NOTES:

1. PROVIDE AUTOMATIC CONTROL DAMPER AND BDD, SIZE FOR 400 FPM.
2. CONTINUED ON M-122A.
3. OSA LOUVER 18.75 SQ. FT. FREE AREA.
4. RELIEF LOUVER 40 SQ. FT. FREE AREA.
5. OSA LOUVER 10.75 SQ. FT. FREE AREA.
6. AUTOMATIC CONTROL DAMPER AT THIS APPROX LOCATION.
7. EXHAUST LOUVER 5 SQ. FT. FREE AREA.
8. DUCT AND PLENUM TO BE ACOUSTICALLY LINED.
9. RF-A TO BE SPRING ISOLATED AND HUNG FROM CEILING.



A1 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE A WEST- MECHANICAL
1/4" = 1'-0"

PLAN NORTH

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MARK	DATE	DESCRIPTION
2	03-13-2015	ADDENDUM 6
1	2-27-2015	ADDENDUM 1

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

 ORIGINAL SHEET SIZE: 30"x42"

MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE A WEST - MECHANICAL

M-401A1

GENERAL NOTES:

A. PROVIDE VOLUME DAMPER AT EACH BRANCH OUTLET/INLET.

B. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

C. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENTIONS BEFORE FABRICATION.

D. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.

E. ALL DETAILS APPLY TO THIS SHEET WHETHER TAGGED OF NOT.

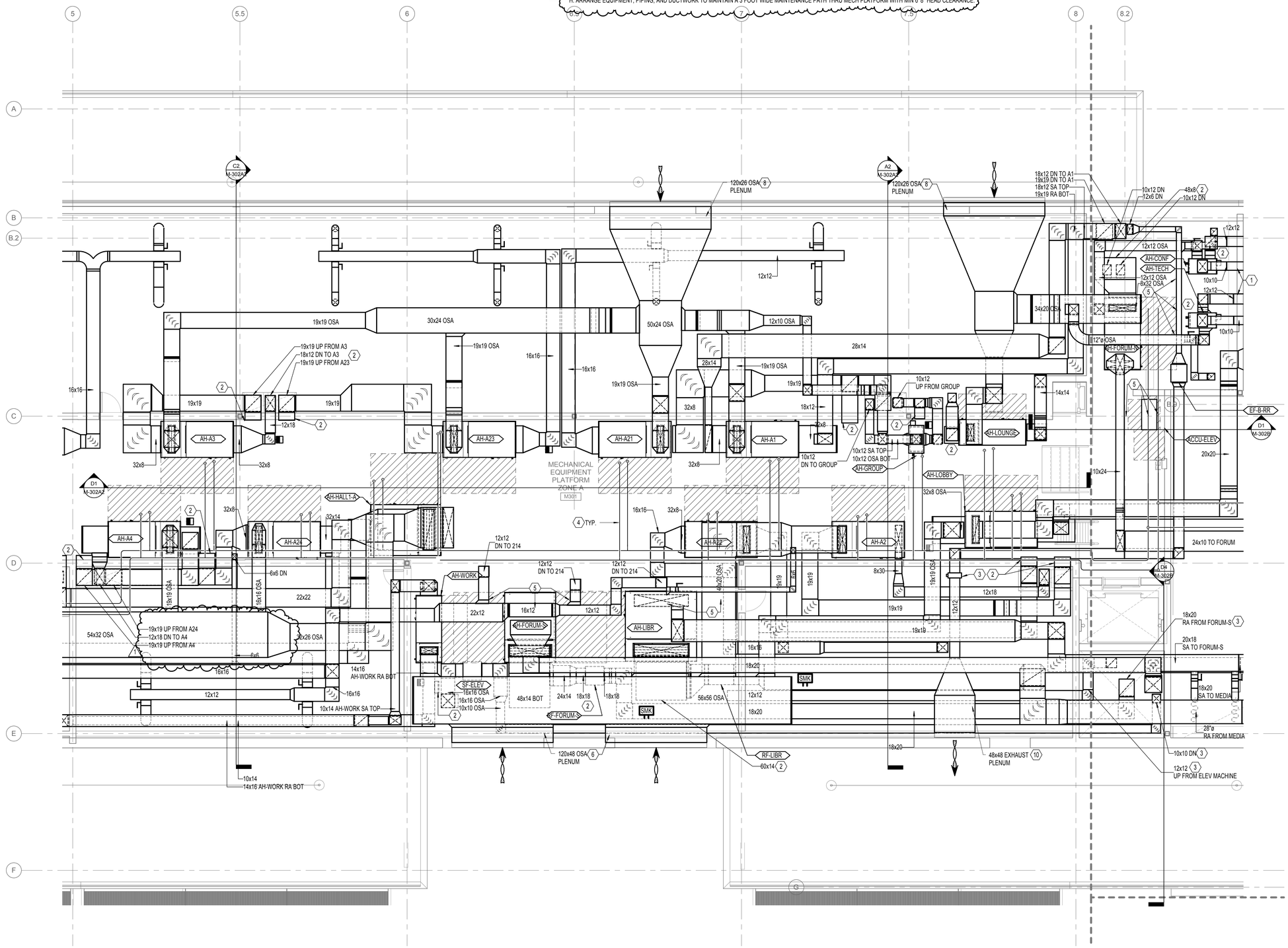
F. PIPING SHALL BE LARGEST SIZE SHOWN UNTIL SMALLER PIPE SIZE IS INDICATED INCLUDING MAINS AND BRANCH PIPING.

G. PROVIDE CONDENSATE DRAIN PIPING FROM AIR HANDLERS TO NEAREST FLOOR SINK. DO NOT BLOCK WALKING PATH.

H. ARRANGE EQUIPMENT, PIPING, AND DUCTWORK TO MAINTAIN A 3 FOOT WIDE MAINTENANCE PATH THRU MECH PLATFORM WITH MIN 6' 8" HEAD CLEARANCE.

NOTES:

1. COORDINATE THROUGH TRUSS OPENINGS.
2. PROVIDE AUTOMATIC RELIEF DAMPER AND BDD, SIZE FOR 400 FPM.
3. CONTINUES ON M-122B
4. ROUTE ABOVE, BETWEEN JOISTS.
5. MIMIMUM 6' 8" AFF FOR MAINTENANCE ACCESS, TYP. TO ALL EQUIPMENT.
6. OSA LOUVER 18.75 SQ. FT. FREE AREA.
7. CONTINUES ON M-121A
8. OSA LOUVER 10.75 SQ. FT. FREE AREA.
9. AUTOMATIC CONTROL DAMPER AT THIS APPROX LOCATION.
10. EXHAUST LOUVER 5 SQ. FT. FREE AREA.



A1 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE A EAST- MECHANICAL

1/4" = 1'-0"

PLAN NORTH

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REGISTERED PROFESSIONAL ENGINEER
18329PE
OREGON
JULY 19, 1995
DOUGLAS R. COLEMAN
12-31-15
EXPIRES

EUGENE SCHOOL DISTRICT 4J

4J

REPLACEMENT ROOSEVELT
MIDDLE SCHOOL
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CIP NO. 410.566.001

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 ORIGINAL SHEET SIZE: 30"x42"

MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE A EAST - MECHANICAL

M-401A2

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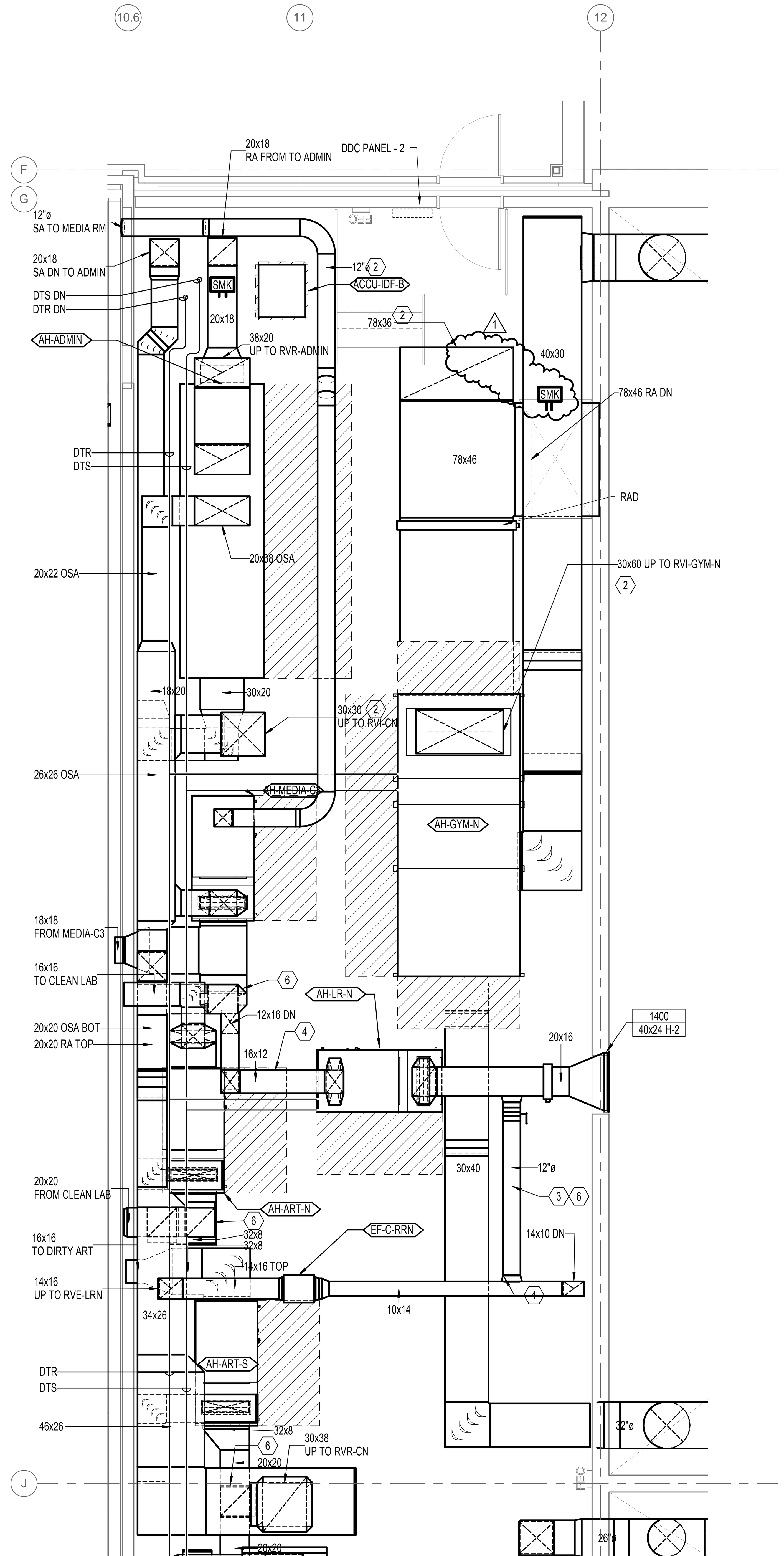
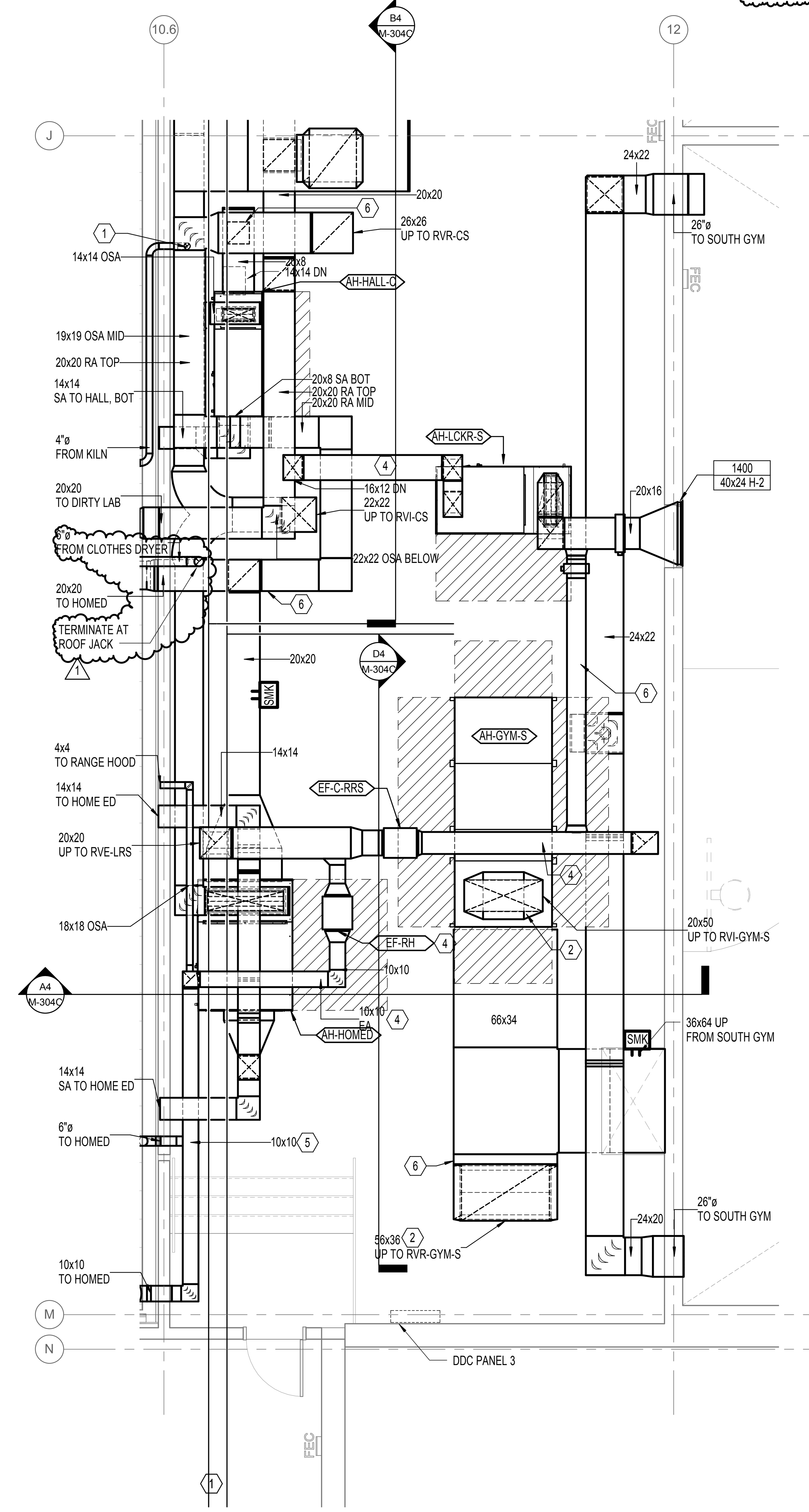


A1 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE C NORTH - MECHANICAL

1/4" = 1'-0"

PLAN NORTH



A4 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE C SOUTH - MECHANICAL

1/4" = 1'-0"

PLAN NORTH

GENERAL NOTES:

A. PROVIDE CONDENSATE DRAIN PIPING FROM AIR HANDLERS TO NEAREST FLOOR SINK.

B. ARRANGE EQUIPMENT, PIPING, AND DUCTWORK TO MAINTAIN A 3 FOOT WIDE MAINTENANCE PATH THRU MECH PLATFORM WITH MIN 6' 8" HEAD CLEARANCE. (1)

NOTES:

1. OWNER PROVIDED ENVIROVENT KILN FAN MOUNTED UNDESIDE OF ROOF DECK, DIV 26 TO PROVIDE DISCONNECT AT KILN LOCATION. TERMINATE AT ROOF JACK. (1)
2. PROVIDE AUTOMATIC CONTROL DAMPER.
3. ROUTE ABOVE THROUGH TRUSS OPENINGS.
4. ROUTE ABOVE BETWEEN TRUSSES.
5. ROUTE BELOW TRUSSES, MAINTAIN 6' 8" AFF FOR MAINTANCE ACCESS.
6. PROVIDE AUTOMATIC CONTROL DAMPER AND BDD. SIZE DAMPERS FOR 400 MAX 400 FPM. (1)

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REGISTERED PROFESSIONAL ENGINEER — OREGON — NICHOLAS P. COLLINS — 2-13-2015
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

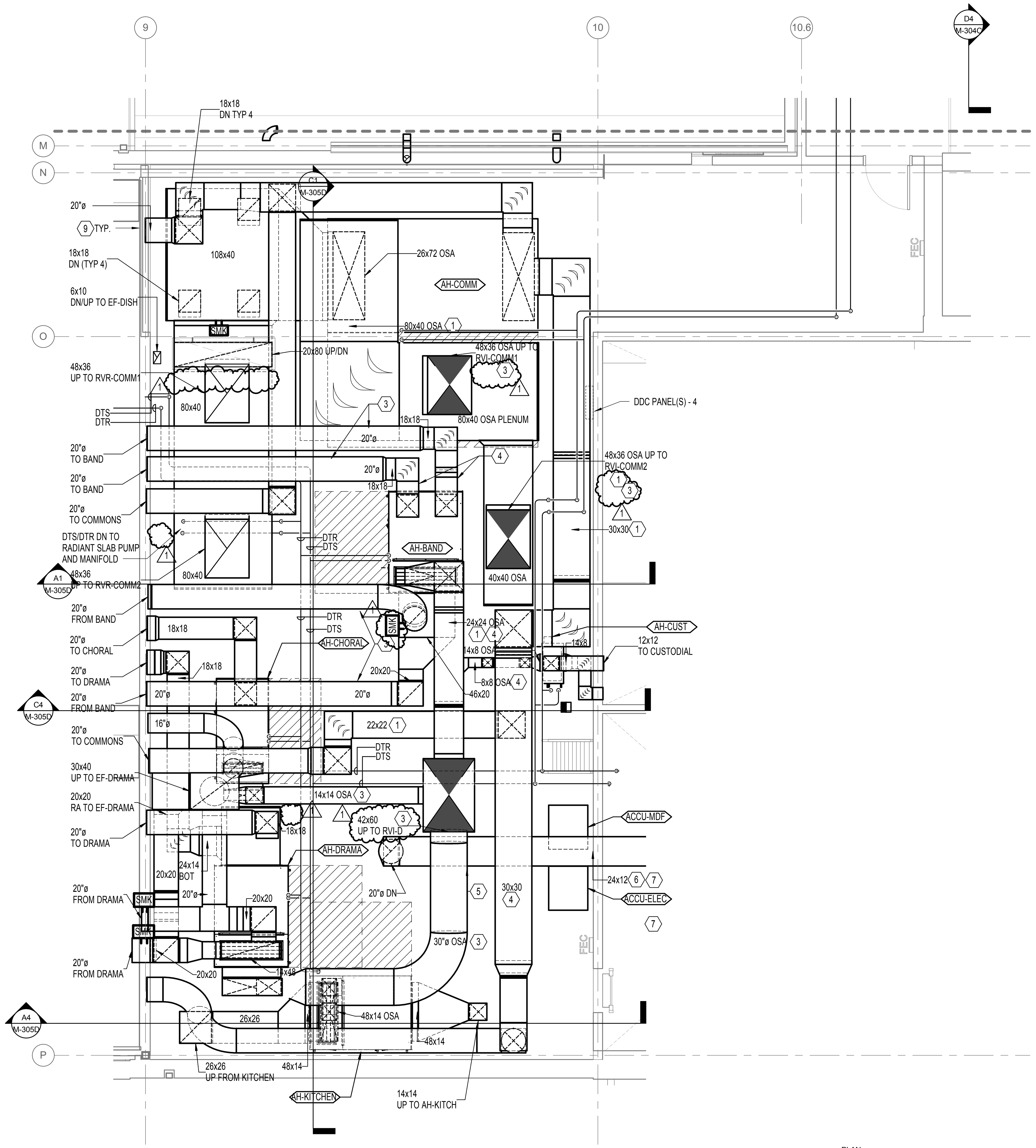
REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

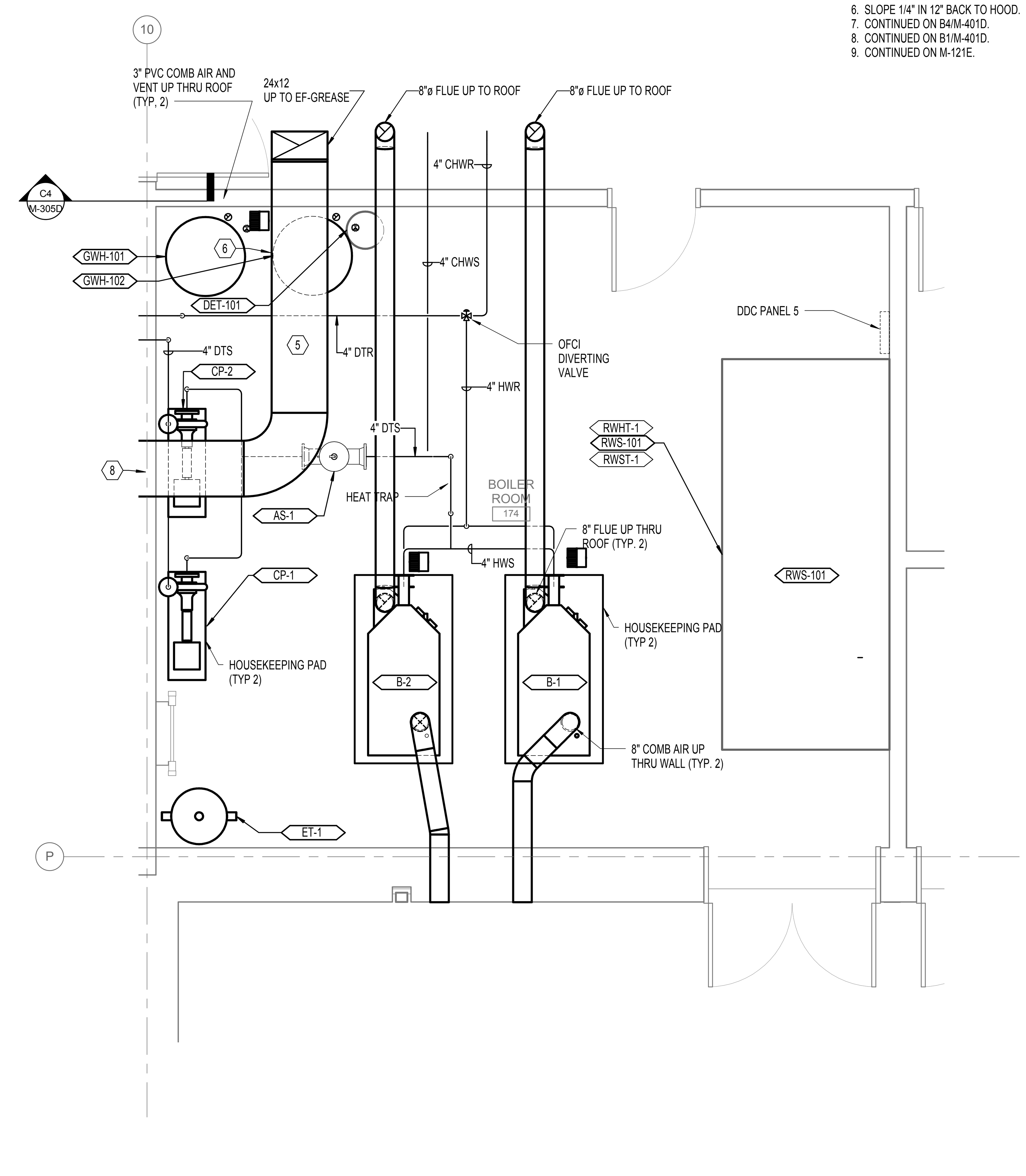
ISSUE DATE:	FEBRUARY 18, 2015
ISSUE:	CONSTRUCTION DOCUMENTS
VOLUME:	PACKAGE 2 VOLUME 2
PROJECT NO:	2013912.00
DRAWN BY:	SG
CHECKED BY:	JCY

MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE C - MECHANICAL

M-401C



B1 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE D - MECHANICAL
1/4" = 1'-0"



B4 ZONE D PARTIAL MECHANICAL PLAN - BOILER ROOM
3/8" = 1'-0"

GENERAL NOTES:

A. NOT USED
B. PROVIDE CONDENSATE DRAIN PIPING FROM AIR HANDLERS TO NEAREST FLOOR SINK.
C. ARRANGE EQUIPMENT, PIPING, AND DUCTWORK TO MAINTAIN A 3 FOOT WIDE MAINTENANCE PATH THRU MECH PLATFORM WITH MIN 6' 8" HEAD CLEARANCE. (1)

NOTES:

1. PROVIDE MINIMUM 6' 8" CLEARANCE AFF FOR MAINTENANCE ACCESS..
2. PROVIDE AUTOMATIC CONTROL DAMPER.
3. ROUTE ABOVE THROUGH TRUSS OPENINGS.
4. ROUTE ABOVE BETWEEN TRUSSES.
5. PROVIDE CLEANOUT.
6. SLOPE 1/4" IN 12" BACK TO HOOD.
7. CONTINUED ON B4/M-401D.
8. CONTINUED ON B1/M-401D.
9. CONTINUED ON M-121E.

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PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY
 ORIGINAL SHEET SIZE: 30"x42"

PARTIAL PLANS - ZONE D - MECHANICAL

M-401D

GENERAL NOTES:

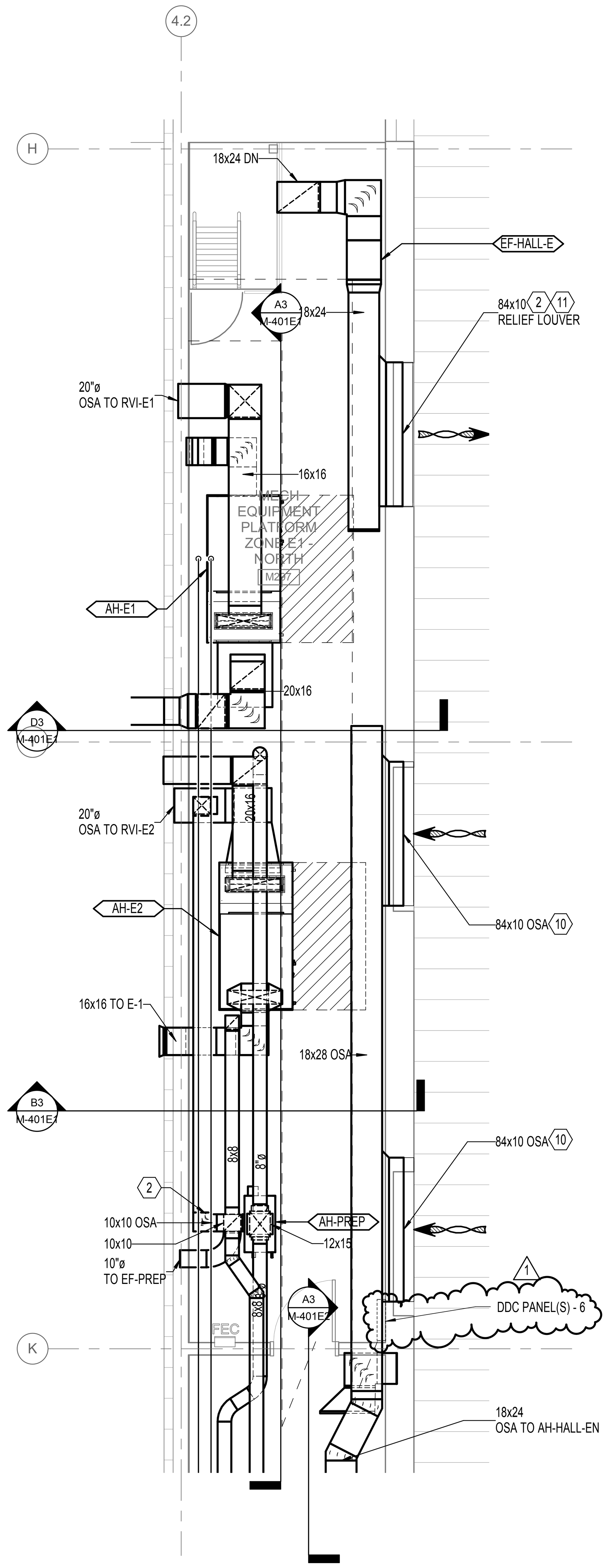
A. NOT USED.

B. PROVIDE CONDENSATE DRAIN PIPING FROM AIR HANDLERS TO NEAREST FLOOR SINK.

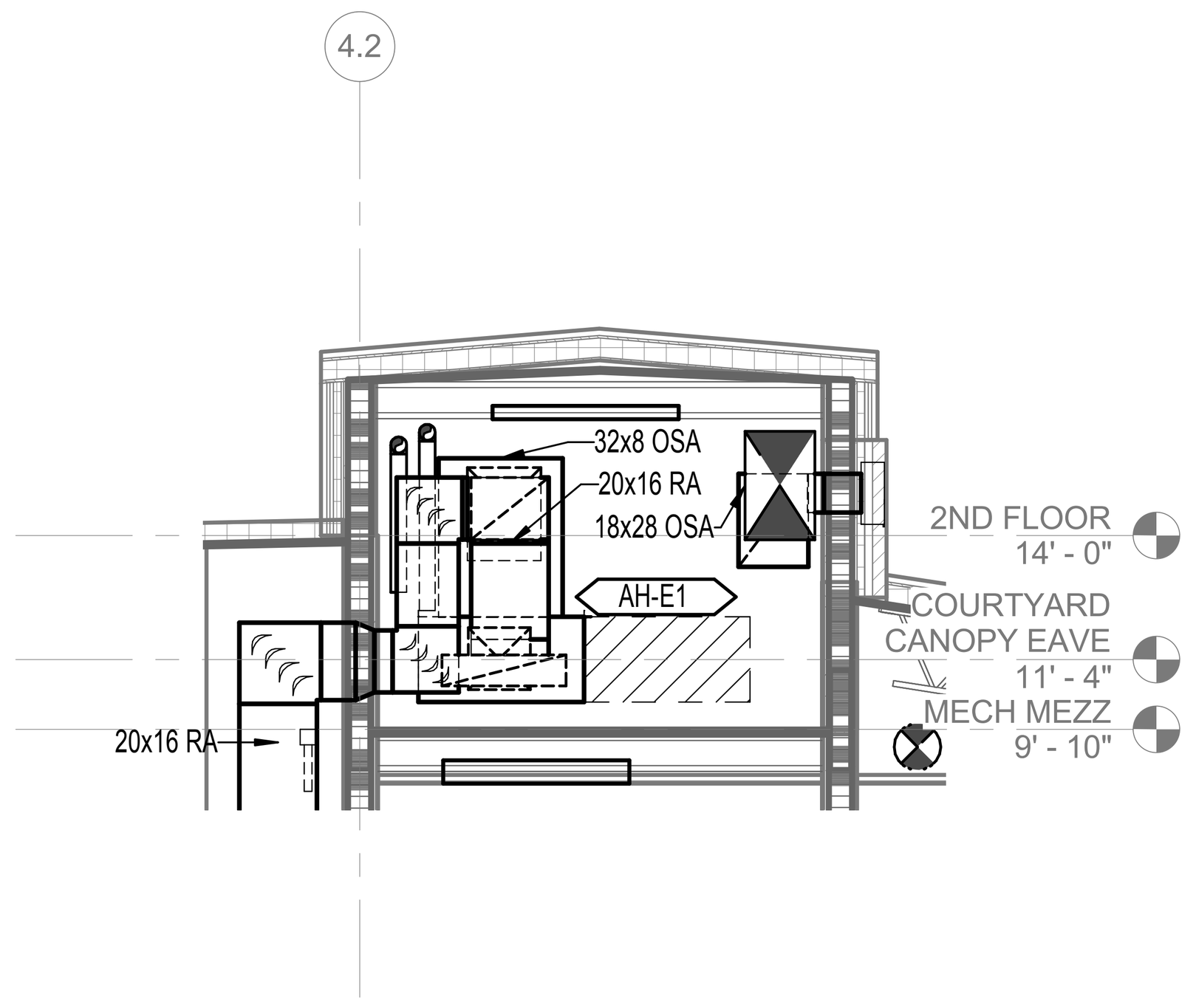
C. ARRANGE EQUIPMENT, PIPING, AND DUCTWORK TO MAINTAIN A 3 FOOT WIDE MAINTENANCE PATH THRU MECH PLATFORM WITH MIN 6' 8" HEAD CLEARANCE.

NOTES:

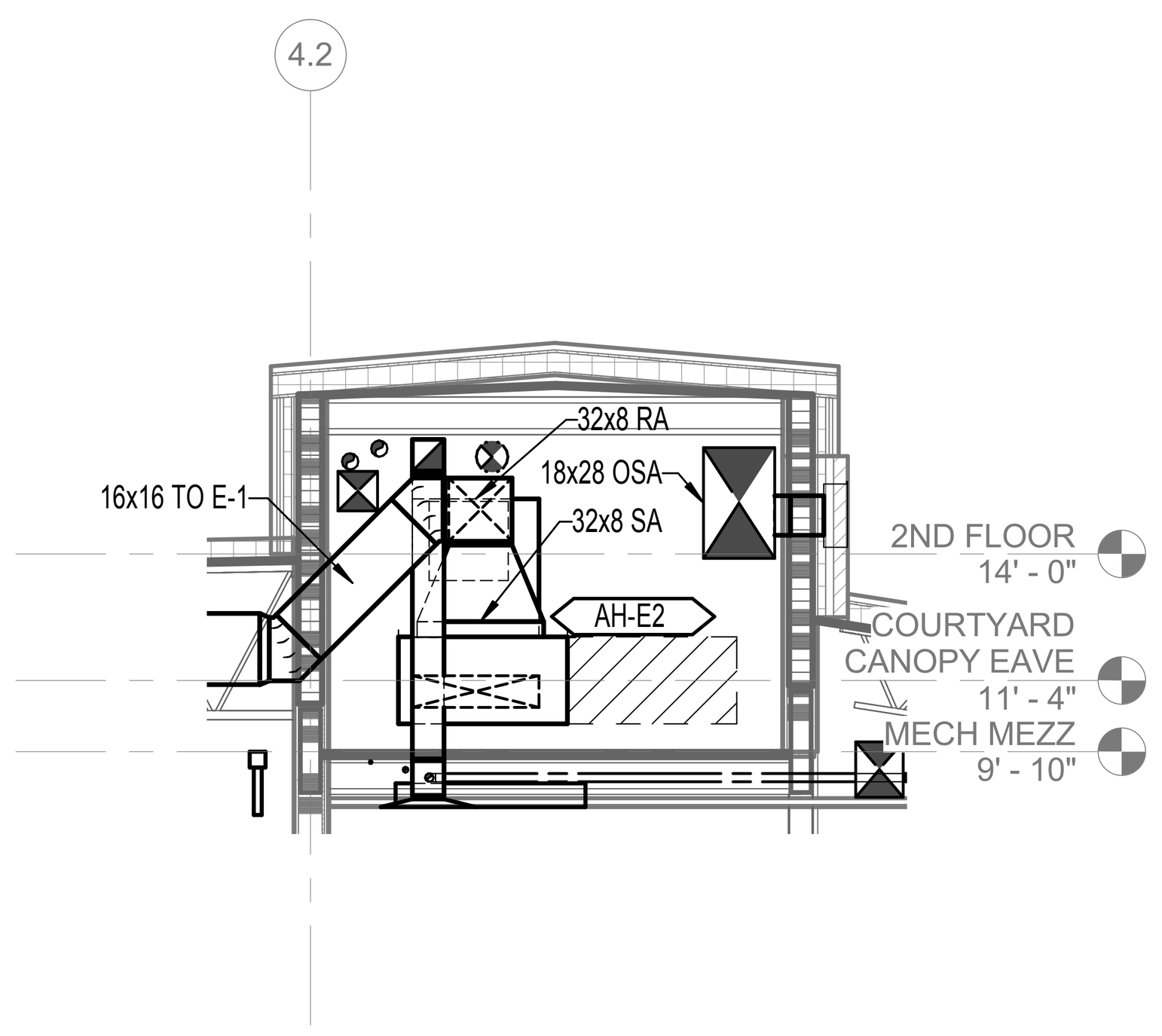
1. RELIEF PLENUM TO BE DIVIDED HORIZONTALLY BY SHEETMETAL SEPTUM AND ACOUSTICALLY LINED. LOWER 1/3 OF PLENUM VOLUME TO SERVE CHORAL, UPPER 2/3 OF PLENUM VOLUME TO SERVE BAND.
2. PROVIDE AUTOMATIC CONTROL DAMPER.
3. DUCT ROUTE TO BE ACOUSTICALLY LINED.
4. ROUTE ABOVE BETWEEN TRUSSES.
5. POSITIONED ABOVE LEVEL OF CEILING CLOUD.
6. MAINTAIN MIN 6' 8" AFF MAINTAINANCE CLEARANCE ZONE..
7. COORDINATE WITH STRUCTURAL PENTRATION, CONTINUED ON M-121E.
8. 2.25 SF LOUVER FA.
9. 12.5 SF LOUVER FA.
10. 6.0 SF LOUVER FA.
11. 3.0 SF LOUVER FA.



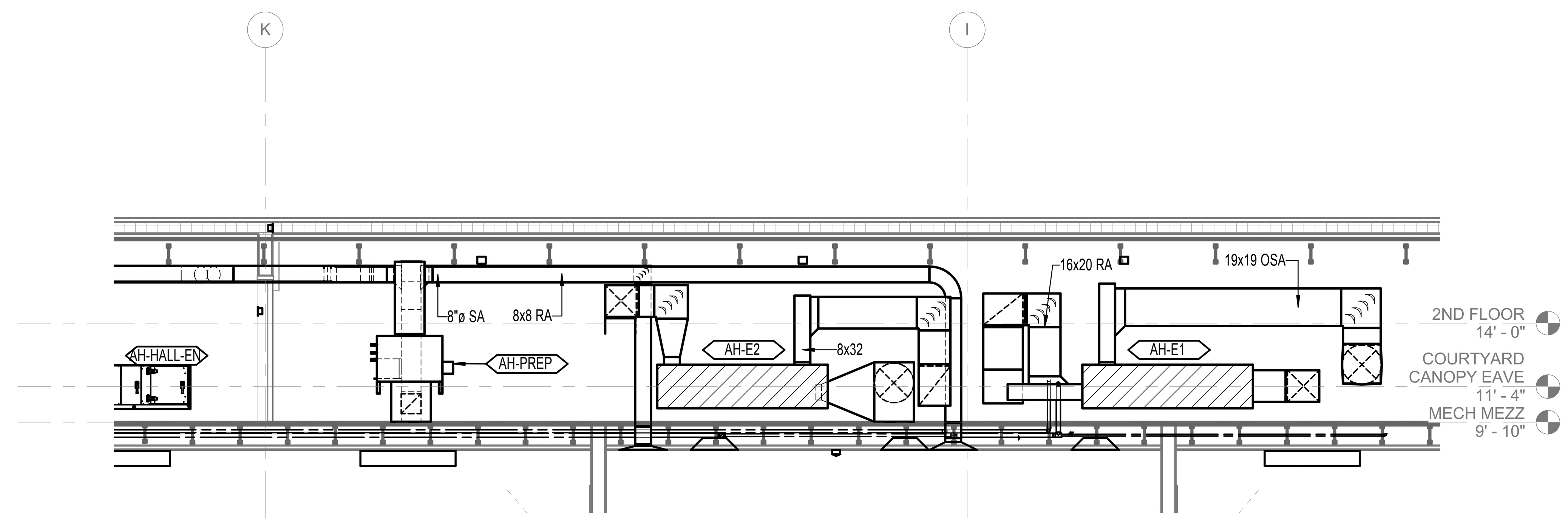
A1 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E NORTH - MECHANICAL
1/4" = 1'-0"



D3 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E -LOOKING NORTH 1
1/4" = 1'-0"



B3 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E -LOOKING NORTH 2
1/4" = 1'-0"



A3 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E WEST
1/4" = 1'-0"

PLAN NORTH

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18329PE
OREGON
March 19, 1996
NICHOLAS P. COLLINS
EXPIRES 12-31-15

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DRAWN BY:	SG
CHECKED BY:	JCY

MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E NORTH - MECHANICAL

M-401E1

GENERAL NOTES:

A. NOT USED.
B. PROVIDE CONDENSATE DRAIN PIPING FROM AIR HANDLERS TO NEAREST FLOOR SINK.
C. ARRANGE EQUIPMENT, PIPING, AND DUCTWORK TO MAINTAIN A 3 FOOT WIDE MAINTENANCE PATH THRU MECH PLATFORM WITH MIN 6' 8" HEAD CLEARANCE

NOTES:

1. RELIEF PLENUM TO BE DIVIDED HORIZONTALLY BY SHEETMETAL SEPTUM AND ACOUSTICALLY LINED. LOWER 1/3 OF PLENUM VOLUME TO SERVE CHORAL, UPPER 2/3 OF PLENUM VOLUME TO SERVE BAND.
2. PROVIDE AUTOMATIC CONTROL DAMPER.
3. DUCT ROUTE TO BE ACOUSTICALLY LINED.
4. ROUTE ABOVE, BETWEEN TRUSSES.
5. POSITIONED ABOVE LEVEL OF CEILING CLOUD.
6. MAINTAIN MIN 6' 8" AFF MAINTAINANCE CLEARANCE ZONE..
7. COORDINATE WITH STRUCTURAL PENTRATION, CONTINUED ON M-121E.
8. 2.25 SF LOUVER FA.
9. 12.5 SF LOUVER FA.
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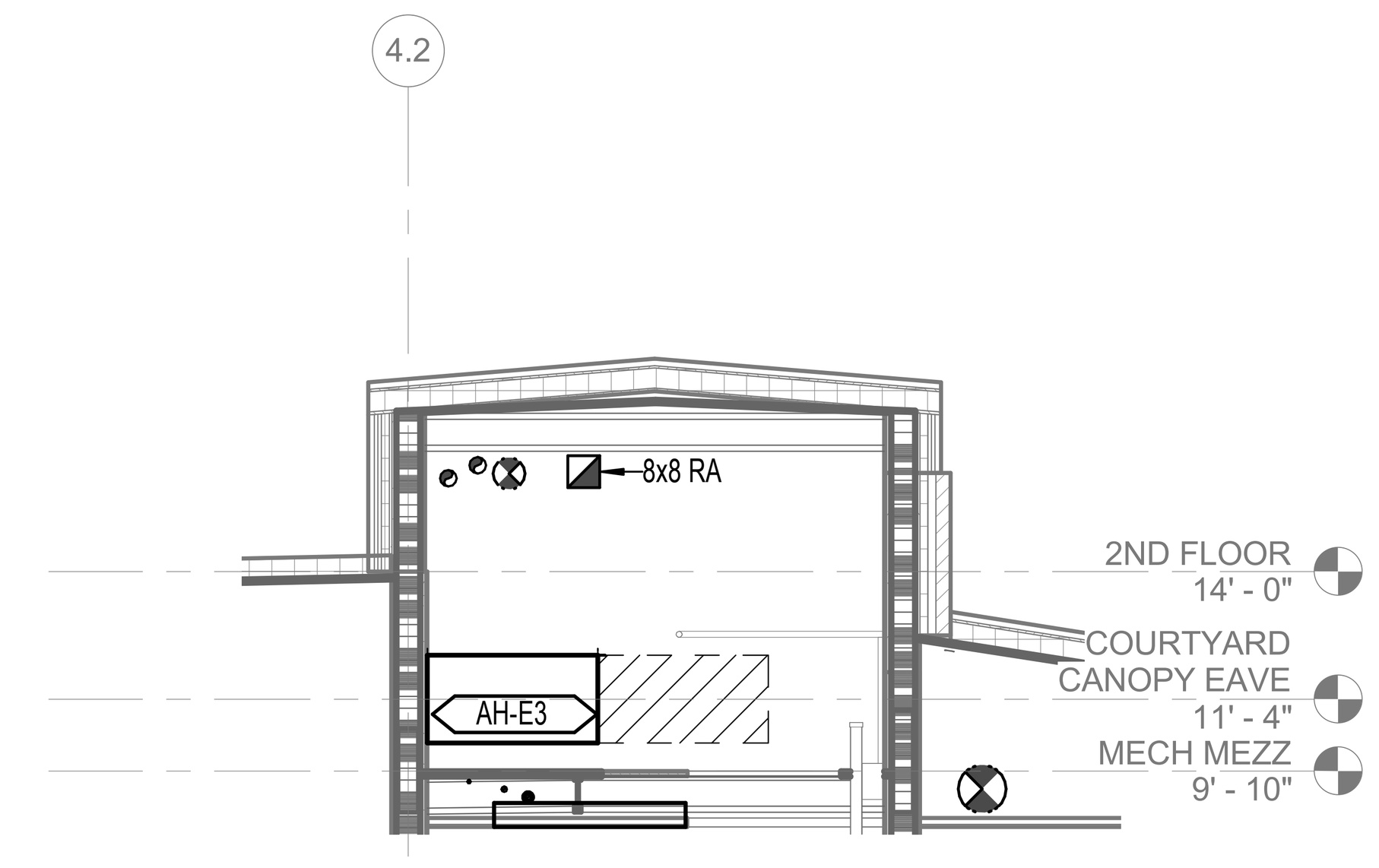
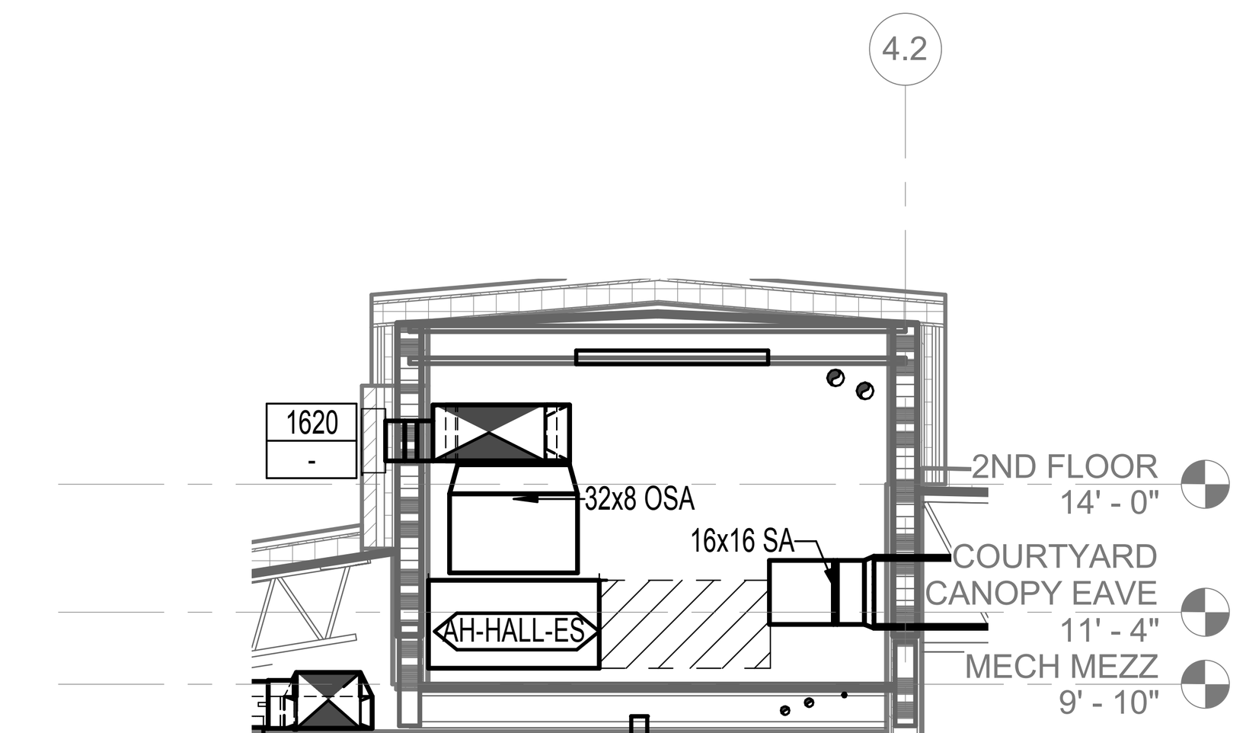
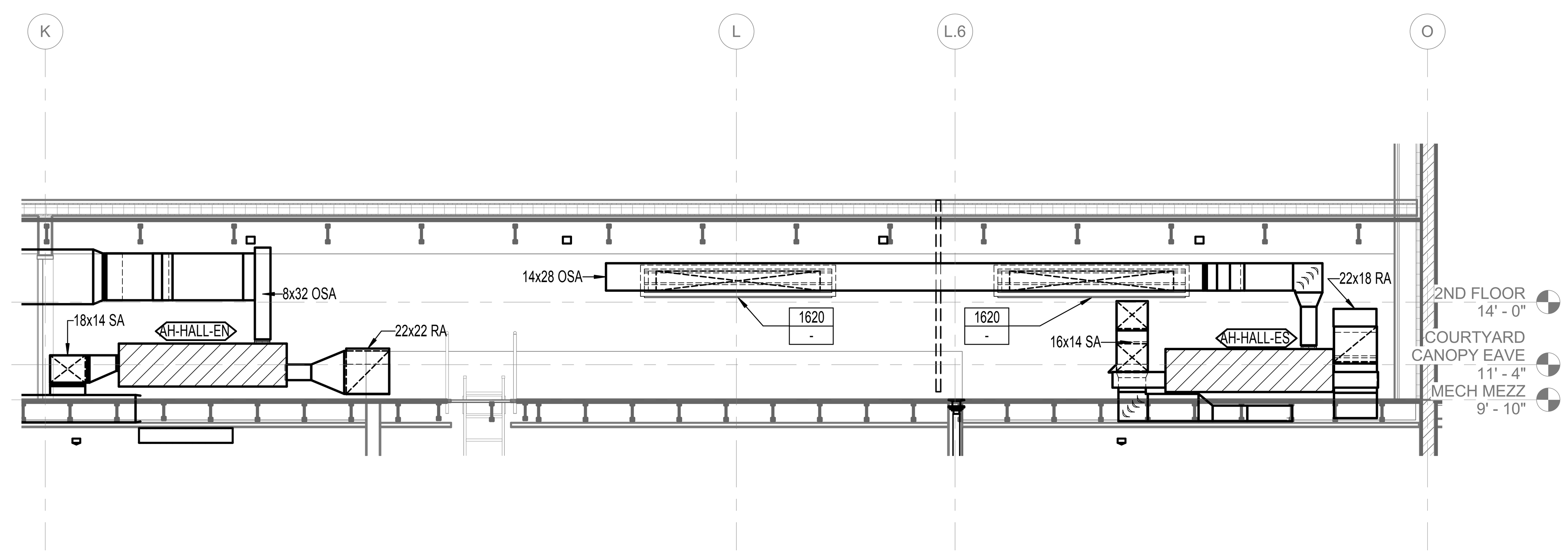


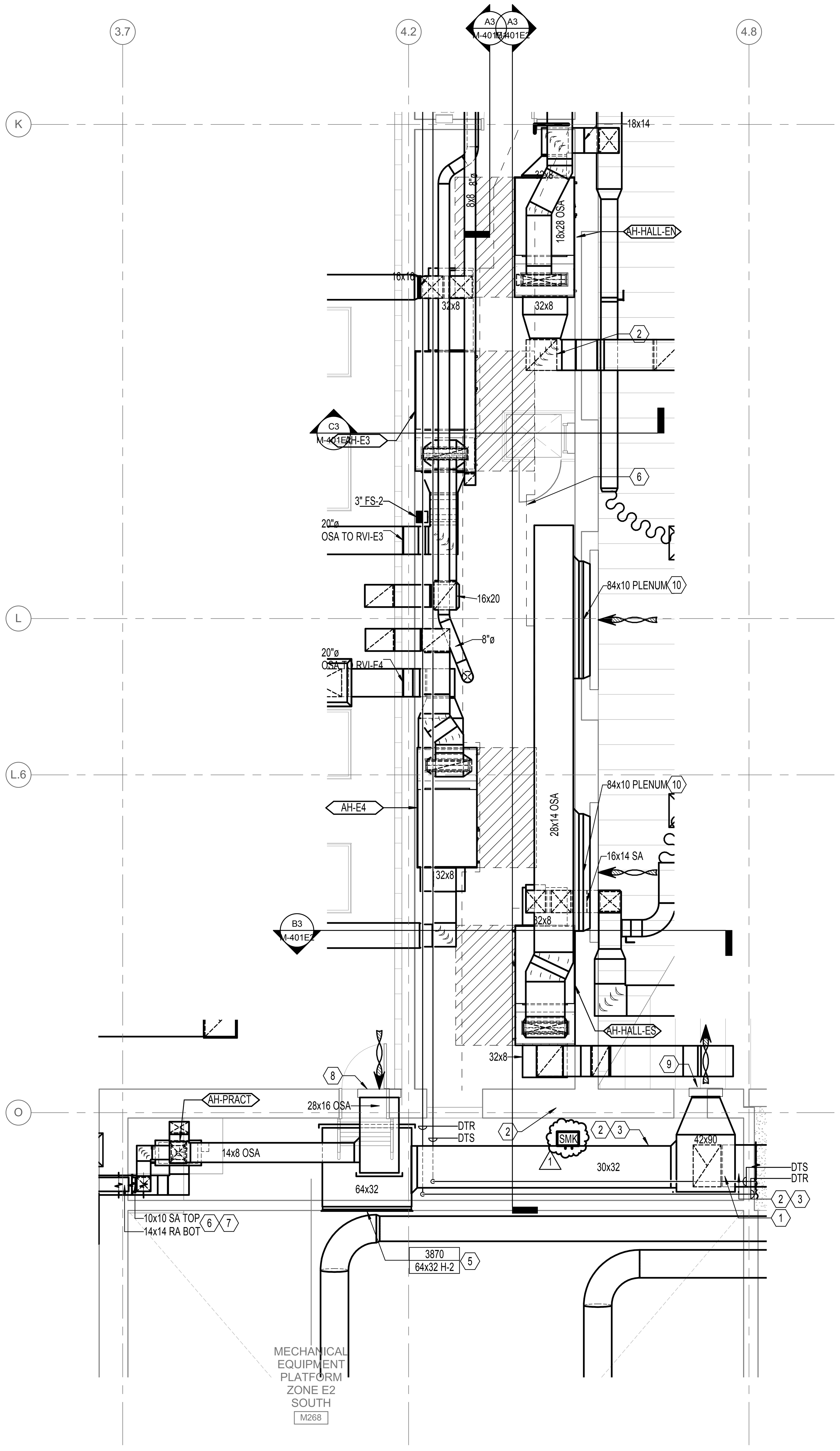
C3 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E - LOOKING NORTH 3
1/4" = 1'-0"



B3 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E - LOOKING SOUTH
1/4" = 1'-0"



A3 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E - LOOKING EAST
1/4" = 1'-0"



A1 MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E SOUTH - MECHANICAL
1/4" = 1'-0"

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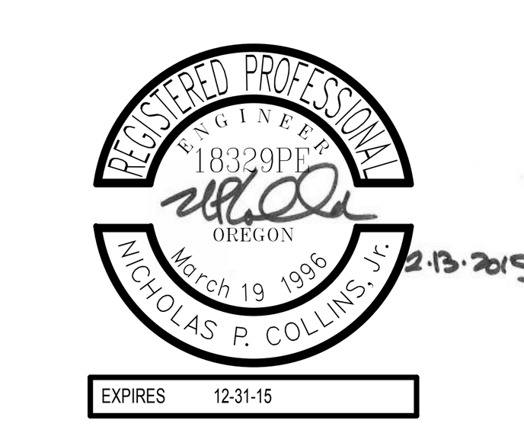

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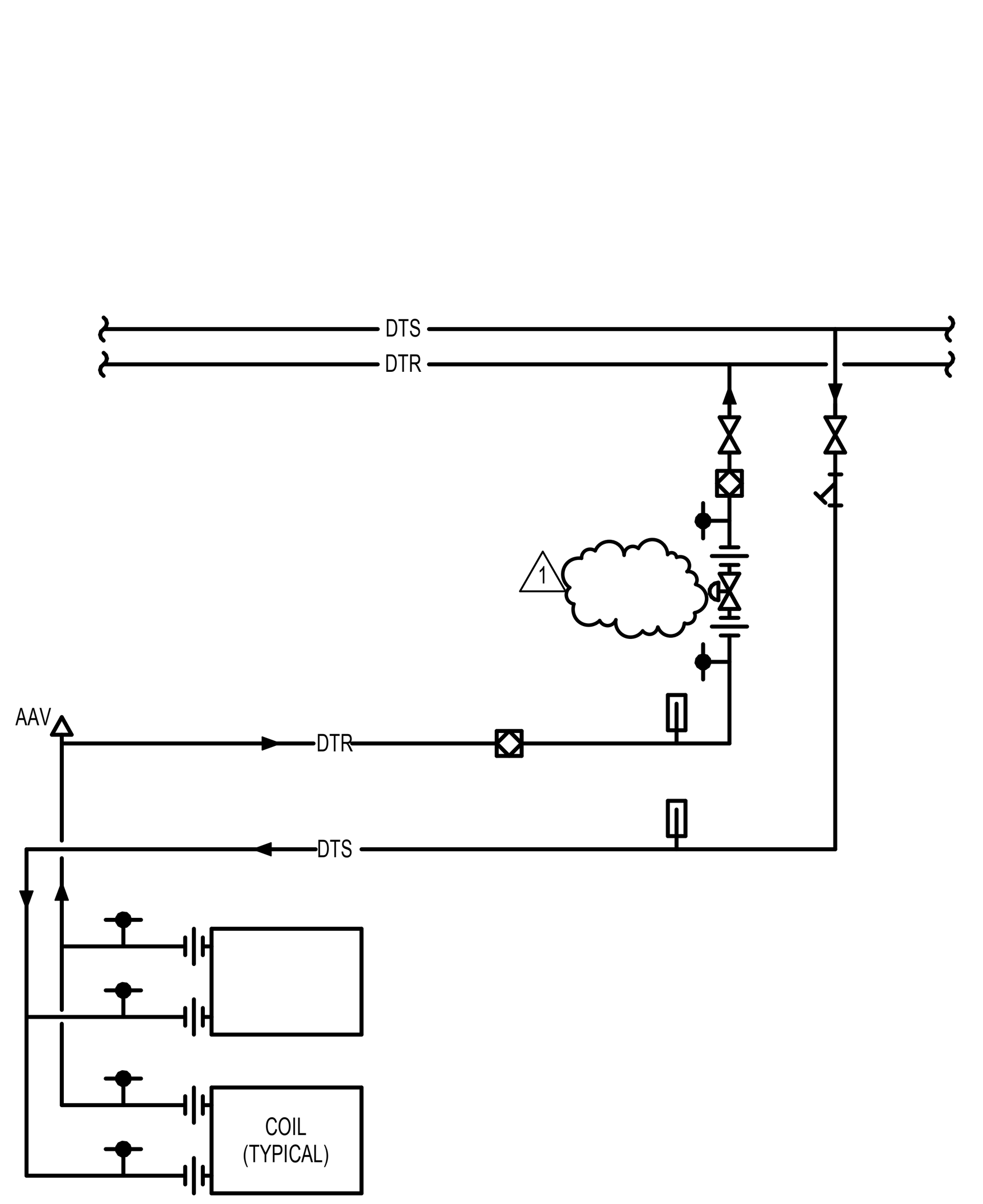
CHECKED BY: JCY

ORIGINAL SHEET SIZE: 30"x42"

MECHANICAL EQUIPMENT PLATFORM PLAN - ZONE E SOUTH - MECHANICAL

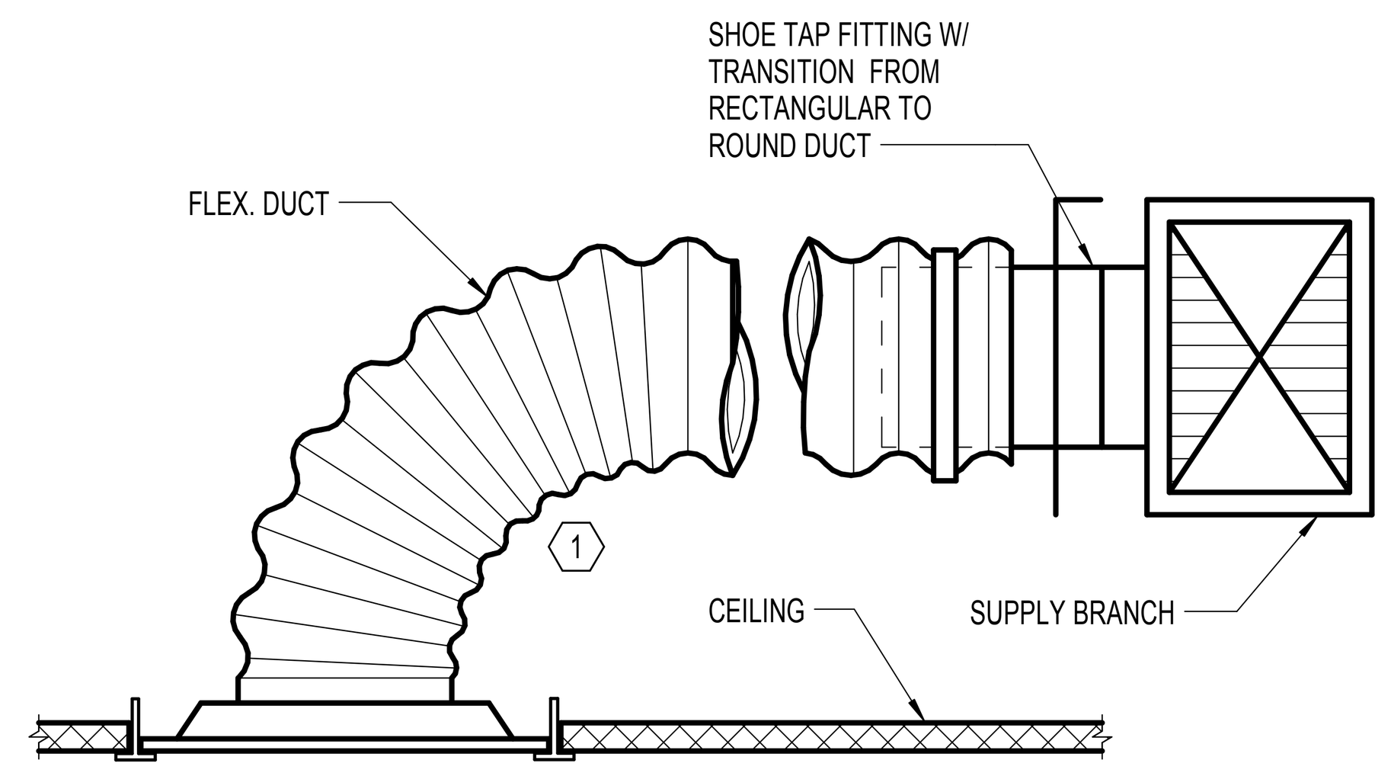
M-401E2



NOTES:
1. OFFSET PIPING AT COIL ENDS TO ALLOW REMOVAL OF COILS.
2. THREE OR MORE COILS PIPED SIMILAR.

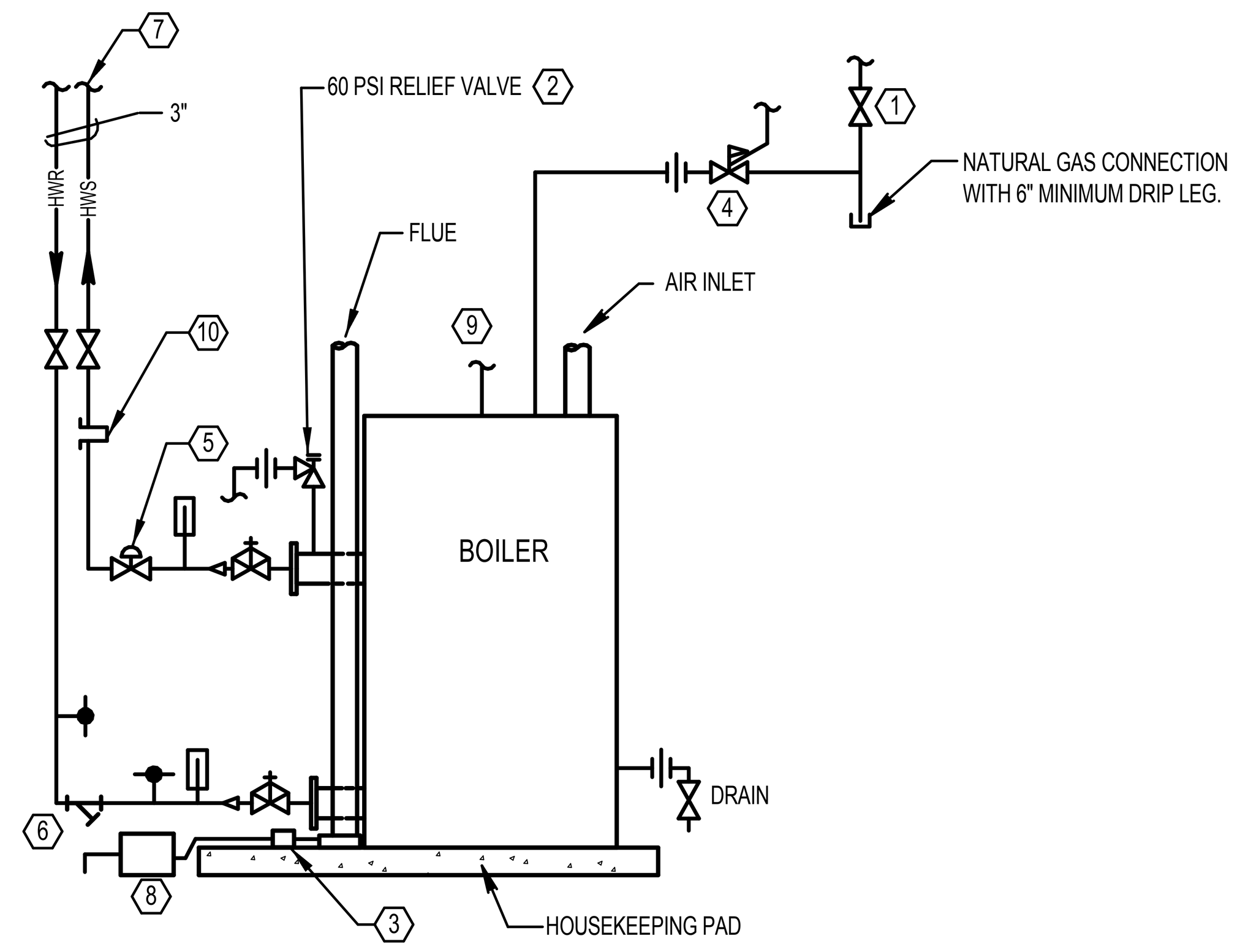
GENERAL NOTE:
1. TYPICAL FOR UNIT 2000 CFM AND GREATER. SEE B2/M502 FOR OTHER LOCATIONS.

D1 AHU COIL PIPING
NONE



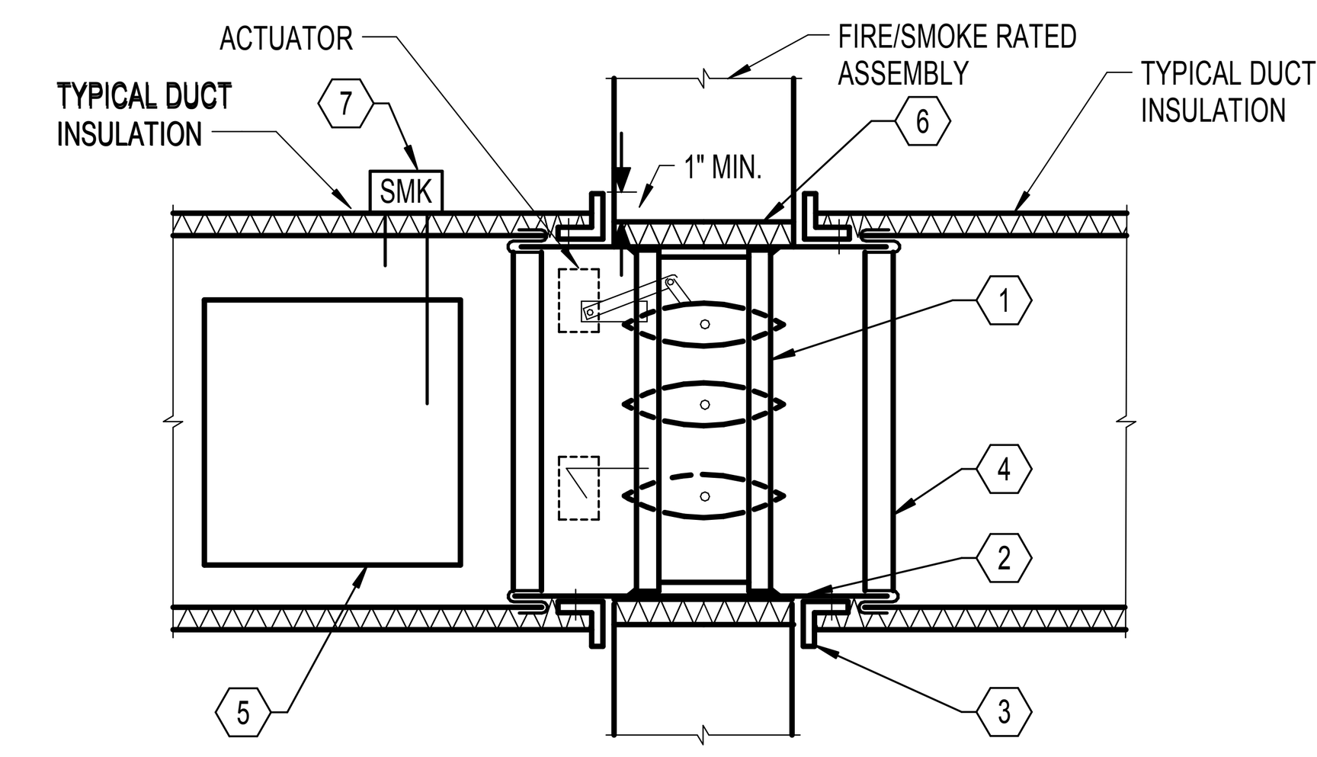
NOTES:
1. 1.5 DIA. MINIMUM FLEX DUCT RADIUS (4' MAX LENGTH). WHERE 1.5 DIA. TURN CAN NOT BE MET USE DETAIL 9/M501

D2 TYPICAL ROUND NECK T-BAR DIFFUSER
NONE



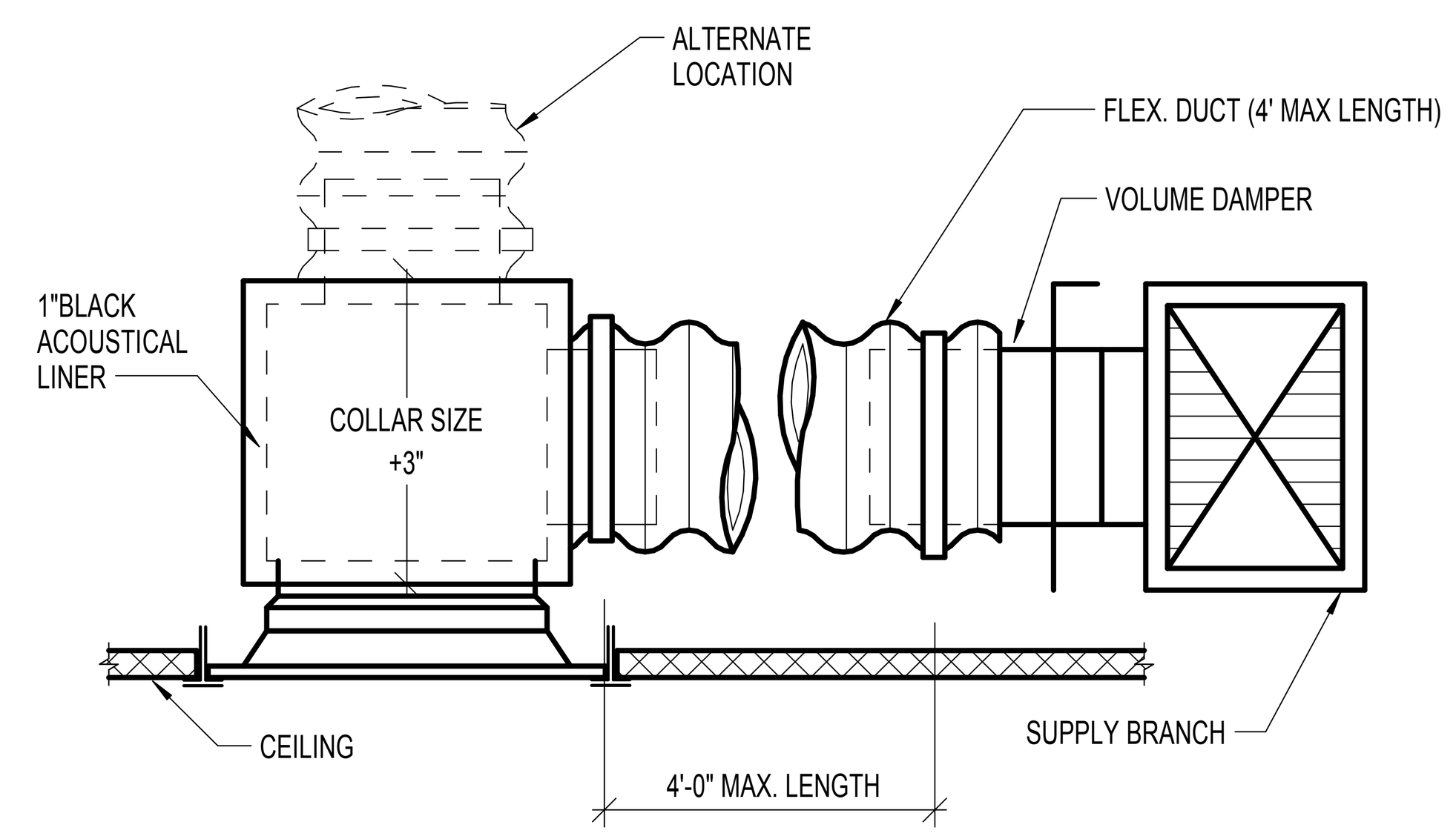
NOTES:
1. GAS COCK
2. ROUTE RELIEF PIPING TO WITHIN 6 INCHES OF FLOOR.
3. CONNECT TRAP TO BOILER WITH TUBING FURNISHED WITH BOILER.
4. PRESSURE REGULATOR. VENT TO OUTDOORS. SIZE OF VENT BY BOILER SUPPLIER. MIN 10 FEET TO BOILER CONNECTION.
5. MOTORIZED AUTOMATIC ISOLATION VALVE, FURNISHED WITH BOILER.
6. PROVIDE STAINLESS STEEL 30 MESH SCREEN.
7. PIPE ALL BOILERS IN IDENTICAL LAYOUT TO PROVIDE EQUAL PRESSURE DROPS.
8. PH NEUTRALIZER - ROUTE OUTLET TO FLOOR SINK
9. PROPANE PIPING SAME AS NAT GAS, BOILER B-2 ONLY.
10. THERMOWELL FOR TEMPERATURE SENSOR.

C3 BOILER PIPING
NONE

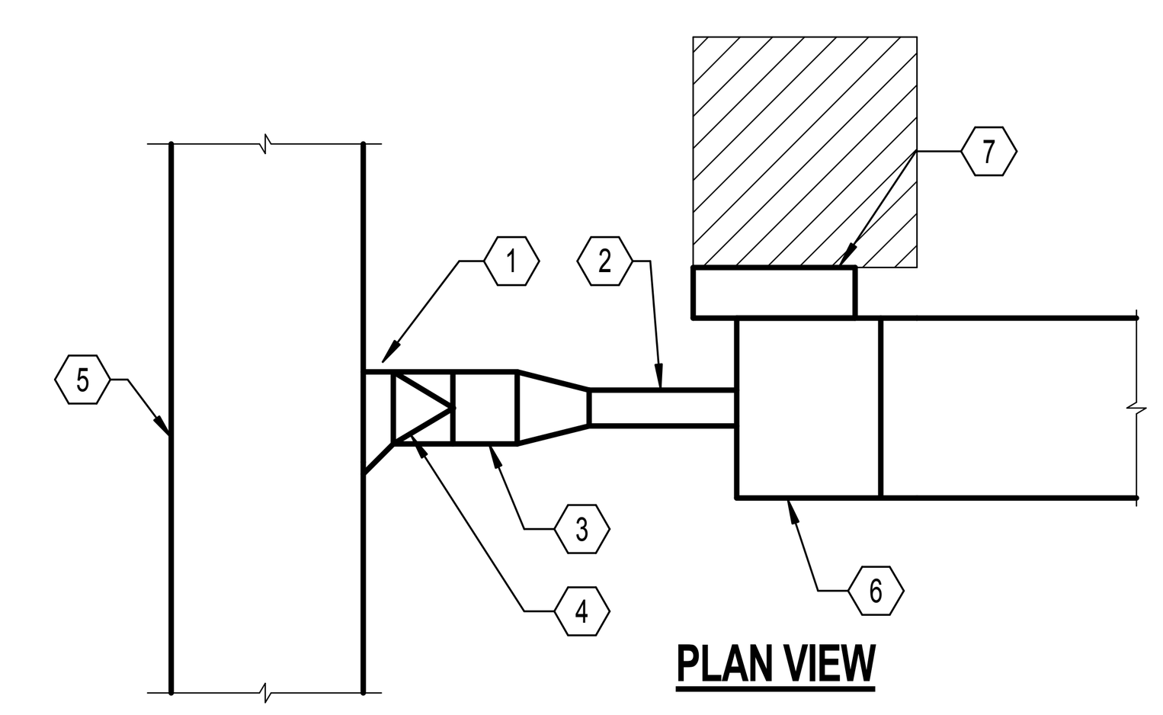


NOTES:
1. COMBINATION FIRE AND SMOKE DAMPER.
2. GALVANIZED STEEL SLEEVE-GAUGE NOT LESS THAN CONNECTION DUCT. FASTEN TO DAMPER FRAME AND PERIMETER ANGLES. CAULK BETWEEN DAMPER FRAME & SLEEVE.
3. PERIMETER ANGLES-14 GA. GALVANIZED STEEL, 1 1/2" x 1 1/2" MIN. TO PROVIDE 1" MIN. OVERLAP OF OPENING ON ALL 4 SIDES. DO NOT FASTEN TO PARTITION.
4. AIR TIGHT, BREAKAWAY DUCT CONNECTION.
5. ACCESS PANEL-SIZE & LOCATION TO PERMIT SERVICING FUSIBLE ROD AND LINK. ACTUATOR TO BE LOCATED OUT OF AIR STREAM. LOCATE PANEL WITHIN 12" OF FSD.
6. PROVIDE 15/16" TO 1/2" CLEARANCE ON HEIGHT & WIDTH, OR AS SPECIFIED BY DAMPER MANUFACTURER. FILL OPENING WITH FIRESTOP MATERIAL.
7. SMOKE DETECTOR FURNISHED PER DIVISION 26, INSTALLED PER DIVISION 23, POWER WIRING PER DIVISION 26, CONTROL WIRING PER DIVISION 28.

D5 COMBINATION FIRE/SMOKE DAMPER
NONE

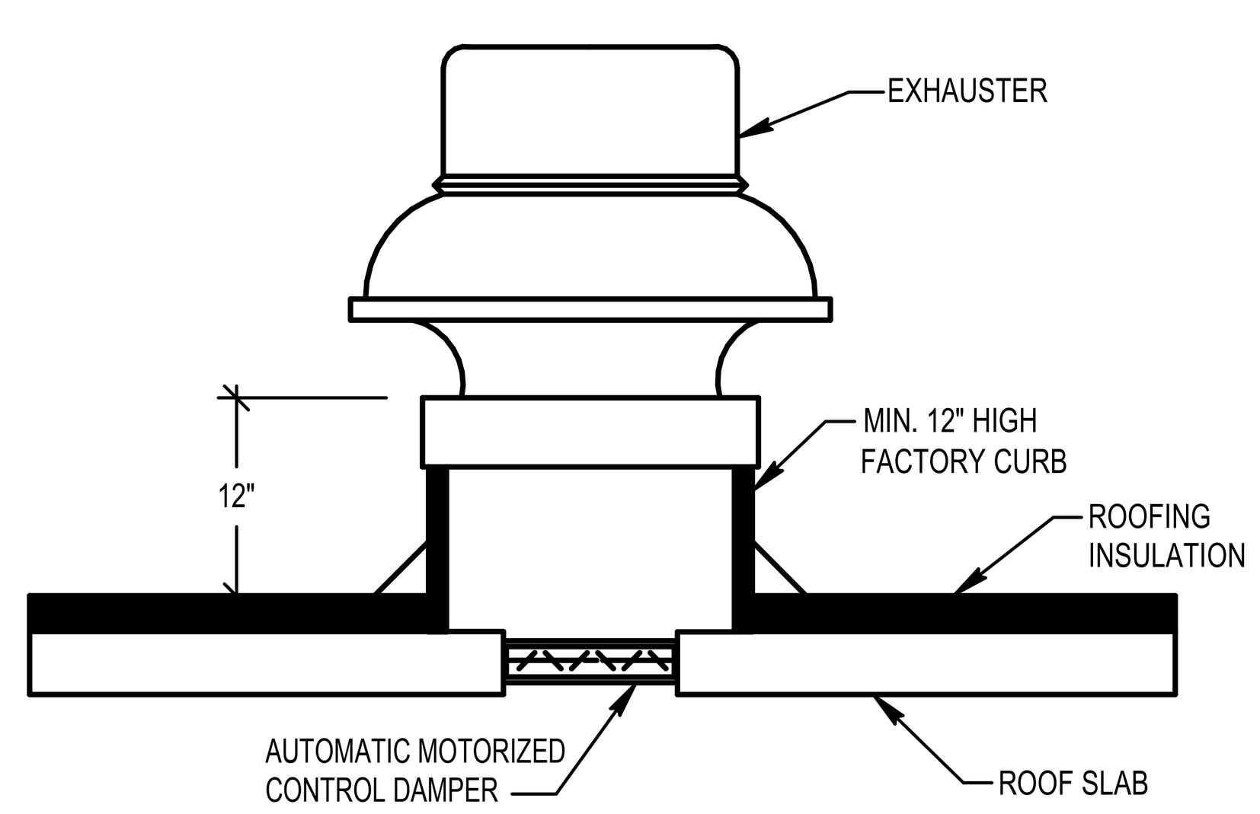


C2 TYPICAL SQUARE NECK T-BAR DIFFUSER
NONE



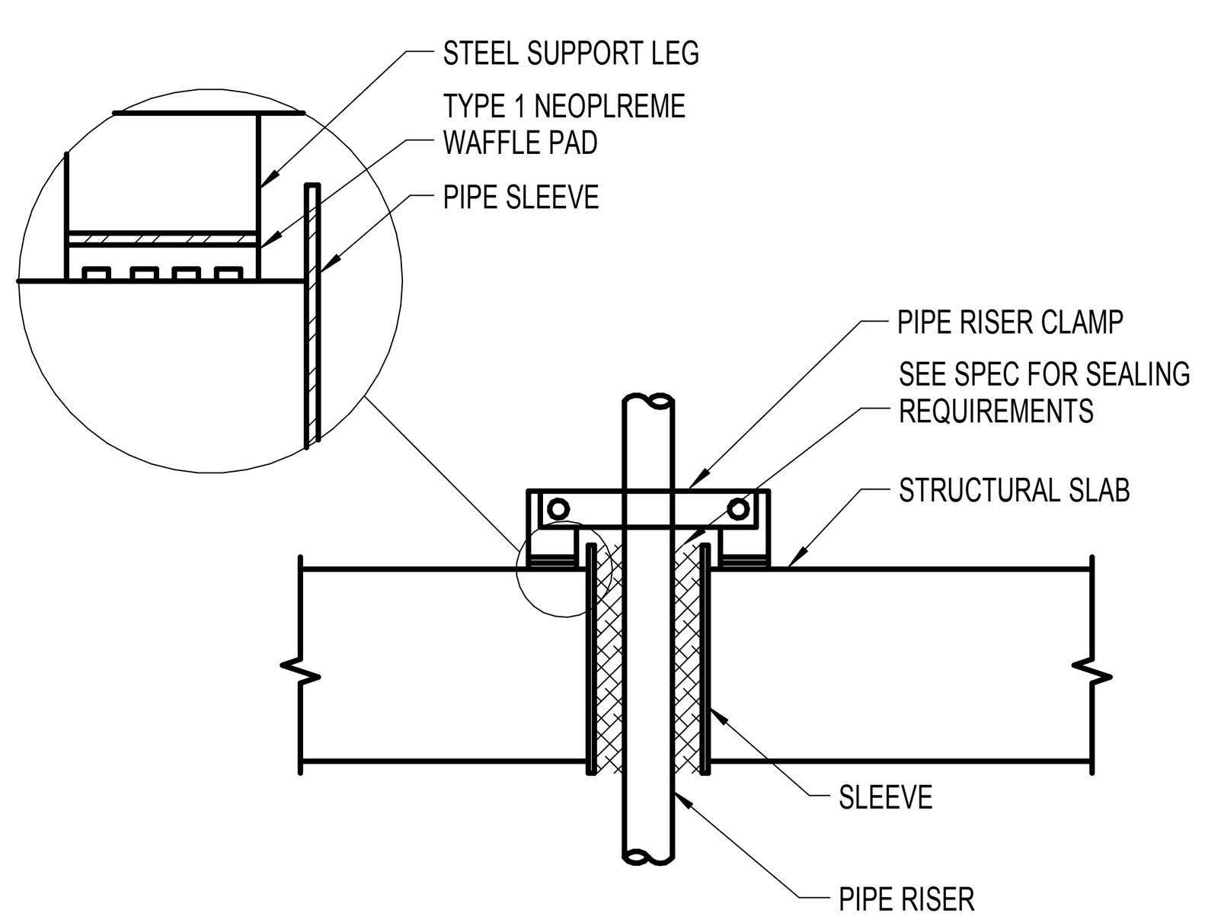
NOTES:
1. RECTANGULAR SHOE TAP FITTING
2. INLET DUCT. MINIMUM STRAIGHT LENGTH = 3'-0", DUCT SIZE TO BE SAME SIZE AS TERMINAL UNIT INLET. FLEXIBLE DUCT CONNECTIONS ARE NOT ALLOWED.
3. BRANCH DUCT. IF UNDER 5'-0" IN LENGTH, DUCT SIZE TO BE SAME SIZE AS TERMINAL UNIT INLET. IF LENGTH IS 5'-0" OR OVER, DUCT SIZE TO BE AS SHOWN ON PLAN.
4. ROUND TO RECTANGULAR TRANSITION.
5. RECTANGULAR LOW-PRESSURE SUPPLY DUCT.
6. TERMINAL UNIT
7. CONTROL ENCLOSURE. PROVIDE 36" CLEARANCE DIRECTLY IN FRONT OF ENCLOSURE, MOUNT CONTROLS AND PIPING CONNECTIONS ON SAME SIDE OF UNIT.

B5 TYPICAL TERMINAL UNIT
NONE

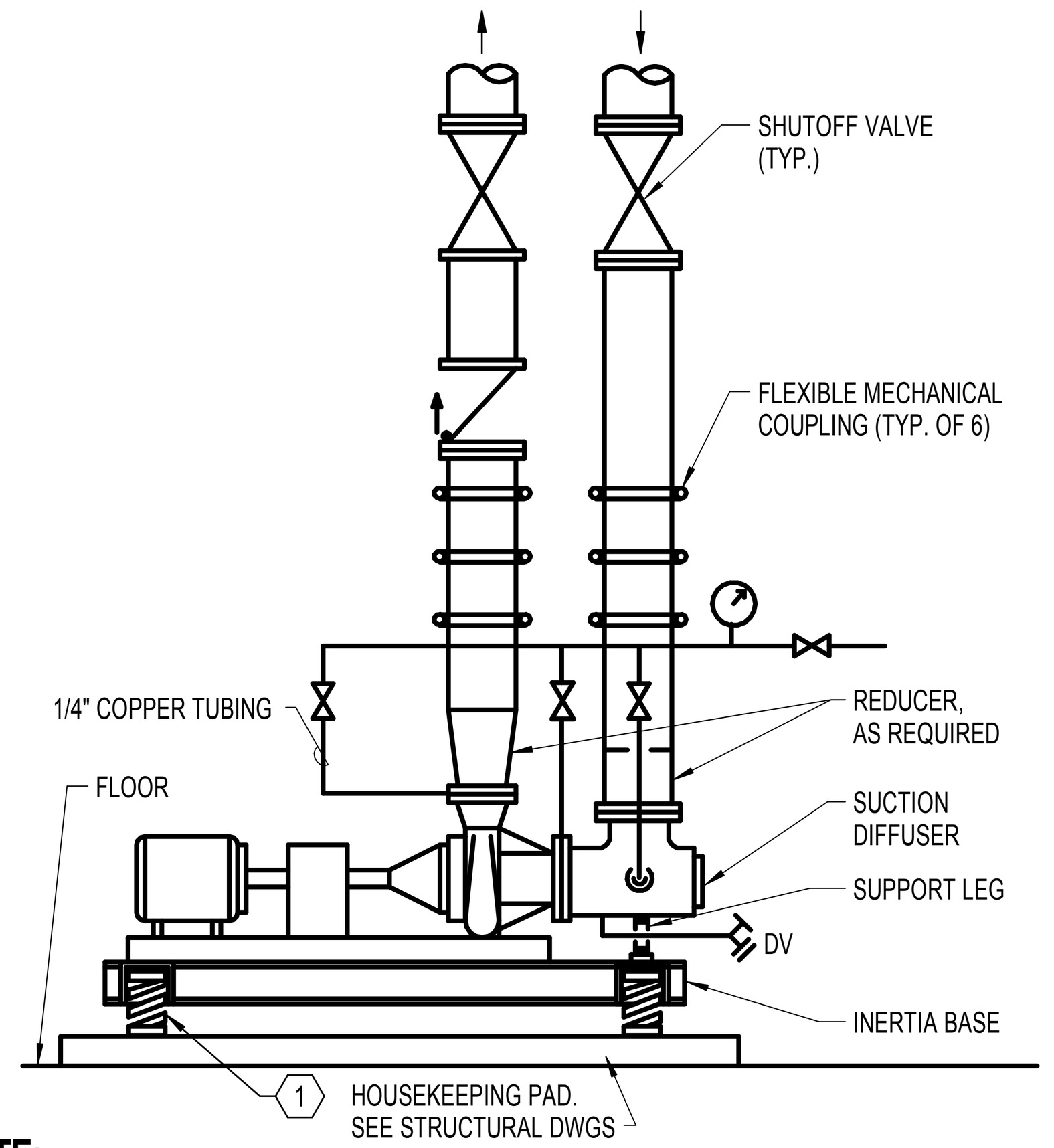


GENERAL NOTES:
1. SEE SPECIFICATIONS FOR VIBRATION ISOLATION AND SEISMIC RESTRAINT.

B1 ROOF EXHAUSTER
NONE

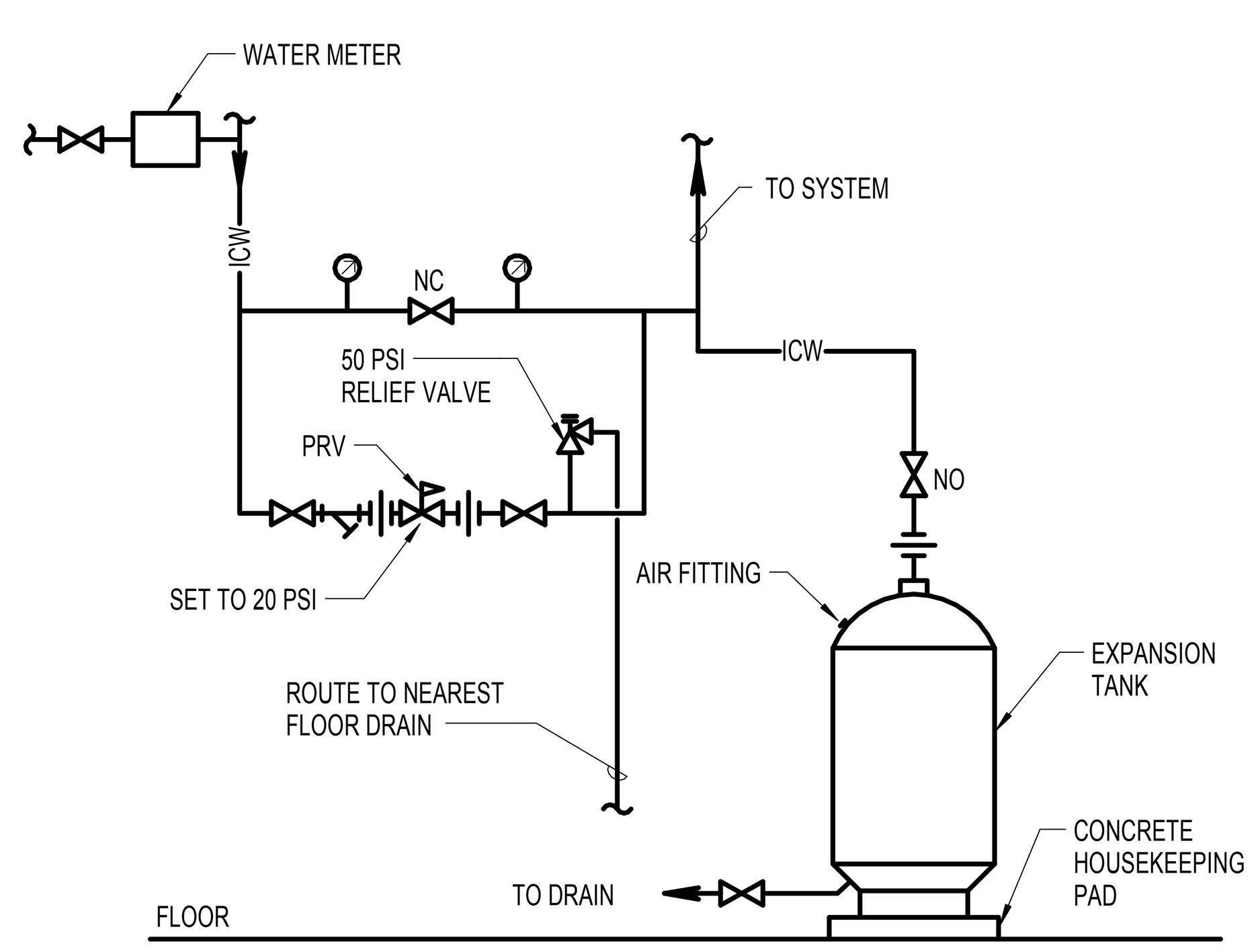


B2 PIPE RISER SUPPORT
NONE



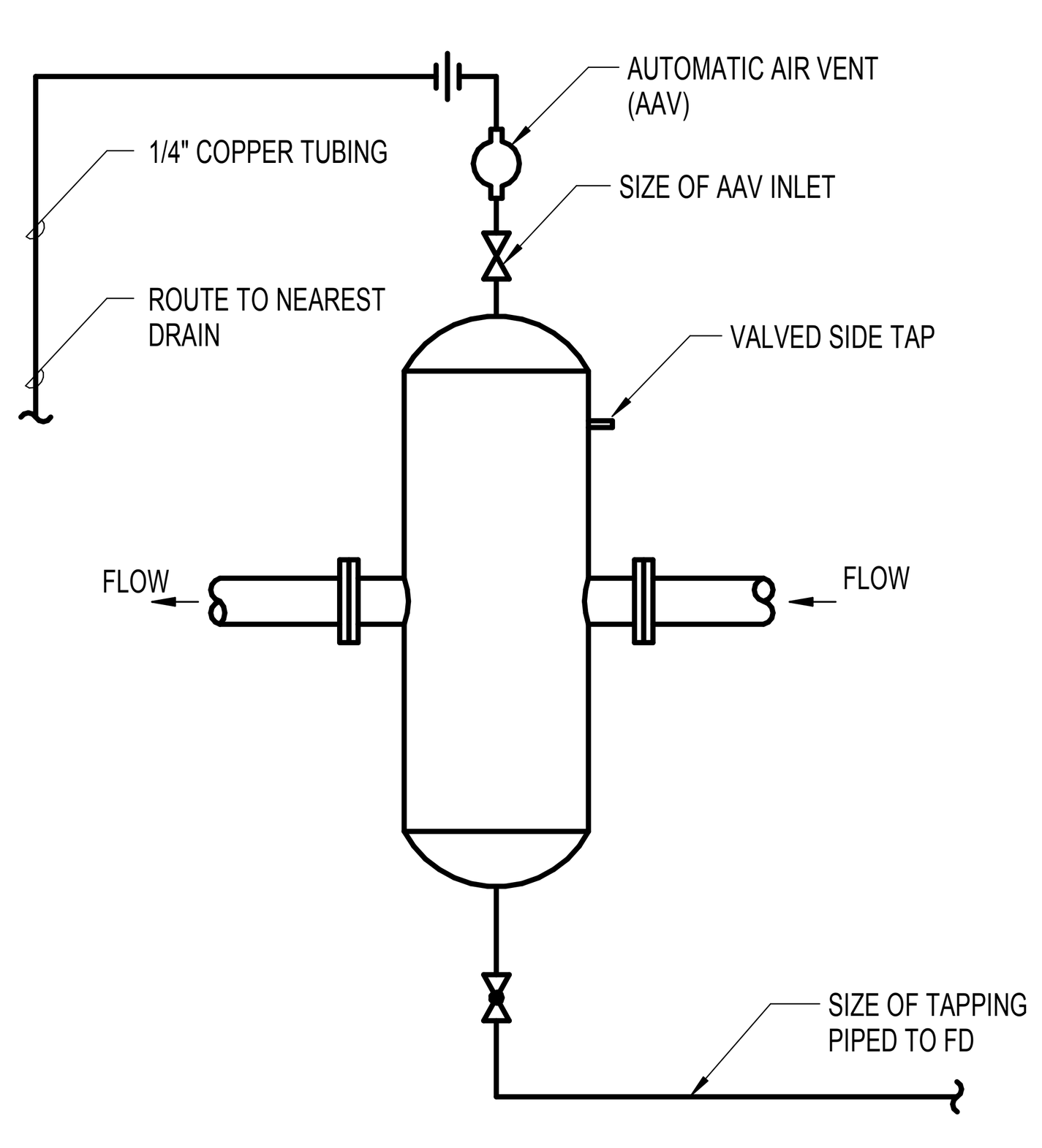
NOTE:
1. SEE SPECIFICATIONS FOR VIBRATION ISOLATION AND SEISMIC RESTRAINT.

B3 BASE MOUNTED PUMP PIPING
NONE

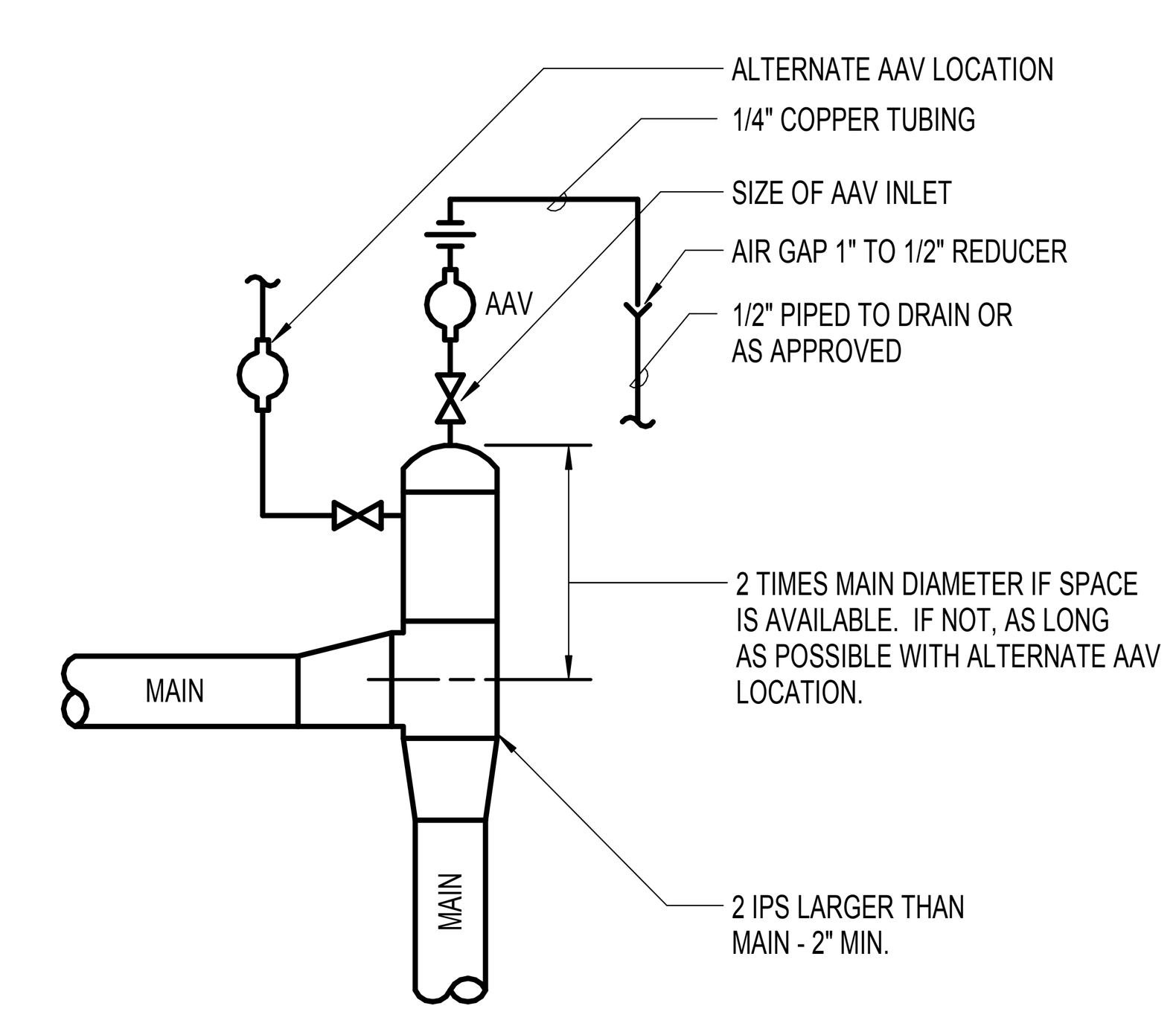


NOTES: 1. SEE SPECIFICATIONS FOR SEISMIC RESTRAINT REQUIREMENTS.

A2 EXPANSION TANK CONNECTION
NONE



A3 AIR/DIRT SEPARATOR - HIGH EFFICIENCY COALESCING
NONE



A5 AUTOMATIC AIR VENT
NONE

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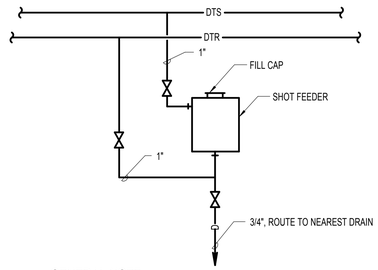
DETAILS - MECHANICAL

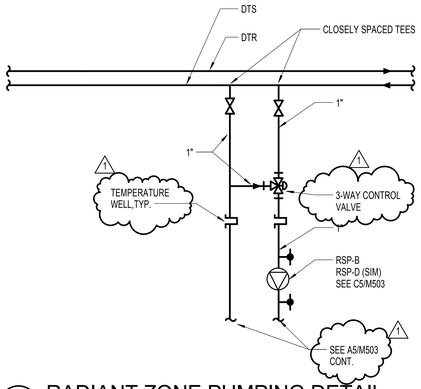
M-501



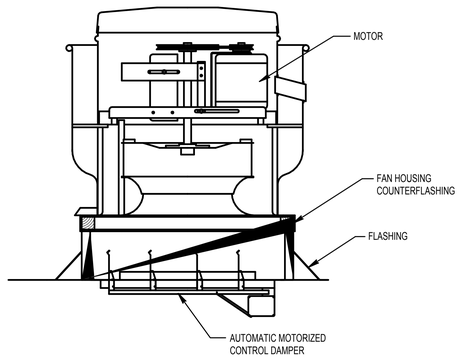
GENERAL NOTE:

1. INSULATE PIPING AND CHEMICAL FEEDER.

D1 BY-PASS CHEMICAL FEEDER
NONE



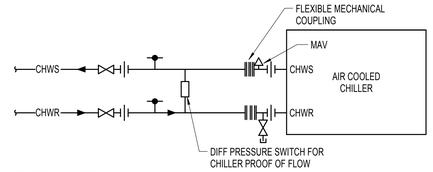
C1 RADIANT ZONE PUMPING DETAIL
NONE



GENERAL NOTES:

1. SEE SPECIFICATIONS FOR VIBRATION ISOLATION AND SEISMIC RESTRAINT.

B1 DISHWASHER EXHAUST
1" = 0'-1"

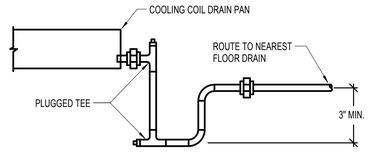


GENERAL NOTES:

1. INSTALL ALL PIPING TO ALLOW SERVICING AND REPAIR ACCESS. INCLUDE A UNION OR VICTAULIC TYPE COUPLING IN PIPING AT A LOCATION IN EACH PIPE THAT ALLOWS PIPES TO BE EASILY REMOVED FOR TUBE BUNDLE MAINTENANCE.

2. VIBRATION ISOLATION AND SEISMIC RESTRAINT PER SPECS.

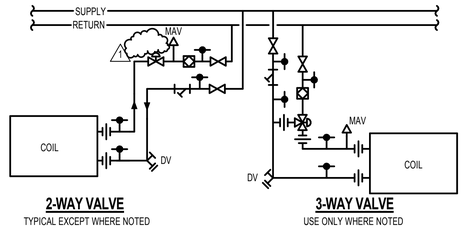
D2 CHILLER PIPING CONNECTIONS
NONE



NOTES:

1. DRAIN SIZE IS OUTLET SIZE UNLESS SHOWN LARGER.

C2 COIL DRAIN PIPING
NONE



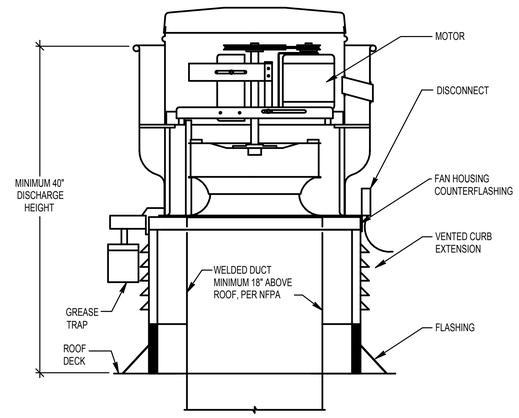
2-WAY VALVE
TYPICAL EXCEPT WHERE NOTED

3-WAY VALVE
USE ONLY WHERE NOTED

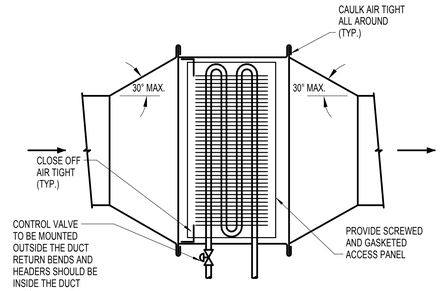
NOTE:

1. TYPICAL OF DUCT COILS, SMALL AIR HANDLERS AND FAN COIL UNITS.

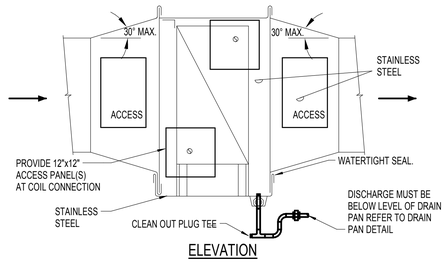
B2 DUAL TEMPERATURE COIL PIPING DETAIL
NONE



A2 KITCHEN EXHAUST FAN
NONE

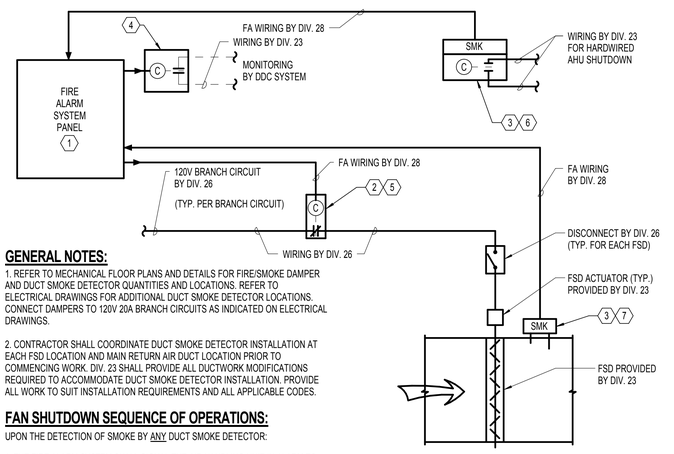


PLAN VIEW



ELEVATION

C4 DUCT COOLING COIL INSTALLATION
NONE



GENERAL NOTES:

1. REFER TO MECHANICAL FLOOR PLANS AND DETAILS FOR FIRE/SMOKE DAMPER AND DUCT SMOKE DETECTOR QUANTITIES AND LOCATIONS. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL DUCT SMOKE DETECTOR LOCATIONS. CONNECT DAMPERS TO 120V 20A BRANCH CIRCUITS AS INDICATED ON ELECTRICAL DRAWINGS.

2. CONTRACTOR SHALL COORDINATE DUCT SMOKE DETECTOR INSTALLATION AT EACH FSD LOCATION AND MAIN RETURN AIR DUCT LOCATION PRIOR TO COMMENCING WORK. DIV. 23 SHALL PROVIDE ALL DUCTWORK MODIFICATIONS REQUIRED TO ACCOMMODATE DUCT SMOKE DETECTOR INSTALLATION. PROVIDE ALL WORK TO SUIT INSTALLATION REQUIREMENTS AND ALL APPLICABLE CODES.

FAN SHUTDOWN SEQUENCE OF OPERATIONS:

UPON THE DETECTION OF SMOKE BY ANY DUCT SMOKE DETECTOR:

1. THE FIRE ALARM SYSTEM SHALL SIGNAL THE AIR HANDLING UNIT IN ALARM TO SHUTDOWN VIA ADDRESSABLE CONTROL RELAY LOCATED AT EACH HANDLING UNIT.

2. THE FIRE ALARM SYSTEM SHALL PROVIDE A SIGNAL TO THE DDC SYSTEM VIA SINGLE ADDRESSABLE CONTROL RELAY TO INITIATE THE DDC SYSTEM SHUTDOWN MODE.

3. THE FIRE ALARM SYSTEM SHALL CLOSE ALL COMBINATION FIRE/SMOKE DAMPERS VIA ADDRESSABLE CONTROL RELAY(S) AFTER 20-SECOND (ADJUSTABLE) FAN SHUTDOWN SIGNAL OCCURRED.

UPON FIRE ALARM RESET AFTER THE DETECTION OF SMOKE HAS OCCURRED:

1. THE FIRE ALARM SYSTEM SHALL OPEN ALL COMBINATION FIRE/SMOKE DAMPERS VIA ADDRESSABLE CONTROL RELAY(S).

2. THE FIRE ALARM SYSTEM SHALL DISABLE FAN SHUTDOWN SIGNAL TO THE DDC SYSTEM VIA SINGLE ADDRESSABLE CONTROL RELAY.

3. THE FIRE ALARM SYSTEM SHALL DISABLE SHUTDOWN SIGNAL TO EACH AIR HANDLING UNIT VIA ADDRESSABLE CONTROL RELAY.

NOTES:

1. REFER TO ELECTRICAL PLANS FOR FIRE ALARM PANEL LOCATION.
2. MOUNT ADJACENT TO APPROPRIATE ELECTRICAL PANEL.
3. PROVIDE/MAINTAIN WORKING ACCESS TO ALL DUCT SMOKE DETECTORS.
4. REMOTE ADDRESSABLE FIRE ALARM RELAY PROVIDED BY DIV. 28 (FORM C CONTACT). MOUNT ADJACENT TO FIRE ALARM PANEL.
5. REMOTE ADDRESSABLE FIRE ALARM RELAY BY DIV. 28 (PROGRAMMED FOR 20 SECOND DELAY AFTER FAN STOP SIGNAL).
6. AHU RETURN AIR DUCT SMOKE DETECTOR WITH SEPARATELY ADDRESSABLE RELAY BASE (FORM C CONTACT) FURNISHED BY DIV. 28. WIRED BY DIV. 28 TO FIRE ALARM SYSTEM. DETECTOR INSTALLED BY DIV. 23.
7. DUCT SMOKE DETECTOR FURNISHED BY DIV. 28. WIRED BY DIV. 28 TO FIRE ALARM SYSTEM. INSTALLED BY DIV. 23.

A4 HVAC AND FIRE ALARM SYSTEM INTERFACE
NONE

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EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
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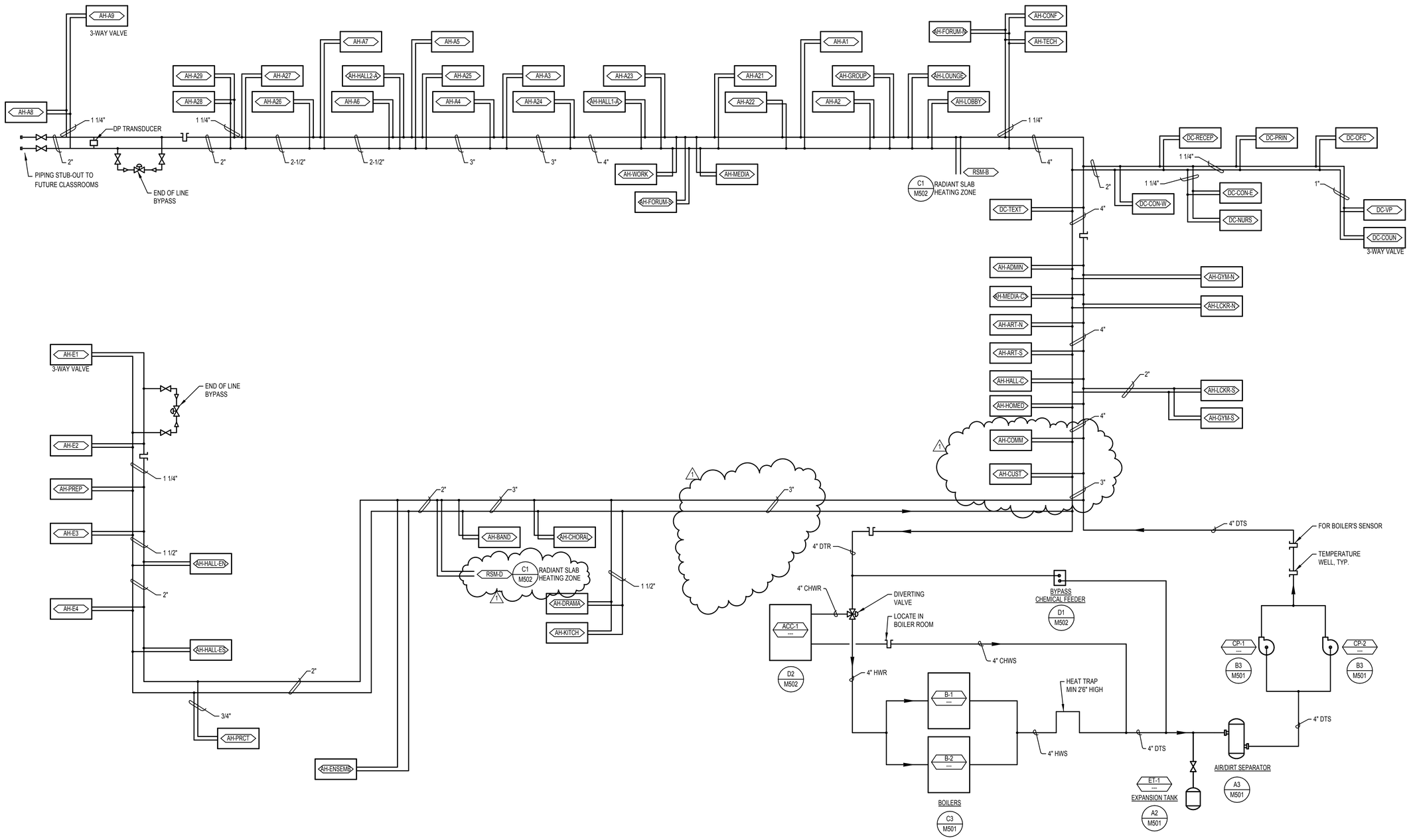
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

DETAILS - MECHANICAL

M-502



A1 DUAL TEMPERATURE WATER SYSTEM DIAGRAM

NONE

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OREGON
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MARK	DATE	DESCRIPTION
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ISSUE DATE: FEBRUARY 18, 2015
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VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: SG
CHECKED BY: JCY

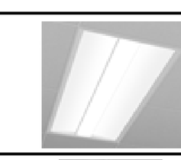
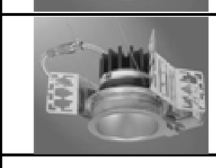
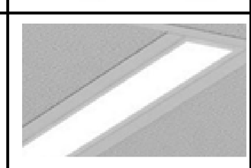
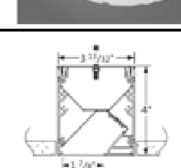
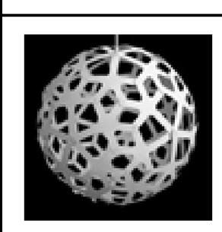
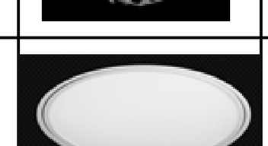
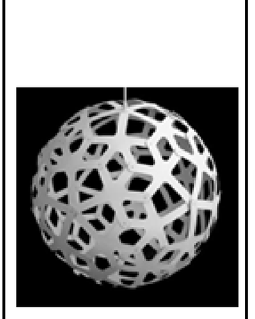
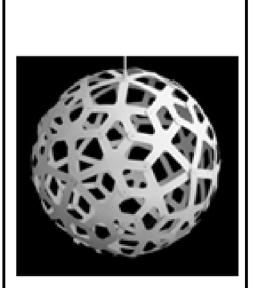
 ORIGINAL SHEET SIZE: 30"x42"

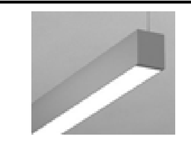
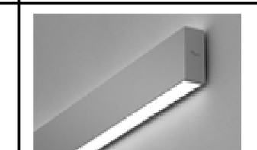
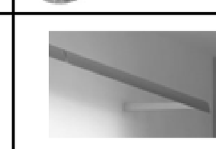
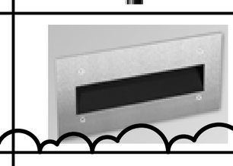
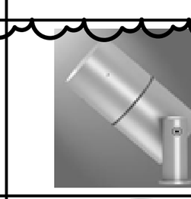
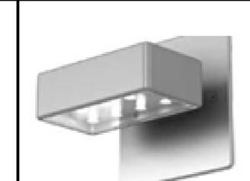
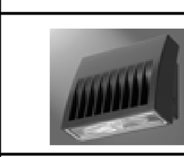
DIAGRAMS - MECHANICAL

M-601

GENERAL NOTES:

A. THE FIRST FIXTURE AND MANUFACTURER NAME LISTED UNDER THE "PRODUCT" COLUMN REPRESENTS THE BASIS OF DESIGN SPECIFICATION.

Tag	Image	Description	Size	Watts	Lamp(s)	Ballast/Driver	Voltage	Product	Mounting	Finish	Notes
L1		RECESSED 2X4 LED VOLUMETRIC LUMINAIRE, SPOTLESS WHITE LENS,	2' W x 4' L x 3 7/8" H	44 W	LED, 3500K 4000 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	277	AXIS DAYFLED-24 SERIES, LITHONIA, METALUX, FINELITE LEDALITE VERSAFORM SERIES, OR APPROVED EQUAL	CEILING RECESSED - GRID	WHITE	
L1A		RECESSED 1X4 LED VOLUMETRIC LUMINAIRE,	1' W x 4' L x 3 7/8" H	46 W	LED, 3500K 4000 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	277	AXIS DAYFLED-14 SERIES, LITHONIA, METALUX, FINELITE LEDALITE VERSAFORM SERIES, OR APPROVED EQUAL	CEILING RECESSED - GRID	WHITE	
L1B		RECESSED 2X4 LED VOLUMETRIC LUMINAIRE,	2' W x 4' L x 3 7/8" H	44 W	LED, 3500K 4000 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	277	AXIS DAYFLED-24 SERIES, LITHONIA, METALUX, FINELITE LEDALITE VERSAFORM SERIES, OR APPROVED EQUAL	CEILING RECESSED - GYP	WHITE	
L2		4" ROUND RECESSED DOWNLIGHT, MEDIUM BEAM REFLECTOR, SELF-FLANGED WHITE TRIM, 80 CRI	4" APPERTURE x 5 11/16" H	22.4 W	LED, 3500K 1300 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	120-277	PORTFOLIO LD4A13, GOTHAM, CALCULITE C4L, INDY, OR APPROVED EQUAL	CEILING RECESSED	SEMI-SPECULAR CLEAR W/ WHITE PAINTED FLANGE; SELF FLANGED	
L2A		4" ROUND RECESSED WALLWASH, MEDIUM BEAM REFLECTOR, SELF-FLANGED WHITE TRIM, 80 CRI	4" APPERTURE x 5 11/16" H	22.4 W	LED, 3500K 1300 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	120-277	PORTFOLIO LD4A13-4LM111, GOTHAM, CALCULITE C4L, OR INDY, APPROVED EQUAL	CEILING RECESSED	SEMI-SPECULAR CLEAR W/ WHITE PAINTED FLANGE; SELF FLANGED	
L3		2X2 LED TROFFER, FLUSH ALUMINUM DOOR, MICRO PRISM LENS, 82 CRI	24" SQUARE 3 3/4" H	38W	LED, 3500K 3300 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	120-277	LITHONIA 2TL2 SERIES, DAY-BRITE DAYLED SERIES, OR APPROVED EQUAL	CEILING RECESSED	FLUSH ALUMINIUM, WHITE	
L4		NOT USED.									
L5		22" LED HIGH-BAY, W/ MEDIUM BEAM, 80 CRI, FROSTED GLASS, DOUBLE SAFETY HOOKS, STEEL WIRE GUARD	22" D x 23" H	238 W	LED, 4000K 24,000 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	277V	HOLOPHANE PHUZION PHS	SUSPENDED WITH DOUBLE SWIVEL	STANDARD AS PER THE ARCHITECT	PROVIDE DOUBLE SAFETY HOOKS
L6		SURFACE LINEAR LED STRIP LIGHT, 92 CRI, FROSTED ACRYLIC LENS	2.5" W x 3" H x 4' L	44W	LED, 3500K 4000 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	120-277	CREE LS4 SERIES, METALUX SNLED SERIES, CROSSOVER SDL SERIES, PRIMUS ALX2 SERIES OR APPROVED EQUAL	SURFACE MOUNTED SUSPEND AS NEEDED	STANDARD WHITE	
L7		2" WIDE LINEAR RECESSED LED, SPOTLESS LENS, SYSTEM RUN CONFIGURATIONS AS PER PLAN	2.25" W x 3.75" H LENGTH AS INDICATED ON PLANS	12W/LF	LED, 3500K 1000 LM/FT	ELDOLED DRIVER 0-10V DIMMING TO 0.1%	277	AXIS BRLED SERIES, ALIGHT, LUMENPULSE, METALUMEN OR APPROVED EQUAL	RECESSED PLYWOOD DRYWALL MOUNTING WITH SLIP THROUGH BRACKET	CUSTOM ALUMINUM OR GREY FINISH	
L8		6" LED LINEAR PERIMETER COVE	6" APERTURE, 14" W x 10.75" H x LENGTH AS INDICATED ON PLANS	10W/LF	LED, 3500K 625 LM/FT	INTEGRAL ELECTRONIC	120-277	PRUDENTIAL P59 SERIES, METALUMEN CS3 SERIES, LITECONTROL WALL SLOT, OR APPROVED EQUAL	CEILING RECESSED - GYP	WHITE	PROVIDE BLANK HOUSING EXTENSION AS NEEDED FOR LUMINAIRE HOUSING TO SPAN CONTINUOUSLY WALL TO WALL. CENTER ILLUMINATED PORTION OF HOUSING ON WALL.
L9		SURFACE MOUNTED LINEAR DIRECT LED MOUNTED TO UNDERSIDE OF ARCHTIECTURAL DETAIL, SPOTLESS LENS, SURFACE SOLID MOUNTING	3.5" W x 4"H x LENGTH AS INDICATED ON PLANS	5W/LF	LED, 3500K 500 LM/FT	INTEGRAL ELECTRONIC 0-10V DIMMING	277	AXIS BEAM BMSLED SERIES, ALIGHT, LEDALITE, METALUMEN OR APPROVED EQUAL	CEILING SURFACE	ALUMINUM	LUMINAIRE INTEGRATED INTO CUSTOM PLYWOOD ARCHITECTURAL DETAIL.
L9A		SURFACE MOUNTED LINEAR INDIRECT LED MOUNTED TO TOPSIDE OF SUSPENDED ARCHTIECTURAL DETAIL	2.5"W x 3.5" H x LENGTH AS INDICATED ON PLANS	14.25W/LF	LED RGB, LED WHITE 3500K 750 LM/FT	INTEGRAL ELECTRONIC 0-10V DIMMING DMX	277	LUMENPULSE LUMENLINE LLI2S SERIES, AXIS, ALIGHT, METALUMEN OR APPROVED EQUAL	SURFACE MOUNTED UPLIGHT IN SUSPENDED ARCHITECTURAL DETAIL	ALUMINUM	LUMINAIRE INTEGRATED INTO CUSTOM SUSPENDED PLYWOOD ARCHITECTURAL DETAIL TO LIGHT THE CEILING
L10		SUSPENDED LINEAR LED DIRECT/INDIRECT, 12% UPLIGHT, FROSTED MICRO BAFFLE LENS, LIGHT LEVEL 3, STRAIGHT POWER CORD, STRUCTURE CEILING TYPE FOR MOUNTING, INTEGRAL OCCUPANCY DAYLIGHT SENSOR	12' LENGTH	48W PER 4'	LED, 3500K 5360 LM PER 4'	INTEGRAL ELECTRONIC 0-10V DIMMING	277	COOPER LIGHTING RZL SERIES, AXIS TWIG SERIES, OR APPROVED EQUAL	SUSPENDED TO STRUCTURE BY 48" AIRCRAFT CABLE @ 10'-6" AFF	WHITE	ALTERNATES MUST HAVE EFFICACY SIMILAR TO BASIS OF DESIGN (LPW). ALTERNATES TO BE REVIEWED FOR AESTHETICS BY THE ARCHITECT FOR FINAL APPROVAL
L10A		SUSPENDED LINEAR LED DIRECT/INDIRECT, 12% UPLIGHT, FROSTED MICRO BAFFLE LENS, LIGHT LEVEL 3, 48" ADJUSTABLE AIRCRAFT CABLE SUSPENSION, STRAIGHT POWER CORD, INTEGRAL OCCUPANCY DAYLIGHT SENSOR,	8' LENGTH	48W PER 4'	LED, 3500K 5360 LM PER 4'	INTEGRAL ELECTRONIC 0-10V DIMMING	277	COOPER LIGHTING RZL SERIES, AXIS TWIG SERIES, LITHONIA OR APPROVED EQUAL	SUSPENDED TO STRUCTURE BY 48" AIRCRAFT CABLE @ 13'-0" AFF	WHITE	ALTERNATES MUST HAVE EFFICACY SIMILAR TO BASIS OF DESIGN (LPW). ALTERNATES TO BE REVIEWED FOR AESTHETICS BY THE ARCHITECT FOR FINAL APPROVAL
L10B		SUSPENDED LINEAR LED DIRECT/INDIRECT, 12% UPLIGHT, FROSTED MICRO BAFFLE LENS, LIGHT LEVEL 3, 48" ADJUSTABLE AIRCRAFT CABLE SUSPENSION, STRAIGHT POWER CORD, STRUCTURE CEILING TYPE FOR MOUNTING, INTEGRAL OCCUPANCY DAYLIGHT SENSOR	8' LENGTH	48W PER 4'	LED, 3500K 5360 LM PER 4'	INTEGRAL ELECTRONIC 0-10V DIMMING	120	COOPER LIGHTING RZL SERIES, AXIS TWIG SERIES, LITHONIA OR APPROVED EQUAL	SUSPENDED TO STRUCTURE BY 48" AIRCRAFT CABLE @ 13'-0" AFF	WHITE	ALTERNATES MUST HAVE EFFICACY SIMILAR TO BASIS OF DESIGN (LPW). ALTERNATES TO BE REVIEWED FOR AESTHETICS BY THE ARCHITECT FOR FINAL APPROVAL
L11		RECESSED LED SHOWER LIGHT WITH DEAD FRONT TRIM, CRI 90	5" DIAMETER	11W	LED, 3500K 600 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	277	HALO ML56 LED ENGINE + 591WB DEAD FRONT TRIM, LIGHTOLIER C6L SERIES, KIRLIN LRR SERIES, OR APPROVED EQUAL	SHOWER	AS PER THE ARCHITECT	
L12		LINEAR RECESSED WALL WASH	3.5"W x 4" H x LENGTH AS INDICATED ON PLANS	6 W/FT	LED, 3500K 500 LM/FT	INTEGRAL ELECTRONIC 0-10V DIMMING	277	AXIS BMRLED SERIES, ALIGHT, LUMENPULSE, METALUMEN OR APPROVED EQUAL	DRYWALL FLANGE	WHITE	
L13		DECORATIVE PENDANT	2.5' DIAMETER	11W	PHILIPS LED REPLACEMENT LAMP DIMMABLE 3000K 800 LUMENS	-	120	DAVID TRUBRIDGE - CORAL	SUSPENDED @ 5'-6" AFF TO BOTTOM OF FIXTURE	WHITE INTERIOR AND NATURAL EXTERIOR	SUBMIT ALTERNATE LED LAMPING FOR APPROVAL
L14		4 FT ROUND RECESSED DIRECT LED	4' DIAMETER 8.75" H	175.4 W	LED, 3500K 13930 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	277	FOCAL POINT SKYDOME, XAL COMBO, PRUDENTIAL, PINNACLE OR APPROVED EQUAL	CEILING RECESSED	STANDARD WHITE	
L15		DECORATIVE PENDANT	5'-6" DIAMETER	11W	PHILIPS HUE LED MEDIUM BASE	-	120	DAVID TRUBRIDGE - CORAL	SUSPENDED SUSPENSION HEIGHT PER ARCHITECT	WHITE INTERIOR AND NATURAL EXTERIOR	PROVIDE LED REPLACEMENT LAMP PHILIPS HUE WITH CONTROLLER CONNECTED TO ETHERNET, PER MANUFACTURER RECOMMENDATIONS. COORDINATE SUSPENSION HEIGHT WITH ARCHITECT IN FIELD PRIOR TO CUTTING WIRES FOR FINAL INSTALLATION
L16		DECORATIVE PENDANT	3' DIAMETER	11W	PHILIPS HUE LED MEDIUM BASE	-	120	DAVID TRUBRIDGE - CORAL	SUSPENDED SUSPENSION HEIGHT PER ARCHITECT	WHITE INTERIOR AND NATURAL EXTERIOR	PROVIDE LED REPLACEMENT LAMP PHILIPS HUE WITH CONTROLLER CONNECTED TO ETHERNET, PER MANUFACTURER RECOMMENDATIONS. COORDINATE SUSPENSION HEIGHT WITH ARCHITECT IN FIELD PRIOR TO CUTTING WIRES FOR FINAL INSTALLATION

Tag	Image	Description	Size	Watts	Lamp(s)	Ballast/Driver	Voltage	Product	Mounting	Finish	Notes
L17		SUSPENDED CYLINDER DOWNLIGHT - BAND 50 DEGREE BEAM, SOLITE FROSTED LENS, 49-96" PENDANT MOUNT	6" DIAMETER x 10" H	33W	LED, 3500K 2100 LM DELIVERED	ELDOLED DRIVER 0-10V DIMMING TO 15%	277	USAI BEVELED 2.0 LBRP6, SPECTRUM GV SERIES, CALCULITE C7L, INDY OR APPROVED EQUAL	ADJUSTABLE 49-96" PENDANT MOUNT	WHITE	BOTTOM OF FIXTURE TO BE FLUSH IN ELEVATION WITH SUSPENDED CEILING
L17A		SUSPENDED CYLINDER DOWNLIGHT - DRAMA / STAGE 30 DEGREE BEAM, SOLITE FROSTED LENS, 49-96" PENDANT MOUNT	6" DIAMETER x 10" H	33W	LED, 3500K 2100 LM DELIVERED	ELDOLED DRIVER 0-10V DIMMING TO 0.1%	277	USAI BEVELED 2.0 LBRP6, SPECTRUM GV SERIES, CALCULITE C7L, INDY OR APPROVED EQUAL	ADJUSTABLE 49-96" PENDANT MOUNT	BLACK	BOTTOM OF FIXTURE TO BE COORDINATED WITH ARCHITECT OR LIGHTING DESIGN PRIOR TO FINAL INSTALLATION
L18		SUSPENDED LINEAR LED DIRECT, SPOTLESS LENS	3.5" W x 4" D x LENGTH AS INDICATED ON PLAN	8.03 W/LF	LED, 3500K 750 LM/LF	ELDOLED DRIVER FOR 0-10V DIMMING TO 0.1%	277	AXIS BEAM3 BMDLED, ALIGHT, LUMENPULSE, METALUMEN OR APPROVED EQUAL	SUSPENDED BY AIRCRAFT	AS PER THE ARCHITECT	BOTTOM OF FIXTURE TO BE FLUSH IN ELEVATION WITH SUSPENDED CEILING
L19		WALL MOUNTED LINEAR DIRECT/INDIRECT LED, SPOTLESS LENS	2.5" W x 6" H x LENGTH AS INDICATED ON PLAN	9 W/LF	LED, 3500K 950 LM/LF (UP AND DN)	INTEGRAL ELECTRONIC 0-10V DIMMING	277	AXIS TWIN BEAM2 TWBDILED, ALIGHT, LUMENPULSE, METALUMEN OR APPROVED EQUAL	SURFACE, WALL	AS PER THE ARCHITECT	
L20		RECESSED ADJUSTABLE SPOTLIGHT IN SQUARE APERTURE HOUSING	6"x6" APERTURE 7"W x 13"L x 6"H	15W	LED, 3500K 1000 DELIVERED LUMENS	INTEGRAL ELECTRONIC 0-10V DIMMING	277	AMERLUX C3SR-G2-1, USAI, PORTFOLIO, LIGHTOLIER OR APPROVED EQUAL	SLOPED CEILING - RECESSED	STANDARD SILVER	ORIENT HOUSING TO FIT IN SLOPED CEILING AND ABLE TO AIM AT SOUTH WALL
L21		SURFACE LINEAR LED VAPOR TIGHT LUMINAIRE, CRI 80+, SYMMETRIC DISTRIBUTION	8.5"W x 5"H x 4 FT. L	59W	LED 3500K 4000 DELIVERED LUMENS	INTEGRAL ELECTRONIC	277	LITHONIA VAP LED SERIES, COOPER, DAYBRITE, BEGHELLI OR APPROVED EQUAL	SURFACE	WHITE	PROVIDE WET LOCATION FITTINGS AND ACCESSORIES AS REQUIRED.
L22		WALL MOUNT ASYMETRIC LED UPLIGHT	1" X 2" X LENGTH AS INDICATED ON PLAN	7W/LF	LED 3500K HIGH OUTPUT 500 LM/LF	INTEGRAL ELECTRONIC 0-10V DIMMING	277	VODE WINGRAIL, ARCHITECTURAL LIGHTING WORKS COMMALITE SERIES, OR APPROVED EQUAL	WALL MOUNT WITH INTEGRAL POWER SUPPLY @ 9'-0" AFF	AS PER ARCHITECT	
S1		POLE MOUNTED AREA LIGHT, TYPE 4 MEDIUM DISTRIBUTION, STEEL POLE	13" W x 36" L	72W	LED, 4000K 4500 LM	BI-LEVEL DIMMED	277	LITHONIA D-SERIES SIZE ZERO DSX0-20C-1000-T4M, GE GARDCO ECOFORM SERIES, OR APPROVED EQUAL	SINGLE HEAD ON SQUARE POLE 20' AFF	AS PER THE ARCHITECT	UNIVERSAL SQUARE MOUNTING ADAPTOR, 2 CIRCUIT FOR 50% AND 100% RELAY CONTROL. OCCUPANCY SENSOR TO TIE TO ONE CIRCUIT ONLY.
S2		SAME AS S1 WITH DUAL HEADS ON ONE STEEL POLE	13" W x 36" L	(2) 72W	LED, 4000K (2) 4500 LM	BI-LEVEL DIMMED	277	(2) LITHONIA D-SERIES DSX0-20C-1000-T4M, GE GARDCO ECOFORM SERIES, OR APPROVED EQUAL	DUAL HEAD ON SQUARE POLE 20' AFF	AS PER THE ARCHITECT	UNIVERSAL SQUARE MOUNTING ADAPTOR, 2 CIRCUIT FOR 50% AND 100% RELAY CONTROL. OCCUPANCY SENSOR TO TIE TO ONE CIRCUIT ONLY.
S3		ILLUMINATED LED BOLLARD	40" HEIGHT	20W	LED, 4000K 400 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	277	BEGA 8619LED, HESS MOROCCO, LIGMAN, SELUX, LUMCA OR APPROVED EQUAL	GRADE	AS PER THE ARCHITECT	ALTERNATES TO BE REVIEWED FOR AESTHETICS BY THE ARCHITECT FOR FINAL APPROVAL
S4		POLE MOUNTED AREA LIGHT, SYMMETRICAL DISTRIBUTION, GLARE CONTROL OPTICS, STEEL POLE	27" DIAMETER x 2.5" H	86W	LED, 4000K 7500 LM MIN.	INTEGRAL ELECTRONIC 0-10V DIMMING	277	WE-EF 659-6624 CFT540, AAL KICK SERIES, OR APPROVED EQUAL	POST TOP 14' AFF	AS PER THE ARCHITECT	
S5		OUTDOOR RATED LED STEPLIGHT, 6" LONG, STANDARD, WET LOCATION	6" W x 8" H x 2" D	6W	LED, 3500K 200 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	277	WINONA STEP13-6-WL, WE-EF 615-1320 SERIES, BEGA OR APPROVED EQUAL	WALL RECESSED	AS PER THE ARCHITECT	
S5A		NOT USED.									
S6		WET RATED LED SPOTLIGHT, 12 DEGREE BEAM SPREAD, CENTER REAR SWIVEL STEM	2.5" DIAMETER x 6" H	10W	LED, 3500K	STANDARD ELECTRONIC	12/277	LUMIERE CAMBRIA 203-CRS SERIES HADCO MA5 SERIES, VISION 3 FL11 SERIES OR APPROVED EQUAL	AT GRADE	AS PER THE ARCHITECT	PROVIDE DIFFUSE LENS (DIF), HEX CELL LOUVER (LVR), AND LINEAR SPREAD LENS (LSL)
S7		EXTERIOR RATED LED CYLINDER DOWNLIGHT	6" DIAMETER x 6" H	14W	LED, 3500K 1500 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	277	SPECTRUM SPC0606LEDGV, USAI, LITON OR APPROVED EQUAL	HANG STRAIGHT MOUNTING	AS PER THE ARCHITECT	
S8		WET RATED ARCHITECTURAL LED WALL SCONCE	5" x 5" BACK PLATE	9W	LED, 4000K 550 LM	INTEGRAL ELECTRONIC 0-10V DIMMING	UNV	LUMIERE EON SERIES 303-W1-4000-UNV-T4, MP LIGHTING L98 SERIES, OR APPROVED EQUAL	EXTERIOR WALL @ 9'0" AFG	AS PER THE ARCHITECT	TYPE 4, FORWARD THROW DISTRIBUTION ARCHITECT TO REVIEW ALTERNATES FOR AESTHEICS FOR FINAL APPROVAL
S9		WET RATED LED ADA COMPLIANT WALLPACK, SMALL DOOR XTOR2A, NEUTRAL WARM WHITE,	7" W x 8" H x 4" D	21W	LED, 3500K 1300 LM	STANDARD ELECTRONIC	277	COOPER LUMARK XTOR SERIES STONCO WTN SERIES, ACCULITE MSL SERIES, OR APPROVED EQUAL	EXTERIOR WALL	STANDARD AS PER THE ARCHITECT	
S10		INGRADE UPLIGHT, GLASS FLUSH WITH FACEPLATE, STAINLESS STEEL, FLUSH MOUNT TO SURFACE, SILICONE RUBBER GASKET, IP68 RATED FOR WET LOCATION, 85 CRI	4.5" DIAMETER x 4" H	6W	LED, 4000K 300 LUMENS	REMOTE ELECTRONIC	24/277	BEGA 7018LED, LUMIERE BOCA SERIES, HYDREL PDX4 SERIES, OR APPROVED EQUAL	INGRADE	AS PER THE ARCHITECT	COORDINATE REMOTE DRIVER LOCATION WITH ARCHITECT PRIOR TO FINAL ROUGH IN AND INSTALLATION.
T1		LED THEATRICAL FRESNEL - 12LBS, 10 DEGREE TO 50 DEGEE MANUAL ZOOM	14.5" X 9.84" X 14.5"	170 W MAX	LED WARM WHITE 3800K, 50000 HRS, 90 CRI	DMX 512 FLICKER FREE DIMMING TO .5%, 2 DMX CHANNELS	120	ELATION FRESNEL II, OR APPROVED BY ETC, ALTMAN OR STRAND	ETC SMARTBAR 2 AND PIPE CLAMP MOUNTING	AS PER THE ARCHITECT	PROVIDE UNIT PRICING FOR OWNER TO SELECT DESIRED QUANTITY. PIPE CLAMP MOUNTING PROVIDED BY OWNER. PROVIDE WITH BARN DOORS AND FILTER FRAME. UNIT PRICING TO BE INCLUDED IN BID. COORDINATE POWER CONNECTOR WITH OWNER PRIOR TO ORDERING
T2		LED PAR THEATRICAL LUMINAIRE - COLOR CHANGING (RGBL OR RGB WW) - 9 LBS	7.98" W X 9.45" L X 12.20" H WITH YOKE	90W MAX	8XRGBL LED CHIPSET WITH HOMOGINIZED OPTICS - PFA OF 24.9 DEGREES AND BA OF 14.5 DEGREES	DMX 512	120	ETC CSPAR OR APPROVED BY TIMES SQUARE LIGHTING, OR STRAND	ETC SMARTBAR 2 AND PIPE CLAMP MOUNTING	AS PER THE ARCHITECT	PROVIDE UNIT PRICING FOR OWNER TO SELECT DESIRED QUANTITY. PIPE CLAMP MOUNTING PROVIDED BY OWNER. COORDINATE POWER CONNECTOR WITH OWNER PRIOR TO ORDERING
T3		LED COLOR CHANGING ZOOM SPOT WITH 15-30 DEGREE RANGE	TBD	246W MAX	LED 7 COLOR CHIP SET WITH WHITE FROM 2700K TO 4500K AND FULL SPECTRUM HUE CONTROL	DMX 512	120	ETC SOURCE 4 LED SERIES 2 OR APPROVED BY STRAND	ETC SMARTBAR 2 AND PIPE CLAMP MOUNTING	AS PER THE ARCHITECT	PROVIDE UNIT PRICING FOR OWNER TO SELECT DESIRED QUANTITY. PIPE CLAMP MOUNTING PROVIDED BY OWNER. COORDINATE POWER CONNECTOR WITH OWNER PRIOR TO ORDERING
T4		LED CYCLORAMA - COLOR CHANGING - 19 LBS	17.85" L X 12.79" W X 12.15" H	246W MAX	LED 7 COLOR CHIP SET WITH WHITE FROM 2700K TO 4500K AND FULL SPECTRUM HUE CONTROL	DMX 512	120	ETC SOURCE FOUR SERIES 2 LED AND CYC ATTACHMENT, OR APPROVED BY STRAND	ETC SMARTBAR 2 AND PIPE CLAMP MOUNTING	AS PER THE ARCHITECT	PROVIDE UNIT PRICING FOR OWNER TO SELECT DESIRED QUANTITY. PIPE CLAMP MOUNTING PROVIDED BY OWNER. COORDINATE POWER CONNECTOR WITH OWNER PRIOR TO ORDERING
X		EXIT SIGN, SUITABLE FOR HIGH ABUSE AND WET LOCATION	14" L x 8.5" H x 3" W - SINGLE 4" W - DOUBLE	2-SINGLE FACE 4-DOUBLE FACE	LED	STANDARD ELECTRONIC	277	LITHONIA EXTREME SERIES LV	CEILING AND WALL	AS PER THE ARCHITECT	CONTRACTOR TO VERIFY ALL MOUNTING CONDITIONS ORIENTATIONS, FACES AND INDICATOR ARROWS PRIOR TO ORDERING

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Lumald.com

REGISTERED PROFESSIONAL ENGINEER 89466PE OREGON September 12, 2014 BRETT W. COURNOYER 3-12-15
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: KCB
CHECKED BY: PJZ

ORIGINAL SHEET SIZE: 30"x42"

LUMINAIRE SCHEDULE

E-002

GENERAL NOTES:

A. CONTRACTOR SHALL CONTACT EWEB TO VERIFY EASEMENT LOCATIONS AND TO OBTAIN UTILITY DESIGN/INSTALLATION DRAWINGS. EWEB INFRASTRUCTURE SHALL BE INSTALLED PER UTILITY COMPANY REQUIREMENTS. INFRASTRUCTURE SHOWN ON THESE DRAWINGS IS DIAGRAMATIC AND APPROXIMATE, AND SHALL BE VERIFIED WITH EWEB DESIGN DOCUMENTS PRIOR TO INSTALLATION.

B. SEE THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL DEVICES. REQUEST CLARIFICATIONS IN WRITING PRIOR TO INSTALLATION. INSTALLED, UNCOORDINATED ELEMENTS SHALL BE RELOCATED PER THE DIRECTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE PROJECT, OWNER OR DESIGN TEAM IF REQUIRED.

C. EMERGENCY EGRESS LIGHTING WILL DESIGNATED BY 'EM' AFTER THE LUMINAIRE TYPE AND WILL BE POWERED THROUGH THE GENERATOR.

D. LIGHTING CONTROL SHALL BE PROVIDE BY THE DISTRICT AND INSTALLED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.

E. SEE SPECIFICATIONS FOR DETAILED SEQUENCE OF OPERATIONS.

F. PROVIDE UL 924 RELAYS AS REQUIRED TO ALLOW DISCRETE CONTROL OF EACH EMERGENCY LUMINAIRES. (2)

G. SEE ZONED PLANS FOR ADDITIONAL INFORMATION.

H. REFERENCE THE APPROPRIATE SPECIFICATION SECTION, 26-09-33 AND 26-09-43, FOR WALL STATIONS IN AREAS WITH PRE-SET SCENE CONTROL.

I. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFETY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.

J. REFER TO SHEET E602 FOR LIGHTING CONTROL DETAILS, AND SHEET E904 FOR SCHEDULE OF RELAYS, CONTROL INFORMATION AND CIRCUTING OF LUMINAIRES THAT ARE CONTROLLED BY A RELAY PANEL.

K. REFER TO DETAIL 9/S-502 IN PACKAGE 1 FOR POLE BASE DETAIL OF SITE LIGHTS AT GRADE AND ABOVE GRADE. (2)

NOTES:

1. APPROXIMATE LOCATION OF EXISTING JOINT UTILITY POLE. RISE EWEB PRIMARY CONDUIT AT EXISTING POLE PER UTILITY COMPANY REQUIREMENTS.

2. APPROXIMATE LOCATION OF EXISTING EWEB PRIMARY CONDUCTORS ROUTED UNDER 24TH AVENUE.

3. (NOT USED).

4. EWEB PRIMARY SERVICE CONDUIT INFRASTRUCTURE, SEE ONE-LINE DIAGRAM.

5. EWEB PRIMARY PULL VAULT PER UTILITY COMPANY REQUIREMENTS. LOCATE CLOSE AS PRACTICAL TO EXISTING PROPERTY LINE. VERIFY EXACT LOCATION WITH EWEB REPRESNTATIVE PRIOR TO INSTALLATION.

6. EWEB TRANSFORMER PAD-VAULT PER UTILITY COMPANY REQUIREMENTS. PROVIDE BOLLARD PROTECTION AT TRANSFORMER.

7. SOUTH WING PV ARRAY. SEE ONE-LINE DIAGRAM. COTNRACTOR TO COORDINATE ALL PV PANEL LOCATIONS WITH MECHANICAL ROOF PENETRATIONS AND EQUIPMENT LOCATIONS PRIOR TO DOCUMENT SUBMITTAL.

8. SCIENCE WING PV ARRAY. SEE ONE-LINE DIAGRAM.

9. GENERATOR. SEE ONE-LINE DIAGRAM.

10. SEE E-121A FOR BUILDING MOUNTED LIGHTING.

11. SEE E-121B FOR BUILDING MOUNTED LIGHTING.

12. SEE E-121C FOR BUILDING MOUNTED LIGHTING.

13. SEE E-121D FOR BUILDING MOUNTED LIGHTING.

14. SEE E-121E FOR BUILDING MOUNTED LIGHTING.

15. EWEB SECONDARY SERVICE CONDUIT INFRASTRUCTURE, SEE ONE-LINE DIAGRAM.

16. LUMINAIRES TO BE CONTROLLED ON LIGHTING RELAY r014, UNLESS OTHERWISE NOTED.

17. COORDINATE CONDUIT ROUTING IN THIS AREA WITH REMOVAL OF EXISTING TREES. COORDINATE WITH ARCHITECT AND OWNER.

18. NEW UTILITY INFRASTRUCTURE SHALL MAINTAIN 5 FEET CLEAR FROM EXISTING DRAIN AND PIPING AT THIS AREA. POTHOLE AND LOCATE TO VERIFY CLEARANCE.

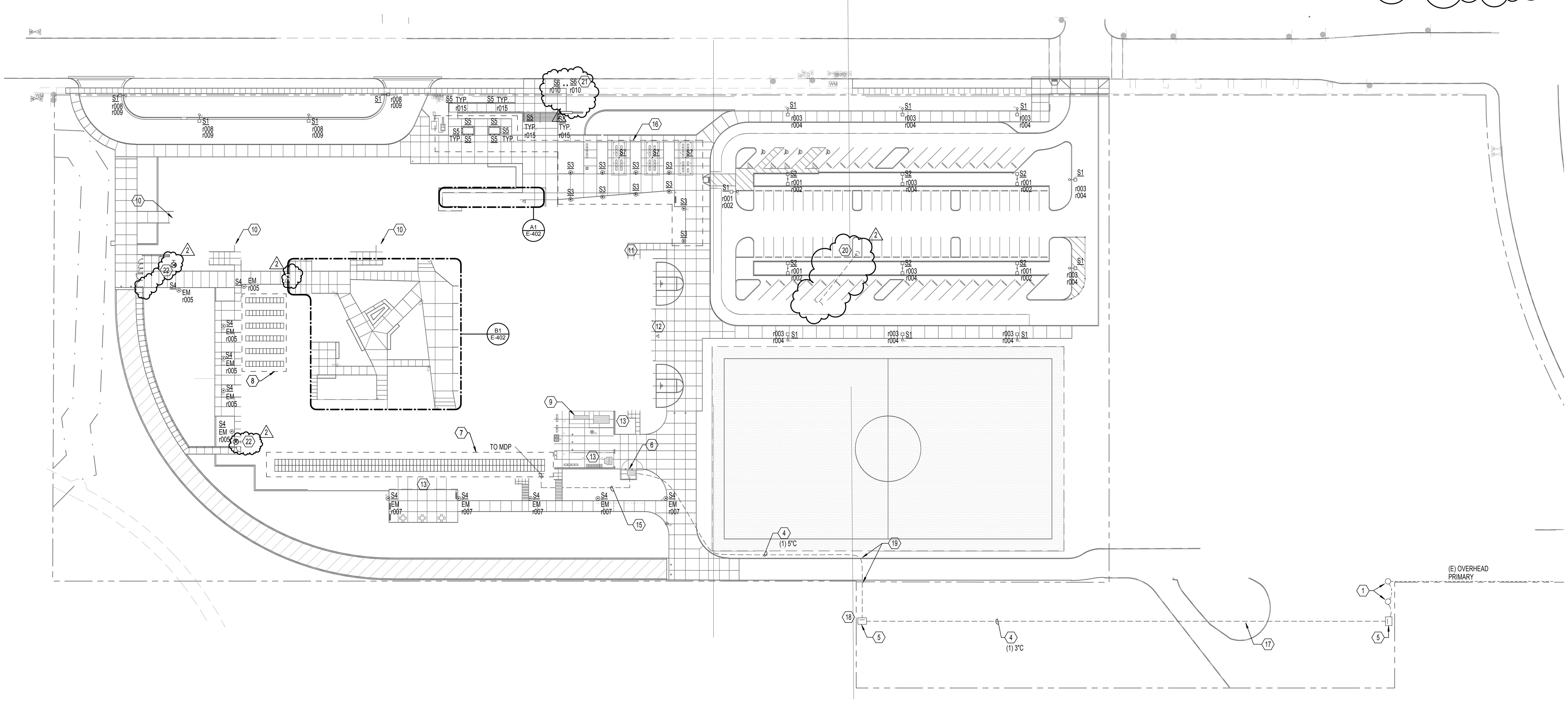
19. POTHOLE AND LOCATE EXISTING UNDERGROUND UTILITIES. MAINTAIN MINIMUM REQUIRED PIPING CLEARANCE PER EWEB AND CITY OF EUGENE REQUIREMENTS.

(2)

20. (1)2-1/2" C.O. STUB UP AT PARKING PLANTER, VERIFY EXACT LOCATION WITH ARCHITECT. HOMERUN TO ELEC ROOM 178, STUB UP AT NORTH WALL AVAILABLE SPACE BETWEEN ELECTRICAL EQUIPMENT.

21. LUMINAIRES S6 TO ILLUMINATED ENTRY SIGNAGE. CENTER LUMINAIRES ON METAL PORTION OF SIGN FOR STRAIGHT FRONT SPOTLIGHT ILLUMINATION. 3' SPACING OF LIGHTS FOR CROSS AIMING. CONTRACTOR TO COORDINATE WITH LANDSCAPE ELEMENTS AND CURB SUCH THAT LUMINAIRES HAVE A DIRECT UNOBSTRUCTED LINE OF SIGHT TO THE SIGN.

22. FLAG STYLE MOUNTING OF EXIT SIGN. MOUNT AT 8'-0" AFG.



B1 SITE PLAN - UNDERGROUND - ELECTRICAL
1" = 40'-0"

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REGISTERED PROFESSIONAL ENGINEER
OREGON
September 12, 2014
BRETT W. COURNOYER
3-12-15
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
2	03-13-2015	ADDENDUM 6
1	2-27-2015	ADDENDUM 1

ISSUE DATE:	FEBRUARY 18, 2015
ISSUE:	CONSTRUCTION DOCUMENTS
VOLUME:	PACKAGE 2 VOLUME 2
PROJECT NO:	2013912.00
DRAWN BY:	KAK
CHECKED BY:	SPD

ORIGINAL SHEET SIZE: 30"x42"

SITE PLAN - ELECTRICAL

E-101

GENERAL NOTES:

A. CONTRACTOR SHALL CONTACT EWEB TO VERIFY EASEMENT LOCATIONS AND TO OBTAIN UTILITY DESIGN/INSTALLATION DRAWINGS. EWEB INFRASTRUCTURE SHALL BE INSTALLED PER UTILITY COMPANY REQUIREMENTS. INFRASTRUCTURE SHOWN ON THESE DRAWINGS IS DIAGRAMATIC AND APPROXIMATE, AND SHALL BE VERIFIED WITH EWEB DESIGN DOCUMENTS PRIOR TO INSTALLATION.

B. SEE THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL DEVICES. REQUEST CLARIFICATIONS IN WRITING PRIOR TO INSTALLATION. INSTALLED, UNCOORDINATED ELEMENTS SHALL BE RELOCATED PER THE DIRECTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE PROJECT, OWNER OR DESIGN TEAM IF REQUIRED.

C. EMERGENCY EGRESS LIGHTING WILL DESIGNATED BY 'EM' AFTER THE LUMINAIRE TYPE AND WILL BE POWERED THROUGH THE GENERATOR.

D. REFER TO E-602 FOR LIGHTING CONTROL SYSTEM INFORMATION.

E. SEE SPECIFICATIONS FOR DETAILED SEQUENCE OF OPERATIONS.

F. PROVIDE UL 924 RELAYS AS REQUIRED TO ALLOW DISCRETE CONTROL OF EACH EMERGENCY RELAY.

G. SEE ZONED PLANS FOR ADDITIONAL INFORMATION.

H. REFERENCE THE APPROPRIATE SPECIFICATION SECTION, 26-09-33 AND 26-09-43, FOR WALL STATIONS IN AREAS WITH PRE-SET SCENE CONTROL.

I. ALL STANDARD NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO 4P-1A UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

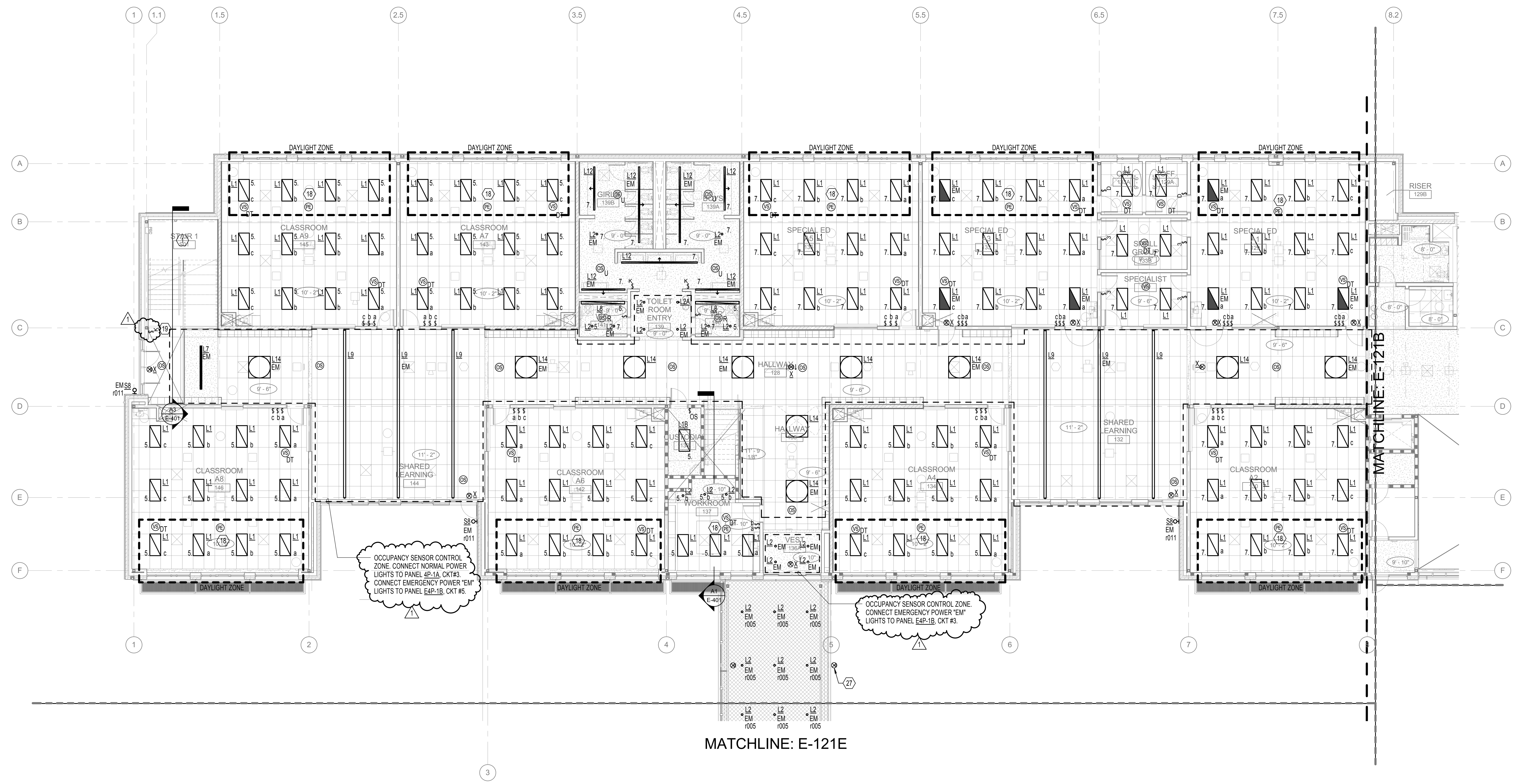
J. ALL EMERGENCY NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO E4P-1B UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

K. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFETY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.

L. REFER TO SHEET E904 FOR SCHEDULE OF RELAYS, CONTROL INFORMATION AND CIRCUTING OF LUMINARIES THAT ARE CONTROLLED BY A RELAY PANEL.

NOTES: *MAY NOT APPLY TO ALL SHEETS.*

1. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.
2. PROVIDE SIGN ON BACK SIDE OF DOOR WITH THE WORDS "TURN OFF LIGHTS" IN LARGE HIGH CONTRAST FONT. PROVIDE MOCK-UP FOR ARCHITECTURAL APPROVAL PRIOR TO INSTALL.
3. REFER TO LIGHTING SITE PLAN E-101 FOR EXTERIOR LIGHTING AT MAIN ENTRY.
4. THEATRICAL LIGHTING AND CONTROLS TO BE PRICED SEPARATELY. PROVIDE UNIT PRICING FOR LUMINAIRE TYPES T1, T2, T3, AND T4 TO OWNER FOR SELECTION ON DESIRED QUANTITY OF EACH TYPE.
5. FOUR BUTTON WALL STATION FOR PRESET SCENE CONTROL OF HOUSE LIGHTING WITH RAISE/LOWER.
6. LCD TOUCH SCREEN PANEL TIED TO THE THEATRICAL LIGHTING CONTROL SYSTEM.
7. PROVIDE CONSOLE FOR DMX CONTROL.
8. LIGHTS INGRADE AND IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r012. LIGHTS IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r013.
9. L20 LIGHTS TO BE CONTROLLED VIA LIGHTING RELAY r209.
10. LOCAL SWITCHES TO CONTROL LIGHTING ON MECHANICAL EQUIPMENT PLATFORM C. SEE SHEET E-122C FOR ADDITIONAL INFORMATION.
11. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C. EMERGENCY LIGHTS CONTROLLED SEPARATELY.
12. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C AND D. EMERGENCY LIGHTS CONTROLLED SEPARATELY.
13. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM E SOUTH. EMERGENCY LIGHTS CONTROLLED SEPARATELY.
14. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM E NORTH. EMERGENCY LIGHTS CONTROLLED SEPARATELY.
15. (5) BUTTON PRESET SCENE CONTROLLER WITH RAISE/LOWER. CONTROLLER TIES TO nLIGHT DIGITAL ROOM CONTROL FOR SCENE CONTROL OF GYMNASIUM.
16. LIGHT FIXTURES AND CONTROLS TO BE DETERMINED.
17. LOCAL OVERRIDE SWITCH PROVIDED FOR EXTERIOR LIGHTING LOADS. REFER TO SHEET DETAIL C4/E-602 FOR ADDITIONAL INFORMATION ON EXTERIOR LIGHTING CONTROL. LOCAL TIMER SWITCH FOR INTERIOR LIGHTING OVERRIDE.
18. CLOSED LOOP 0-10V PHOTOCELL CONNECTED TO LUMINAIRES IN DESIGNATED DAYLIGHTZONE.
19. REFER TO CONTROL DETAIL C4/E-602.
20. OPEN LOOP DLM PHOTOCELL MOUNTED PER MANUFACTURERES RECOMMENDATIONS FOR OPTIMUM DAYLIGHT CONTROL.
21. TWO BUTTON SCENE CONTROLLER.
22. LIGHTING IN THIS SPACE TO BE CONTROLLED VIA LOCAL DIGITALLY DISTRIBUTED DIMMING RELAYS. COORDINATE RELAY BOX LOCATION WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN AND INSTALLATION.
23. ETC SMARTBAR WITH 6 OUTPUTS AND DMX CONTROL.
24. LUMINAIRES L6 SHALL BE WALL MOUNTED ABOVE DOOR AT 8'-0" AFF.
25. LOCAL SWITCH TO CONTROL LIGHTS ON MECHANICAL PLATFORM A. EMERGENCY LIGHTS CONTROLLED SEPARATELY.
26. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.
27. MOUNT EXTERIOR EXIT SIGN TO WALL ABOVE FACIA, 10'-0" AFG. COORDINATE FINAL MOUNTING LOCATION WITH ARCHITECT IN FIELD PRIOR TO FINAL INSTALLATION. (1)
28. PROVIDE ROTARY WHEEL SWITCH STATION FOR RGB CONTROL OF TYPE L9A PENDANT.



PLAN NORTH

A1 FIRST FLOOR PLAN - ZONE A - LIGHTING
1/8" = 1'-0"

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BRETT W. COURNOYER
OREGON
September, 12 2014
3-12-15
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT
MIDDLE SCHOOL
CIP NUMBER 410.566.001
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CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: KCB
CHECKED BY: PJZ

ORIGINAL SHEET SIZE: 30"x42"

FIRST FLOOR PLAN - ZONE A - LIGHTING

E-121A

GENERAL NOTES:

A. CONTRACTOR SHALL CONTACT EWEB TO VERIFY EASEMENT LOCATIONS AND TO OBTAIN UTILITY DESIGN/INSTALLATION DRAWINGS. EWEB INFRASTRUCTURE SHALL BE INSTALLED PER UTILITY COMPANY REQUIREMENTS. INFRASTRUCTURE SHOWN ON THESE DRAWINGS IS DIAGRAMATIC AND APPROXIMATE, AND SHALL BE VERIFIED WITH EWEB DESIGN DOCUMENTS PRIOR TO INSTALLATION.

B. SEE THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL DEVICES. REQUEST CLARIFICATIONS IN WRITING PRIOR TO INSTALLATION. INSTALLED, UNCOORDINATED ELEMENTS SHALL BE RELOCATED PER THE DIRECTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE PROJECT, OWNER OR DESIGN TEAM IF REQUIRED.

C. EMERGENCY EGRESS LIGHTING WILL DESIGNATED BY 'EM' AFTER THE LUMINAIRE TYPE AND WILL BE POWERED THROUGH THE GENERATOR.

D. REFER TO E-602 FOR LIGHTING CONTROL SYSTEM INFORMATION.

E. SEE SPECIFICATIONS FOR DETAILED SEQUENCE OF OPERATIONS.

F. PROVIDE UL 924 RELAYS AS REQUIRED TO ALLOW DISCRETE CONTROL OF EACH EMERGENCY RELAY.

G. SEE ZONED PLANS FOR ADDITIONAL INFORMATION.

H. REFERENCE THE APPROPRIATE SPECIFICATION SECTION, 26-09-33 AND 26-09-43, FOR WALL STATIONS IN AREAS WITH PRE-SET SCENE CONTROL.

I. ALL STANDARD NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO 4P-1A UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

J. ALL EMERGENCY NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO E4P-1B UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

K. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFETY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.

L. REFER TO SHEET E904 FOR SCHEDULE OF RELAYS, CONTROL INFORMATION AND CIRCUTING OF LUMINARIES THAT ARE CONTROLLED BY A RELAY PANEL.

M. ALL STANDBY NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO S2P-2A UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

NOTES: *MAY NOT APPLY TO ALL SHEETS.*

1. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.

2. PROVIDE SIGN ON BACK SIDE OF DOOR WITH THE WORDS "TURN OFF LIGHTS" IN LARGE HIGH CONTRAST FONT. PROVIDE MOCK-UP FOR ARCHITECTURAL APPROVAL PRIOR TO INSTALL.

3. REFER TO LIGHTING SITE PLAN E-101 FOR EXTERIOR LIGHTING AT MAIN ENTRY.

4. THEATRICAL LIGHTING AND CONTROLS TO BE PRICED SEPARATELY. PROVIDE UNIT PRICING FOR LUMINAIRE TYPES T1, T2, T3, AND T4 TO OWNER FOR SELECTION ON DESIRED QUANTITY OF EACH TYPE.

5. FOUR BUTTON WALL STATION FOR PRESET SCENE CONTROL OF HOUSE LIGHTING WITH RAISE/LOWER.

6. LCD TOUCH SCREEN PANEL TIED TO THE THEATRICAL LIGHTING CONTROL SYSTEM.

7. PROVIDE CONSOLE FOR DMX CONTROL.

8. LIGHTS INGRADE AND IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r012. LIGHTS IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r013.

9. L20 LIGHTS TO BE CONTROLLED VIA LIGHTING RELAY r209.

10. LOCAL SWITCHES TO CONTROL LIGHTING ON MECHANICAL EQUIPMENT PLATFORM C. SEE SHEET E-122C FOR ADDITIONAL INFORMATION.

11. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

12. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C AND D. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

13. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM E SOUTH. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

14. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM E NORTH. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

15. (5) BUTTON PRESET SCENE CONTROLLER WITH RAISE/LOWER. CONTROLLER TIES TO nLIGHT DIGITAL ROOM CONTROL FOR SCENE CONTROL OF GYMNASIUM.

16. LIGHT FIXTURES AND CONTROLS TO BE DETERMINED.

17. LOCAL OVERRIDE SWITCH PROVIDED FOR EXTERIOR LIGHTING LOADS. REFER TO SHEET DETAIL C4/E-602 FOR ADDITIONAL INFORMATION ON EXTERIOR LIGHTING CONTROL. LOCAL TIMER SWITCH FOR INTERIOR LIGHTING OVERRIDE.

18. CLOSED LOOP 0-10V PHOTOCELL CONNECTED TO LUMINAIRES IN DESIGNATED DAYLIGHTZONE.

19. REFER TO CONTROL DETAIL C4/E-602.

20. OPEN LOOP DLM PHOTOCELL MOUNTED PER MANUFACTURERES RECOMMENDATIONS FOR OPTIMUM DAYLIGHT CONTROL.

21. TWO BUTTON SCENE CONTROLLER.

22. LIGHTING IN THIS SPACE TO BE CONTROLLED VIA LOCAL DIGITALLY DISTRIBUTED DIMMING RELAYS. COORDINATE RELAY BOX LOCATION WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN AND INSTALLATION.

23. ETC SMARTBAR WITH 6 OUTPUTS AND DMX CONTROL.

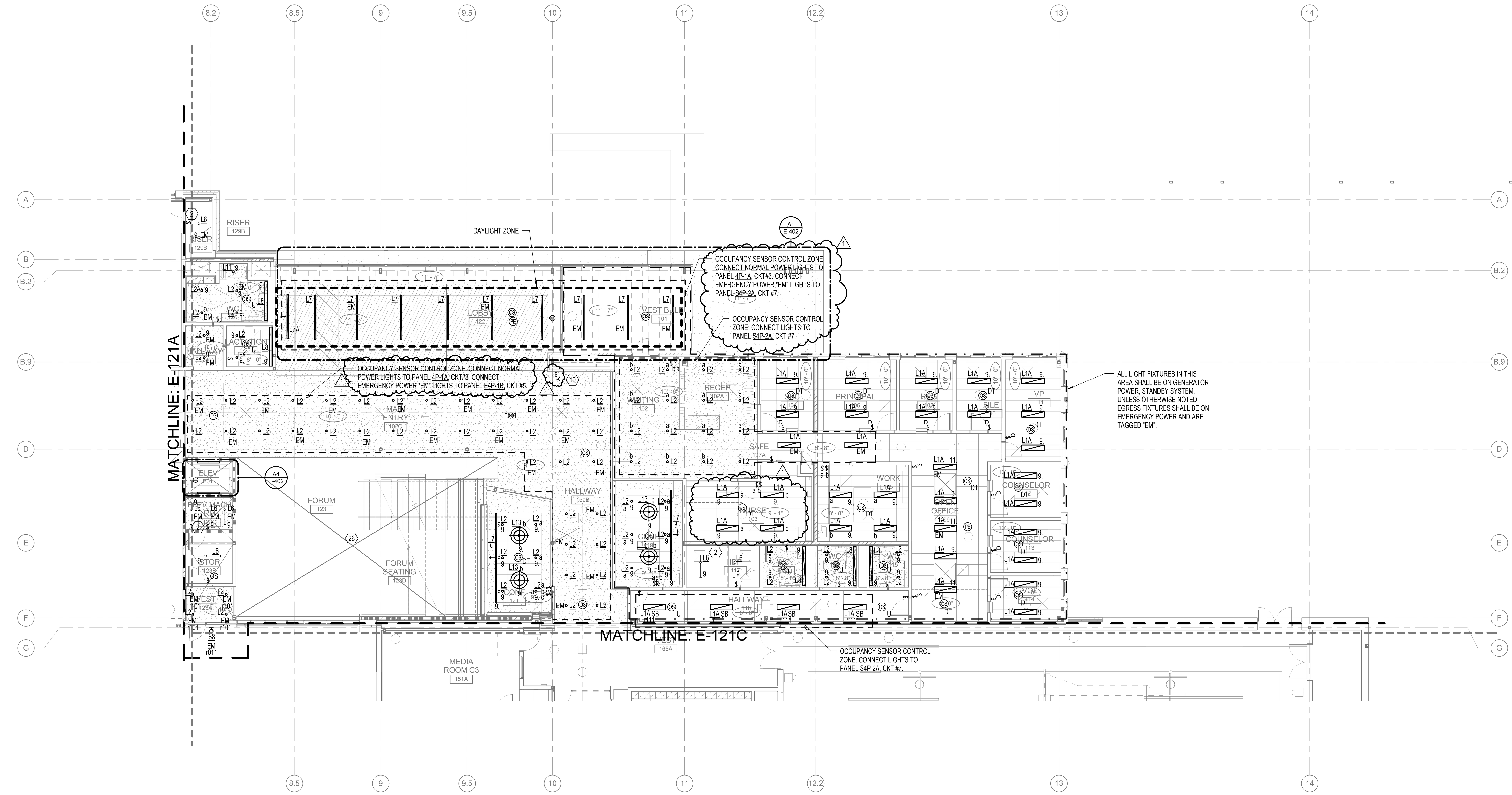
24. LUMINAIRES L6 SHALL BE WALL MOUNTED ABOVE DOOR AT 8'-0" AFF.

25. LOCAL SWITCH TO CONTROL LIGHTS ON MECHANICAL PLATFORM A. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

26. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.

27. MOUNT EXTERIOR EXIT SIGN TO WALL ABOVE FACIA, 10'-0" AFG. COORDINATE FINAL MOUNTING LOCATION WITH ARCHITECT IN FIELD PRIOR TO FINAL INSTALLATION.

28. PROVIDE ROTARY WHEEL SWITCH STATION FOR RGB CONTROL OF TYPE L9A PENDANT.



A1 FIRST FLOOR PLAN - ZONE B - LIGHTING

1/8" = 1'-0"

ROBERTSON/SHERWOOD/ARCHITECTS PC
132 EAST BROADWAY, SUITE 540
EUGENE, OREGON 97401
541-342-8077
www.robertsonsherwood.com

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503-224-4032

71 COLUMBIA, FLOOR 4
SEATTLE, WASHINGTON 98104
206-441-4151
www.mahlum.com

PAE
Portland | San Francisco | Seattle
pae-engineers.com

Luma
Portland | San Francisco | Seattle
Lumald.com

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: KCB
CHECKED BY: PJZ

 ORIGINAL SHEET SIZE: 30"x42"

FIRST FLOOR PLAN - ZONE B - LIGHTING

E-121B

GENERAL NOTES:

A. CONTRACTOR SHALL CONTACT EWEB TO VERIFY EASEMENT LOCATIONS AND TO OBTAIN UTILITY DESIGN/INSTALLATION DRAWINGS. EWEB INFRASTRUCTURE SHALL BE INSTALLED PER UTILITY COMPANY REQUIREMENTS. INFRASTRUCTURE SHOWN ON THESE DRAWINGS IS DIAGRAMATIC AND APPROXIMATE, AND SHALL BE VERIFIED WITH EWEB DESIGN DOCUMENTS PRIOR TO INSTALLATION.

B. SEE THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL DEVICES. REQUEST CLARIFICATIONS IN WRITING PRIOR TO INSTALLATION. INSTALLED, UNCOORDINATED ELEMENTS SHALL BE RELOCATED PER THE DIRECTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE PROJECT, OWNER OR DESIGN TEAM IF REQUIRED.

C. EMERGENCY EGRESS LIGHTING WILL DESIGNATED BY 'EM' AFTER THE LUMINAIRE TYPE AND WILL BE POWERED THROUGH THE GENERATOR.

D. REFER TO E-602 FOR LIGHTING CONTROL SYSTEM INFORMATION.

E. SEE SPECIFICATIONS FOR DETAILED SEQUENCE OF OPERATIONS.

F. PROVIDE UL 924 RELAYS AS REQUIRED TO ALLOW DISCRETE CONTROL OF EACH EMERGENCY RELAY.

G. SEE ZONED PLANS FOR ADDITIONAL INFORMATION.

H. REFERENCE THE APPROPRIATE SPECIFICATION SECTION, 26-09-33 AND 26-09-43, FOR WALL STATIONS IN AREAS WITH PRE-SET SCENE CONTROL.

I. ALL STANDARD NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO 4P-1C UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

J. ALL EMERGENCY NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO E4P-1A UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

K. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFETY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.

L. REFER TO SHEET E904 FOR SCHEDULE OF RELAYS, CONTROL INFORMATION AND CIRCUTING OF LUMINARIES THAT ARE CONTROLLED BY A RELAY PANEL.

NOTES: *MAY NOT APPLY TO ALL SHEETS.*

1. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.

2. PROVIDE SIGN ON BACK SIDE OF DOOR WITH THE WORDS "TURN OFF LIGHTS" IN LARGE HIGH CONTRAST FONT. PROVIDE MOCK-UP FOR ARCHITECTURAL APPROVAL PRIOR TO INSTALL.

3. REFER TO LIGHTING SITE PLAN E-101 FOR EXTERIOR LIGHTING AT MAIN ENTRY.

4. THEATRICAL LIGHTING AND CONTROLS TO BE PRICED SEPARATELY. PROVIDE UNIT PRICING FOR LUMINAIRE TYPES T1, T2, T3, AND T4 TO OWNER FOR SELECTION ON DESIRED QUANTITY OF EACH TYPE.

5. FOUR BUTTON WALL STATION FOR PRESET SCENE CONTROL OF HOUSE LIGHTING WITH RAISE/LOWER.

6. LCD TOUCH SCREEN PANEL TIED TO THE THEATRICAL LIGHTING CONTROL SYSTEM.

7. PROVIDE CONSOLE FOR DMX CONTROL.

8. LIGHTS INGRADE AND IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r012. LIGHTS IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r013.

9. L20 LIGHTS TO BE CONTROLLED VIA LIGHTING RELAY r209.

10. LOCAL SWITCHES TO CONTROL LIGHTING ON MECHANICAL EQUIPMENT PLATFORM C. SEE SHEET E-122C FOR ADDITIONAL INFORMATION.

11. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

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14. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM E NORTH. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

15. (5) BUTTON PRESET SCENE CONTROLLER WITH RAISE/LOWER. CONTROLLER TIES TO nLIGHT DIGITAL ROOM CONTROL FOR SCENE CONTROL OF GYMNASIUM.

16. LIGHT FIXTURES AND CONTROLS TO BE DETERMINED.

17. LOCAL OVERRIDE SWITCH PROVIDED FOR EXTERIOR LIGHTING LOADS. REFER TO SHEET DETAIL C4/E-602 FOR ADDITIONAL INFORMATION ON EXTERIOR LIGHTING CONTROL. LOCAL TIMER SWITCH FOR INTERIOR LIGHTING OVERRIDE.

18. CLOSED LOOP 0-10V PHOTOCELL CONNECTED TO LUMINAIRES IN DESIGNATED DAYLIGHTZONE.

19. REFER TO CONTROL DETAIL C4/E-602.

20. OPEN LOOP DLM PHOTOCELL MOUNTED PER MANUFACTURERES RECOMMENDATIONS FOR OPTIMUM DAYLIGHT CONTROL.

21. TWO BUTTON SCENE CONTROLLER.

22. LIGHTING IN THIS SPACE TO BE CONTROLLED VIA LOCAL DIGITALLY DISTRIBUTED DIMMING RELAYS. COORDINATE RELAY BOX LOCATION WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN AND INSTALLATION.

23. ETC SMARTBAR WITH 6 OUTPUTS AND DMX CONTROL.

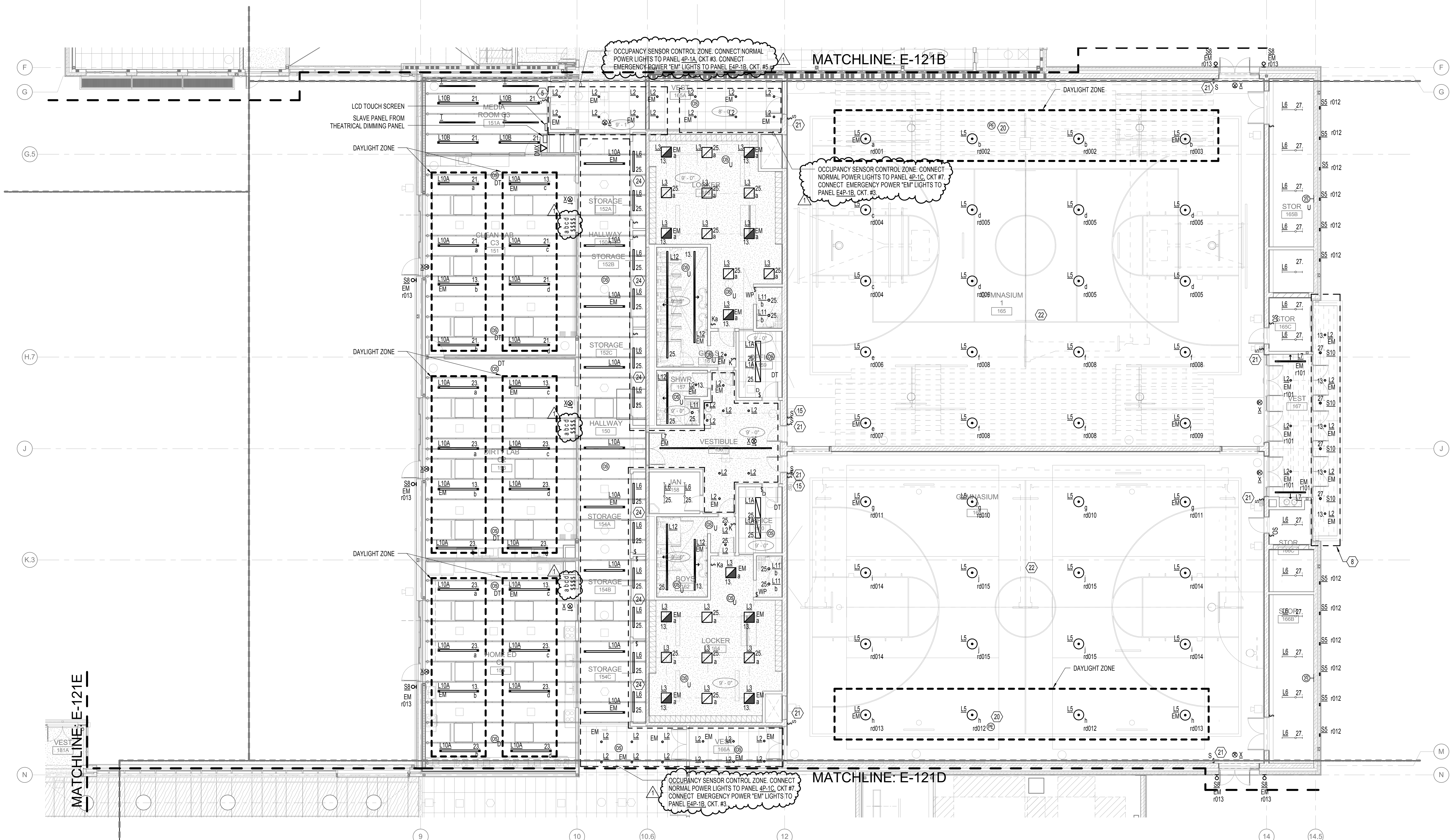
24. LUMINAIRES L6 SHALL BE WALL MOUNTED ABOVE DOOR AT 8'-0" AFF.

25. LOCAL SWITCH TO CONTROL LIGHTS ON MECHANICAL PLATFORM A. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

26. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.

27. MOUNT EXTERIOR EXIT SIGN TO WALL ABOVE FACIA, 10'-0" AFG. COORDINATE FINAL MOUNTING LOCATION WITH ARCHITECT IN FIELD PRIOR TO FINAL INSTALLATION.

28. PROVIDE ROTARY WHEEL SWITCH STATION FOR RGB CONTROL OF TYPE L9A PENDANT.



A1 FIRST FLOOR PLAN - ZONE C - LIGHTING

1/8" = 1'-0"

PLAN NORTH

Robertson | Sherwood | Architects PC — mahlum

ROBERTSON/SHERWOOD/ARCHITECTS PC

132 EAST BROADWAY, SUITE 540
EUGENE, OREGON 97401
541-342-8077
www.robertsonsherwood.com

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206-441-4151
www.mahlum.com

PAE
Portland | San Francisco | Seattle
pae-engineers.com

Luma
Portland | San Francisco | Seattle
Lumald.com

REGISTERED PROFESSIONAL ENGINEER 89466PE OREGON September, 12 2014 BRETT W. COURNOYER 3-12-15

EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT
MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: KCB
CHECKED BY: PJZ

 ORIGINAL SHEET SIZE: 30"x42"

FIRST FLOOR PLAN - ZONE C - LIGHTING

E-121C

GENERAL NOTES:

A. CONTRACTOR SHALL CONTACT EWEB TO VERIFY EASEMENT LOCATIONS AND TO OBTAIN UTILITY DESIGN/INSTALLATION DRAWINGS. EWEB INFRASTRUCTURE SHALL BE INSTALLED PER UTILITY COMPANY REQUIREMENTS. INFRASTRUCTURE SHOWN ON THESE DRAWINGS IS DIAGRAMATIC AND APPROXIMATE, AND SHALL BE VERIFIED WITH EWEB DESIGN DOCUMENTS PRIOR TO INSTALLATION.

B. SEE THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL DEVICES. REQUEST CLARIFICATIONS IN WRITING PRIOR TO INSTALLATION. INSTALLED, UNCOORDINATED ELEMENTS SHALL BE RELOCATED PER THE DIRECTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE PROJECT, OWNER OR DESIGN TEAM IF REQUIRED.

C. EMERGENCY EGRESS LIGHTING WILL DESIGNATED BY 'EM' AFTER THE LUMINAIRE TYPE AND WILL BE POWERED THROUGH THE GENERATOR.

D. REFER TO E-602 FOR LIGHTING CONTROL SYSTEM INFORMATION.

E. SEE SPECIFICATIONS FOR DETAILED SEQUENCE OF OPERATIONS.

F. PROVIDE UL 924 RELAYS AS REQUIRED TO ALLOW DISCRETE CONTROL OF EACH EMERGENCY RELAY.

G. SEE ZONED PLANS FOR ADDITIONAL INFORMATION.

H. REFERENCE THE APPROPRIATE SPECIFICATION SECTION, 26-09-33 AND 26-09-43, FOR WALL STATIONS IN AREAS WITH PRE-SET SCENE CONTROL.

I. ALL STANDARD NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO 4P-1C UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

J. ALL EMERGENCY NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO E4P-1A UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

K. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFETY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.

L. REFER TO SHEET E904 FOR SCHEDULE OF RELAYS, CONTROL INFORMATION AND CIRCUTING OF LUMINARIES THAT ARE CONTROLLED BY A RELAY PANEL.

NOTES: *MAY NOT APPLY TO ALL SHEETS.*

1. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.

2. PROVIDE SIGN ON BACK SIDE OF DOOR WITH THE WORDS "TURN OFF LIGHTS" IN LARGE HIGH CONTRAST FONT. PROVIDE MOCK-UP FOR ARCHITECTURAL APPROVAL PRIOR TO INSTALL.

3. REFER TO LIGHTING SITE PLAN E-101 FOR EXTERIOR LIGHTING AT MAIN ENTRY.

4. THEATRICAL LIGHTING AND CONTROLS TO BE PRICED SEPARATELY. PROVIDE UNIT PRICING FOR LUMINAIRE TYPES T1, T2, T3, AND T4 TO OWNER FOR SELECTION ON DESIRED QUANTITY OF EACH TYPE.

5. FOUR BUTTON WALL STATION FOR PRESET SCENE CONTROL OF HOUSE LIGHTING WITH RAISE/LOWER.

6. LCD TOUCH SCREEN PANEL TIED TO THE THEATRICAL LIGHTING CONTROL SYSTEM.

7. PROVIDE CONSOLE FOR DMX CONTROL.

8. LIGHTS INGRADE AND IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r012. LIGHTS IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r013.

9. L20 LIGHTS TO BE CONTROLLED VIA LIGHTING RELAY r209.

10. LOCAL SWITCHES TO CONTROL LIGHTING ON MECHANICAL EQUIPMENT PLATFORM C. SEE SHEET E-122C FOR ADDITIONAL INFORMATION.

11. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

12. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C AND D. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

13. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM E SOUTH. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

14. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM E NORTH. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

15. (5) BUTTON PRESET SCENE CONTROLLER WITH RAISE/LOWER. CONTROLLER TIES TO nLIGHT DIGITAL ROOM CONTROL FOR SCENE CONTROL OF GYMNASIUM.

16. LIGHT FIXTURES AND CONTROLS TO BE DETERMINED.

17. LOCAL OVERRIDE SWITCH PROVIDED FOR EXTERIOR LIGHTING LOADS. REFER TO SHEET DETAIL C4/E-602 FOR ADDITIONAL INFORMATION ON EXTERIOR LIGHTING CONTROL. LOCAL TIMER SWITCH FOR INTERIOR LIGHTING OVERRIDE.

18. CLOSED LOOP 0-10V PHOTOCELL CONNECTED TO LUMINAIRES IN DESIGNATED DAYLIGHTZONE.

19. REFER TO CONTROL DETAIL C4/E-602.

20. OPEN LOOP DLM PHOTOCELL MOUNTED PER MANUFACTURERES RECOMMENDATIONS FOR OPTIMUM DAYLIGHT CONTROL.

21. TWO BUTTON SCENE CONTROLLER.

22. LIGHTING IN THIS SPACE TO BE CONTROLLED VIA LOCAL DIGITALLY DISTRIBUTED DIMMING RELAYS. COORDINATE RELAY BOX LOCATION WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN AND INSTALLATION.

23. ETC SMARTBAR WITH 6 OUTPUTS AND DMX CONTROL.

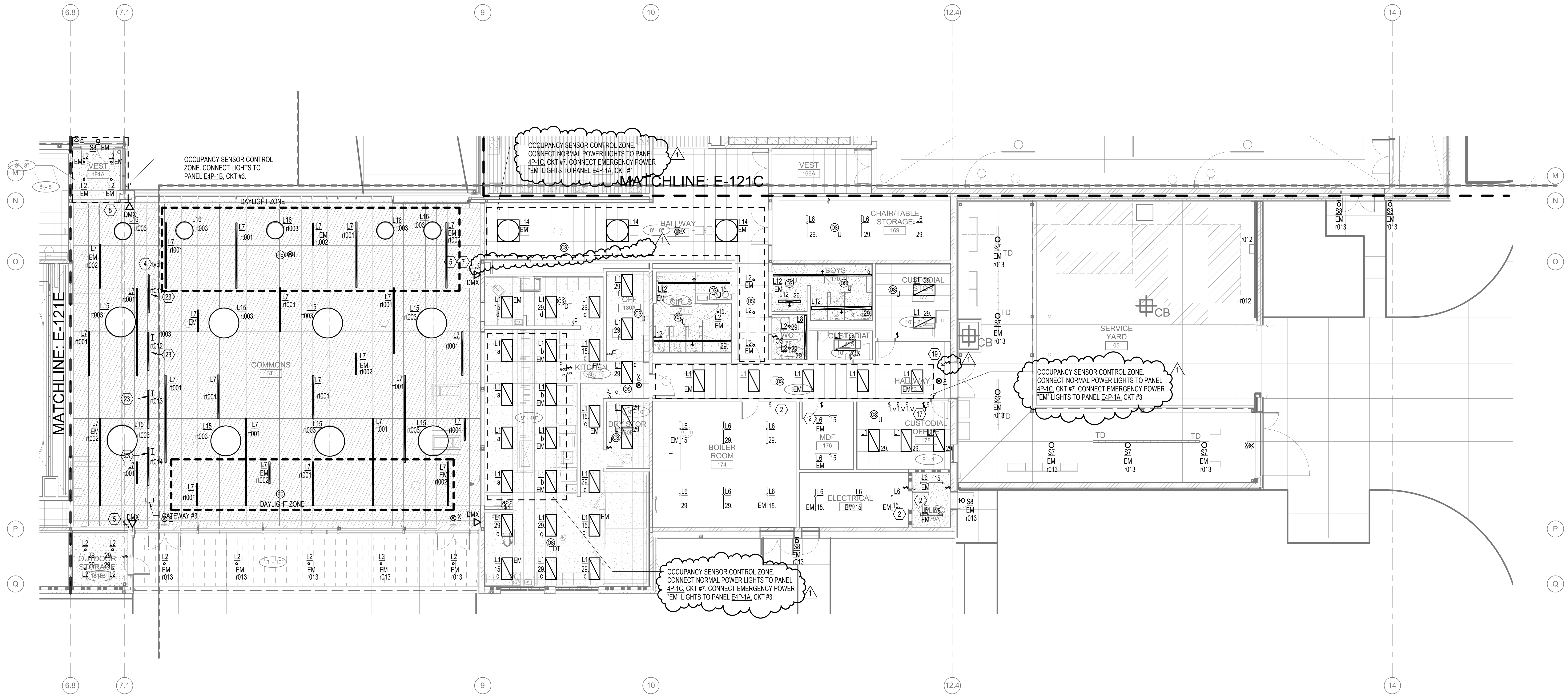
24. LUMINAIRES L6 SHALL BE WALL MOUNTED ABOVE DOOR AT 8'-0" AFF.

25. LOCAL SWITCH TO CONTROL LIGHTS ON MECHANICAL PLATFORM A. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

26. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.

27. MOUNT EXTERIOR EXIT SIGN TO WALL ABOVE FACIA, 10'-0" AFG. COORDINATE FINAL MOUNTING LOCATION WITH ARCHITECT IN FIELD PRIOR TO FINAL INSTALLATION.

28. PROVIDE ROTARY WHEEL SWITCH STATION FOR RGB CONTROL OF TYPE L9A PENDANT.



A1 FIRST FLOOR PLAN - ZONE D - LIGHTING

1/8" = 1'-0"

PLAN NORTH

ROBERTSON/SHERWOOD/ARCHITECTS PC
132 EAST BROADWAY, SUITE 540
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REGISTERED PROFESSIONAL ENGINEER 89466PE OREGON September 12, 2014 BRETT W. COURNOYER
3-12-15
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
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MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: KCB
CHECKED BY: PJZ

 ORIGINAL SHEET SIZE: 30"x42"

FIRST FLOOR PLAN - ZONE D - LIGHTING

E-121D

GENERAL NOTES:

A. CONTRACTOR SHALL CONTACT EWEB TO VERIFY EASEMENT LOCATIONS AND TO OBTAIN UTILITY DESIGN/INSTALLATION DRAWINGS. EWEB INFRASTRUCTURE SHALL BE INSTALLED PER UTILITY COMPANY REQUIREMENTS. INFRASTRUCTURE SHOWN ON THESE DRAWINGS IS DIAGRAMATIC AND APPROXIMATE, AND SHALL BE VERIFIED WITH EWEB DESIGN DOCUMENTS PRIOR TO INSTALLATION.

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C. EMERGENCY EGRESS LIGHTING WILL DESIGNATED BY 'EM' AFTER THE LUMINAIRE TYPE AND WILL BE POWERED THROUGH THE GENERATOR.

D. REFER TO E-602 FOR LIGHTING CONTROL SYSTEM INFORMATION.

E. SEE SPECIFICATIONS FOR DETAILED SEQUENCE OF OPERATIONS.

F. PROVIDE UL 924 RELAYS AS REQUIRED TO ALLOW DISCRETE CONTROL OF EACH EMERGENCY RELAY.

G. SEE ZONED PLANS FOR ADDITIONAL INFORMATION.

H. ALL STANDARD NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO 4P-1B UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

I. ALL EMERGENCY NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO E4P-1A UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

J. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFETY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.

K. REFER TO SHEET E904 FOR SCHEDULE OF RELAYS, CONTROL INFORMATION AND CIRCUTING OF LUMINARIES THAT ARE CONTROLLED BY A RELAY PANEL.

NOTES: *MAY NOT APPLY TO ALL SHEETS.*

1. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.

2. PROVIDE SIGN ON BACK SIDE OF DOOR WITH THE WORDS "TURN OFF LIGHTS" IN LARGE HIGH CONTRAST FONT. PROVIDE MOCK-UP FOR ARCHITECTURAL APPROVAL PRIOR TO INSTALL.

3. REFER TO LIGHTING SITE PLAN E-101 FOR EXTERIOR LIGHTING AT MAIN ENTRY.

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8. LIGHTS INGRADE AND IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r012. LIGHTS IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r013.

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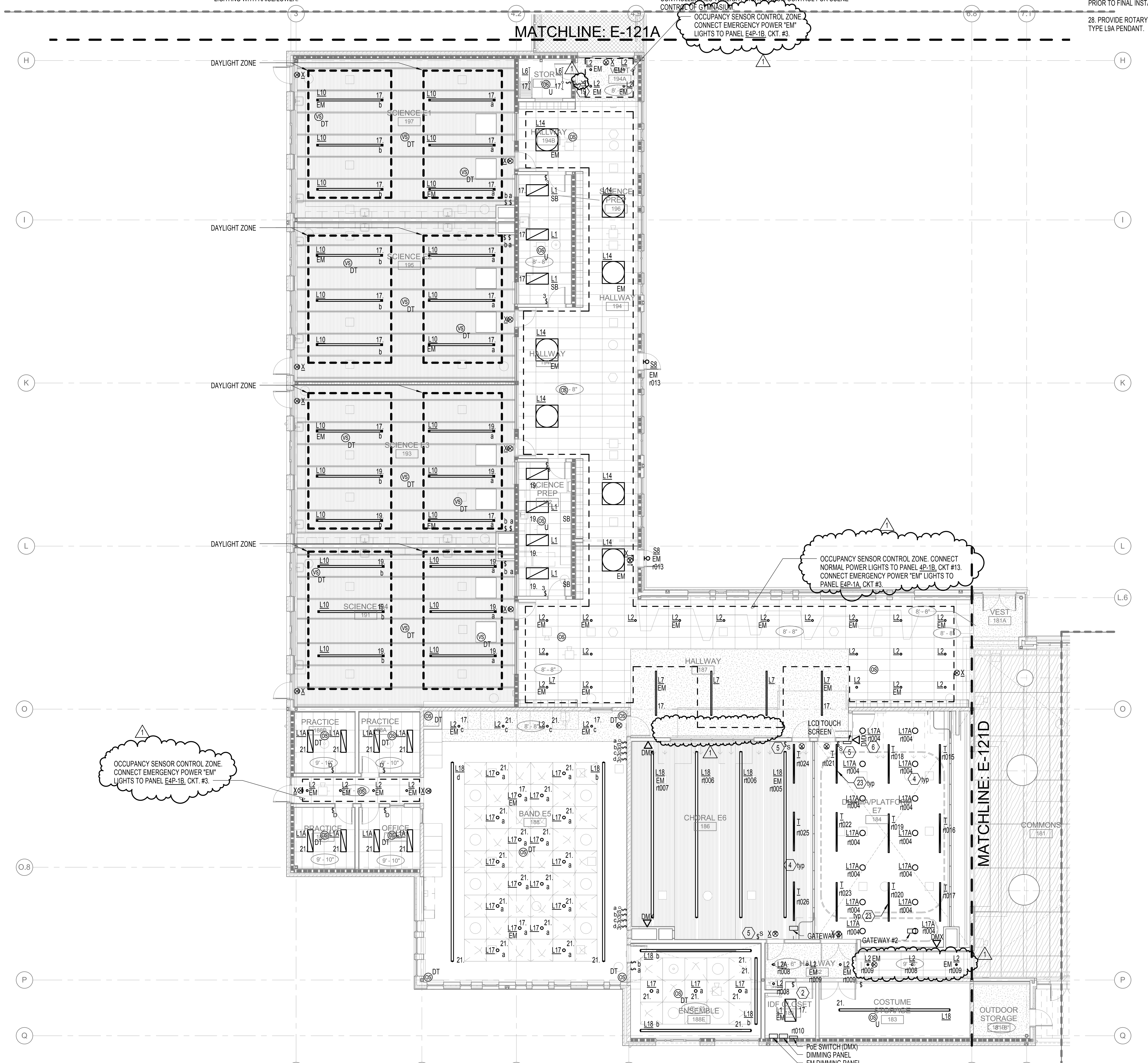

A1 FIRST FLOOR PLAN - ZONE E - LIGHTING
1/8" = 1'-0"

PLAN NORTH

ROBERTSON/SHERWOOD/ARCHITECTS PC
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OREGON
September, 12 2014
BRETT W. COURNOYER
3-12-15
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: KCB
CHECKED BY: PJZ

 ORIGINAL SHEET SIZE: 30"x42"

FIRST FLOOR PLAN - ZONE E - LIGHTING

E-121E

GENERAL NOTES:

A. CONTRACTOR SHALL CONTACT EWEB TO VERIFY EASEMENT LOCATIONS AND TO OBTAIN UTILITY DESIGN/INSTALLATION DRAWINGS. EWEB INFRASTRUCTURE SHALL BE INSTALLED PER UTILITY COMPANY REQUIREMENTS. INFRASTRUCTURE SHOWN ON THESE DRAWINGS IS DIAGRAMATIC AND APPROXIMATE, AND SHALL BE VERIFIED WITH EWEB DESIGN DOCUMENTS PRIOR TO INSTALLATION.

B. SEE THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL DEVICES. REQUEST CLARIFICATIONS IN WRITING PRIOR TO INSTALLATION. INSTALLED, UNCOORDINATED ELEMENTS SHALL BE RELOCATED PER THE DIRECTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE PROJECT, OWNER OR DESIGN TEAM IF REQUIRED.

C. EMERGENCY EGRESS LIGHTING WILL DESIGNATED BY 'EM' AFTER THE LUMINAIRE TYPE AND WILL BE POWERED THROUGH THE GENERATOR.

D. REFER TO E-602 FOR LIGHTING CONTROL SYSTEM INFORMATION.

E. SEE SPECIFICATIONS FOR DETAILED SEQUENCE OF OPERATIONS.

F. PROVIDE UL 924 RELAYS AS REQUIRED TO ALLOW DISCRETE CONTROL OF EACH EMERGENCY RELAY.

G. SEE ZONED PLANS FOR ADDITIONAL INFORMATION.

H. REFERENCE THE APPROPRIATE SPECIFICATION SECTION, 26-09-33 AND 26-09-43, FOR WALL STATIONS IN AREAS WITH PRE-SET SCENE CONTROL.

I. ALL STANDARD NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO 4P-1C UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

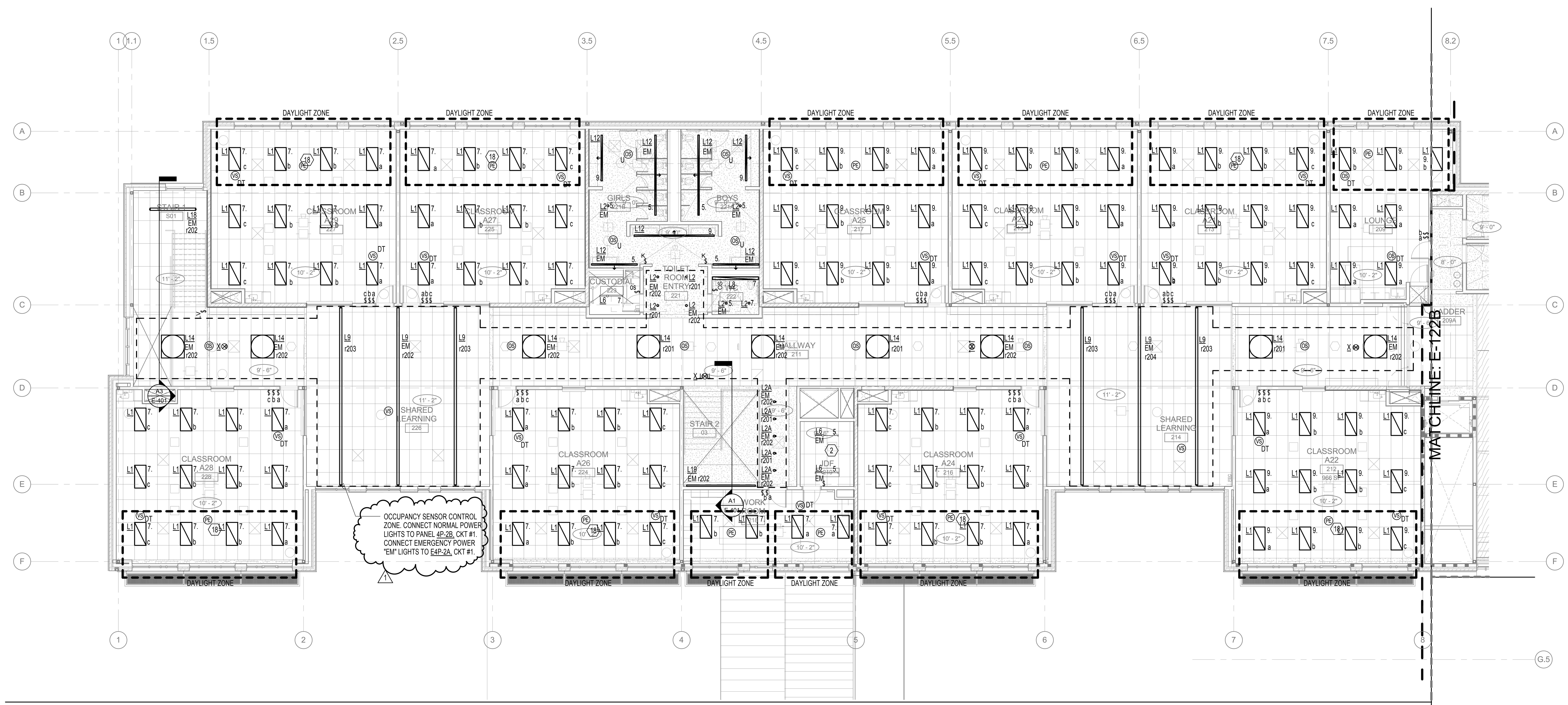
J. ALL EMERGENCY NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO E4P-1A UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

K. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFETY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.

L. REFER TO SHEET E904 FOR SCHEDULE OF RELAYS, CONTROL INFORMATION AND CIRCUTING OF LUMINARIES THAT ARE CONTROLLED BY A RELAY PANEL.

NOTES: *MAY NOT APPLY TO ALL SHEETS.*

1. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.
2. PROVIDE SIGN ON BACK SIDE OF DOOR WITH THE WORDS "TURN OFF LIGHTS" IN LARGE HIGH CONTRAST FONT. PROVIDE MOCK-UP FOR ARCHITECTURAL APPROVAL PRIOR TO INSTALL.
3. REFER TO LIGHTING SITE PLAN E-101 FOR EXTERIOR LIGHTING AT MAIN ENTRY.
4. THEATRICAL LIGHTING AND CONTROLS TO BE PRICED SEPARATELY. PROVIDE UNIT PRICING FOR LUMINAIRE TYPES T1, T2, T3, AND T4 TO OWNER FOR SELECTION ON DESIRED QUANTITY OF EACH TYPE.
5. FOUR BUTTON WALL STATION FOR PRESET SCENE CONTROL OF HOUSE LIGHTING WITH RAISE/LOWER.
6. LCD TOUCH SCREEN PANEL TIED TO THE THEATRICAL LIGHTING CONTROL SYSTEM.
7. PROVIDE CONSOLE FOR DMX CONTROL.
8. LIGHTS INGRADE AND IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r012. LIGHTS IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r013.
9. L20 LIGHTS TO BE CONTROLLED VIA LIGHTING RELAY r209.
10. LOCAL SWITCHES TO CONTROL LIGHTING ON MECHANICAL EQUIPMENT PLATFORM C. SEE SHEET E-122C FOR ADDITIONAL INFORMATION.
11. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C. EMERGENCY LIGHTS CONTROLLED SEPARATELY.
12. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C AND D. EMERGENCY LIGHTS CONTROLLED SEPARATELY.
13. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM E SOUTH. EMERGENCY LIGHTS CONTROLLED SEPARATELY.
14. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM E NORTH. EMERGENCY LIGHTS CONTROLLED SEPARATELY.
15. (5) BUTTON PRESET SCENE CONTROLLER WITH RAISE/LOWER. CONTROLLER TIES TO nLIGHT DIGITAL ROOM CONTROL FOR SCENE CONTROL OF GYMNASIUM.
16. LIGHT FIXTURES AND CONTROLS TO BE DETERMINED.
17. LOCAL OVERRIDE SWITCH PROVIDED FOR EXTERIOR LIGHTING LOADS. REFER TO SHEET DETAIL C4/E-602 FOR ADDITIONAL INFORMATION ON EXTERIOR LIGHTING CONTROL. LOCAL TIMER SWITCH FOR INTERIOR LIGHTING OVERRIDE.
18. CLOSED LOOP 0-10V PHOTOCELL CONNECTED TO LUMINAIRES IN DESIGNATED DAYLIGHTZONE.
19. REFER TO CONTROL DETAIL C4/E-602.
20. OPEN LOOP DLM PHOTOCELL MOUNTED PER MANUFACTURERES RECOMMENDATIONS FOR OPTIMUM DAYLIGHT CONTROL.
21. TWO BUTTON SCENE CONTROLLER.
22. LIGHTING IN THIS SPACE TO BE CONTROLLED VIA LOCAL DIGITALLY DISTRIBUTED DIMMING RELAYS. COORDINATE RELAY BOX LOCATION WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN AND INSTALLATION.
23. ETC SMARTBAR WITH 6 OUTPUTS AND DMX CONTROL.
24. LUMINAIRES L6 SHALL BE WALL MOUNTED ABOVE DOOR AT 8'-0" AFF.
25. LOCAL SWITCH TO CONTROL LIGHTS ON MECHANICAL PLATFORM A. EMERGENCY LIGHTS CONTROLLED SEPARATELY.
26. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.
27. MOUNT EXTERIOR EXIT SIGN TO WALL ABOVE FACIA, 10'-0" AFG. COORDINATE FINAL MOUNTING LOCATION WITH ARCHITECT IN FIELD PRIOR TO FINAL INSTALLATION.
28. PROVIDE ROTARY WHEEL SWITCH STATION FOR RGB CONTROL OF TYPE L9A PENDANT.



A1 SECOND FLOOR PLAN - ZONE A -LIGHTING

1/8" = 1'-0"

PLAN NORTH

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ORIGINAL SHEET SIZE: 30"x42"

SECOND FLOOR PLAN - ZONE A - LIGHTING

E-122A

NOTES: MAY NOT APPLY TO ALL SHEETS.

1. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.

2. PROVIDE SIGN ON BACK SIDE OF DOOR WITH THE WORDS "TURN OFF LIGHTS" IN LARGE HIGH CONTRAST FONT. PROVIDE MOCK-UP FOR ARCHITECTURAL APPROVAL PRIOR TO INSTALL.

3. REFER TO LIGHTING SITE PLAN E-101 FOR EXTERIOR LIGHTING AT MAIN ENTRY.

4. THEATRICAL LIGHTING AND CONTROLS TO BE PRICED SEPARATELY. PROVIDE UNIT PRICING FOR LUMINAIRE TYPES T1, T2, T3, AND T4 TO OWNER FOR SELECTION ON DESIRED QUANTITY OF EACH TYPE.

5. FOUR BUTTON WALL STATION FOR PRESET SCENE CONTROL OF HOUSE LIGHTING WITH RAISE/LOWER.

6. LCD TOUCH SCREEN PANEL TIED TO THE THEATRICAL LIGHTING CONTROL SYSTEM.

7. PROVIDE CONSOLE FOR DMX CONTROL.

8. LIGHTS INGRADE AND IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r012. LIGHTS IN EXTERIOR SOFFIT SHALL BE CONTROLLED ON LIGHTING RELAY r013.

9. L20 LIGHTS TO BE CONTROLLED VIA LIGHTING RELAY r209.

10. LOCAL SWITCHES TO CONTROL LIGHTING ON MECHANICAL EQUIPMENT PLATFORM C. SEE SHEET E-122C FOR ADDITIONAL INFORMATION.

11. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

12. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM C AND D. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

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14. LOCAL SWITCHES TO CONTROL LIGHTS ON MECHANICAL PLATFORM E NORTH. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

15. (5) BUTTON PRESET SCENE CONTROLLER WITH RAISE/LOWER. CONTROLLER TIES TO nLIGHT DIGITAL ROOM CONTROL FOR SCENE CONTROL OF GYMNASIUM.

16. LIGHT FIXTURES AND CONTROLS TO BE DETERMINED.

17. LOCAL OVERRIDE SWITCH PROVIDED FOR EXTERIOR LIGHTING LOADS. REFER TO SHEET DETAIL C4/E-602 FOR ADDITIONAL INFORMATION ON EXTERIOR LIGHTING CONTROL. LOCAL TIMER SWITCH FOR INTERIOR LIGHTING OVERRIDE.

18. CLOSED LOOP 0-10V PHOTOCELL CONNECTED TO LUMINAIRES IN DESIGNATED DAYLIGHTZONE.

19. REFER TO CONTROL DETAIL C4/E-602.

20. OPEN LOOP DLM PHOTOCELL MOUNTED PER MANUFACTURERES RECOMMENDATIONS FOR OPTIMUM DAYLIGHT CONTROL.

21. TWO BUTTON SCENE CONTROLLER.

22. LIGHTING IN THIS SPACE TO BE CONTROLLED VIA LOCAL DIGITALLY DISTRIBUTED DIMMING RELAYS. COORDINATE RELAY BOX LOCATION WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN AND INSTALLATION.

23. ETC SMARTBAR WITH 6 OUTPUTS AND DMX CONTROL.

24. LUMINAIRES L6 SHALL BE WALL MOUNTED ABOVE DOOR AT 8'-0" AFF.

25. LOCAL SWITCH TO CONTROL LIGHTS ON MECHANICAL PLATFORM A. EMERGENCY LIGHTS CONTROLLED SEPARATELY.

26. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.

27. PROVIDE ROTARY WHEEL SWITCH STATION FOR RGB CONTROL OF TYPE L9A PENDANT.

GENERAL NOTES:

A. CONTRACTOR SHALL CONTACT EWEB TO VERIFY EASEMENT LOCATIONS AND TO OBTAIN UTILITY DESIGN/INSTALLATION DRAWINGS. EWEB INFRASTRUCTURE SHALL BE INSTALLED PER UTILITY COMPANY REQUIREMENTS. INFRASTRUCTURE SHOWN ON THESE DRAWINGS IS DIAGRAMATIC AND APPROXIMATE, AND SHALL BE VERIFIED WITH EWEB DESIGN DOCUMENTS PRIOR TO INSTALLATION.

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D. REFER TO E-602 FOR LIGHTING CONTROL SYSTEM INFORMATION.

E. SEE SPECIFICATIONS FOR DETAILED SEQUENCE OF OPERATIONS.

F. PROVIDE UL 924 RELAYS AS REQUIRED TO ALLOW DISCRETE CONTROL OF EACH EMERGENCY RELAY.

G. SEE ZONED PLANS FOR ADDITIONAL INFORMATION.

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I. ALL STANDARD NON-RELAY LIGHTS ON THIS SHEET WILL HOMERUN BACK TO 4P-1C UNLESS OTHERWISE NOTED. CIRCUIT NUMBERS ARE ADJACENT TO FIXTURES.

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L. REFER TO SHEET E904 FOR SCHEDULE OF RELAYS, CONTROL INFORMATION AND CIRCUTING OF LUMINARIES THAT ARE CONTROLLED BY A RELAY PANEL.

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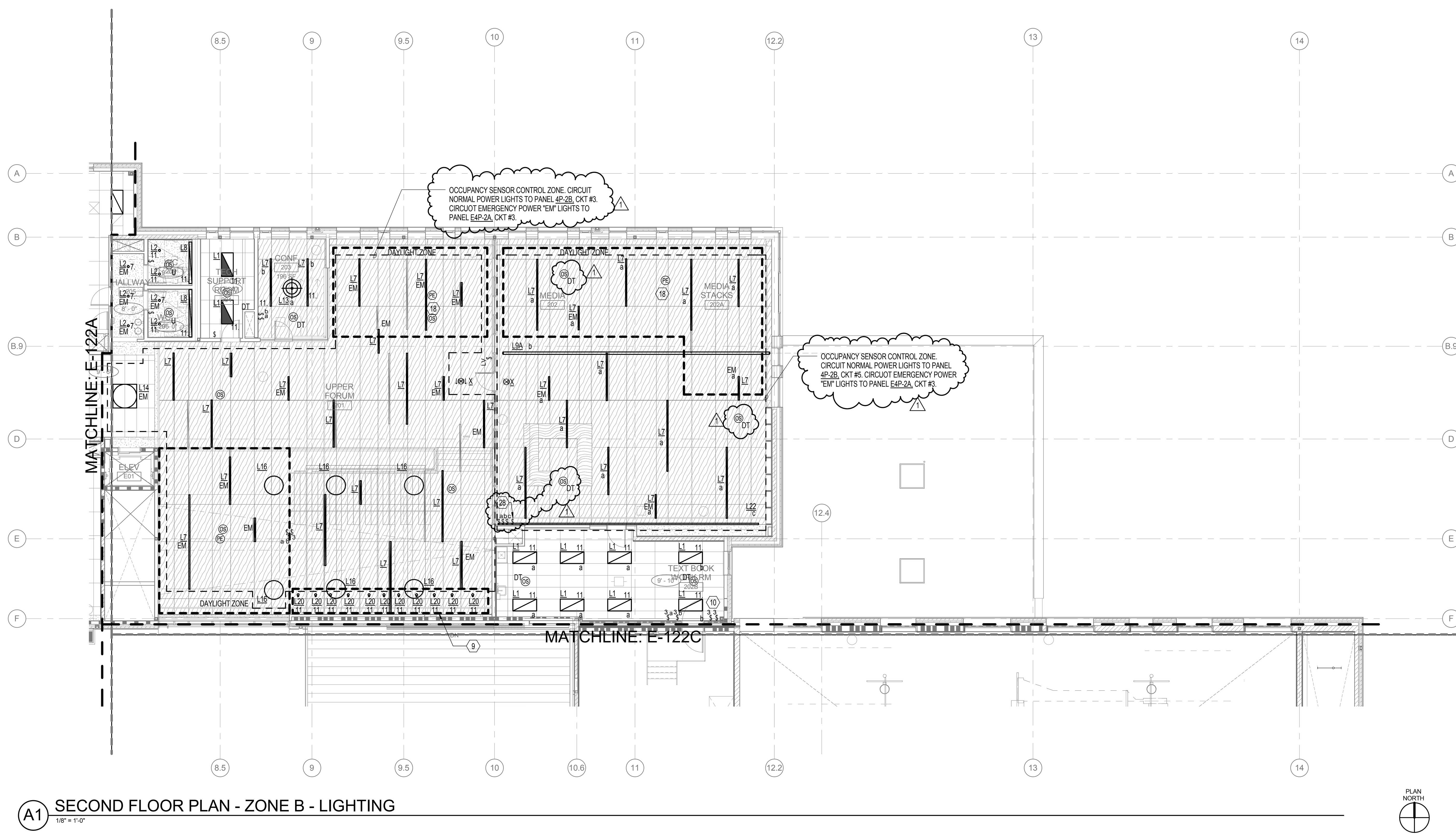
26. REFER TO SHEET E-122A FOR LIGHTING ABOVE STAIR IN SECOND STORY SPACE.

27. MOUNT EXTERIOR EXIT SIGN TO WALL ABOVE FACIA, 10'-0" AFG. COORDINATE FINAL MOUNTING LOCATION WITH ARCHITECT IN FIELD PRIOR TO FINAL INSTALLATION.

28. PROVIDE ROTARY WHEEL SWITCH STATION FOR RGB CONTROL OF TYPE L9A PENDANT.



A1 SECOND FLOOR PLAN - ZONE B - LIGHTING
1/8" = 1'-0"

PLAN NORTH

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REGISTERED PROFESSIONAL ENGINEER 89446PE OREGON September 12, 2014 BRETT W. COURNOYER 3-12-15
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
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 ORIGINAL SHEET SIZE: 30"x42"

SECOND FLOOR PLAN - ZONE B - LIGHTING

E-122B

GENERAL NOTES:

A. CONTRACTOR TO PROVIDE SEPARATE NEUTRALS FOR EACH 120V BRANCH CIRCUIT.

B. WIRING AND TICK MARKS HAVE BEEN OMITTED FROM THE DRAWINGS FOR CLARITY.

C. PROVIDE DISCONNECTING MEANS FOR ALL EQUIPMENT, MOTORS, CONTROLLERS, FIRE/SMOKE DAMPERS, AND APPLIANCES. DISCONNECTING MEANS SHALL COMPLY WITH REQUIREMENTS OF CHAPTER 4 OF THE NEC.

D. ALL INTERIOR RACEWAY TO BE CONCEALED WHEN LOCATED WITHIN FINISHED SPACES UNLESS OTHERWISE NOTED.

E. DEVICE AND EQUIPMENT CONNECTION LOCATIONS ARE SHOWN SCHEMATIC AND APPROXIMATE. REFER TO ARCHITECTURAL CEILING PLANS, FLOOR PLANS, ELEVATIONS AND SECTIONS FOR ADDITIONAL INFORMATION IMPACTING DEVICE ROUGH-IN. TYPICAL DIMENTIONED DEVICE LOCATIONS SHALL BE CONFIRMED WITH THE ARCHITECT PRIOR TO ROUGH-IN. WHERE CONFLICT OCCURS, DECISION OF THE ARCHITECT SHALL GOVERN.

F. SPACE BACK-TO-BACK RECEPTACLES ON COMMON WALLS A MINIMUM OF 24" BETWEEN ADJACENT BOXES, WHENEVER POSSIBLE. USE ACOUSTICAL BOX PADS AROUND ENTIRE ASSEMBLY WHEN RECEPTACLES ARE LOCATED LESS THAN 24".

G. MECHANICAL AND PLUMBING EQUIPMENT LOCATIONS SHOWN ARE FOR REFERENCE ONLY. REFER TO MECHANICAL AND PLUMBING SHEETS FOR EXACT LOCATION OF ALL EQUIPMENT.

NOTES:

1. RECEPTACLE FOR SHORT THROW PROJECTOR. VERIFY LOCATION WITH ARCHITECTURAL ELEVATIONS.

2. RECEPTACLE FOR TABLET CHARGING. COORDINATE EXACT LOCATION WITH ARCHITECT.

3. RECEPTACLE ROUGH-IN FOR FUTURE MONITOR. COORDINATE INSTALLATION WITH WHITEBOARD INSTALLATION AND USABLE WRITING/SCREEN AREA. VERIFY LOCATION WITH ARCHITECTURAL ELEVATIONS. ROUGH-IN SHALL BE APPROVED BY ARCHITECT PRIOR TO INSTALLATION.

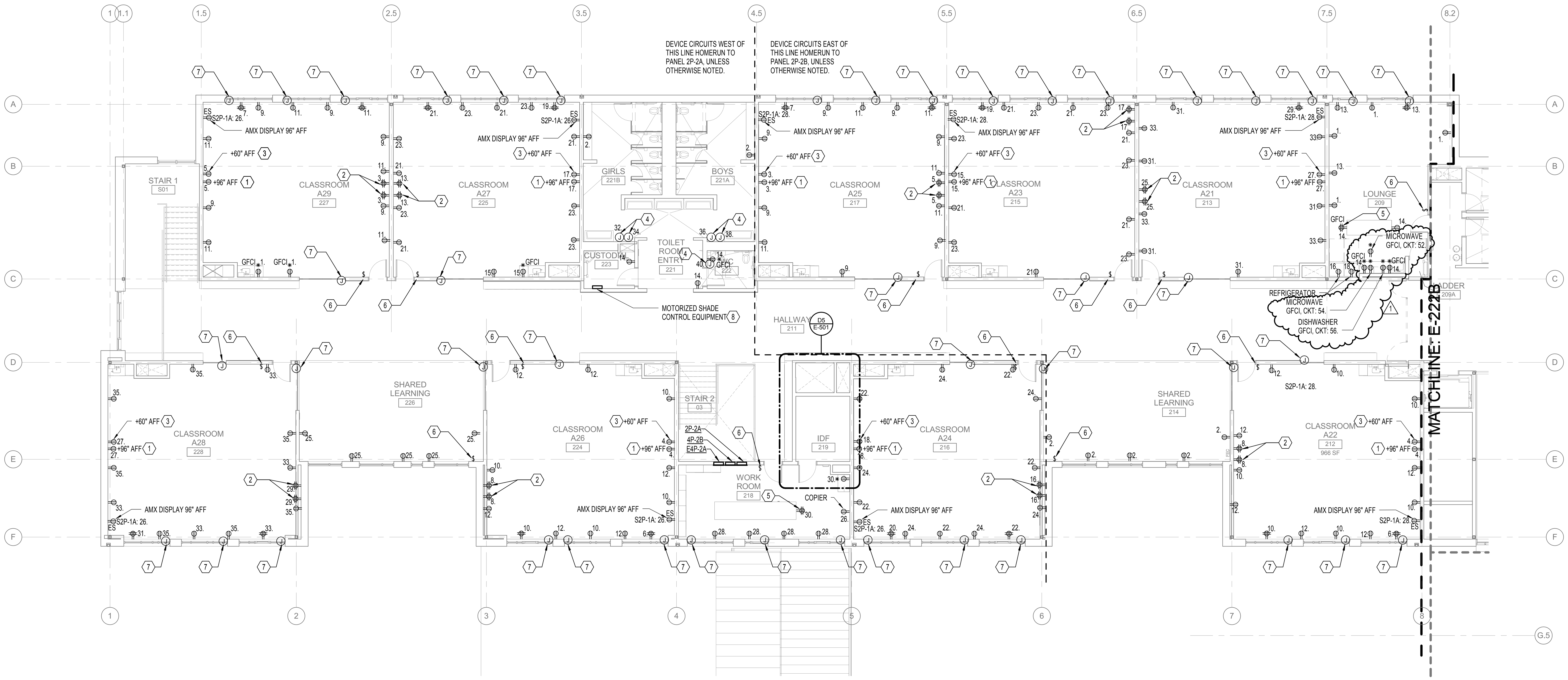
4. CONNECT TO ELECTRICAL HAND DRYER. PROVIDE CIRCUIT BREAKER WITH PAD-LOCKABLE "LOCKED OFF" PROVISIONS.

5. RECEPTACLE DEVICE TO BE ROUGHED INTO ARCHITECTURAL CASE WORK. STUB CONDUIT UP FROM BELOW GRADE AND MOUNT DEVICE BOX WITHIN CASE WORK. COORDINATE WITH ARCHITECTURAL DOCUMENTS FOR ADDITIONAL INFORMATION.

6. MOTORIZED SHADE CONTROL SWITCH. SHARE GANG BOX AND FACEPLATE WITH LIGHT SWITCH CONTROLLING LUMINAIRES IN THIS AREA WHERE APPLICABLE. ALL BLINDS WITHIN A SPACE TO BE CONTROLLED FROM SINGLE SWITCH.

7. MOTORIZED SHADE CONNECTION POINT. REFER TO MANUFACTURER'S SPECIFICATIONS FOR EXACT REQUIREMENTS PRIOR TO WORK.

8. MOTORIZED SHADE POWER SUPPLIES AND ASSOCIATED EQUIPMENT TO BE MOUNTED HERE. REFER TO STANDYBY POWER PANEL SCHEDULES FOR CIRCUITS DEDICATED TO SHADE POWER.



A1 SECOND FLOOR PLAN - ZONE A - POWER
1/8" = 1'-0"

PLAN NORTH

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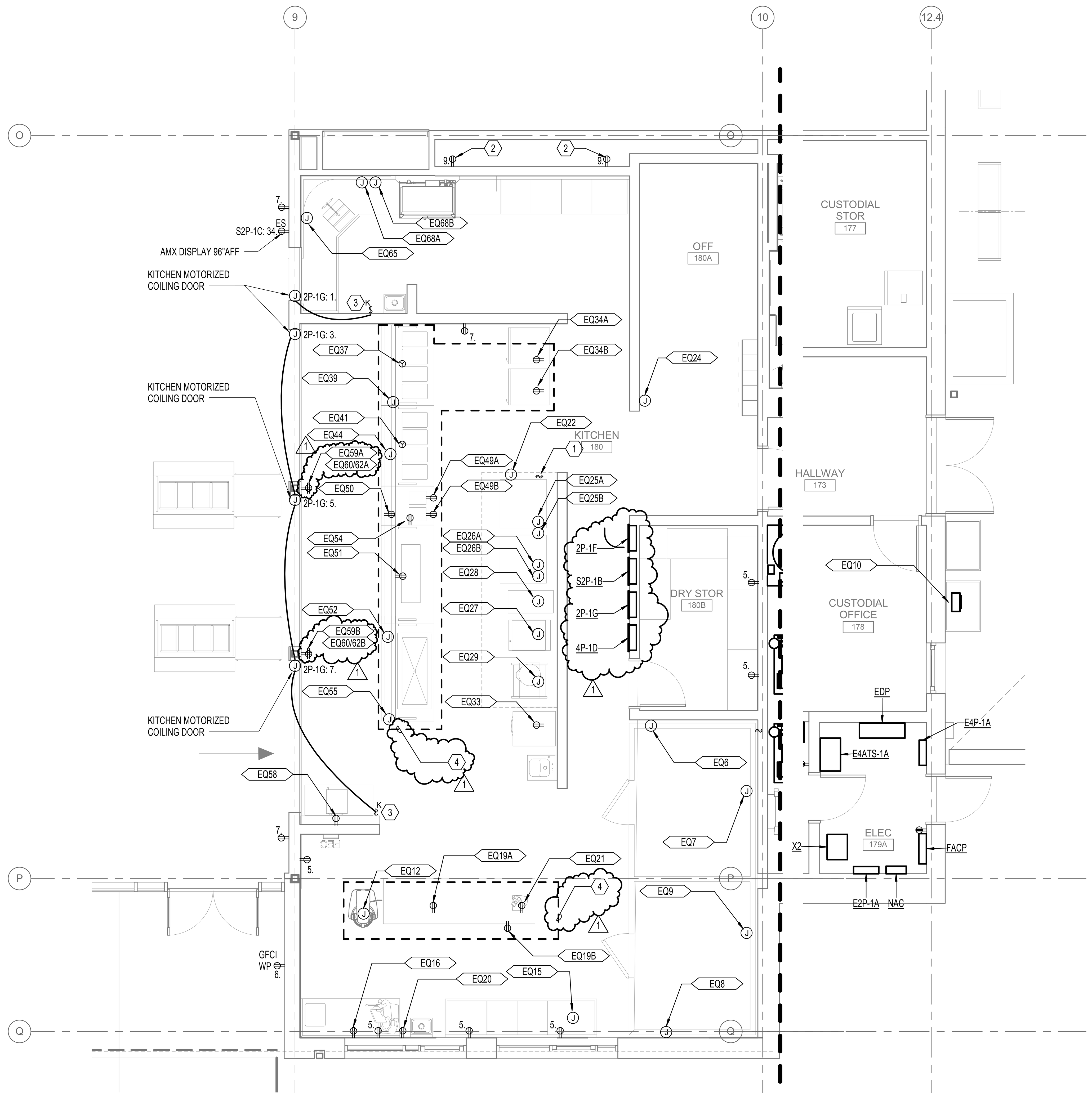
SECOND FLOOR PLAN - ZONE A - POWER

E-222A



B1 ENLARGED KITCHEN PLAN - POWER

1/4" = 1'-0"

PLAN NORTH

ROOSEVELT KITCHEN EQUIPMENT SCHEDULE														
TAG	EQUIPMENT DESCRIPTION	LOCATION	ELECTRICAL CHARACTERISTICS						CONDUIT	CONDUCTOR	DISCONNECT	PANEL	COMMENTS/NOTES
			KW	AMPS	HP	VOLTAGE	PHASE	CONNECTION					
EQ6	WALK-IN FREEZER	KITCHEN	1.20			120	1	HARDWIRE	1/2"	2#12, 1#12G	-	S2P-1B	
EQ7	FREEZER COIL	KITCHEN		14.35		208	1	HARDWIRE	1/2"	2#12, 1#12G		S2P-1B	
EQ8	WALK-IN COOLER	KITCHEN	1.20			120	1	HARDWIRE	1/2"	2#12, 1#12G	-	S2P-1B	
EQ9	COOLER COIL	KITCHEN		1.80		120	1	HARDWIRE	1/2"	2#12, 1#12G		S2P-1B	
EQ10	REFRIGERATION SYSTEM	KITCHEN		27.3		208	3	HARDWIRE	1/2"	3#8,1#10G	AT UNIT	S2P-1B	
EQ12	MIXER	KITCHEN		9.3		208	1	HARDWIRE	1/2"	2#12,1#12G	AT UNIT	2P-1F	
EQ15	GARBAGE DISPOSAL	KITCHEN		6.1		120	1	HARDWIRE	1/2"	2#12,1#12G	AT UNIT	2P-1F	
EQ16	TABLE/WALL SHELF	KITCHEN	0.2			120	1	NEMA 5-20R	1/2"	2#12,1#12G		2P-1F	
EQ19A	PREP TABLE	KITCHEN	0.2			120	1	NEMA 5-20R	1/2"	2#12,1#12G		2P-1F	
EQ19B	PREP TABLE	KITCHEN	0.2			120	1	NEMA 5-20R	1/2"	2#12,1#12G		2P-1F	
EQ20	SLICER	KITCHEN		5.6		120	1	HARDWIRE	1/2"	2#12,1#12G	-	2P-1F	
EQ21	FOOD PROCESSOR	KITCHEN		4.8		120	1	HARDWIRE	1/2"	2#12,1#12G	-	2P-1F	
EQ22	EXHAUST HOOD	KITCHEN	0.5			120	1	HARDWIRE	1/2"	2#12,1#12G		2P-1F	
EQ24	FIRE SUPRESSION HOOD	KITCHEN		15.0		120	1	HARDWIRE	1/2"	2#12,1#12G	-	2P-1F	
EQ25A	CONVECTION OVEN UPPER	KITCHEN	11.0			480	3	HARDWIRE	1/2"	3#12,1#12G	AT UNIT	4P-1D	
EQ25B	CONVECTION OVEN LOWER	KITCHEN	11.0			480	3	HARDWIRE	1/2"	3#12,1#12G	AT UNIT	4P-1D	
EQ26A	CONVECTION OVEN UPPER	KITCHEN	11.0			480	3	HARDWIRE	1/2"	3#12,1#12G	AT UNIT	4P-1D	
EQ26B	CONVECTION OVEN LOWER	KITCHEN	11.0			480	3	HARDWIRE	1/2"	3#12,1#12G	AT UNIT	4P-1D	
EQ27	STEAMER	KITCHEN		29.0		480	3	HARDWIRE	1/2"	3#8,1#10G	AT UNIT	4P-1D	
EQ28	OPEN BURNER/RANGE	KITCHEN		13.0		480	1	HARDWIRE	1/2"	2#12,1#12G	AT UNIT	4P-1D	
EQ29	TILTING KETTLE/STAND	KITCHEN		15.0		480	3	HARDWIRE	1/2"	3#12,1#12G	AT UNIT	4P-1D	
EQ33	ROLLER REFRIGERATOR	KITCHEN		4.8		120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ34A	HEATED CABINET	KITCHEN	1.5			120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ34B	HEATED CABINET	KITCHEN	1.5			120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ37	ENTRÉE COUNTER	KITCHEN		19.2		208	1	NEMA L6-30R	1/2"	2#10,1#10G	-	2P-1F	FLOOR OUTLET
EQ41	HOT FOOD COUNTER	KITCHEN		19.2		208	1	NEMA L6-30R	1/2"	2#10,1#10G	-	2P-1F	FLOOR OUTLET
EQ48	POS COUNTER	KITCHEN	0.5			120	1	NEMA 5-20R	1/2"	2#12,1#12G		2P-1F	
EQ49A	POS CONNECTION	KITCHEN	0.5			120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ49B	POS CONNECTION	KITCHEN	0.5			120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ50	PIZZA COUNTER	KITCHEN	0.5			120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ51	HEATED SHELF	KITCHEN		5.0		120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ54	COLD FOOD UNIT	KITCHEN		10.7		120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ58	MICROWAVE	KITCHEN		15.0		120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ59A	MILK COOLER	KITCHEN		6.7		120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ59B	MILK COOLER	KITCHEN		6.7		120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ60A	SALAD BAR	KITCHEN		7.8		120	1	NEMA 5-20R	1/2"	2#12,1#12G	-	2P-1F	
EQ60B	SALAD BAR	KITCHEN		7.8		120	1	NEMA 5-20R	1/2"	2#12,1#12G		2P-1F	
EQ62A	LIGHT	KITCHEN		0.6		120	1	NEMA 5-20R	1/2"	2#12,1#12G		2P-1F	
EQ62B	LIGHT	KITCHEN		0.6		120	1	NEMA 5-20R	1/2"	2#12,1#12G		2P-1F	
EQ65	GARBAGE DISPOSAL	KITCHEN		6.1		120	1	HARDWIRE	1/2"	2#12,1#12G	AT UNIT	2P-1F	
EQ68A	DISHWASHER	KITCHEN		27.9		480	3	HARDWIRE	1/2"	3#8,1#10G	AT UNIT	4P-1D	
EQ68B	BOOSTER	KITCHEN		40.1		480	3	HARDWIRE	1/2"	3#6,1#10G	AT UNIT	4P-1D	

GENERAL NOTE:

A. VERIFY ALL FINAL ELECTRICAL CONNECTION REQUIREMENT AND LOCATIONS WITH FOOD SERVICE EQUIPMENT PROVIDER PRIOR TO ROUGH IN.

B. PROVIDE A COMPLETE ELECTRICAL CONNECTIONS PER MANUFACTURER AS REQURIED.

GENERAL NOTES:

A. VERIFY ALL EQUIPMENT ELECTRICAL INFORMATION AND ROUGH-IN LOCATIONS WITH FOOD SERVICE SHOP DRAWINGS AND APPROVED FOOD SERVICE MANUFACTURER'S SPECIFICATION SHEETS PRIOR TO INSTALLATION.

B. PROVIDE CONDUIT SEALS AND FOAM BARRIER AS DESCRIBED ON FOOD SERVICE DOCUMENTS.

C. ALL 20A, 120V RECEPTACLES SHOWN ON THIS PLAN SHALL BE GFCI TYPE, OR SHALL BE PROTECTED BY GFCI TYPE CIRCUIT BREAKER.

D. REFER TO FIRE SUPPRESSION HOOD WIRING DIAGRAM, SHEET E-601, DETAIL 3, FOR ELECTRICAL OUTLETS AND SHUTDOWN REQUIREMENTS. ALL ELECTRICAL OUTLETS LOCATED UNDERNEATH KITCHEN HOOD SHUT SHUTDOWN AND SHUT DOWN VIA SHUNT-TRIP CONTACTORS UPON ACTUATION OF KITCHEN HOOD FIRE SUPPRESSION SYSTEM.

E. PROVIDE LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONNECTION (MAX 24" LENGTH) AT EACH MECHANICAL EQUIPMENT HARD-WIRED CONNECTION.

F. ALL FLOOR OUTLET BOXES AND PEDESTALS SHALL BE WATERPROOF.

NOTES:

1. SWITCH AND JBOX TO BE USED FOR HOOD LIGHT CI=ONNECTIONS AND CONTROL. VERIFY REQUIREMENTS WITH APPROVED FOOD SERVICE EQUIPMENT.

2. MOUNT IN CASEWORK. VERIFY EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.

3. REFER TO MANUFACTURER FOR EXACT CENTRAL DEVICE REQUIRED.

4. DEVICES IN THIS AREA SHALL BE FLOOR MOUNTED, WITH UNDERGROUND CONDUIT TO ALUMINUM PEDESTAL BOX. WIREMOLD 525 SERIES OR APPROVED EQUAL.

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EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: KAK
CHECKED BY: SPD

 ORIGINAL SHEET SIZE: 30"x42"

ENLARGED KITCHEN PLANS - ELECTRICAL

E-502

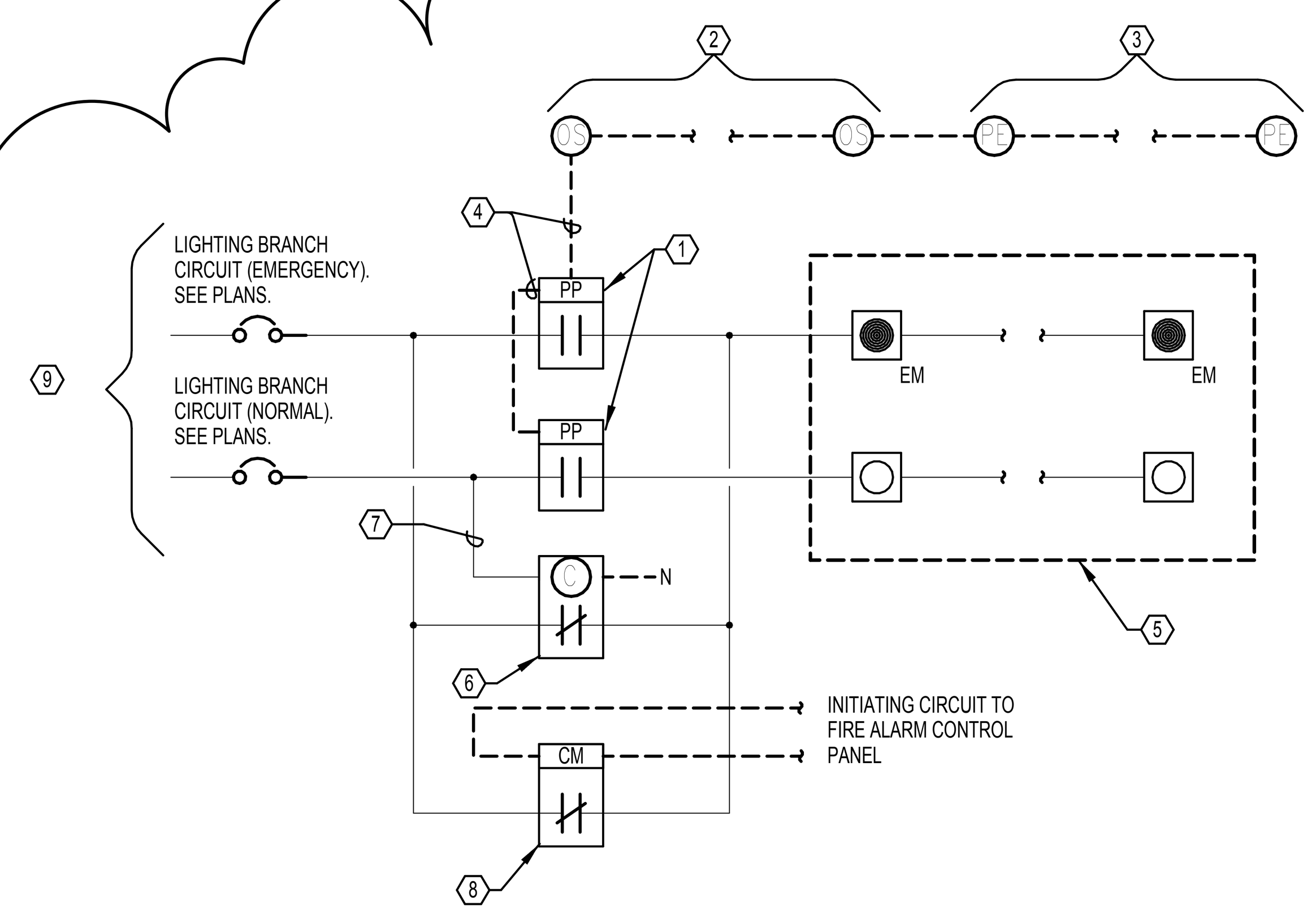
GENERAL LIGHTING CONTROL NOTES:

A. AUTOMATIC ON/OFF BY ASTRONOMICAL TIMECLOCK FOR EXTERIOR SITE LIGHTING CONTROLLED VIA DDC.

B. INTERIOR LIGHTING VIA DDC SHALL TURN ON/OFF BY TIMECLOCK DURING NORMAL OPERATING HOURS. AFTER HOURS, CARD SWIPE TO ACTIVE RELAYS TIED TO THE EMERGENCY PANEL, WITH LOCAL OVERRIDE SWITCHES TO CONTROL RELAYS TIED TO THE NORMAL PANEL.

C. BMS LIGHTING CONTROL EQUIPMENT IS TO BE PROVIDED BY OWNER OR OWNER'S DESIGNATED CONTROLS CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL COMPONENTS REQUIRED TO MAKE THE SYSTEM FUNCTION AS DESIGNED IN 260923, 260933, 260943, AND 265000.

D. THE ETC THEATRICAL AND HOUSE LIGHTING SYSTEM, AND THE GYMNASIUM DIGITAL CONTROL SYSTEM IS TO BE PROVIDED BY AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

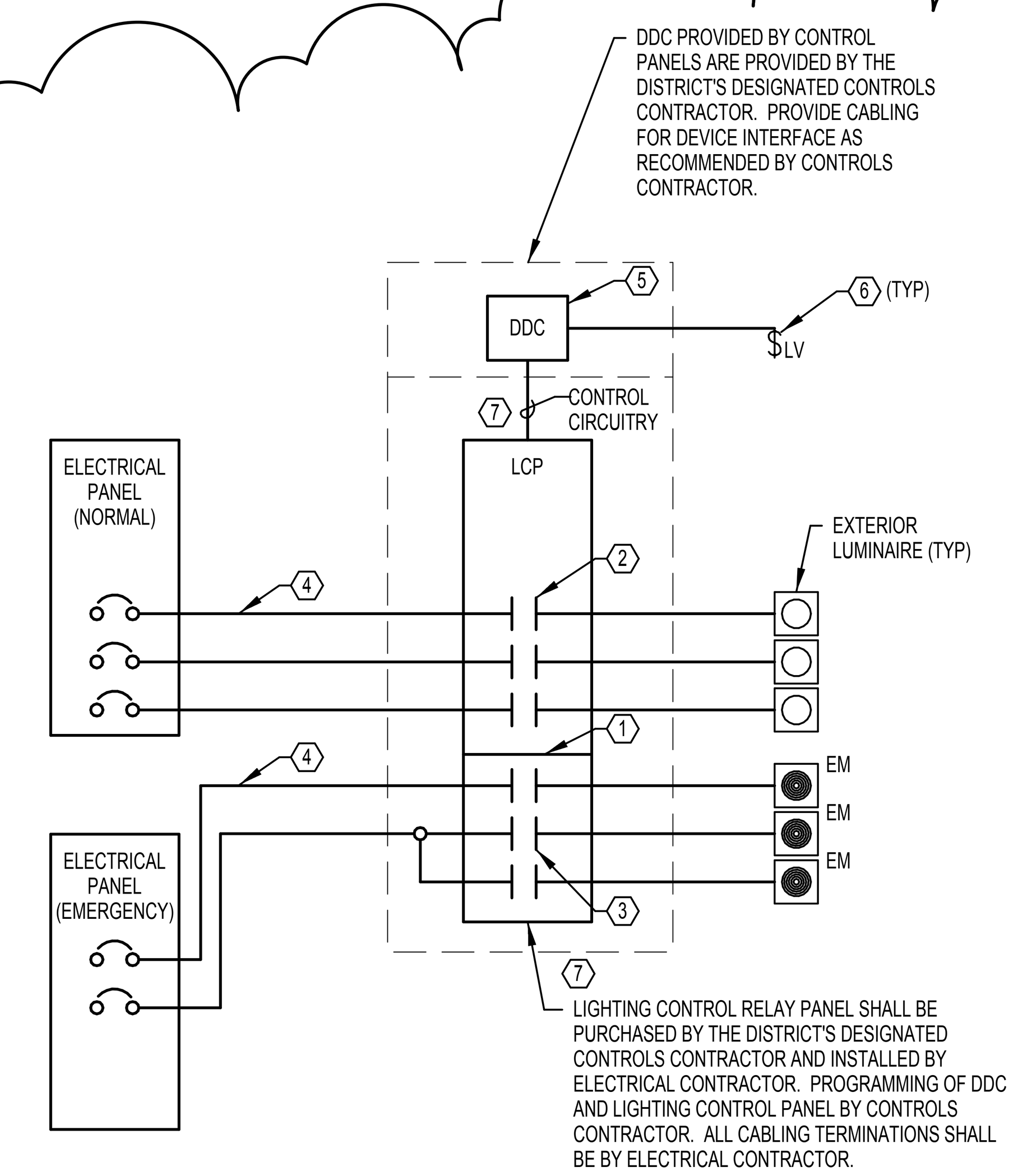


NOTES:

1. LOCAL LIGHTING CONTROL POWER PACK RELAY, CAPABLE OF INPUT FROM MULTIPLE CONTROL DEVICES. EMERGENCY LIGHTING AND NORMAL LIGHTING POWER PACKS SERVING THE SAME ZONE/AREA SHALL WORK TOGETHER TO CONTROL AS ONE ZONE DURING NORMAL CONDITIONS.
2. CEILING OCCUPANCY SENSOR(S) AS REQUIRED FOR COVERAGE OF THE ZONE/AREA.
3. CEILING PHOTOCELL DAYLIGHT SENSOR (S) AS REQUIRED FOR DAYLIT AREAS.
4. LOW VOLTAGE CONTROLS CABLING BETWEEN SENSORS AND POWER PACKS PER MANUFACTURER'S WIRING REQUIREMENTS.
5. EMERGENCY AND NORMAL POWER LIGHTING FIXTURES LOCATED IN THE SAME ZONE/AREA. SEE LIGHTING PLANS FOR FIXTURE TYPE, LOCATIONS, AND QUANTITIES.
6. BYPASS SHUNT RELAY LISTED UL924. LOSS OF NORMAL SHALL TURN ON EMERGENCY POWER LIGHTING.
7. BYPASS RELAY SHALL BE PROVIDED WITH UNSWITCHED NORMAL POWER BRANCH CIRCUIT SERVING THE ZONE/AREA.
8. FIRE ALARM CONTROL MODULE/RELAY. ACTUATION OF FIRE ALARM SYSTEM NOTIFICATION SHALL TURN ON EMERGENCY POWER LIGHTING.
9. CIRCUITING SHOWN DIAGRAMMATICALLY. SEE LIGHTING PLANS, PANEL SCHEDULES, AND RELAY SCHEDULES FOR CIRCUITING REQUIREMENTS, LOAD INFORMATION, AND FIXTURE QUANTITIES.

C3 TYPICAL LIGHTING CONTROL IN COMMON SPACES AND CORRIDORS

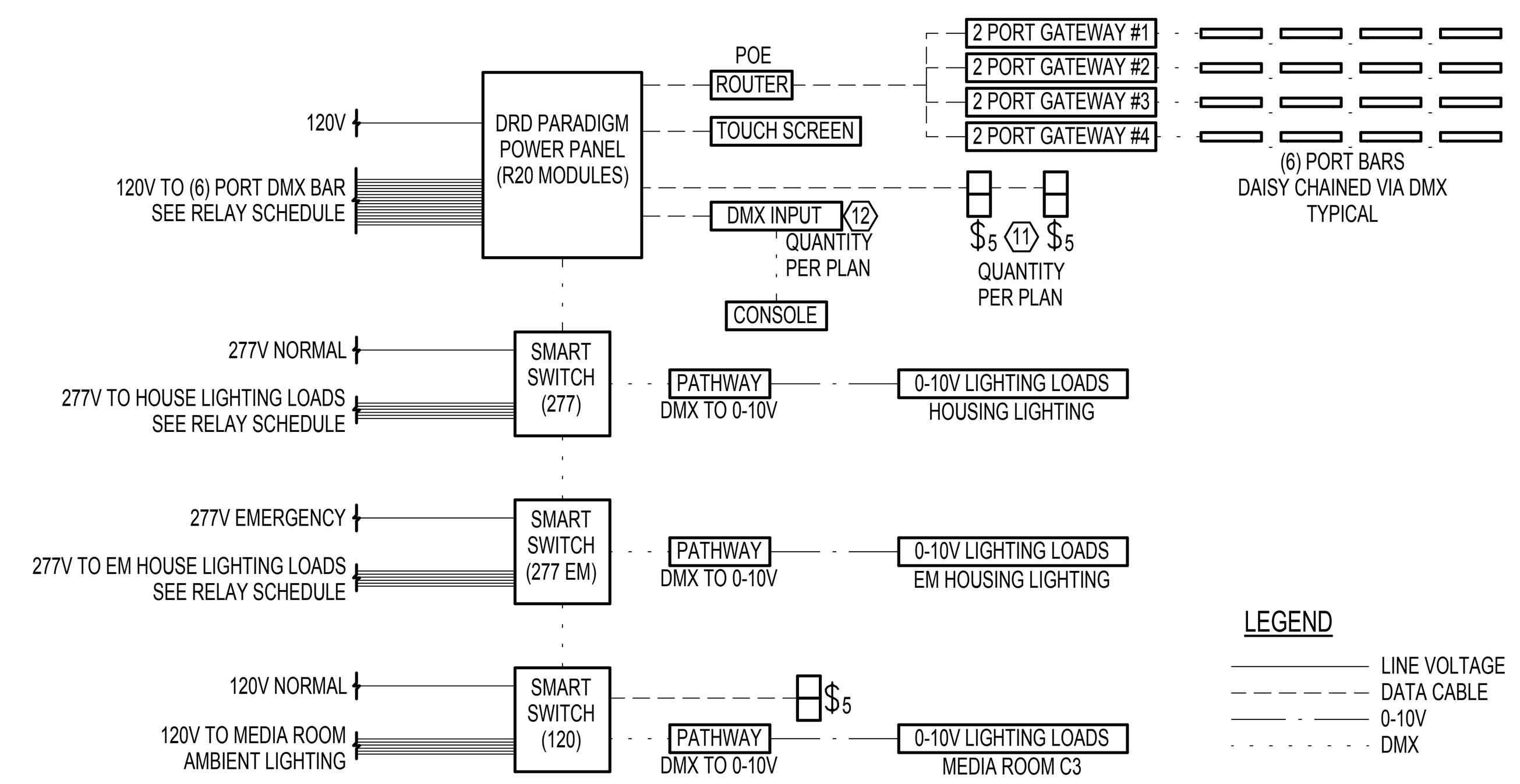
SCALE: NONE



NOTES:

1. ENCLOSURE SHALL CONTAIN SEPARATION BETWEEN NORMAL AND EMERGENCY CIRCUITS PER NEC.
2. RELAYS SHALL BE UL LISTED FOR USE IN LIGHTING APPLICATIONS AND BE ADEQUATELY BRACED FOR THE AVAILABLE FAULT CURRENT. RELAYS SHALL HAVE A SCCR LABELED ON THEM. AVAILABLE FAULT CURRENT CAN BE FOUND ON PANEL SCHEDULES. PROVIDE LIGHTING CONTROL RELAYS AND CONTROL PANEL COMPATIBLE WITH DDC SYSTEM. COORDINATE RELAY SELECTION WITH THE CONTROLS CONTRACTOR FOR APPROVAL.
3. CONTROL DEVICES SWITCHING EMERGENCY EGRESS CIRCUITS SHALL BE LISTED WITH AN APPROVED UL924 SHUNTING DEVICE THAT WILL TURN EMERGENCY LIGHTING TO "ON" IN THE EVENT OF A NORMAL POWER FAILURE.
4. CIRCUITING IS SHOWN DIAGRAMMATICALLY. SEE LIGHTING PLANS, PANEL SCHEDULES, AND RELAY SCHEDULES FOR CIRCUITING REQUIREMENTS, LOAD INFORMATION, AND FIXTURE QUANTITIES.
5. TIME CLOCK/ASTRONOMICAL FUNCTION AND TIME OF DAY SCHEDULING TO BE PROGRAMMED WITHIN THE DDC / LIGHTING CONTROL SYSTEM. LOW VOLTAGE SWITCHES ARE TO BE PROGRAMMED BY THE CONTROL CONTRACTOR.
6. 2-HOUR BYPASS OVERRIDE SWITCH. FOR EXTERIOR LIGHTING. INSTALL AT CUSTODIAL OFFICE 128, VERIFY LOCATION WITH DISTRICT PRIOR TO INSTALLATION.
7. CONNECTIONS TO DDC AND LIGHTING SYSTEM WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. COORDINATE RELAY LOCATION, CABLING REQUIREMENTS, AND CONNECTION DETAILS WITH CONTROL CONTRACTOR.

C4 DETAIL - LIGHTING CONTROL INTERFACE



B4 DETAIL - THEATRICAL DIMMING CONTROL SYSTEM

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BRETT W. COURNOYER
3-12-15
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT
MIDDLE SCHOOL
CIP NUMBER 410.566.001
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MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: KAK
CHECKED BY: SPD

ORIGINAL SHEET SIZE: 30"x42"

DETAILS - LIGHTING CONTROL

E-602

FEEDER SCHEDULE COPPER: 3 PHASE, 3 WIRE + GROUND					FEEDER SCHEDULE COPPER: 3 PHASE, 4 WIRE + GROUND			
NOMINAL AMPACITY	TAG	CONDUIT SIZE (MIN)	PHASE CONDUCTORS	GROUND CONDUCTOR	TAG	CONDUIT SIZE (MIN)	PHASE & NEUTRAL CONDUCTORS	GROUND CONDUCTOR
20	203	1/2"	(3) #12	#12	204	1/2"	(4) #12	#12
30	303	1/2"	(3) #10	#10	304	3/4"	(4) #10	#10
40	403	3/4"	(3) #8	#10	404	3/4"	(4) #8	#10
50	503	3/4"	(3) #6	#10	504	1"	(4) #6	#10
60	603	1"	(3) #4	#10	604	1 1/4"	(4) #4	#10
70	703	1"	(3) #4	#8	704	1 1/4"	(4) #4	#8
80	803	1 1/4"	(3) #3	#8	804	1 1/4"	(4) #3	#8
90	903	1 1/4"	(3) #2	#8	904	1 1/4"	(4) #2	#8
100	1003	1 1/4"	(3) #1	#8	1004	1 1/2"	(4) #1	#8
110	1103	1 1/4"	(3) #1	#6	1104	1 1/2"	(4) #1	#6
125	1253	1 1/4"	(3) #1	#6	1254	2"	(4) #1/0	#4
150	1503	1 1/2"	(3) #1/0	#6	1504	2"	(4) #2/0	#4
175	1753	1 1/2"	(3) #2/0	#6	1754	2"	(4) #3/0	#4
200	2003	2"	(3) #3/0	#6	2004	2 1/2"	(4) #4/0	#4
225	2253	2"	(3) #4/0	#4	2254	2 1/2"	(4) 250KCM	#3
250	2503	2 1/2"	(3) 250KCM	#4	2504	3"	(4) 350KCM	#2
300	3003	2 1/2"	(3) 350KCM	#4	3004	3 1/2"	(4) 500KCM	#2
350	3503	3"	(3) 500KCM	#3	3504	(2) 2"	(8) #3/0	(2) #3
400	4003	(2) 2"	(6) #3/0	(2) #3	4004	(2) 2 1/2"	(8) #4/0	(2) #2
450	4503	(2) 2"	(6) #4/0	(2) #2	4504	(2) 3"	(8) 250KCM	(2) #1
500	5003	(2) 2 1/2"	(6) 250KCM	(2) #2	5004	(3) 2 1/2"	(12) #3/0	(3) #1
600	6003	(2) 3"	(6) 350KCM	(2) #1	6004	(2) 3 1/2"	(8) 500KCM	(2) #2/0
800	8003	(3) 3"	(9) 350KCM	(3) #1/0	8004	(3) 3"	(12) 350KCM	(3) #2/0
1000	10003	(3) 3"	(9) 500KCM	(3) #2/0	10004	(4) 3"	(16) 350KCM	(4) #2/0
1200	12003	(4) 3"	(12) 350KCM	(4) #3/0	12004	(4) 3 1/2"	(16) 500KCM	(4) 250KCM
1600	16003	(5) 3"	(15) 500KCM	(5) #4/0	16004	(6) 3"	(24) 350KCM	(6) 250KCM
2000	20003	(6) 3"	(18) 500KCM	(6) 250KCM	20004	(6) 3 1/2"	(24) 500KCM	(6) 250KCM
2500	25003	(6) 4"	(18) 750KCM	(6) 350KCM	25004	(8) 4"	(32) 500KCM	(8) 350KCM
3000	30003	(7) 4"	(21) 750KCM	(7) 500KCM	30004	(9) 4"	(36) 500KCM	(9) 500KCM
4000	40003	(9) 4"	(27) 750KCM	(9) 500KCM	40004	(12) 4"	(48) 500KCM	(12) 500KCM

NOTES:
1. REFER TO SPECIFICATIONS FOR INSULATION TYPE PER WIRE SIZE.
2. MINIMUM CONDUIT SIZES IDENTIFIED MEET MAXIMUM 40% FILL FOR EMT, RMC AND PVC SCHEDULE 40.
3. FOR FEEDER RATINGS 100AMPS OR LESS, ACTUAL AMPACITY IS CALCULATED BY THOSE GIVEN IN NEC 310.15(B)(16), 60DEG C.
4. FOR FEEDER RATINGS GREATER THAN 100AMPS, ACTUAL AMPACITY IS CALCULATED BY THOSE GIVEN IN NEC 310.15(B)(16), 75DEG C.

NOTES:
1. REFER TO SPECIFICATIONS FOR INSULATION TYPE PER WIRE SIZE.
2. MINIMUM CONDUIT SIZES IDENTIFIED MEET MAXIMUM 40% FILL FOR EMT, RMC AND PVC SCHEDULE 40.
3. ALL NEUTRAL CONDUCTORS ARE CONSIDERED CURRENT CARRYING, THEREFORE AMPACITY ADJUSTMENTS HAVE BEEN INCLUDED IN ACCORDANCE WITH NEC TABLE 310.15(B)(3)(a) TO ACCOMMODATE FOUR (4) CURRENT CARRYING CONDUCTORS IN A SINGLE RACEWAY.
4. ADJUSTED CONDUCTOR AMPACITIES ARE CALCULATED BASED ON THOSE GIVEN FOR 90DEG C CONDUCTORS IN ACCORDANCE WITH NEC 310.15(B) AND TABLE NEC 310.15(B)(16). FOR FEEDER RATINGS 100AMPS OR LESS, THE ADJUSTED AMPACITY SHALL NOT EXCEED THE 60DEG C RATING. FOR FEEDER RATINGS GREATER THAN 100AMPS, ACTUAL AMPACITY SHALL NOT EXCEED THE 75DEG C RATING.

GENERAL NOTES:

A. FOR FEEDER SCHEDULE, SEE E-702.

B. THE ELECTRIC UTILITY COMPANY SERVICE INFRASTRUCTURE REQUIREMENTS SHOWN ON THESE PLANS ARE APPROXIMATE. UTILITY COMPANY SERVICE INFRASTRUCTURE, SUCH AS PRIMARY AND SECONDARY CONDUITS, PULL ROPES, PULL BOXES, VAULTS, CONCRETE PADS, GROUNDING, AND OTHER REQUIREMENTS NECESSARY FOR UTILITY SERVICE INSTALLATION SHALL BE INSTALLED PER UTILITY COMPANY DESIGN DRAWINGS (HANDOUT). CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE UTILITY COMPANY REPRESENTATIVE FOR THE PROJECT SITE TO OBTAIN THEIR DESIGN DRAWINGS AND INSTALLATION REQUIREMENTS, AND TO SCHEDULE UTILITY COMPANY INSPECTOR TO JOB SITE FOR MILESTONES AS DESIGNATED BY THE UTILITY COMPANY.

C. GROUNDING ELECTRODE CONDUCTORS AT TRANSFORMERS SHALL BE SIZED MINIMUM PER NEC TABLE 250.66, BASED ON SIZE OF THE TRANSFORMER SECONDARY CONDUCTORS.

D. ELECTRICAL SYSTEM EQUIPMENT DESIGN IS BASED ON EATON PRODUCTS. SUBSTITUTIONS SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

E. GROUNDING ELECTRODE SYSTEM INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF NEC ARTICLE 250. BOND THE GROUNDING BUS OF THE MAIN SWITCHBOARD TO ALL AVAILABLE GROUNDING ELECTRODES AS DESCRIBED IN THE NEC, INCLUDING BUT NOT NECESSARILY LIMITED TO CONCRETE REBAR, COLD WATER PIPING, BUILDING STRUCTURAL STEEL, GROUND RODS, ETC. ALL AVAILABLE GROUNDING ELECTRODES AT THE BUILDING SHALL BE BONDED TOGETHER WITH A GROUNDING ELECTRODE CONDUCTOR TO FORM A CONTINUOUS ELECTRICAL GROUNDING PATH.

F. SOLAR PHOTOVOLTAIC SYSTEM REQUIREMENTS ARE SHOWN SCHEMATIC. CONTRACTOR SHALL PROVIDE COMPLETE SOLAR PHOTOVOLTAIC SYSTEM DESIGN, APPROVAL, AND INSTALLATION. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. LOCATIONS OF SOLAR PV EQUIPMENT SHALL BE COORDINATED AND VERIFIED WITH THE ARCHITECT.

G. ALL SPACES PROVIDED IN DISTRIBUTION PANELS SHALL BE FULLY PROVISIONED.

NOTES:

1. CONTRACTOR SHALL PROVIDE SOLAR PHOTOVOLTAIC SYSTEM DESIGN AND INSTALLATION. COORDINATE WITH SOLAR PV DESIGN DRAWINGS FOR EXACT EQUIPMENT REQUIREMENTS.

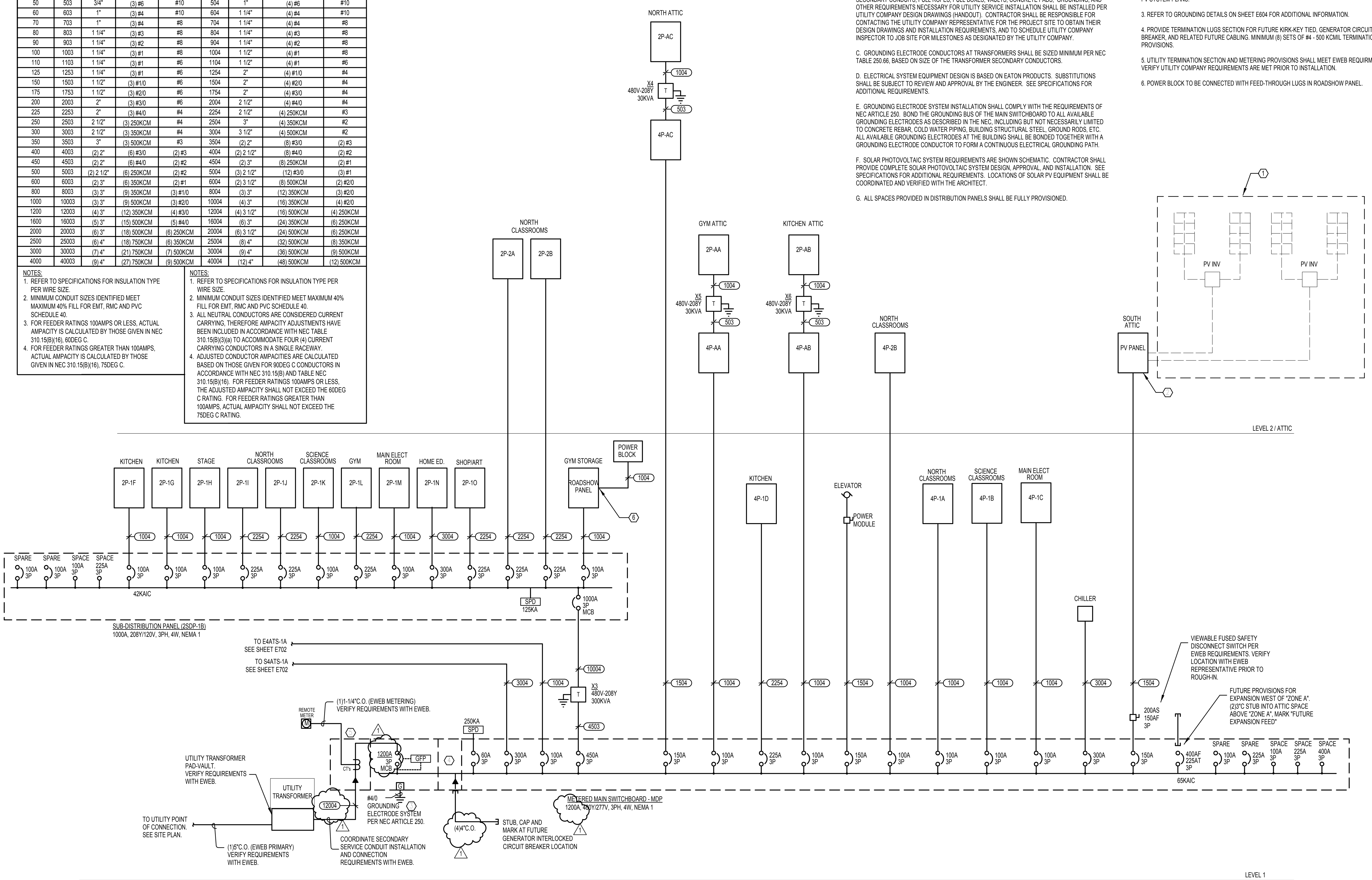
2. LOCATE NEAR SOLAR PV SYSTEM INVERTER EQUIPMENT. VERIFY LOCATION WITH APPROVED PV SYSTEM PLANS.

3. REFER TO GROUNDING DETAILS ON SHEET E604 FOR ADDITIONAL INFORMATION.

4. PROVIDE TERMINATION LUGS SECTION FOR FUTURE KIRK-KEY TIED, GENERATOR CIRCUIT BREAKER, AND RELATED FUTURE CABLING. MINIMUM (8) SETS OF #4 - 500 KCMIL TERMINATIONS PROVISIONS.

5. UTILITY TERMINATION SECTION AND METERING PROVISIONS SHALL MEET EWEB REQUIRMENTS. VERIFY UTILITY COMPANY REQUIREMENTS ARE MET PRIOR TO INSTALLATION.

6. POWER BLOCK TO BE CONNECTED WITH FEED-THROUGH LUGS IN ROADSHOW PANEL.



1 ELECTRICAL ONE-LINE DIAGRAM - NORMAL POWER
NONE

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September, 12 2014
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3-12-15
EXPIRES 12-31-15

EUGENE SCHOOL DISTRICT 4J

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ISSUE DATE: FEBRUARY 18, 2015
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PROJECT NO: 2013912.00
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DIAGRAMS - ELECTRICAL ONE-LINE DIAGRAM - NORMAL POWER

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT DESCRIPTIONS			ELECTRICAL CHARACTERISTICS							CONNECTION CHARACTERISTICS				FEEDER CHARACTERISTICS			PANEL INFORMATION	NOTES
TAG	DESCRIPTION	LOCATION	KW	HP	FLA	MCA	MOCP	VOLTS	PHASE	VFD	1-POINT CONNECT	STARTER DIVISION	DISCONNECT DIVISION	CONDUIT DIA (INCH)	PHASE CONDUCTORS	GROUND CONDUCTOR	PANEL NAME	
DDC PANELS	CONTROL PANEL	REFER TO FLOOR PLANS	0.2					120	1	-	-	-	-	1/2	2#12	1#12	-	
AH-A1	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A2	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A3	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A4	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A5	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A6	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A7	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A8	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A9	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A21	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A22	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A23	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A24	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A25	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A26	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A27	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A28	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-A29	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-HALL1-A	Air handling unit	MECHANICAL PLATFORM 301		2x1.34	3.4	4.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-WORK	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-GROUP	Air handling unit	MECHANICAL PLATFORM 301		0.17	2.6			115	1	NO	Yes	-	26					1
AH-CONF	Air handling unit	MECHANICAL PLATFORM 301		0.17	2.6			115	1	NO	Yes	-	26					1
AH-TECH	Air handling unit	MECHANICAL PLATFORM 301		0.17	2.6			115	1	NO	Yes	-	26					
AH-LOUNGE	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-HALL2-A	Air handling unit	MECHANICAL PLATFORM 301		2x1.34	3.4	4.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-LOBBY	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-FORUM-N	Air handling unit	MECHANICAL PLATFORM 301		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-LIBR	Air handling unit	MECHANICAL PLATFORM 301		2x2.3	5.2	6.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-FORUM-S	Air handling unit	MECHANICAL PLATFORM 301		2X1.34	3.4	4.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AC	1
AH-ADMIN	Air handling unit	MECH PLATFORM M265		2X4	8.4	9.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	S4P-2A	
AH-GYM-N	Air handling unit	MECH PLATFORM M265		15.00	21.0	26.0	45	460	3	YES	Yes	23	23	3/4"	3#8	1#10	4P-AA	1
AHU-GYM-S	Air handling unit	MECH PLATFORM M265		2x4	8.40	9.00	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AA	1
AH-ART-N	Air handling unit	MECH PLATFORM M265		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AA	1
AH-ART-S	Air handling unit	MECH PLATFORM M265		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AA	1
AH-HALL-C	Air handling unit	MECH PLATFORM M265		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AA	1
AH-HOMED	Air handling unit	MECH PLATFORM M265		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AA	1
AH-MEDIA-C3	Air handling unit	MECH PLATFORM M265		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AA	1
AH-LR-N	Air handling unit	MECH PLATFORM M265		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AA	1
AH-LR-S	Air handling unit	MECH PLATFORM M265		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AA	1
AH-BAND	Air handling unit	MECHANICAL PLATFORM 281A		4.00	4.2	5.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AB	1
AH-CHORAL	Air handling unit	MECHANICAL PLATFORM 281A		2X1.34	3.4	4.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AB	1
AH-COMMONS	Air handling unit	MECHANICAL PLATFORM 281A		7.50	11.0	13.0	20.0	460	3	YES	Yes	23	23	1/2"	3#10	1#10	4P-AB	1
AH-DRAMA	Air handling unit	MECHANICAL PLATFORM 281A		2x2.3	5.2	6.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AB	1
AH-KITCHEN	Air handling unit	MECHANICAL PLATFORM 281A		1X1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-AB	1
AH-CUST	Air handling unit	MECHANICAL PLATFORM 281A		0.17	2.6			115	1	NO	Yes	-	26					
AH-E1	Air handling unit	MECHANICAL PLATFORM M297		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-1B	1
AH-E2	Air handling unit	MECHANICAL PLATFORM M297		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-1B	1
AH-E3	Air handling unit	MECHANICAL PLATFORM M297		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-1B	1
AH-E4	Air handling unit	MECHANICAL PLATFORM M297		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-1B	1
AH-PREP	Air handling unit	MECHANICAL PLATFORM M297		0.17	2.6			115	1	NO	Yes	-	26					1
AH-HALL-EN	Air handling unit	MECHANICAL PLATFORM M268		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-1B	1
AH-HALL-ES	Air handling unit	MECHANICAL PLATFORM M268		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-1B	1
AH-PRACT	Air handling unit	MECHANICAL PLATFORM M268		1.34	1.7	2.0	15	208	1	NO	Yes	-	26	1/2"	2#12	1#12	2P-1K	1
AH-ENSEMBLE	Air handling unit	HALLWAY 182		1.34	1.7	2.0	15	460	3	NO	Yes	-	26	1/2"	3#12	1#12	4P-1B	1
FCU-IDF-B	Fan Coil Unit	IDF B117		0.50	4.0	5.0	15	208	1	NO	Yes	23	23	1/2"	2#12	1#12	S2P-1D	
FCU-IDF-A	Fan Coil Unit	IDF A219		0.50	4.0	5.0	15	208	1	NO	Yes	23	23	1/2"	2#12	1#12	S2P-1E	
FCU-MDF	Fan Coil Unit	MDFD176		0.50	4.0	5.0	15	208	1	NO	Yes	23	23	1/2"	2#12	1#12	S2P-1C	
FCU-ELEC	Fan Coil Unit	ELECTRICAL 179		0.50	4.0	5.0	15	208	1	NO	Yes	23	23	1/2"	2#12	1#12	2P-1M	
FCU-ELEV	Ductless FCU - Indoor WM Unit	ELEV MACHINE RM			13.0			208	1	NO							2P-AC	
ACCU-IDF-B	Air Cooled Condensing Unit	MECH PLATFORM M265			13.6	16.8		208	1	NO	Yes	23	23	1/2"	2#10	1#10	S2P-1D	
ACCU-IDF-A	Air Cooled Condensing Unit	MECHANICAL PLATFORM 301			14.3	17.6		208	1	NO	Yes	23	23	1/2"	2#10	1#10	S2P-1E	
ACCU-MDF	Air Cooled Condensing Unit	MECHANICAL PLATFORM 281A			13.6	16.8		208	1	NO	Yes	23	23	1/2"	2#10	1#10	S2P-1C	
ACCU-ELEC	Air Cooled Condensing Unit	MECHANICAL PLATFORM 281A			13.6	16.8		208	1	NO	Yes	23	23	1/2"	2#10	1#10	2P-1M	
ACCU-ELEV	Ductless FCU - Cond Unit	MECH PLATFORM ZONE A			13.0			208	1	NO	Yes	23	23				2P-AC	
ACC-1	CHILLER	UTILITY COURT			236.5	283.6		460	3	NO	Yes	23	23	-	-	-	REFER TO ONELINE	
	- CONTROL PANEL									-	-	-	-	-	-	-	-	
	-HEATER									-	-	-	-	-	-	-	-	
	- REFRIGERANT MONITORING PANEL									-	-	-	-	-	-	-	-	

GENERAL NOTES:

1. REFER TO ONE-LINE DIAGRAM OR PANEL SCHEDULES FOR OVERCURRENT PROTECTION CHARACTERISTICS AND CIRCUIT NUMBERS.
2. COORDINATE ALL EQUIPMENT CONNECTION REQUIREMENTS WITH INSTALLING CONTRACTOR PRIOR TO THE INSTALLATION OF ANY ELECTRICAL WORK.
3. VFD'S ARE FURNISHED BY DIVISION 23. INSTALL VFD AND PROVIDE PROVIDE LINE AND LOAD SIDE FEEDERS IN ELECTRICAL WORK.
4. COMBINATION STARTER/DISCONNECTS AND DISCONNECT SWITCHES SHALL BE LOCATED WITHIN SIGHT OF AND ADJACENT TO EQUIPMENT SERVED. COORDINATE INSTALLATION WITH EQUIPMENT INSTALLER.
5. NOT ALL EQUIPMENT IDENTIFIED HERE IS SHOWN ON FLOOR PLANS. REFER TO DRAWINGS IN OTHER DISCIPLINES FOR EQUIPMENT LOCATIONS.

NOTES: (SOME MAY NOT BE USED ON THIS SHEET)

1. MULTIPLE UNITS CONNECTED TO ONE CIRCUIT BREAKER. REFER TO PANEL SCHEDULES FOR EQUIPMENT CIRCUITS.

1 MECHANICAL COORDINATION SCHEDULE PART ONE

1/4" = 1'-0"

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MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: KAK
CHECKED BY: SPD

 ORIGINAL SHEET SIZE: 30"x42"

MECHANICAL COORDINATION SCHEDULE

E-801

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

TAG	DESCRIPTION	LOCATION	KW	HP	FLA	MCA	MOCP	VOLTS	PHASE	VFD	1-POINT CONNECT	STARTER DIVISION	DISCONNECT DIVISION	CONDUIT DIA (INCH)	PHASE CONDUCTORS	GROUND CONDUCTOR	PANEL NAME	NOTES
EQUIPMENT DESCRIPTIONS			ELECTRICAL CHARACTERISTICS							CONNECTION CHARACTERISTICS				FEEDER CHARACTERISTICS			PANEL INFORMATION	NOTES
B-1	BOILER	BOILER ROOM			7.3			120	1	-	Yes	-	26	1/2"	2#12	1#12	S2P-1B	
	- BOILER CONTROL PANEL									-	-	-	-	-	-	-	-	
	- BOILER EMERGENCY POWER OFF									-	-	-	-	-	-	-	-	
B-2	BOILER	BOILER ROOM			7.3			120	1	-	Yes	-	26	1/2"	2#12	1#12	S2P-1B	
	- BOILER CONTROL PANEL									-	-	-	-	-	-	-	-	
	- BOILER EMERGENCY POWER OFF									-	-	-	-	-	-	-	-	
DTP-1	HEATING/CHILLED WATER PUMP	BOILER ROOM		10.00				480	3	YES	Yes	23	23	1/2"	3#10	1#10	S4P-1A	
DTP-2	HEATING/CHILLED WATER PUMP	BOILER ROOM		10.00				480	3	YES	Yes	23	23	1/2"	3#10	1#10	S4P-1A	
EF-RH	RANGE HOOD EXHAUST FAN	MECH PLATFORM M265		0.50				115	1	NO	YES	-	23	1/2"	3#12	1#12	2P-AA	OPERATE FROM RANGE HOOD SWITCH
EF-KILN	KILN EXHAUST FAN	ROOF ABOVE M265		-	1.4	-	-	115	1	NO	YES	-	26	1/2"	3#12	1#12	2P-AA	
EF-E1	SCIENCE ROOM EXHAUST FAN	ROOF ABOVE SCIENCE ROOM		0.50				115	1	NO	YES	-	23	1/2"	2#12	1#12	2P-AA	
EF-E2	SCIENCE ROOM EXHAUST FAN	ROOF ABOVE SCIENCE ROOM		0.50				115	1	NO	YES	-	23	1/2"	2#12	1#12	2P-AA	
EF-E3	SCIENCE ROOM EXHAUST FAN	ROOF ABOVE SCIENCE ROOM		0.50				115	1	NO	YES	-	23	1/2"	2#12	1#12	2P-AA	
EF-E4	SCIENCE ROOM EXHAUST FAN	ROOF ABOVE SCIENCE ROOM		0.50				115	1	NO	YES	-	23	1/2"	2#12	1#12	2P-AA	
EF-D-RR	RESTROOM, CUST EXHAUST FAN	CUSTODIAL 177		1/2				115	1	NO	YES	-	23	1/2"	3#12	1#12	2P-1M	
EF-A-RR	RESTROOM EXHAUST FAN	MECHANICAL PLATFORM 301		1.5				460	3	NO	YES	26	23	1/2"	3#12	1#12	4P-AC	
EF-B-RR	RESTROOM EXHAUST FAN	MECHANICAL PLATFORM 301		1/4				115	1	NO	YES	-	23	1/2"	2#12	1#12	S2P-1A	
EF-ADMIN	ADMIN RESTROOMS	MECHANICAL ATTIC 301A		1/4				115	1	NO	YES	-	23	1/2"	3#12	1#12	2P-AC	
EF-C-RRN	GYM LOCKER EXHAUST FAN	MECH PLATFORM M265		3/4				115	1	NO	YES	-	23	1/2"	3#12	1#12	2P-AA	
EF-C-RRS	GYM LOCKER EXHAUST FAN	MECH PLATFORM M265		3/4				115	1	NO	YES	-	23	1/2"	3#12	1#12	2P-AA	
EF-GREASE	GREASE EXHAUST FAN	ROOF ABV ROOM A200		1.5				460	3	NO	YES	26	23	1/2"	3#12	1#12	4P-AB	
EF-DISH	DISHWASHER HOOD EXHAUST	ROOF ABV ROOM A200		1/2				115	1	NO	YES	-	23	1/2"	3#12	1#12	2P-AB	
EF-IDF-A	IDF A HEAT RECOVERY EXHAUST FAN	IDF 219		1/4				115	1	NO	YES	-	23	1/2"	2#12	1#12	S2P-1E	
EF-IDF-B	IDF B HEAT RECOVER EXHAUST FAN	IDF 117		1/4				115	1	NO	YES	-	23	1/2"	2#12	1#12	S2P-1D	
EF-MDF	MDF HEAT RECOVERY EXHAUST FAN	MDF 176		3/4				115	1	NO	YES	-	23	1/2"	2#12	1#12	S2P-1C	
EF-IDF-E	IDF E EXHAUST FAN	IDF 185		1/4				115	1	NO	YES	-	23	1/2"	2#12	1#12	S2P-1E	
EF-DRAMA	AH-DRAMA RELIEF	ZONE D ROOF		2.0				460	3	YES	YES	23	23	1/2"	3#12	1#12	4P-AB	
EF-HALL-E	HALL ES/EN RELIEF	MECH PLATFORM ZONE E		1.5				460	3	YES	YES	23	23	1/2"	3#12	1#12	4P-1B	
EF-PREP	SCIENCE PREP 192/196	ROOF ABOVE SCIENCE ROOM		1/4				115	1	NO	YES	-	23	1/2"	3#12	1#12	4P-1B	
RF-FORUM-S	AH-FORUM-S RETURN	MECH PLATFORM ZONE A		1.5				460	3	YES	YES	23	23	1/2"	3#12	1#12	4P-AC	
SF-ELEV	ELEVATOR RM SUPPLY	MECH PLATFORM ZONE A		1/2				115	1	NO	YES	-	23	1/2"	2#12	1#12	2P-AC	
RF-A	ZONE A & B RELIEF	MECH PLATFORM ZONE A		10				460	3	YES	YES	23	23	1/2"	3#10	1#10	4P-AC	
RF-LIBR	AH-LIBR RETURN	MECH PLATFORM ZONE A		2.1				460	3	YES	YES	23	23	1/2"	3#12	1#12	4P-AC	
TF-STOR-CN	GYM-N STORAGE	GYM-N WALL		1/4				115	1	NO	YES	-	23	1/2"	2#12	1#12	2P-AC	
TF-STOR-CS	GYM-S STORAGE	GYM-S WALL		1/4				115	1	NO	YES	-	23	1/2"	2#12	1#12	2P-AC	
TP-1	ELECTRONIC TRAP PRIMING MANIFOLD	JANITOR 138	0.1					120	1	-	YES	-	-	1/2"	2#12	1#12	2P-1I	
TP-2	ELECTRONIC TRAP PRIMING MANIFOLD	STOR 123B	0.1					120	1	-	YES	-	-	1/2"	2#12	1#12	2P-1J	
TP-3	ELECTRONIC TRAP PRIMING MANIFOLD	JANITOR 158	0.1					120	1	-	YES	-	-	1/2"	2#12	1#12	2P-1L	
TP-4	ELECTRONIC TRAP PRIMING MANIFOLD	BOILER ROOM 174	0.1					120	1	-	YES	-	-	1/2"	2#12	1#12	S2P-1C	
TP-5	ELECTRONIC TRAP PRIMING MANIFOLD	SCIENCE PREP 196	0.1					120	1	-	YES	-	-	1/2"	2#12	1#12	2P-1H	
TP-6	ELECTRONIC TRAP PRIMING MANIFOLD	JANITOR 223	0.1					120	1	-	YES	-	-	1/2"	2#12	1#12	2P-2A	
TP-7	ELECTRONIC TRAP PRIMING MANIFOLD	BOILER ROOM 174	0.1					120	1	-	YES	-	-	1/2"	2#12	1#12	S2P-1C	
GWH-101	GAS WATER HEATER	BOILER ROOM			5.0			120	1	-	YES	-	26	1/2"	2#12	1#12	S2P-1B	
GWH-102	GAS WATER HEATER	BOILER ROOM			5.0			120	1	-	YES	-	26	1/2"	2#12	1#12	S2P-1B	
(FUTURE) GWH-103	GAS WATER HEATER	BOILER ROOM			5.0			120	1	-	YES	-	26	1/2"	2#12	1#12	S2P-1B	
SV-1	GAS SOLENOID VALVE		0.1					120	1	-	-	-	-	1/2"	2#12	1#12	2P-1K	
CP-1	HYDRONIC WATER PUMP	BOILER ROOM		10				460	3	YES	YES	23	23	1/2"	3#10	1#10	S4P-1A	
CP-2	HYDRONIC WATER PUMP	BOILER ROOM		10				460	3	YES	YES	23	23	1/2"	3#10	1#10	S4P-1A	
RSP-B	RADIANT WATER PUMP	MECH M301		1/4				120	1	NO	YES	-	26	1/2"	2#12	1#12	S2P-1B	
RSP-D	RADIANT WATER PUMP	MECH M281A		1/2				120	1	NO	YES	-	26	1/2"	2#12	1#12	S2P-1B	
RHWP-101	RECIRCULATING WATER PUMP	BOILER ROOM		2/5				120	1	NO	YES	-	26	1/2"	2#12	1#12	2P-1M	
RHTWP-101	RECIRCULATING WATER PUMP HTW	BOILER ROOM	0.039	-				120	1	NO	YES	-	26	1/2"	2#12	1#12	2P-1M	
SCP-101	SOLAR CIRC PUMP	BOILER ROOM	0.052					120	1	NO	YES	-	26	1/2"	2#12	1#12	2P-1M	
SHEP-201	SOLAR HEAT EXCHANGER PUMP	MECHANICAL EQUIPMENT PLATFORM D	0.270	-				120	1	NO	YES	-	26	1/2"	2#12	1#12	2P-1M	
ALT 5: RWHHT-101	**RAINWATER HYPOTREATMENT SKID**	**BOILER ROOM**			**13.0**			**120**	**1**		**YES**		**22**	**1/2"**	**2#12**	**1#12**	**2P-1M**	
ALT 5: RWS-101	RAINWATER PUMP SKID	BOILER ROOM		(2) @ 5	**25.0**			480	3	YES	YES	22	22	1/2"	3#12	1#12	4P-1C	
ALT 5: RCP-101	RAINWATER CISTERN PUMP	RAIN WATER CISTERN (SITE)		1.50				460	3	NO	YES	22	22	1/2"	2#10	1#10	4P-1C	
SP-1	SUMP PUMP	ELEVATOR PIT		1/2				120	1	NO	YES	22	22	1/2"	2#12	1#12	2P-1M	
HEAT TRACE	HEAT TRACING	CHILLED WATER PIPING IN YARD								-	YES	-	26	1/2"	2#12	1#12	S2P-1B	

GENERAL NOTES:

1. REFER TO ONE-LINE DIAGRAM OR PANEL SCHEDULES FOR OVERCURRENT PROTECTION CHARACTERISTICS AND CIRCUIT NUMBERS.
2. COORDINATE ALL EQUIPMENT CONNECTION REQUIREMENTS WITH INSTALLING CONTRACTOR PRIOR TO THE INSTALLATION OF ANY ELECTRICAL WORK.
3. VFD'S ARE FURNISHED BY DIVISION 23. INSTALL VFD AND PROVIDE PROVIDE LINE AND LOAD SIDE FEEDERS IN ELECTRICAL WORK.
4. COMBINATION STARTER/DISCONNECTS AND DISCONNECT SWITCHES SHALL BE LOCATED WITHIN SIGHT OF AND ADJACENT TO EQUIPMENT SERVED. COORDINATE INSTALLATION WITH EQUIPMENT INSTALLER.
5. NOT ALL EQUIPMENT IDENTIFIED HERE IS SHOWN ON FLOOR PLANS. REFER TO DRAWINGS IN OTHER DISCIPLINES FOR EQUIPMENT LOCATIONS.

1 MECHANICAL COORDINATION SCHEDULE PART TWO

1/4" = 1'-0"

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3-12-15

EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: KAK
CHECKED BY: SPD

MECHANICAL COORDINATION SCHEDULE

E-802

DESIGNATION: MDP		BUS RATING: 1200 A	TYPE: Switchboard		PROJECT NAME: ROOSEVELT MS
VOLTAGE: 480					AVAILABLE FAULT(A): 28911
FEEDER ID:	TYPE	TRIP RATING (A)	CONNECTED (Amps)	DESIGN (Amps)	NOTES
E4ATS-1A-N	Feeder	60	0.0	0.0	
E4P-1A	Feeder	100	25.6	31.1	
CHILLER	Feeder	300	237.0	237.0	
PNL-PV	Feeder	150	0.0	0.0	
4P-AC	Feeder	150	94.1	94.1	
1200A-MCB	Feeder	1200	1391.4	1257.2	
4P-AA	Feeder	100	60.5	60.5	
4P-AB	Feeder	100	41.2	41.6	
4P-1C	Feeder	100	58.7	63.4	
MDP SPARE B	Feeder	225	0.0	0.0	
MDP SPACE A	Feeder	100	0.0	0.0	
MDP SPACE B	Feeder	225	0.0	0.0	
MDP SPACE C	Feeder	400	0.0	0.0	
ELEVATOR	Feeder	150	30.0	30.0	
4P-2B	Feeder	100	16.6	20.8	
4P-1A	Feeder	100	11.8	14.8	
4P-1B	Feeder	100	28.2	31.8	
MDP SPARE A	Feeder	100	0.0	0.0	
X3	Feeder	450	431.1	356.5	
4P-1D	Feeder	225	187.4	121.8	
S4P-1A	Feeder	300	226.4	208.5	

DEMAND CATEGORY	Aph (VA)	Bph (VA)	Cph (VA)
Equipment	240860	249225	240834
Receptacles	25232	26242	27727
(None)	3141	2479	1416
Lighting	33001	31382	22261
Kitchen Equip	43859	39084	38360
DESIGN LOAD:	346093	348412	330599

TOTAL CONNECTED LOAD	VA:	1140885
	Amps:	1391.4
TOTAL DESIGN LOAD	VA:	1025103
	Amps:	1257.2

Total Design Load = 1135 Amps
Per NEC 220.86, Optional Calculation Method for Schools.
LOAD JUSTIFICATION:
Total building square footage: 97,300
1,159,768VA/97,300sf = 11.92VA/sf (connected load per square foot)
1st 3VA/sf @ 100% = 291,900 VA
3-20VA/sf (remaining) @ 75%,
(1,159,768 - 291,900) x 0.75 = 650,901 VA
TOTAL CALCULATED LOAD = 942,801VA (1135 Amps @ 480V 3ph)

DESIGNATION: EDP		TYPE: Switchboard		PROJECT NAME: ROOSEVELT MS	
VOLTAGE: 480		BUS RATING: 400 A		kAIC RATING: 35	AVAILABLE FAULT(A): 2704
FEEDER ID:	TYPE	TRIP RATING (A)	CONNECTED (kVA)	DESIGN (kVA)	NOTES
PANEL-EDP	Feeder		226.3	220.2	
LOAD BANK	Feeder	400	0.0	0.0	
E4ATS-1A	Feeder	100	20.6	25.0	
S4ATS-1A	Feeder	300	205.7	195.2	

DESIGNATION: 2SDP-1B		TYPE: Switchboard			PROJECT NAME: ROOSEVELT MS
VOLTAGE: 208		BUS RATING: 1000 A			AVAILABLE FAULT(A): 12597
FEEDER ID:	TYPE	TRIP RATING (A)	CONNECTED (Amps)	DESIGN (Amps)	NOTES
2P-1K	Feeder	100	71.8	57.6	
2P-1L	Feeder	225	101.3	98.9	
2P-1M	Feeder	100	38.8	38.8	
2P-2A	Feeder	225	90.6	77.5	
2P-2B	Feeder	225	116.8	102.6	
2P-1H	Feeder	100	63.4	67.9	
ROADSHOW	Feeder	100	0.0	0.0	
2P-1G	Feeder	100	8.3	8.3	
2P-1N	Feeder	300	212.5	212.5	
2P-1O	Feeder	225	84.3	79.5	
2SDP-1B	Main	1000	994.9	822.8	
2P-1F	Feeder	100	83.5	54.8	
SDP SPARE A	Feeder	100	0.0	0.0	
SDP SPARE B	Feeder	100	0.0	0.0	
SDP SPACE A	Feeder	100	0.0	0.0	
SDP SPACE B	Feeder	225	0.0	0.0	
2P-1I	Feeder	225	98.9	85.8	
2P-1J	Feeder	225	80.3	69.4	

DEMAND CATEGORY	Aph (VA)	Bph (VA)	Cph (VA)
Equipment	55138	63039	54230
(None)	1475	938	0
Receptacles	19172	22192	24307
Kitchen Equip	6402	6132	5549
Lighting	4437	6507	2875
DESIGN LOAD:	86624	98808	86961

TOTAL CONNECTED LOAD	VA:	334553
	Amps:	994.9
TOTAL DESIGN LOAD	VA:	272392
	Amps:	822.8

DESIGNATION: PANEL PNL-PV				VOLTAGE: 480Y/277V - 3 Ph - 4 Wire					PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 225	MAIN(A): 150			AVAILABLE FAULT(A): 13037					MOUNTING: Surface	ENCLOSURE: NEMA 1
DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
	(None)			1	A	2			(None)	
	(None)			3	B	4			(None)	
	(None)			5	C	6			(None)	
	(None)			7	A	8			(None)	
	(None)			9	B	10			(None)	
	(None)			11	C	12			(None)	
	(None)			13	A	14			(None)	
	(None)			15	B	16			(None)	
	(None)			17	C	18			(None)	
	(None)			19	A	20			(None)	
	(None)			21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
DESIGN LOAD:				

TOTAL CONNECTED LOAD	VA:	0
	AMPS:	0.0
TOTAL DESIGN LOAD	VA:	0
	AMPS:	0.0

DESIGNATION: PANEL ROADSHOW				VOLTAGE: 208Y/120V - 3 Ph - 4 Wire					PROJECT NAME: ROOSEVELT MS	
BUS RATING(A):	MAIN(A): 100			AVAILABLE FAULT(A): 2721					MOUNTING: Surface	ENCLOSURE: NEMA 1
DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
SPARE	(None)		20/1	1	A	2			(None)	
SPARE	(None)		20/1	3	B	4			(None)	
SPARE	(None)		20/1	5	C	6			(None)	
SPARE	(None)		20/1	7	A	8			(None)	
SPARE	(None)		20/1	9	B	10			(None)	
SPARE	(None)		20/1	11	C	12			(None)	
	(None)			13	A	14			(None)	
	(None)			15	B	16			(None)	
	(None)			17	C	18			(None)	
	(None)			19	A	20			(None)	
	(None)			21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
	(None)			37	A	38			(None)	
	(None)			39	B	40			(None)	
	(None)			41	C	42			(None)	

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
DESIGN LOAD:				

TOTAL CONNECTED LOAD	VA:	0
	AMPS:	0.0
TOTAL DESIGN LOAD	VA:	0
	AMPS:	0.0

MDP	EDP	2SDP-1B
PNL PV	ROADSHOW	

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EUGENE SCHOOL DISTRICT 4J

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REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: JAR
CHECKED BY: SPD

PANEL SCHEDULES

E-900

DESIGNATION: S2SDP-1A | TYPE: Switchboard | PROJECT NAME: ROOSEVELT MS

VOLTAGE: 208 | BUS RATING: 400 A | AVAILABLE FAULT(A): 6835

FEEDER ID:	TYPE	TRIP RATING (A)	CONNECTED (kVA)	DESIGN (kVA)	NOTES
S2P-1A	Feeder	150	30.8	29.5	
S2P-1F	Feeder	100	11.3	11.3	
S2P-1E	Feeder	100	17.6	17.6	
S2P-1D	Feeder	100	23.3	23.3	
S2SDP-1A	Main	600	148.2	136.8	
S2P-1C	Feeder	150	39.0	38.8	
SDP SPARE C	Feeder	100	0.0	0.0	
SDP SPACE C	Feeder	225	0.0	0.0	
S2P-1B	Feeder	100	26.2	20.8	

DEMAND CATEGORY	Aph (VA)	Bph (VA)	Cph (VA)
Receptacles	6737	4727	4817
Equipment	36465	35506	37027
(None)	625	500	375
Kitchen Equip	3691	3242	3102
DESIGN LOAD:	47518	43975	45320

TOTAL CONNECTED LOAD	VA:	148197
	Amps:	439.5
TOTAL DESIGN LOAD	VA:	136813
	Amps:	395.7

DESIGNATION: PANEL S4P-1A | VOLTAGE: 480Y/277V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): 400 | MAIN(A): 300 | AVAILABLE FAULT(A): 24012 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
	(None)			1	A	2			(None)	
	(None)			3	B	4			(None)	
	(None)			5	C	6			(None)	
	(None)			7	A	8			(None)	
	(None)			9	B	10			(None)	
	(None)			11	C	12			(None)	
CP-1	Equipment	3900	25/3	13	A	14			(None)	
		3900		15	B	16			(None)	
		3900		17	C	18			(None)	
CP-2	Equipment	3900	25/3	19	A	20			(None)	
		3900		21	B	22			(None)	
		3900		23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
SPARE	(None)		20/1	31	A	32	20/1		(None)	SPARE
SPARE	(None)		20/1	33	B	34	20/1		(None)	SPARE
SPARE	(None)		20/1	35	C	36	20/1		(None)	SPARE
			225/3	37	A	38	100/3			
				39	B	40				
				41	C	42				

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	45153	45634	48595	139382
(None)	625	500	375	1500
Receptacles	6737	4727	4817	16280
Kitchen Equip	3691	3242	3102	10035
Lighting	1585	2850	218	4652
DESIGN LOAD:	57791	56953	57106	171849

TOTAL CONNECTED LOAD	VA:	182303
	AMPS:	226.4
TOTAL DESIGN LOAD	VA:	171849
	AMPS:	208.5

1

DESIGNATION: PANEL S4P-2A | VOLTAGE: 480Y/277V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): 100 | MAIN(A): 175 | AVAILABLE FAULT(A): 7406 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
AH-ADMIN	Equipment	2328	15/3	1	A	2	20/1		(None)	SPARE
		2328		3	B	4	20/1		(None)	SPARE
		2328		5	C	6	20/1		(None)	SPARE
R107/108/109/110/111	Lighting	1268	20/1	7	A	8	20/1		(None)	SPARE
ADMIN	Lighting	2280	20/1	9	B	10	20/1		(None)	SPARE
ADMIN - EM	Lighting	174	20/1	11	C	12	20/1		(None)	SPARE
	(None)			13	A	14			(None)	
	(None)			15	B	16			(None)	
	(None)			17	C	18			(None)	
	(None)			19	A	20			(None)	
	(None)			21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
	(None)			37	A	38			(None)	
	(None)			39	B	40			(None)	
	(None)			41	C	42			(None)	

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	2328	2328	2328	6984
Lighting	1585	2850	218	4652
DESIGN LOAD:	3913	5178	2546	11637

TOTAL CONNECTED LOAD	VA:	10706
	AMPS:	16.6
TOTAL DESIGN LOAD	VA:	11637
	AMPS:	18.7

DESIGNATION: PANEL S2P-1A | VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): 225 | MAIN(A): 150 | AVAILABLE FAULT(A): 2428 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 102A	Receptacles	1080	20/1	1	A	2	20/1	720	Receptacles	CONFERENCE RM
RM 102A	Receptacles	1080	20/1	3	B	4	20/1	500	Equipment	SLIDING DOORS
RM 101/107A/118	Receptacles	720	20/1	5	C	6	20/1	1180	Equipment	HALLWAY - ROLL DOWN SECURITY DOORS
RM 104/108	Receptacles	1080	20/1	7	A	8	20/1	200	Equipment	FIRE ALARM BELL
RM 106	Receptacles	720	20/1	9	B	10	20/1	1440	Equipment	SHADE POWER (LEVEL 2)
RM 110/111	Receptacles	900	20/1	11	C	12	20/1	1440	Equipment	SHADE POWER (LEVEL 2)
RM 112/113/114	Receptacles	1500	20/1	13	A	14	20/1	360	Receptacles	RM 109 - DED
RM 109	Receptacles	540	20/1	15	B	16	20/1	360	Receptacles	RM 109 - DED
RM 105	Receptacles	720	20/1	17	C	18	20/1	500	Equipment	RM 134/142/143/145/146 - TV
RM 105 - COPIER	Equipment	1000	20/1	19	A	20	20/1	400	Equipment	RM 129/130/133/134 - TV
RM 105	Receptacles	720	20/1	21	B	22	20/1	400	Equipment	RM 191/193/195/197 - TV
RM 115 - HAND DRYER	Equipment	1400	20/1	23	C	24	20/1	300	Equipment	RM 184/186/188 - TV
RM 103A/115/116	Receptacles	540	20/1	25	A	26	20/1	500	(None)	RM 218/224/225/227/228 - TV
RM 116 - HAND DRYER	Equipment	1400	20/1	27	B	28	20/1	400	(None)	RM 212/213/215/217 - TV
RM 103A - HAND DRYER	Equipment	1400	20/1	29	C	30	20/1	300	(None)	RM 151/153/155 - TV
RM 103 - REFRIGERATOR	Equipment	500	20/1	31	A	32	20/1	700	Equipment	EF-B-RR
RM 103	Receptacles	1080	20/1	33	B	34	20/1	1440	Equipment	SHADE POWER
RM 103	Receptacles	360	20/1	35	C	36	20/1	1440	Equipment	SHADE POWER
SPARE	(None)		20/1	37	A	38	20/1	1440	Equipment	SHADE POWER
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	4306	3917	2700	10923
Equipment	4240	5180	7660	17080
(None)	625	500	375	1500
DESIGN LOAD:	9171	9597	10735	29503

TOTAL CONNECTED LOAD	VA:	30760
	AMPS:	88.8
TOTAL DESIGN LOAD	VA:	29503
	AMPS:	89.4

DESIGNATION: PANEL S2P-1B | VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): 100 | MAIN(A): 100 | AVAILABLE FAULT(A): 3591 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
EQ6 - WALK-IN FREEZER	Kitchen Equip	1200	20/1	1	A	2	20/1	1440	Equipment	SHADE POWER (LAB/CUSTODIAL)
EQ7 - FREEZER COIL	Kitchen Equip	1493	20/2	3	B	4	20/1	600	Equipment	GWH-103
		1493		5	C	6	20/1	1440	Equipment	SHADE POWER (COMMONS)
EQ8 - WALK-IN COOLER	Kitchen Equip	1200	20/1	7	A	8	20/1	1440	Equipment	SHADE POWER
EQ9 - COOLER COIL	Kitchen Equip	216	20/1	9	B	10	20/1		(None)	SPARE
EQ10 - REFRIGERATION SYSTEM	Kitchen Equip	3279	20/3	11	C	12	20/1		(None)	SPARE
		3279		13	A	14	20/1		(None)	SPARE
		3279		15	B	16	20/1		(None)	SPARE
B-1 - BOILER	Equipment	438	20/2	17	C	18	20/1		(None)	SPARE
		438		19	A	20	20/1		(None)	SPARE
B-2 - BOILER	Equipment		20/2	21	B	22	20/1		(None)	SPARE
		438		23	C	24	20/1		(None)	SPARE
GWH-101	Equipment	600	20/1	25	A	26	20/1		(None)	SPARE
GWH-102	Equipment	600	20/1	27	B	28	20/1		(None)	SPARE
RSP-B	Equipment	700	20/1	29	C	30	20/1		(None)	SPARE
RSP-D	Equipment	1180	20/1	31	A	32	20/1		(None)	SPARE
DDC PANEL 3	Equipment	500	20/1	33	B	34	20/1		(None)	SPARE
DDC PANEL 4	Equipment	500	20/1	35	C	36	20/1		(None)	SPARE
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Kitchen Equip	3691	3242	3102	10035
Equipment	5536	1700	3516	10752
DESIGN LOAD:	9227	4942	6618	20787

TOTAL CONNECTED LOAD	VA:	26191
	AMPS:	93.4
TOTAL DESIGN LOAD	VA:	20787
	AMPS:	76.8

DESIGNATION: PANEL S2P-1C | VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): 225 | MAIN(A): 150 | AVAILABLE FAULT(A): 6290 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 181 - MOTORIZED SCREEN	Equipment	1000	20/1	1	A	2	20/1	1080	Receptacles	RM 05
RM 181 - PROJECTOR	Equipment	500	20/1	3	B	4	20/1	180	Receptacles	RM 05
KITCHEN	Receptacles	1080	20/1	5	C	6	20/1	540	Receptacles	OUTSIDE
RM 168/173	Receptacles	1080	20/1	7	A	8	20/1	720	Receptacles	MDF 176
RM 168	Receptacles	720	20/1	9	B	10	20/1	360	Equipment	MDF 176 - RACK-MNTD PWR
RM 174	Receptacles	540	20/1	11	C	12	20/1	360	Equipment	MDF 176 - RACK-MNTD PWR
WATER COOLER	Equipment	500	20/1	13	A	14	20/1	360	Equipment	MDF 176 - RACK-MNTD PWR
RM 171 - HAND DRYER	Equipment	1400	20/1	15	B	16	30/2	1500	Equipment	MDF 176 - SPECIAL
RM 170 - HAND DRYER	Equipment	1400	20/1	17	C	18		1500		
RM 172 - HAND DRYER	Equipment	1400	20/1	19	A	20	20/1	360	Equipment	MDF 176 - RACK-MNTD PWR
RM 170/171/172	Receptacles	720	20/1	21	B	22	30/2	1500	Equipment	MDF 176 - SPECIAL
RM 169/177	Receptacles	720	20/1	23	C	24		1500		
RM 181A - ADA DOOR	Equipment	500	20/1	25	A	26	20/1	500	Equipment	MDF 176 - NAC PANEL
RM 181B - ADA DOOR	Equipment	500	20/1	27	B	28	20/1	500	Equipment	MDF 176 - NAC PANEL
RM 178	Receptacles	720	20/1	29	C	30	20/1	500	Equipment	MDF 176 - SECURITY
DDC PANEL 5	Equipment	500	20/1	31	A	32	20/1	500	Equipment	MDF 176 - SECURITY
SHADE POWER	Equipment	1440	20/1	33	B	34	20/1	100	Equipment	RM 181 - TV
SHADE POWER	Equipment	1440	20/1	35	C	36	15/2	416	Equipment	FCU-MDF
EF-MDF	Equipment	1660	20/1	37	A	38		416		
150A - ROLL DOWN SECURITY DOORS	Equipment	1180	20/1	39	B	40	15/2	1414	Equipment	ACCU-MDF
SHADE POWER	Equipment	1440	20/1	41	C	42		1414		
SHADE POWER	Equipment	1440	20/1	43	A	44	20/1	200	Equipment	TP-4/7
SPARE	(None)		20/1	45	B	46	20/1	1180	Equipment	SERVICE YARD SECURITY GATE
SPARE	(None)		20/1	47	C	48	20/1		(None)	SPARE
SPARE	(None)		20/1	49	A	50	20/1		(None)	SPARE
SPARE	(None)		20/1	51	B	52	20/1		(None)	SPARE
SPARE	(None)		20/1	53	C	54	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	9336	11574	9970	30880
Receptacles	2880	1620	3467	7967
DESIGN LOAD:	12216	13194	13437	38847

TOTAL CONNECTED LOAD	VA:	38980
	AMPS:	113.0
TOTAL DESIGN LOAD	VA:	38847
	AMPS:	111.9

DESIGNATION: PANEL S2P-1D | VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): 100 | MAIN(A): 100 | AVAILABLE FAULT(A): 2206 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
IDF 117	Receptacles	720	20/1	1	A	2	20/1		(None)	SPARE
IDF 117 - RACK-MNTD PWR	Equipment	360	20/1	3	B	4	20/1	1440	Equipment	SHADE POWER (CLSSRM)
IDF 117 - RACK-MNTD PWR	Equipment	360	20/1	5	C	6	20/1	1440	Equipment	SHADE POWER (CLSSRM)
IDF 117 - SPECIAL	Equipment	1500	30/2	7	A	8	20/1	1440	Equipment	SHADE POWER (CLSSRM)
		1500		9	B	10	20/1	1440	Equipment	SHADE POWER (CLSSRM)
IDF 117 - SECURITY	Equipment	500	20/1	11	C	12	20/1	1440	Equipment	SHADE POWER (CLSSRM)
IDF 117 - SECURITY	Equipment	500	20/1	13	A	14	20/1	1440	Equipment	SHADE POWER (CLSSRM)
IDF 117 - NAC PANEL	Equipment	500	20/1	15	B	16	20/1	1440	Equipment	SHADE POWER (CLSSRM)
IDF 117 - NAC PANEL	Equipment	500	20/1	17	C	18	20/1	1440	Equipment	SHADE POWER (CLSSRM)
FCU-IDF-B	Equipment	416	15/2	19	A	20	20/1		(None)	SPARE
		416		21	B	22	20/1		(None)	SPARE
ACCU-IDFIB	Equipment	1414	15/2	23	C	24	20/1		(None)	SPARE
		1414		25	A	26	20/1		(None)	SPARE
EF-IDF-B	Equipment	700	20/1	27	B	28	20/1		(None)	SPARE
DDC PANEL 1	Equipment	500	20/1	29	C	30	20/1		(None)	SPARE
DDC PANEL 2	Equipment	500	20/1	31	A	32	20/1		(None)	SPARE
SPARE	(None)		20/1	33	B	34	20/1		(None)	SPARE
SPARE	(None)		20/1	35	C	36	20/1		(None)	SPARE
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	720	0	0	720
Equipment	7210	7796	7594	22600
DESIGN LOAD:	7930	7796	7594	23320

TOTAL CONNECTED LOAD	VA:	23320
	AMPS:	66.0
TOTAL DESIGN LOAD	VA:	23320
	AMPS:	66.0

DESIGNATION: PANEL S2P-1E | VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): 100 | MAIN(A): 100 | AVAILABLE FAULT(A): 2698 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
IDF 185	Receptacles	720	20/1	1	A	2	20/1	700	Equipment	EF-IDF-E
IDF 185 - SPECIAL	Equipment	1500	30/2	3	B	4	20/1	1440	Equipment	SHADE POWER (SCIENCE)
		1500		5	C	6	20/1	1440	Equipment	SHADE POWER (SCIENCE)
IDF 185 - RACK-MNTD PWR	Equipment	360	20/1	7	A	8	20/1	1440	Equipment	SHADE POWER (SCIENCE)
IDF 185 - RACK-MNTD PWR	Equipment	360	20/1	9	B	10	20/1		(None)	SPARE
IDF 185 - NAC PANEL	Equipment	500	20/1	11	C	12	20/1		(None)	SPARE
IDF 185 - NAC PANEL	Equipment	500	20/1	13	A	14	20/1		(None)	SPARE
IDF 185 - SECURITY	Equipment	500	20/1	15	B	16	20/1		(None)	SPARE
IDF 185 - SECURITY	Equipment	500	20/1	17	C	18	20/1		(None)	SPARE
FCU-IDF-A	Equipment	416	15/2	19	A	20	20/1		(None)	SPARE
		416		21	B	22	20/1		(None)	SPARE
ACCU-IDF-A	Equipment	1487	15/2	23	C	24	20/1		(None)	SPARE
		1487		25	A	26	20/1		(None)	SPARE
EF-IDF-A	Equipment	700	20/1	27	B	28	20/1		(None)	SPARE
DDC PANEL 6	Equipment	500	20/1	29	C	30	20/1		(None)	SPARE
194 - ROLL DOWN SECURITY DOORS	Equipment		20/1	31	A	32	20/1		(None)	SPARE
SPARE	(None)		20/1	33	B	34	20/1		(None)	SPARE
SPARE	(None)		20/1	35	C	36	20/1		(None)	SPARE
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	720	0	0	720
Equipment	4903	6096	5927	16926
DESIGN LOAD:	5623	6096	5927	17646

TOTAL CONNECTED LOAD	VA:	17646
	AMPS:	50.8
TOTAL DESIGN LOAD	VA:	17646
	AMPS:	50.8

DESIGNATION: PANEL S2P-1F | VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): 100 | MAIN(A): 100 | AVAILABLE FAULT(A): 1429 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
IDF 219	Receptacles	540	20/1	1	A	2	20/1	1440	Equipment	SHADE POWER
IDF 219 - DEDICATED	Equipment	360	20/1	3	B	4	20/1	1440	Equipment	SHADE POWER
IDF 219 - RACK-MNTD PWR	Equipment	360	20/1	5	C	6	20/1	1440	Equipment	SHADE POWER
IDF 219 - RACK-MNTD PWR	Equipment	360	20/1	7	A	8	20/1		(None)	SPARE
IDF 219 - RACK-MNTD PWR	Equipment	360	20/1	9	B	10	20/1		(None)	SPARE
IDF 219 - SPECIAL	Equipment	1500	30/2	11	C	12	20/1		(None)	SPARE
		1500		13	A	14	20/1		(None)	SPARE
IDF 219 - NAC PANEL	Equipment	500	20/1	15	B	16	20/1		(None)	SPARE
IDF 219 - NAC PANEL	Equipment	500	20/1	17	C	18	20/1		(None)	SPARE
IDF 219 - SECURITY	Equipment	500	20/1	19	A	20	20/1		(None)	SPARE
IDF 219 - SECURITY	Equipment	500	20/1	21	B	22	20/1		(None)	SPARE
SPARE	(None)		20/1	23	C	24	20/1		(None)	SPARE
SPARE	(None)		20/1	25	A	26	20/1		(None)	SPARE
SPARE	(None)		20/1	27	B	28	20/1		(None)	SPARE
SPARE	(None)		20/1	29	C	30	20/1		(None)	SPARE
SPARE	(None)		20/1	31	A	32	20/1		(None)	SPARE
SPARE	(None)		20/1	33	B	34	20/1		(None)	SPARE
SPARE	(None)		20/1	35	C	36	20/1		(None)	SPARE
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	540	0	0	540
Equipment	3800	3160	3800	10760
DESIGN LOAD:	4340	3160	3800	11300

TOTAL CONNECTED LOAD	VA:	11300
	AMPS:	36.1
TOTAL DESIGN LOAD	VA:	11300
	AMPS:	36.1

DESIGNATION: PANEL E4P-1A | VOLTAGE: 480Y/277V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): | MAIN(A): 100 | AVAILABLE FAULT(A): 23450 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
R113/115/117	Lighting	1020	20/1	1	A	2	20/1		(None)	SPARE
R119/121/123	Lighting	1029	20/1	3	B	4	20/1		(None)	SPARE
MECH MEZZANINES	Lighting	989	20/1	5	C	6	20/1		(None)	SPARE
RT002	Lighting	672	20/1	7	A	8	20/1		(None)	SPARE
R002/007	Lighting	1078	20/1	9	B	10	20/1		(None)	SPARE
RD003007/009/011/013	Lighting	1680	20/1	11	C	12	20/1		(None)	SPARE
LAB/LOCKER/GYM/WEST STORAGE	Lighting	715	20/1	13	A	14			(None)	
SOUTH AREA	Lighting	825	20/1	15	B	16			(None)	
SCIENCE/BAND	Lighting	1056	20/1	17	C	18			(None)	
R001	Lighting	648	20/1	19	A	20			(None)	
ELEVATOR PIT	Lighting	118	20/1	21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
			25/3	37	A	38			(None)	
				39	B	40			(None)	
				41	C	42			(None)	

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Lighting	7640	6391	7614	21645
Equipment	500	1500	1000	3000
Receptacles	180	0	0	180
DESIGN LOAD:	8320	7891	8614	24825

TOTAL CONNECTED LOAD	VA:	20496
	AMPS:	25.6
TOTAL DESIGN LOAD	VA:	24825
	AMPS:	31.1

DESIGNATION: PANEL E4P-1B | VOLTAGE: 480Y/277V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): | MAIN(A): 100 | AVAILABLE FAULT(A): 3623 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
R005/008/013/015	Lighting	746	20/1	1	A	2	20/1	100	Lighting	ELEV PIT LTG
R101/105	Lighting	1038	20/1	3	B	4	20/1		(None)	SPARE
R103	Lighting	1682	20/1	5	C	6	20/1		(None)	SPARE
NE/NW CLASSROOMS	Lighting	618	20/1	7	A	8	20/1		(None)	SPARE
MAIN ENTRY	Lighting	266	20/1	9	B	10	20/1		(None)	SPARE
	(None)			11	C	12	20/1		(None)	SPARE
	(None)			13	A	14	20/1		(None)	SPARE
	(None)			15	B	16			(None)	
	(None)			17	C	18			(None)	
	(None)			19	A	20			(None)	
	(None)			21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
	(None)			37	A	38			(None)	
	(None)			39	B	40			(None)	
	(None)			41	C	42			(None)	

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Lighting	1830	1630	2102	5562
DESIGN LOAD:	1830	1630	2102	5562

TOTAL CONNECTED LOAD	VA:	4450
	AMPS:	6.1
TOTAL DESIGN LOAD	VA:	5563
	AMPS:	7.6

DESIGNATION: PANEL E4P-2A | VOLTAGE: 480Y/277V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS

BUS RATING(A): | MAIN(A): 100 | AVAILABLE FAULT(A): 3490 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
R202	Lighting	1503	20/1	1	A	2	20/1		(None)	SPARE
R204/206/211	Lighting	759	20/1	3	B	4	20/1		(None)	SPARE
NORTH CLASSROOMS	Lighting	420	20/1	5	C	6	20/1		(None)	SPARE
2ND FLOOR - NE AREA	Lighting	90	20/1	7	A	8	20/1		(None)	SPARE
SPARE	(None)		20/1	9	B	10	20/1		(None)	SPARE
MECH MEZZANINES	Lighting	264	20/1	11	C	12	20/1		(None)	SPARE
	(None)			13	A	14			(None)	
	(None)			15	B	16			(None)	
	(None)			17	C	18			(None)	
	(None)			19	A	20			(None)	
	(None)			21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
	(None)			37	A	38			(None)	
	(None)			39	B	40			(None)	
	(None)			41	C	42			(None)	

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Lighting	1991	949	855	3795
DESIGN LOAD:	1991	949	855	3795

TOTAL CONNECTED LOAD	VA:	3036
	AMPS:	5.7
TOTAL DESIGN LOAD	VA:	3795
	AMPS:	7.2

S2SDP-1A	S2P-1B	S2P-1F
1 S4P-1A	S2P-1C	E4P-1A
S4P-2A	S2P-1D	E4P-1B
S2P-1A	S2P-1E	E4P-2A

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EUGENE SCHOOL DISTRICT 4J

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REPLACEMENT ROOSEVELT
MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: KAK
CHECKED BY: SPD

PANEL SCHEDULES

E-901

DESIGNATION: PANEL E2P-1A

DESIGNATION: PANEL E2P-1A		VOLTAGE: 208Y/120V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 100	MAIN(A): 60	AVAILABLE FAULT(A): 796	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 105B - AUTO FIRE DOOR	Equipment	500	20/1	1	A	2	20/1		(None)	SPARE
GENERATOR BLOCK HEATER	Equipment	1500	20/1	3	B	4	20/1		(None)	SPARE
GENERATOR BATTERY CHARGER	Equipment	1000	20/1	5	C	6	20/1		(None)	SPARE
ELEVATOR PIT	Receptacles	180	20/1	7	A	8	20/1		(None)	SPARE
	(None)			9	B	10	20/1		(None)	SPARE
	(None)			11	C	12	20/1		(None)	SPARE
	(None)			13	A	14			(None)	
	(None)			15	B	16			(None)	
	(None)			17	C	18			(None)	
	(None)			19	A	20			(None)	
	(None)			21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
	(None)			37	A	38			(None)	
	(None)			39	B	40			(None)	
	(None)			41	C	42			(None)	

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	500	1500	1000	3000
Receptacles	180	0	0	180
DESIGN LOAD:	680	1500	1000	3180

TOTAL CONNECTED LOAD	VA:	3180
	AMPS:	12.5
TOTAL DESIGN LOAD	VA:	3180
	AMPS:	12.5

DESIGNATION: PANEL 4P-1D

DESIGNATION: PANEL 4P-1D		VOLTAGE: 480Y/277V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 225	MAIN(A): 225	AVAILABLE FAULT(A): 24964	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
EQ25A - CONVECTION OVE UPPER	Kitchen Equip	3667	20/3	1	A	2	30/3	7732	Kitchen Equip	EQ68A - DISHWASHER
		3667		3	B	4		7732		
		3667		5	C	6		7732		
EQ25B - CONVECTION OVEN LOWER	Kitchen Equip	3667	20/3	7	A	8	50/3	11113	Kitchen Equip	EQ68B - BOOSTER
		3667		9	B	10		11113		
		3667		11	C	12		11113		
EQ26A - CONVECTION OVEN UPPER	Kitchen Equip	3667	20/3	13	A	14			(None)	
		3667		15	B	16			(None)	
		3667		17	C	18			(None)	
EQ26B - CONVECTION OVEN LOWER	Kitchen Equip	3667	20/3	19	A	20			(None)	
		3667		21	B	22			(None)	
		3667		23	C	24			(None)	
EQ27 - STEAMER	Kitchen Equip	8037	40/3	25	A	26			(None)	
		8037		27	B	28			(None)	
		8037		29	C	30			(None)	
EQ28 - OPEN BURNER/RANGE	Kitchen Equip	6240	20/1	31	A	32	20/1		(None)	SPARE
EQ29 - TILTING KETTLE/STAND	Kitchen Equip	4157	20/3	33	B	34	20/1		(None)	SPARE
		4157		35	C	36	20/1		(None)	SPARE
		4157		37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Kitchen Equip	33766	29710	29710	93185
DESIGN LOAD:	33766	29710	29710	93185

TOTAL CONNECTED LOAD	VA:	143361
	AMPS:	187.4
TOTAL DESIGN LOAD	VA:	93185
	AMPS:	121.8

DESIGNATION: PANEL 4P-AC

DESIGNATION: PANEL 4P-AC		VOLTAGE: 480Y/277V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 225	MAIN(A): 150	AVAILABLE FAULT(A): 13279	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
AH-A1 THRU A5	Equipment	2356	15/3	1	A	2	15/3	2383	Equipment	AH-FORUM-S/LIBR
		2356		3	B	4		2383		
		2356		5	C	6		2383		
AH-A6 THRU A9/A21	Equipment	2356	15/3	7	A	8	15/3	1667	Equipment	EF-A-RR/RF-FORUM-S
		2356		9	B	10		1667		
		2356		11	C	12		1667		
AH-A22 THRU A26	Equipment	2356	15/3	13	A	14	25/3	3900	Equipment	RF-A
		2356		15	B	16		3900		
		2356		17	C	18		3900		
AH-A27 THRU A29/HALL1-A	Equipment	2356	15/3	19	A	20	15/3	1000	Equipment	RF-LIBR
		2356		21	B	22		1000		
		2356		23	C	24		1000		
AH-WORK/GROUP/CONF/LOUNGE/LOBBY	Equipment	2356	15/3	25	A	26			(None)	
		2356		27	B	28			(None)	
		2356		29	C	30			(None)	
AH-HALL2-A/FORUM-N	Equipment	1413	15/3	31	A	32			(None)	
		1413		33	B	34			(None)	
		1413		35	C	36			(None)	
PANEL 2P-AC			50/3	37	A	38	20/1		(None)	SPARE
				39	B	40	20/1		(None)	SPARE
				41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	25425	26077	25205	76707
DESIGN LOAD:	25425	26077	25205	76707

TOTAL CONNECTED LOAD	VA:	76707
	AMPS:	94.1
TOTAL DESIGN LOAD	VA:	76707
	AMPS:	94.1

DESIGNATION: PANEL 4P-1A

DESIGNATION: PANEL 4P-1A		VOLTAGE: 480Y/277V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 100	MAIN(A): 100	AVAILABLE FAULT(A): 3617	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
R009/010	Lighting	300	20/1	1	A	2			(None)	
R102/104/106	Lighting	2088	20/1	3	B	4			(None)	
NW CLASSROOMS	Lighting	3130	20/1	5	C	6			(None)	
NE CLASSROOMS	Lighting	2976	20/1	7	A	8			(None)	
MAIN ENTRY	Lighting	567	20/1	9	B	10			(None)	
	Lighting		20/1	11	C	12			(None)	
	(None)			13	A	14			(None)	
	(None)			15	B	16			(None)	
	(None)			17	C	18			(None)	
	(None)			19	A	20			(None)	
	(None)			21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Lighting	4095	3319	3913	11326
DESIGN LOAD:	4095	3319	3913	11326

TOTAL CONNECTED LOAD	VA:	9061
	AMPS:	11.8
TOTAL DESIGN LOAD	VA:	11326
	AMPS:	14.8

DESIGNATION: PANEL 4P-2B

DESIGNATION: PANEL 4P-2B		VOLTAGE: 480Y/277V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 100	MAIN(A): 100	AVAILABLE FAULT(A): 3458	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
R201/203	Lighting	1125	20/1	1	A	2			(None)	
R205/207/208	Lighting	1584	20/1	3	B	4			(None)	
R210/212	Lighting	199	20/1	5	C	6			(None)	
NE CLASSROOMS	Lighting	2996	20/1	7	A	8			(None)	
NW CLASSROOMS	Lighting	3020	20/1	9	B	10			(None)	
2ND FLOOR - NE AREA	Lighting	831	20/1	11	C	12			(None)	
	(None)			13	A	14			(None)	
	(None)			15	B	16			(None)	
	(None)			17	C	18			(None)	
	(None)			19	A	20			(None)	
	(None)			21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Lighting	5151	5755	1287	12194
DESIGN LOAD:	5151	5755	1287	12194

TOTAL CONNECTED LOAD	VA:	9755
	AMPS:	16.6
TOTAL DESIGN LOAD	VA:	12194
	AMPS:	20.8

DESIGNATION: PANEL 2P-1F

DESIGNATION: PANEL 2P-1F		VOLTAGE: 208Y/120V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 100	MAIN(A): 100	AVAILABLE FAULT(A): 4716	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
EQ12 - MIXER	Kitchen Equip	968	20/2	1	A	2	20/1	600	Kitchen Equip	EQ51 - HEATED SHELF
		968		3	B	4	20/1	1284	Kitchen Equip	EQ54 - COLD FOOD UNTI
EQ15 - GARBAGE DISPOSAL	Kitchen Equip	732	20/1	5	C	6	20/1	1800	Kitchen Equip	EQ58 - MICROWAVE
EQ16 - DED RECEPTACLE	Receptacles	180	20/1	7	A	8	20/1	804	Kitchen Equip	EQ59A - MILK COOLER
EQ19A - DED RECEPTACLE	Receptacles	180	20/1	9	B	10	20/1	804	Kitchen Equip	EQ59B - MILK COOLER
EQ19B - DED RECEPTACLE	Receptacles	180	20/1	11	C	12	20/1	1008	Kitchen Equip	EQ60/62A - SALAD BAR/LIGHT
EQ20 - SLICER	Kitchen Equip	672	20/1	13	A	14	20/1	1008	Kitchen Equip	EQ60/62B - SALAD BAR/LIGHT
EQ21 - FOOD PROCESSOR	Kitchen Equip	576	20/1	15	B	16	20/1	732	Kitchen Equip	EQ68B - GARBAGE DISPOSAL
EQ22 - EXHAUST HOOD	Kitchen Equip	500	20/1	17	C	18	20/1		(None)	SPARE
EQ24 - FIRE SUPPRESSION HOOD	Kitchen Equip	1800	20/1	19	A	20	20/1		(None)	SPARE
EQ33 - ROLLER REFRIGERATOR	Kitchen Equip	576	20/1	21	B	22	20/1		(None)	SPARE
EQ34A - HEATED CABINET	Kitchen Equip	1500	20/1	23	C	24	20/1		(None)	SPARE
EQ34B - HEATED CABINET	Kitchen Equip	1500	20/1	25	A	26	20/1		(None)	SPARE
EQ37 - ENTREE COUNTER	Kitchen Equip	1997	30/2	27	B	28	20/1		(None)	SPARE
		1997		29	C	30	20/1		(None)	SPARE
EQ41 - HOT FOOD COUNTER	Kitchen Equip	1997	30/2	31	A	32	20/1		(None)	SPARE
		1997		33	B	34	20/1		(None)	SPARE
EQ48 - POS COUNTER	Kitchen Equip	500	20/1	35	C	36	20/1		(None)	SPARE
EQ49A - POS CONNECTION	Kitchen Equip	500	20/1	37	A	38	20/1		(None)	SPARE
EQ49B - POS CONNECTION	Kitchen Equip	500	20/1	39	B	40	20/1		(None)	SPARE
EQ50 - PIZZA COUNTER	Kitchen Equip	500	20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Kitchen Equip	6402	6132	5549	18083
Receptacles	180	180	180	540
DESIGN LOAD:	6582	6312	5729	18623

TOTAL CONNECTED LOAD	VA:	28360
	AMPS:	83.5
TOTAL DESIGN LOAD	VA:	18623
	AMPS:	54.8

DESIGNATION: PANEL 4P-1B

DESIGNATION: PANEL 4P-1B		VOLTAGE: 480Y/277V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 100	MAIN(A): 100	AVAILABLE FAULT(A): 4230	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
AH-E1 THRU E4/PREP	Equipment	2356	15/3	1	A	2			(None)	
		2356		3	B	4			(None)	
		2356		5	C	6			(None)	
AH-HALLEN/HALL-ES/ENSEMBLE	Equipment	1414	15/3	7	A	8			(None)	
		1414		9	B	10			(None)	
		1414		11	C	12			(None)	
R122	Lighting	756	20/1	13	A	14			(None)	
RT005/006/007/008/009	Lighting	1048	20/1	15	B	16			(None)	
SCIENCE 195/197	Lighting	1372	20/1	17	C	18			(None)	
SCIENCE 191/193	Lighting	1572	20/1	19	A	20			(None)	
BAND PRACTICE/OFFICE/CLASSROOM	Lighting	2164	20/1	21	B	22			(None)	
EF-HALL-E/PREP	(None)	444	15/3	23	C	24			(None)	
		444		25	A	26			(None)	
		444		27	B	28			(None)	
R006/012/R014	Lighting	656	20/1	29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	3770	3770	3770	11310
(None)	555	555	555	1665
Lighting	2910	4015	2535	9460
DESIGN LOAD:	7235	8340	6860	22435

TOTAL CONNECTED LOAD	VA:	20210
	AMPS:	26.8
TOTAL DESIGN LOAD	VA:	22435
	AMPS:	30.1

DESIGNATION: PANEL 4P-AA

DESIGNATION: PANEL 4P-AA		VOLTAGE: 480Y/277V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 100	MAIN(A): 100	AVAILABLE FAULT(A): 6449	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
AH-GYM-N	Equipment	5820	45/3	1	A	2			(None)	
		5820		3	B	4			(None)	
		5820		5	C	6			(None)	
AH-ART-N/ART-S/HALL-C	Equipment	1413	15/3	7	A	8			(None)	
		1413		9	B	10			(None)	
		1413		11	C	12			(None)	
AH-HOMED/MEDIA-C3/LR-N/LR-S	Equipment	1885	15/3	13	A	14			(None)	
		1885		15	B	16			(None)	
		1885		17	C	18			(None)	
AHU-GYM-S	Equipment	2728		19	A	20			(None)	
		2728		21	B	22			(None)	
		2728		23	C	24			(None)	
SPARE	Equipment			25	A	26			(None)	
				27	B	28			(None)	
				29	C	30			(None)	
SPARE	(None)		20/1	31	A	32			(None)	
SPARE	(None)		20/1	33	B	34			(None)	
SPARE	(None)		20/1	35	C	36			(None)	
			50/3	37	A	38	20/1		(None)	SPARE
				39	B	40	20/1		(None)	SPARE
				41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	15866	14847	14206	44919
Receptacles	900	900	0	1800
DESIGN LOAD:	16766	15747	14206	46719

TOTAL CONNECTED LOAD	VA:	46719
	AMPS:	60.5
TOTAL DESIGN LOAD	VA:	46719
	AMPS:	60.5

DESIGNATION: PANEL 2P-1H

DESIGNATION: PANEL 2P-1H		VOLTAGE: 208Y/120V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 100	MAIN(A): 100	AVAILABLE FAULT(A): 3261	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 188 A/B	Receptacles	1080	20/1	1	A	2	20/1	1150	Lighting	RT011/012
RM 188C/HALLWAY	Receptacles	720	20/1	3	B	4	20/1	1150	Lighting	RT013/014
RM 188D	Receptacles	900	20/1	5	C	6	20/1	1150	Lighting	RT015/016
RM 188	Receptacles	720	20/1	7	A	8	20/1	1150	Lighting	RT017/018
RM 188	Receptacles	540	20/1	9	B	10	20/1	1150	Lighting	RT019/020
RM 186	Receptacles	900	20/1	11	C	12	20/1	1150	Lighting	RT021/022
RM 188E	Receptacles	720	20/1	13	A	14	20/1	1150	Lighting	RT023/024
RM 182/183	Receptacles	900	20/1	15	B	16	20/1	1150	Lighting	RT025/026
RM 184	Receptacles	360	20/1	17	C	18	20/1	500	Equipment	RM 188 - PROJ
RM 184	Receptacles	360	20/1	19	A	20	20/1	200	Equipment	RT010
RM 184	Receptacles	360	20/1	21	B	22	20/1		(None)	SPARE
RM 184	Receptacles	360	20/1	23	C	24	20/1		(None)	SPARE
RM 184	Receptacles	180	20/1	25	A	26	20/1		(None)	SPARE
RM 187	Receptacles	540	20/1	27	B	28	20/1		(None)	SPARE
RM 187	Receptacles	540	20/1	29	C	30	20/1		(None)	SPARE
RM 194	Receptacles	900	20/1	31	A	32	20/1		(None)	SPARE
TP-5	Receptacles	100	20/1	33	B	34	20/1		(None)	SPARE
SPARE	(None)		20/1	35	C	36	20/1		(None)	SPARE
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	3647	3160	3060	9866
Lighting	4313	4313	2875	11500
Equipment	200	0	500	700
DESIGN LOAD:	8159	7472	6435	22066

TOTAL CONNECTED LOAD	VA:	20080
	AMPS:	63.4
TOTAL DESIGN LOAD	VA:	22067
	AMPS:	67.9

DESIGNATION: PANEL 4P-1C

DESIGNATION: PANEL 4P-1C		VOLTAGE: 480Y/277V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 100	MAIN(A): 100	AVAILABLE FAULT(A): 26276	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
ALT 5: RWRS-101	Equipment	3900	40/3	1	A	2	15/3	1300	Equipment	TRASH COMPACTOR
		3900		3	B	4		1300		
		3900		5	C	6		1300		
R112/114/116/118/120	Lighting	1031	20/1	7	A	8	50/3	4961	Equipment	DWBP-101
R003	Lighting	864	20/1	9	B	10		4961		
R004	Lighting	864	20/1	11	C	12		4961		
SPARE	(None)		20/1	13	A	14		833	Equipment	RCP-101
SPARE	(None)		20/1	15	B	16		833		
SPARE	(None)		20/1	17	C	18		833		
RT001/003	Lighting	2400	20/1	19	A	20			(None)	
MEDIA ROOM/CLEAN LAB	Lighting	576	20/1	21	B	22			(None)	
DIRTY LAB/HOME ED	Lighting	768	20/1	23	C	24			(None)	
LOCKER ROOMS	Lighting	1831	20/1	25	A	26			(None)	
WEST STORAGE	Lighting	596	20/1	27	B	28			(None)	
SOUTH AREA	Lighting	1424	20/1	29	C	30			(None)	
	Lighting		20/1	31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	10994	10994	10994	32982
Lighting	6578	2545	3820	12943
DESIGN LOAD:	17571	13539	14814	45924

TOTAL CONNECTED LOAD	VA:	43336
	AMPS:	58.7
TOTAL DESIGN LOAD	VA:	45925
	AMPS:	63.4

DESIGNATION: PANEL 4P-AB

DESIGNATION: PANEL 4P-AB		VOLTAGE: 480 - 3 Ph - 3 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 100	MAIN(A): 100	AVAILABLE FAULT(A): 10160	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
AH-BAND/CHORAL	Equipment	2106	15/3	1	A	2	15/3	1912	Equipment	AH-DRAMA/KITCHEN
		2106		3	B	4		1912		
		2106		5	C	6		1912		
AH-COMMONS	Equipment	3048	20/3	7	A	8	15/3	942	Equipment	EF-DRAMA
		3048		9	B	10		942		
		3048		11	C	12		942		
EF-GREASE	Equipment	833	15/3	13	A	14	20/1		(None)	SPARE
		833		15	B	16	20/1		(None)	SPARE
		833		17	C	18	20/1		(None)	SPARE
MECH MEZZANINE LTG	Lighting	484	20/1	19	A	20	20/1		(None)	SPARE
	(None)			21	B	22	20/1		(None)	SPARE
	(None)			23	C	24	20/1		(None)	SPARE
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
			50/3	37	A	38			(None)	
				39	B	40			(None)	
				41	C	42			(None)	

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	10021	8841	8841	27703
Lighting	605	0	0	605
Receptacles	900	1080	540	2520
DESIGN LOAD:	11526	9921	9381	30828

TOTAL CONNECTED LOAD	VA:	30707
	AMPS:	41.2
TOTAL DESIGN LOAD	VA:	30828
	AMPS:	41.6

DESIGNATION: PANEL 2P-1I

DESIGNATION: PANEL 2P-1I		VOLTAGE: 208Y/120V - 3 Ph - 4 Wire	PROJECT NAME: ROOSEVELT MS	
BUS RATING(A): 225	MAIN(A): 225	AVAILABLE FAULT(A): 3131	MOUNTING: Surface	ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 145	Receptacles	360	20/1	1	A	2	20/1	360	Receptacles	RM 142
RM 145 - TABLET CHARGING	Equipment	300	20/1	3	B	4	20/1	500	Equipment	RM 142 - PROJECTOR/MONITOR
RM 145 - PROJECTOR/MONITOR	Equipment	500	20/1	5	C	6	20/1	360	Receptacles	RM 142
RM 145	Receptacles	360	20/1	7	A	8	20/1	300	Equipment	RM 142 - TABLET CHARGING
RM 145	Receptacles	1080	20/1	9	B	10	20/1	1080	Receptacles	RM 142
RM 145	Receptacles	1260	20/1	11	C	12	20/1	900	Receptacles	RM 142
RM 143 - TABLET CHARGING	Equipment	300	20/1	13	A	14	20/1	360	Receptacles	RM 134
RM 143	Receptacles	360	20/1	15	B	16	20/1	300	Equipment	RM 134 - TABLET CHARGING
RM 143 - PROJECTOR/MONITOR	Equipment	500	20/1	17	C	18	20/1	500	Equipment	RM 134 - PROJECTOR/MONITO
RM 143	Receptacles	360	20/1	19	A	20	20/1	360	Receptacles	RM 134
RM 143	Receptacles	1080	20/1	21	B	22	20/1	1080	Receptacles	RM 134
RM 143	Receptacles	1080	20/1	23	C	24	20/1	1080	Receptacles	RM 134
RM 146	Receptacles	360	20/1	25	A	26	20/1	1000	Equipment	RM 137 - COPIER
RM 146 - PROJECTOR/MONITOR	Equipment	500	20/1	27	B	28	20/1	720	Receptacles	RM 137
RM 146 - TABLET CHARGING	Equipment	300	20/1	29	C	30	20/1	900	Receptacles	RM 136/136A
RM 146	Receptacles	360	20/1	31	A	32	20/1	1400	Equipment	RM 139B - HAND DRYER
RM 146	Receptacles	1080	20/1	33	B	34	20/1	1400	Equipment	RM 139B - HAND DRYER
RM 146	Receptacles	1080	20/1	35	C	36	20/1	1400	Equipment	RM 139A - HAND DRYER
RM 141/142	Receptacles	540	20/1	37	A	38	20/1	1400	Equipment	RM 139A - HAND DRYER
RM 139 - WATER COOLER	Equipment	500	20/1	39	B	40	20/1	1400	Equipment	RM 141 - HAND DRYER
RM 139 A/B	Receptacles	360	20/1	41	C	42	20/1	1400	Equipment	RM 140 - HAND DRYER
RM 144	Receptacles	1080	20/1	43	A	44	20/1		(None)	SPARE
RM 136A - SLIDING DOORS	Equipment	500	20/1	45	B	46	20/1		(None)	SPARE
TP-1I	Equipment	100	20/1	47	C	48	20/1		(None)	SPARE
SPARE	(None)		20/1	49	A	50	20/1		(None)	SPARE
SPARE	(None)		20/1	51	B	52	20/1		(None)	SPARE
SPARE	(None)		20/1	53	C	54	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	3917	4906	5176	13999
Equipment	4400	5400	4700	14500
DESIGN LOAD:	8316	10306	9876	28499

TOTAL CONNECTED LOAD	VA:	32500
	AMPS:	98.9
TOTAL DESIGN LOAD	VA:	28499
	AMPS:	85.8

E2P-1A	4P-1D	4P-AC
4P-1A	4P-2B	2P-1F
4P-1B	4P-AA	2P-1H
4P-1C	4P-AB	2P-1I

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REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: KAK
CHECKED BY: SPD

PANEL SCHEDULES

E-902

DESIGNATION: PANEL 2P-1J

VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 225 | MAIN(A): 225 | AVAILABLE FAULT(A): 3730 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 135	Receptacles	360	20/1	1	A	2	20/1	360	Receptacles	RM 130
RM 135 - PROJECTOR/MONITOR	Equipment	500	20/1	3	B	4	20/1	500	Equipment	RM 130 - PROJECTOR/MONITOR
RM 135 - TABLET CHARGING	Equipment	300	20/1	5	C	6	20/1	360	Receptacles	RM 130
RM 135	Receptacles	360	20/1	7	A	8	20/1	300	Equipment	RM 130 - TABLET CHARGING
RM 135	Receptacles	1080	20/1	9	B	10	20/1	1080	Receptacles	RM 130
RM 135	Receptacles	1080	20/1	11	C	12	20/1	1080	Receptacles	RM 130
RM 133 - PROJECTOR/MONITOR	Equipment	500	20/1	13	A	14	20/1	1080	Equipment	RM 129A/133A/B
RM 133	Receptacles	360	20/1	15	B	16	20/1	720	Receptacles	RM 131
RM 133 - TABLET CHARGING	Equipment	300	20/1	17	C	18	20/1	900	Receptacles	RM 132
RM 133	Receptacles	360	20/1	19	A	20	20/1	360	Receptacles	RM 125/126
RM 133	Receptacles	900	20/1	21	B	22	20/1	1400	Equipment	RM 126 - HAND DRYER
RM 133	Receptacles	1080	20/1	23	C	24	20/1	500	Receptacles	RM 125
RM 129	Receptacles	360	20/1	25	A	26	20/1	360	Equipment	RM 125 - WATER COOLER
RM 129 - TABLET CHARGING	Equipment	300	20/1	27	B	28	20/1	1080	Receptacles	RM 102C/122/129B
RM 129 - PROJECTOR/MONITOR	Equipment	500	20/1	29	C	30	20/1	500	Equipment	RM 121 - PROJECTOR/MONITOR
RM 129	Receptacles	360	20/1	31	A	32	20/1	1080	Equipment	PHONE CHARGING
RM 129	Receptacles	720	20/1	33	B	34	20/1	500	Equipment	RM 119 - PROJECTOR/MONITOR
RM 129	Receptacles	900	20/1	35	C	36	20/1	1080	Receptacles	RM 121
TP-2	Equipment	100	20/1	37	A	38	20/1	1180	Equipment	102C - SECURITY DOOR ROLL DOWN
RM 123 - ADA DOOR	Equipment	500	20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE
SPARE	(None)		20/1	43	A	44	20/1		(None)	SPARE
SPARE	(None)		20/1	45	B	46	20/1		(None)	SPARE
SPARE	(None)		20/1	47	C	48	20/1		(None)	SPARE
SPARE	(None)		20/1	49	A	50	20/1		(None)	SPARE
SPARE	(None)		20/1	51	B	52	20/1		(None)	SPARE
SPARE	(None)		20/1	53	C	54	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	2520	4636	5156	12313
Equipment	4600	3700	1600	9900
DESIGN LOAD:	7120	8337	6756	22213

TOTAL CONNECTED LOAD	VA: 25340	AMPS: 80.3
TOTAL DESIGN LOAD	VA: 22213	AMPS: 69.4

1

DESIGNATION: PANEL 2P-1K

VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 100 | MAIN(A): 100 | AVAILABLE FAULT(A): 1823 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 197	Receptacles	720	20/1	1	A	2	20/1	720	Receptacles	RM 192
RM 197	Receptacles	540	20/1	3	B	4	20/1	810	Receptacles	RM 191
RM 197	Receptacles	1080	20/1	5	C	6	20/1	810	Receptacles	RM 191
RM 197	Receptacles	810	20/1	7	A	8	20/1	1000	Equipment	RM 191 - RANGE HOOD
RM 197	Receptacles	810	20/1	9	B	10	20/1	360	Receptacles	RM 191
RM 196	Receptacles	540	20/1	11	C	12	20/1	900	Receptacles	RM 191
RM 196	Receptacles	540	20/1	13	A	14	20/1	1080	Receptacles	RM 191
RM 195	Receptacles	1080	20/1	15	B	16	20/1	360	Receptacles	RM 194/198
RM 195	Receptacles	810	20/1	17	C	18	20/1	500	Equipment	RM 194A - SLIDING DOORS
RM 195	Receptacles	810	20/1	19	A	20	20/1	540	Receptacles	OUTDOOR REC
RM 195	Receptacles	720	20/1	21	B	22	15/1		(None)	SPARE
RM 195	Receptacles	540	20/1	23	C	24	20/1	100	Equipment	SV-1
RM 193	Receptacles	720	20/1	25	A	26	20/2	177	Equipment	AH-PRACT
RM 193	Receptacles	540	20/1	27	B	28		177		
RM 193	Receptacles	1080	20/1	29	C	30	20/1	530	Equipment	AH-PREP
RM 193	Receptacles	810	20/1	31	A	32	20/1	700	Equipment	EF-PREP
RM 193	Receptacles	810	20/1	33	B	34			(None)	
RM 192	Receptacles	540	20/1	35	C	36			(None)	
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	5041	4681	4816	14539
Equipment	1877	177	1130	3184
DESIGN LOAD:	6918	4859	5946	17723

TOTAL CONNECTED LOAD	VA: 22264	AMPS: 71.8
TOTAL DESIGN LOAD	VA: 17724	AMPS: 57.6

DESIGNATION: PANEL 2P-1L

VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 225 | MAIN(A): 225 | AVAILABLE FAULT(A): 6273 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 165 - GYM 1 BLEACHER	Receptacles	180	20/1	1	A	2	20/1	900	Receptacles	HALLWAY
RM 165 - GYM 1 HOOP	Equipment	1180	20/1	3	B	4	20/1	540	Receptacles	RM 164
RM 165 - GYM 1 HOOP	Equipment	1180	20/1	5	C	6	20/1	360	Receptacles	RM 158/162
RM 165 - GYM 1 VOLLEYBALL	Equipment	1180	20/1	7	A	8	20/1	720	Receptacles	RM 159
RM 165 - GYM 1 HOOP	Equipment	1180	20/1	9	B	10	20/1	1400	Equipment	RM 161 - HAND DRYER
RM 165 - GYM 1 HOOP	Equipment	1180	20/1	11	C	12	20/1	360	Receptacles	RM 163
RM 165 - GYM 1 SCOREBOARD	Equipment	500	20/1	13	A	14	20/1	1400	Equipment	RM 157 - HAND DRYER
RM 165 - GYM 1 HOOP	Equipment	1180	20/1	15	B	16	20/1	540	Receptacles	RM 160
RM 165 - GYM 1 HOOP	Equipment	1180	20/1	17	C	18	20/1	1400	Receptacles	RM 162
RM 165 - GYM 1 BLEACHER	Receptacles	180	20/1	19	A	20	20/1	360	Receptacles	RM 157/161
RM 166 - GYM 2 HOOP	Equipment	1180	20/1	21	B	22	20/1	720	Receptacles	RM 165/166
RM 166 - GYM 2 HOOP	Equipment	1180	20/1	23	C	24	20/1	720	Receptacles	RM 165/166
RM 166 - GYM 2 HOOP	Equipment	1180	20/1	25	A	26	20/1	500	Equipment	GYM PROJECTOR
RM 166 - GYM 2 HOOP	Equipment	1180	20/1	27	B	28	20/1		(None)	SPARE
RM 166 - GYM 2 HOOP	Equipment	1180	20/1	29	C	30	20/1	1080	Receptacles	RM 165/166/167
RM 165 - ADA DOOR	Equipment	500	20/1	31	A	32	20/1		(None)	SPARE
RM 166 - GYM 2 HOOP	Equipment	1180	20/1	33	B	34	20/1	500	Equipment	WATER COOLER
RM 166 - GYM 2 VOLLEYBALL	Equipment	1180	20/1	35	C	36	20/1	100	Equipment	TP-3
GYM BLEACHER POWER	Equipment	533	20/3	37	A	38	20/1		(None)	SPARE
		533		39	B	40	20/1		(None)	SPARE
		533		41	C	42	20/1		(None)	SPARE
GYM BLEACHER POWER	Equipment	533	20/3	43	A	44	20/1		(None)	SPARE
		533		45	B	46	20/1		(None)	SPARE
		533		47	C	48	20/1		(None)	SPARE
SPARE	(None)		20/1	49	A	50	20/1		(None)	SPARE
SPARE	(None)		20/1	51	B	52	20/1		(None)	SPARE
SPARE	(None)		20/1	53	C	54	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	2340	1800	3627	7767
Equipment	6326	10046	8246	24618
DESIGN LOAD:	8666	11846	11872	32384

TOTAL CONNECTED LOAD	VA: 32678	AMPS: 101.3
TOTAL DESIGN LOAD	VA: 32384	AMPS: 98.9

DESIGNATION: PANEL 2P-1M

VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 100 | MAIN(A): 100 | AVAILABLE FAULT(A): 10575 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
FCU-ELEC	Equipment	416	15/2	1	A	2			(None)	
		416		3	B	4			(None)	
ACCU-ELEC	Equipment	1414	20/2	5	C	6			(None)	
		1414		7	A	8			(None)	
RHWP-101	Equipment	900	20/1	9	B	10			(None)	
	Equipment		20/1	11	C	12			(None)	
SCP-101	Equipment	100	20/1	13	A	14			(None)	
SHEP-101	Equipment	530	20/1	15	B	16			(None)	
ALT 5: RWHHT-101	Equipment	1560	20/1	17	C	18			(None)	
	Equipment		20/1	19	A	20			(None)	
	(None)		20/1	21	B	22			(None)	
SP-1	Equipment	1180	20/1	23	C	24			(None)	
RWTWP-101	Equipment	100	20/1	25	A	26			(None)	
RT003/004	Lighting	508	20/1	27	B	28			(None)	
IRRIGATION CONTROLLER	Equipment	500	20/1	29	C	30			(None)	
EF-D-RR	(None)	1180	20/1	31	A	32			(None)	
SHEP-201	(None)	750	20/1	33	B	34			(None)	
SPARE	(None)		20/1	35	C	36	20/1		(None)	SPARE
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	2030	2991	4654	9675
(None)	1475	938	0	2412
Lighting	0	635	0	635
DESIGN LOAD:	3505	4563	4654	12722

TOTAL CONNECTED LOAD	VA: 12113	AMPS: 38.8
TOTAL DESIGN LOAD	VA: 12723	AMPS: 38.8

DESIGNATION: PANEL 2P-1N

VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 400 | MAIN(A): 300 | AVAILABLE FAULT(A): 8620 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 155 - REFRIGERATOR	Equipment	800	20/1	1	A	2	20/1	1000	Equipment	RM 155 - RANGE HOOD
RM 155 - REFRIGERATOR	Equipment	800	20/1	3	B	4	20/1	1000	Equipment	RM 155 - RANGE HOOD
RM 155 - OVEN	Equipment	3500	50/2	5	C	6	50/2	3500	Equipment	RM 155 - OVEN
		3500		7	A	8		3500		
RM 155	Receptacles	360	20/1	9	B	10	20/1	360	Receptacles	RM 155
RM 155	Receptacles	360	20/1	11	C	12	20/1	360	Receptacles	RM 155
RM 155 - DRYER	Equipment	2000	30/2	13	A	14	50/2	3500	Equipment	RM 155 - OVEN
		2000		15	B	16		3500		
RM 155 - WASHER	Equipment	1200	20/1	17	C	18	20/1	1000	Equipment	RM 155 - RANGE HOOD
RM 155 - OVEN	Equipment	3500	50/2	19	A	20	20/1	1000	Equipment	RM 155 - RANGE HOOD
		3500		21	B	22	50/2	3500	Equipment	RM 155 - OVEN
RM 155 - RANGE HOOD	Equipment	1000	20/1	23	C	24		3500		
RM 155	Receptacles	540	20/1	25	A	26	20/1	360	Receptacles	RM 155
RM 155 - OVEN	Equipment	3500	50/2	27	B	28	20/2	3500	Equipment	RM 155 - OVEN
		3500		29	C	30		3500		
RM 155 - RANGE HOOD	Equipment	1000	20/1	31	A	32	20/1		(None)	SPARE
RM 155 - OVEN	Equipment	3500	50/2	33	B	34	20/1		(None)	SPARE
		3500		35	C	36	20/1		(None)	SPARE
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	19800	24800	24200	68800
Receptacles	900	720	720	2340
DESIGN LOAD:	20700	25520	24920	71140

TOTAL CONNECTED LOAD	VA: 71140	AMPS: 212.5
TOTAL DESIGN LOAD	VA: 71140	AMPS: 212.5

DESIGNATION: PANEL 2P-1O

VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 225 | MAIN(A): 225 | AVAILABLE FAULT(A): 8367 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 151A	Receptacles	1080	20/1	1	A	2	20/1	360	Receptacles	RM 153 - OVERHEAD REC
RM 151A	Receptacles	540	20/1	3	B	4	20/1	540	Receptacles	RM 153
RM 151A	Receptacles	720	20/1	5	C	6	20/1	720	Receptacles	RM 153
RM 151- KILN	Equipment	5625	70/2	7	A	8	20/1	900	Receptacles	RM 153
		5625		9	B	10	20/1		(None)	SPARE
RM 151 - OVERHEAD REC	Receptacles	360	20/1	11	C	12	20/1		(None)	SPARE
RM 151 - OVERHEAD REC	Receptacles	360	20/1	13	A	14	20/1		(None)	SPARE
RM 151 - OVERHEAD REC	Receptacles	360	20/1	15	B	16	20/1		(None)	SPARE
RM 151 - OVERHEAD REC	Receptacles	360	20/1	17	C	18	20/1		(None)	SPARE
RM 151 - OVERHEAD REC	Receptacles	360	20/1	19	A	20	20/1		(None)	SPARE
RM 151 - OVERHEAD REC	Receptacles	360	20/1	21	B	22	20/1		(None)	SPARE
RM 151 - OVERHEAD REC	Receptacles	360	20/1	23	C	24	20/1		(None)	SPARE
RM 151	Receptacles	1080	20/1	25	A	26	20/1		(None)	SPARE
RM 151	Receptacles	720	20/1	27	B	28	20/1		(None)	SPARE
RM 153 - OVERHEAD REC	Receptacles	360	20/1	29	C	30	20/1		(None)	SPARE
RM 153 - OVERHEAD REC	Receptacles	360	20/1	31	A	32	20/1		(None)	SPARE
RM 153 - OVERHEAD REC	Receptacles	360	20/1	33	B	34	20/1		(None)	SPARE
RM 153 - OVERHEAD REC	Receptacles	360	20/1	35	C	36	20/1		(None)	SPARE
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	3917	2880	3240	10037
Equipment	5625	5625	0	11250
DESIGN LOAD:	9542	8505	3240	21287

TOTAL CONNECTED LOAD	VA: 21870	AMPS: 84.3
TOTAL DESIGN LOAD	VA: 21287	AMPS: 79.5

DESIGNATION: PANEL 2P-2A

VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 225 | MAIN(A): 225 | AVAILABLE FAULT(A): 3010 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 227	Receptacles	360	20/1	1	A	2	20/1	360	Receptacles	RM 221A/B
RM 227 - TABLET CHARGING	Equipment	300	20/1	3	B	4	20/1	500	Equipment	RM 224 - PROJECTOR/MONITOR
RM 227 - PROJECTOR/MONITOR	Equipment	500	20/1	5	C	6	20/1	360	Receptacles	RM 224
RM 227	Receptacles	360	20/1	7	A	8	20/1	300	Equipment	RM 224 - TABLET CHARGING
RM 227	Receptacles	900	20/1	9	B	10	20/1	1080	Receptacles	RM 224
RM 227	Receptacles	1080	20/1	11	C	12	20/1	1080	Receptacles	RM 224
RM 225 - TABLET CHARGING	Equipment	300	20/1	13	A	14	20/1	540	Receptacles	RM 221/222/223
RM 225	Receptacles	540	20/1	15	B	16	20/1	300	Equipment	RM 216 - TABLET CHARGING
RM 225 - PROJECTOR/MONITOR	Equipment	500	20/1	17	C	18	20/1	500	Equipment	RM 216 - PROJECTOR/MONITOR
RM 225	Receptacles	360	20/1	19	A	20	20/1	360	Receptacles	RM 216
RM 225	Receptacles	1080	20/1	21	B	22	20/1	1260	Receptacles	RM 216
RM 225	Receptacles	1080	20/1	23	C	24	20/1	1080	Receptacles	RM 216
SHARED LEARNING	Equipment	900	20/1	25	A	26	20/1	1000	Equipment	RM 218 - COPIER
RM 228 - PROJECTOR/MONITOR	Equipment	500	20/1	27	B	28	20/1	540	Receptacles	RM 218
RM 228 - TABLET CHARGING	Equipment	300	20/1	29	C	30	20/1	720	Receptacles	RM 218
RM 228	Receptacles	360	20/1	31	A	32	20/1	1400	Equipment	RM 221B - HAND DRYER
RM 228	Receptacles	1080	20/1	33	B	34	20/1	1400	Equipment	RM 221B - HAND DRYER
RM 228	Receptacles	1260	20/1	35	C	36	20/1	1400	Equipment	RM 221A - HAND DRYER
TP-6	Equipment	100	20/1	37	A	38	20/1	1400	Equipment	RM 221A - HAND DRYER
SPARE	(None)		20/1	39	B	40	20/1	1400	Equipment	RM 222 - HAND DRYER
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE
SPARE	(None)		20/1	43	A	44	20/1		(None)	SPARE
SPARE	(None)		20/1	45	B	46	20/1		(None)	SPARE
SPARE	(None)		20/1	47	C	48	20/1		(None)	SPARE
SPARE	(None)		20/1	49	A	50	20/1		(None)	SPARE
SPARE	(None)		20/1	51	B	52	20/1		(None)	SPARE
SPARE	(None)		20/1	53	C	54	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	2700	4906	4997	12603
Equipment	5400	4400	3200	13000
DESIGN LOAD:	8100	8306	8196	25603

TOTAL CONNECTED LOAD	VA: 28840	AMPS: 90.6
TOTAL DESIGN LOAD	VA: 25603	AMPS: 77.5

DESIGNATION: PANEL 2P-2B

VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 225 | MAIN(A): 225 | AVAILABLE FAULT(A): 3331 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM 209	Receptacles	720	20/1	1	A	2	20/1	900	Receptacles	SHARED LEARNING
RM 217 - PROJECTOR/MONITO	Equipment	500	20/1	3	B	4	20/1	500	Equipment	RM 212 - PROJECTOR/MONITOR
RM 217 - TABLET CHARGING	Equipment	300	20/1	5	C	6	20/1	720	Receptacles	RM 212
RM 217	Receptacles	360	20/1	7	A	8	20/1	300	Equipment	RM 212 - TABLET CHARGING
RM 217	Receptacles	1260	20/1	9	B	10	20/1	1260	Receptacles	RM 212
RM 217	Receptacles	1080	20/1	11	C	12	20/1	1080	Receptacles	RM 212
RM 209	Receptacles	720	20/1	13	A	14	20/1	360	Receptacles	RM 209
RM 215 - PROJECTOR/MONITOR	Equipment	500	20/1	15	B	16	20/1	800	Equipment	RM 209 - REFRIGERATOR
RM 215 - TABLET CHARGING	Equipment	300	20/1	17	C	18	20/1	800	Equipment	RM 209 - REFRIGERATOR
RM 215	Receptacles	360	20/1	19	A	20	20/1	360	Receptacles	RM 206/208
RM 215	Receptacles	1080	20/1	21	B	22	20/1	1400	Equipment	RM 208 - HAND DRYER
RM 215	Receptacles	1080	20/1	23	C	24	20/1	1400	Equipment	RM 206 - HAND DRYER
RM 213 - TABLET CHARGING	Equipment	300	20/1	25	A	26	20/1	500	Equipment	RM 205 - WATER COOLER
RM 213 - PROJECTOR/MONITO	Equipment	500	20/1	27	B	28	20/1	1080	Receptacles	RM 202
RM 213	Receptacles	360	20/1	29	C	30	20/1	1080	Receptacles	RM 202 A/B
RM 213	Receptacles	900	20/1	31	A	32	20/1	900	Receptacles	RM 202
RM 213	Receptacles	720	20/1	33	B	34	20/1	540	Receptacles	RM 202
RM 203	Receptacles	720	20/1	35	C	36	20/1	500	Equipment	RM 202B PROJECTOR/MONITOR
RM 205	Receptacles	360	20/1	37	A	38	20/1	360	Receptacles	RM 202B
RM 204	Receptacles	720	20/1	39	B	40	20/1	360	Receptacles	RM 204
RM 204	Receptacles	360	20/1	41	C	42	20/1	360	Receptacles	RM 204
RM 204	Receptacles	360	20/1	43	A	44	20/1	1180	Equipment	RM 201 - ROLL DOWN SECURITY DOOR
RM 204	Receptacles	360	20/1	45	B	46	20/1	1248	Lighting	Relay Lighting r209
RM 204	Receptacles	360	20/1	47	C	48	20/1	1000	Equipment	RM 204 - PROJ/MON
Relay Lighting r213	Lighting	100	20/1	49	A	50	20/1	1000	Equipment	RM 204 - PROJ/MON
SPARE	(None)		20/1	51	B	52	20/1	1200	Equipment	RM 209 - MICROWAVE
SPARE	(None)		20/1	53	C	54	20/1	1200	Equipment	RM 209 - MICROWAVE
SPARE	(None)		20/1	55	A	56	20/1	600	Equipment	RM 209 - DISHWASHER
SPARE	(None)		20/1	57	B	58	20/1		(None)	SPARE
SPARE	(None)		20/1	59	C	60	20/1		(None)	SPARE
SPARE	(None)		20/1	61	A	62	20/1		(None)	SPARE
SPARE	(None)		20/1	63	B	64	20/1		(None)	SPARE
SPARE	(None)		20/1	65	C	66	20/1		(None)	SPARE
SPARE	(None)		20/1	67	A	68	20/1		(None)	SPARE
SPARE	(None)		20/1	69	B	70	20/1		(None)	SPARE
SPARE	(None)		20/1	71	C	72	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	4997	5357	5266	15620
Equipment	3880	5400	5500	14780
Lighting	125	1560	0	1685
DESIGN LOAD:	9002	12317	10767	32085

TOTAL CONNECTED LOAD	VA: 37368	AMPS: 116.8
TOTAL DESIGN LOAD	VA: 32085	AMPS: 102.6

1

DESIGNATION: PANEL 2P-2C

VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 100 | MAIN(A): 100 | AVAILABLE FAULT(A): 1688 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM M265	Receptacles	720	20/1	1	A	2	20/1		Receptacles	SPARE
RM M265	Receptacles	900	20/1	3	B	4	20/1		Receptacles	SPARE
SPARE	(None)		20/1	5	C	6	20/1		Equipment	SPARE
SPARE	(None)		20/1	7	A	8	20/1		Equipment	SPARE
SPARE	(None)		20/1	9	B	10	20/1		Equipment	SPARE
SPARE	(None)		20/1	11	C	12	20/1		(None)	SPARE
SPARE	(None)		20/1	13	A	14	20/1		(None)	SPARE
SPARE	(None)		20/1	15	B	16	20/1		(None)	SPARE
SPARE	(None)		20/1	17	C	18	20/1		(None)	SPARE
SPARE	(None)		20/1	19	A	20	20/1		(None)	SPARE
SPARE	(None)		20/1	21	B	22	20/1		(None)	SPARE
SPARE	(None)		20/1	23	C	24	20/1		(None)	SPARE
SPARE	(None)		20/1	25	A	26	20/1		(None)	SPARE
SPARE	(None)		20/1	27	B	28	20/1		(None)	SPARE
SPARE	(None)		20/1	29	C	30	20/1		(None)	SPARE
SPARE	(None)		20/1	31	A	32	20/1		(None)	SPARE
SPARE	(None)		20/1	33	B	34	20/1		(None)	SPARE
SPARE	(None)		20/1	35	C	36	20/1		(None)	SPARE
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	720	900	0	1620
DESIGN LOAD:	720	900	0	1620

TOTAL CONNECTED LOAD	VA: 1620	AMPS: 7.5
TOTAL DESIGN LOAD	VA: 1620	AMPS: 7.5

DESIGNATION: PANEL 2P-AA

VOLTAGE: 208Y/120V - 3 Ph - 4 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 100 | MAIN(A): 100 | AVAILABLE FAULT(A): 1485 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
EF-E1	Equipment	1180	20/1	1	A	2	20/1	900	Receptacles	PLATFORM 265 RECEPTACLES
EF-E2	Equipment	1180	20/1	3	B	4	20/1	900	Receptacles	PLATFORM 265 RECEPTACLES
EF-E3	Equipment	1180	20/1	5	C	6			(None)	
EF-E4	Equipment	1180	20/1	7	A	8			(None)	
KILN EXHAUST FAN	Equipment	161	20/1	9	B	10			(None)	
EF-RH	Equipment	1180	20/1	11	C	12			(None)	
EF-C-RRN	Equipment	1660	25/1	13	A	14			(None)	
EF-C-RRS	Equipment	1660	25/1	15	B	16			(None)	
	(None)			17	C	18			(None)	
	(None)			19	A	20			(None)	
	(None)			21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	4020	3001	2360	9381
Receptacles	900	900	0	1800
DESIGN LOAD:	4920	3901	2360	11181

TOTAL CONNECTED LOAD	VA: 11181	AMPS: 41.0
TOTAL DESIGN LOAD	VA: 11181	AMPS: 41.0

DESIGNATION: PANEL 2P-AB

VOLTAGE: 208 - 3 Ph - 3 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): | MAIN(A): 100 | AVAILABLE FAULT(A): 1530 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
RM M281A	Receptacles	900	20/1	1	A	2	20/1		(None)	SPARE
RM M297	Receptacles	1080	20/1	3	B	4	20/1		(None)	SPARE
RM M268	Receptacles	540	20/1	5	C	6	20/1		(None)	SPARE
EF-DISH	Equipment	1180	20/1	7	A	8	20/1		(None)	SPARE
SPARE	(None)		20/1	9	B	10	20/1		(None)	SPARE
SPARE	(None)		20/1	11	C	12	20/1		(None)	SPARE
SPARE	(None)		20/1	13	A	14	20/1		(None)	SPARE
SPARE	(None)		20/1	15	B	16	20/1		(None)	SPARE
SPARE	(None)		20/1	17	C	18	20/1		(None)	SPARE
SPARE	(None)		20/1	19	A	20	20/1		(None)	SPARE
SPARE	(None)		20/1	21	B	22	20/1		(None)	SPARE
SPARE	(None)		20/1	23	C	24	20/1		(None)	SPARE
SPARE	(None)		20/1	25	A	26	20/1		(None)	SPARE
SPARE	(None)		20/1	27	B	28	20/1		(None)	SPARE
SPARE	(None)		20/1	29	C	30	20/1		(None)	SPARE
SPARE	(None)		20/1	31	A	32	20/1		(None)	SPARE
SPARE	(None)		20/1	33	B	34	20/1		(None)	SPARE
SPARE	(None)		20/1	35	C	36	20/1		(None)	SPARE
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Receptacles	900	1080	540	2520
Equipment	1180	0	0	1180
DESIGN LOAD:	2080	1080	540	3700

TOTAL CONNECTED LOAD	VA: 3700	AMPS: 17.3
TOTAL DESIGN LOAD	VA: 3700	AMPS: 17.3

DESIGNATION: PANEL 2P-AC

VOLTAGE: 208 - 3 Ph - 3 Wire | PROJECT NAME: ROOSEVELT MS
BUS RATING(A): 100 | MAIN(A): 100 | AVAILABLE FAULT(A): 1548 | MOUNTING: Surface | ENCLOSURE: NEMA 1

DESCRIPTION	DEMAND CATEGORY	VA	BKR A/P	CKT	PH	CKT	BKR A/P	VA	DEMAND CATEGORY	DESCRIPTION
EF-ADMIN	Equipment	700	20/1	1	A	2		530	Equipment	AH-GROUP
FCU-ELEV	Equipment	1352	20/2	3	B	4		530	Equipment	AH-CONF
		1352		5	C	6		530	Equipment	AH-TECH
ACCU-ELEV	Equipment	1352	20/2	7	A	8			(None)	
		1352		9	B	10			(None)	
SF-ELEV	Equipment	1180	20/1	11	C	12			(None)	
TF-STOR-CN	Equipment	700	20/1	13	A	14			(None)	
TF-STOR-CS	Equipment	700	20/1	15	B	16			(None)	
	(None)			17	C	18			(None)	
	(None)			19	A	20			(None)	
	(None)			21	B	22			(None)	
	(None)			23	C	24			(None)	
	(None)			25	A	26			(None)	
	(None)			27	B	28			(None)	
	(None)			29	C	30			(None)	
	(None)			31	A	32			(None)	
	(None)			33	B	34			(None)	
	(None)			35	C	36			(None)	
SPARE	(None)		20/1	37	A	38	20/1		(None)	SPARE
SPARE	(None)		20/1	39	B	40	20/1		(None)	SPARE
SPARE	(None)		20/1	41	C	42	20/1		(None)	SPARE

DEMAND CATEGORY	A ph (VA)	B ph (VA)	C ph (VA)	TOTAL (VA)
Equipment	3282	3934	3062	10278
DESIGN LOAD:	3282	3934	3062	10278

TOTAL CONNECTED LOAD	VA: 10278	AMPS: 32.8
TOTAL DESIGN LOAD	VA: 10278	AMPS: 32.8

1

2P-1J	2P-1N	2P-2C
1 2P-1K	2P-1O	2P-AA
2P-1L	2P-2A	2P-AB
2P-1M	2P-2B 1	2P-AC 1

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EUGENE SCHOOL DISTRICT 4J

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REPLACEMENT ROOSEVELT
MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2

PROJECT NO: 2013912.00
DRAWN BY: KAK
CHECKED BY: SPD

PANEL SCHEDULES

E-903

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EUGENE SCHOOL DISTRICT 4J

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
CIP NO. 410.566.001

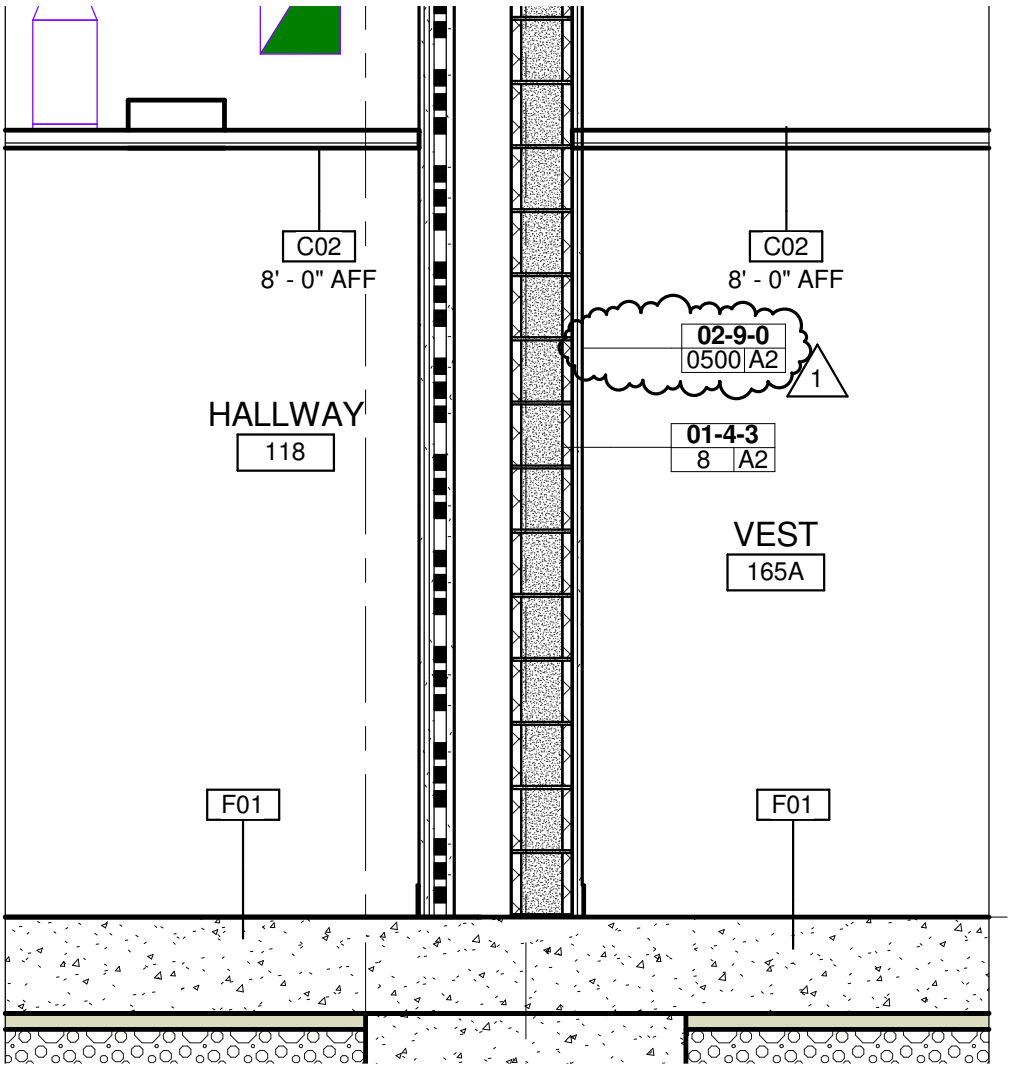
MARK	DATE	DESCRIPTION
1	03-13-2015	ADDENDUM 6

ISSUE DATE: FEBRUARY 18, 2015
ISSUE: CONSTRUCTION DOCUMENTS
VOLUME: PACKAGE 2 VOLUME 2
PROJECT NO: 2013912.00
DRAWN BY: JAR
CHECKED BY: SPD
 ORIGINAL SHEET SIZE: 30"x42"

LIGHTING RELAY SCHEDULES

E-905

REGISTERED ARCHITECT
5594
LEROY A. LANDERS
PORTLAND, OREGON
STATE OF OREGON



SECTION (N/S) AT ADMIN TO LOCKER ROOM FIREWALL

A1

1/2" = 1'-0"

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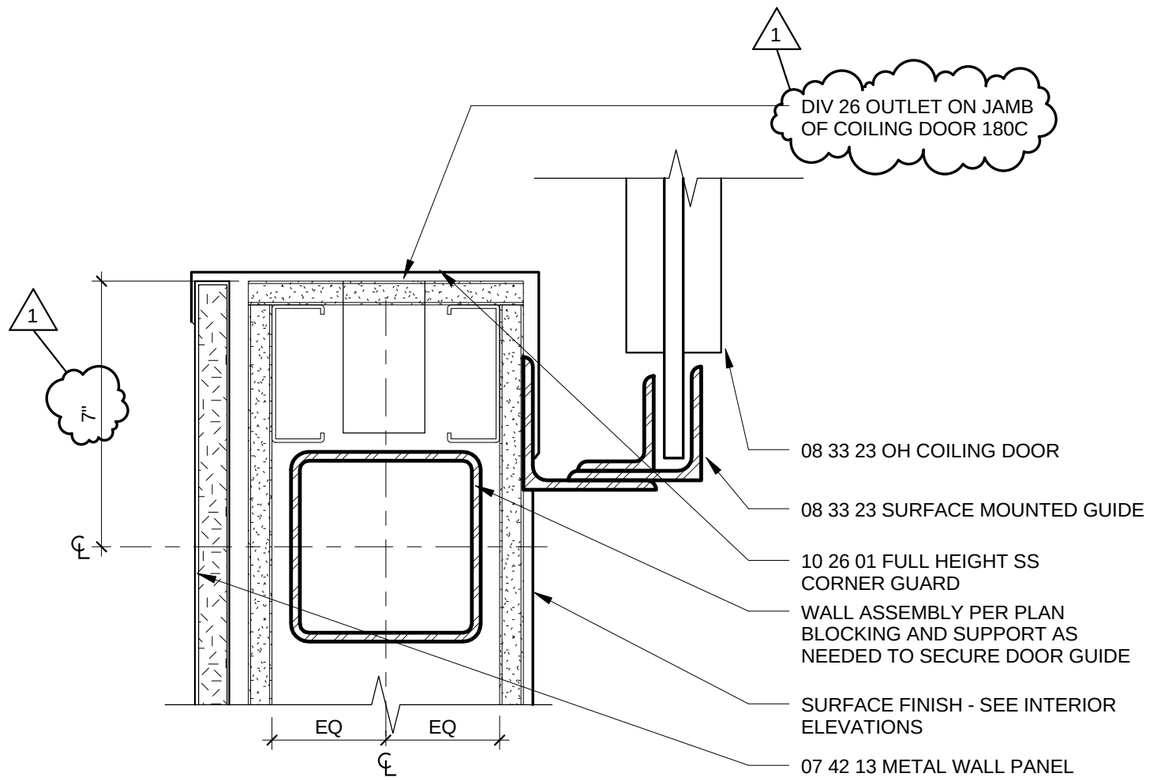
REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
EUGENE SCHOOL DISTRICT 4J

DETL/SHT: **A1/A-325**
REF: **ADDENDUM 6**

PROJECT NO: **2013912.00**
DATE: **3/13/15**
ADD-A-325-01



A6 OH DOOR JAMB

3" = 1'-0"

REGISTERED ARCHITECT
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STATE OF OREGON

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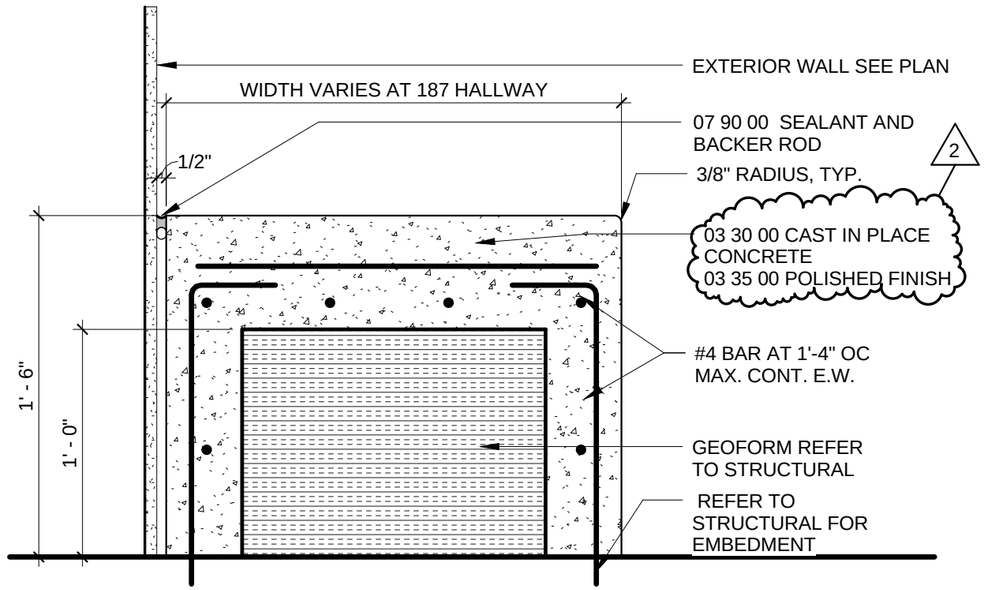
REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
EUGENE SCHOOL DISTRICT 4J

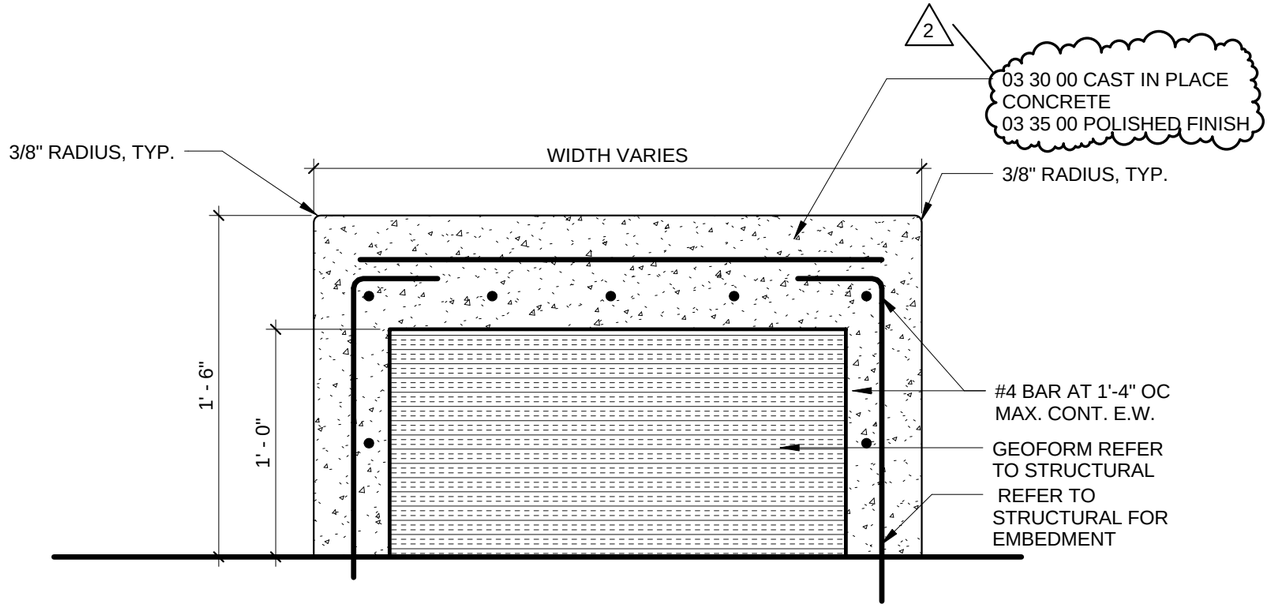
DETL/SHT: **A6/A-555**
REF: **ADDENDUM 6**

PROJECT NO: **2013912.00**
DATE: **3/13/15**
ADD-A-555-01



C4 BENCH SECTION @ WALL

1 1/2" = 1'-0"



C5 BENCH SECTION

1 1/2" = 1'-0"

REGISTERED ARCHITECT
5594
LEROY A. LANDERS
PORTLAND, OREGON
STATE OF OREGON

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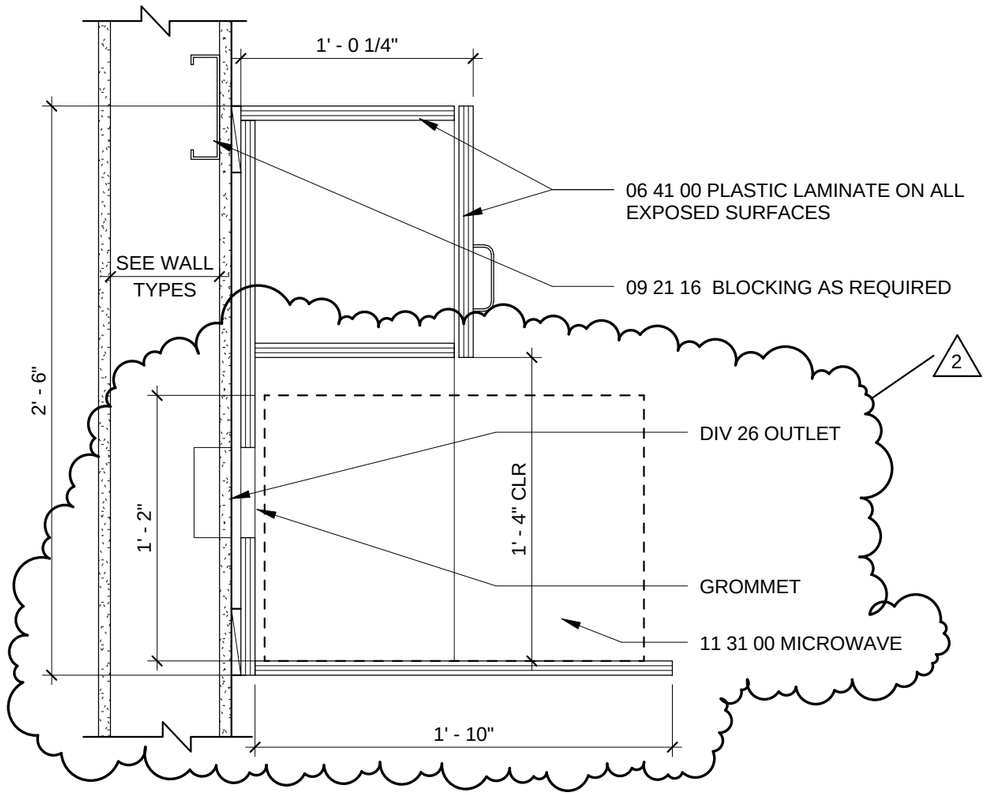
REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
EUGENE SCHOOL DISTRICT 4J

DETL/SHT: **C4&C5/A-559**
REF: **ADDENDUM 6**

PROJECT NO: **2013912.00**
DATE: **3/12/15**
ADD-A-559-01



C4 UPPER CABINET W/ MICROWAVE

1 1/2" = 1'-0"

REGISTERED ARCHITECT
5594
LEROY A. LANDERS
PORTLAND, OREGON
STATE OF OREGON

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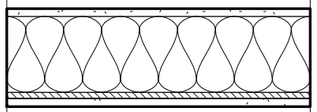
mahlum

REPLACEMENT ROOSEVELT MIDDLE SCHOOL
CIP NUMBER 410.566.001
680 EAST 24TH AVENUE
EUGENE, OREGON 97405
EUGENE SCHOOL DISTRICT 4J

DETL/SHT: **C4/A-582**
REF: **ADDENDUM 6**

PROJECT NO: **2013912.00**
DATE: **3/13/15**
ADD-A-582-02



09 21 16 GYPSUM WALLBOARD
-
09 21 16 METAL STUD FRAMING
09 10 00 PLYWOOD
09 21 16 GYPSUM WALLBOARD

MARK	**FIRE RESISTANCE/ SOURCE:**	0 HOUR(S)
17-9-0	**STC RATING/SOURCE:**	STC 35 USG 810509

1

REGISTERED ARCHITECT
5594
LEROY A. LANDERS
PORTLAND, OREGON
STATE OF OREGON

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680 EAST 24TH AVENUE
EUGENE, OREGON 97405
EUGENE SCHOOL DISTRICT 4J

DETL/SHT: **A-602**
REF: **ADDENDUM 6**

PROJECT NO: **2013912.00**
DATE: **3/13/15**
ADD-A-602-01