



ADDENDUM TO THE CONTRACT

for the

Auke Bay Elementary School Renovation

Contract No. E12-042

ADDENDUM NO.: ONE

CURRENT DEADLINE FOR BIDS:
February 7, 2012

PREVIOUS ADDENDA: NONE

ISSUED BY: City and Borough of Juneau
ENGINEERING DEPARTMENT
155 South Seward Street
Juneau, Alaska 99801

DATE ADDENDUM ISSUED: January 30, 2012

The following items of the contract are modified as herein indicated. All other items remain the same. This addendum has been issued and is posted online. Please refer to the CBJ Engineering Contracts Division webpage at: <http://www.juneau.org/engineering ftp/contracts/Contracts.php>

PROJECT MANUAL – Volume III:

1. Section 017300 Execution 2.1 A.1: **Delete** reference to the following: Section 018113.13 "Sustainable Design Requirements - LEED for New Construction and Major Renovations, and".
2. Section 020900 Lead Abatement, Article 3.5 E: **Add** the following sentence: "For bidding purposes, the Abatement Subcontractor should assume that the final waste stream will meet TCLP standards for disposal at the local municipal landfill."
3. Section 020900 Lead Abatement, Article 3.7.A: **Delete** the existing paragraph and **Replace** it in its entirety with the following paragraph: "After abatement activities are complete and the before the performance of clearance monitoring, the Abatement Subcontractor and the OWNER representative shall perform a detailed visual inspection of the WORK area for any visible lead dust residual. If any is found, a complete recleaning of the area shall be performed, and the area reinspected. Once the visual inspection is satisfactorily completed, lead wipe sampling will be performed in accordance with the EPA Lead RRP Rule. Once the wipe test has been passed, lockdown sealant shall be applied."
4. Section 033000 Cast-In-Place Concrete, Section 3.15: **Delete** Section B.
5. Section 051200 Structural Steel Framing: **Delete** Section 2.9.
6. Section 057000 Ornamental Metal Grilles: **Add** section 057000 Ornamental Metal Grilles labeled Addendum No. 1 (see attachment)
7. Section 064023 Interior Architectural Woodwork: Title of subsection 2.2.A. **Replace** with: "Softwood Lumber for Wood Plank Wall with Transparent Finish (Stain or Clear Finish)".
8. Section 064023 Interior Architectural Woodwork: **Add** subsection 3.4.A.4.: "Returns and corners to be detailed as stated above unless otherwise shown in the drawings".

9. **Delete** Section 067320 Composite Decking and **Replace** with attached Section 066120 Plastic Decking labeled Addendum No. 1.
10. Section 072500 2.1 A.1. Basis of Design: **Replace** "Vapro Shield LLC Wall Shield" to "Vapro Shield LLC Wrap Shield Black."
11. Section 072500 2.1: **Add** paragraph C. as follows:
 - C Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than **0.030 inch (0.8 mm)**.
12. Section 072500: **Add** paragraph 3.2 as follows:

3.2 FLEXIBLE FLASHING INSTALLATION

 - A. Apply flexible flashing at perimeter of all window and door openings and where indicated to comply with manufacturer's written instructions.
 1. Prime substrates as recommended by flashing manufacturer.
 2. Lap seams and junctures with other materials at least **4 inches (100 mm)** except that at flashing flanges of other construction, laps need not exceed flange width.
 3. Lap flashing over water-resistive barrier at bottom and sides of openings.
 4. Lap water-resistive barrier over flashing at heads of openings.
 5. After flashing has been applied, roll surfaces with a hard rubber or metal roller to ensure that flashing is completely adhered to substrates.
13. Section 075419 PVC Roofing 1.4: **Add** paragraph E. As follows:
 - E. Solar Reflectance Index: Not less than 78 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency
14. Section 075419 PVC Roofing 1.5: **Add** paragraph D. As follows:
 - D. LEED Submittals:
 6. Product Data for Credit SS 7.2: For roof materials, indicating that roof materials comply with Solar Reflectance Index requirement.
 7. Laboratory Test Reports for Credit IEQ 4: For adhesives and sealants used inside the weatherproofing system, documentation indicating that they comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
15. Section 075419 PVC Roofing 2.1 A. 1.: **Add** e. Johns Manvill.
16. Section 075419 PVC Roofing 2.1 A 4: **Change** Color to white.
17. Section 087100 Door Hardware: **Replace** section 087100 Door Hardware in its entirety with the attached Section 087100 Door Hardware labeled Addendum No. 1.
18. Section 088000 Glazing: **Replace** subsections 3.10.A.1 & C.1 with "Overall Unit Thickness: 1-3/4 inches." **Replace** subsections 3.10.A.8 & C.8 with "Maximum U-Factor: 0.27." **Replace** subsection 3.10.C.9 with "Opaque Coating Location: Indoor surface."
19. Section 088000 Glazing: **Delete** subsection 3.10.B Glass Type GL4.
20. Section 095113 Acoustical Panel Ceilings: Section 2.4: A: **Replace** with "Armstrong Health Zone Ultima"; B1, **Replace** with "Type IV, Form 2"; E: **Replace** with "Not less than .70"; G: **Replace** with "3/4 inch".
21. Section 095424 Suspended Wood Ceilings: Section 2.1 A. 1: **Replace** "To be selected by Architect from manufacturer's full range" with "Maple".
22. Section 101100 Visual Display Surfaces: **Add** Section 1.2 A. "4. Slat Wall". Add 2.9 "D. Slat Wall: Basis of Design: Marlite Slat Wall or approved equal. Series 7000 for medium duty engineered groove machined into 3/4" thick substrate at 6" O.C., reinforced with aluminum insert. Finish: Marlite modified melamine enamel, color

to be selected by Architect from manufacturer's full range. Accessories: Acrylic shelving and supports for shelving extending full lengths of units, 18" O.C. from top to bottom of slat wall."

PROJECT MANUAL – Volume IV:

23. Section 235213 Electric Boilers: **Add** the attached specification Section labeled Addendum No. 1.
24. Section 321216 Asphalt Concrete Pavement: Part 3 – Execution, Article 3.13, Acceptance Sampling and Testing, **Add** the following:

"K. For each lot of asphalt pavement produced, at least two (2) samples shall be taken by the CONTRACTOR for purposes of acceptance testing by the OWNER. The CONTRACTOR shall split the sample with the OWNER to retain a portion for their own use. The sample shall be taken according to proper sampling methods, from the asphalt pavement on the grade. Based on the averaged results of the acceptance testing, a deduction from the asphalt pavement pay item may be made at the following amounts:

#200 Sieve: the greater of either 1.0% the contract price for asphalt pavement placed within the sampled lot or \$500 per each 0.1% outside the job mix design tolerance, not exceeding 6% maximum, of the percent passing the #200 sieve.

Asphalt Content: the greater of either 1.0% the contract price for asphalt pavement placed within the sampled lot or \$500 per each 0.1% outside the allowable job mix design asphalt content tolerance. The allowable asphalt content tolerance for this Contract shall be +/- 0.4% of the target job mix design asphalt content and shall not exceed the asphalt oil content limits specified in this Contract.

The pay deductions for exceeding the job mix design tolerances does not constitute acceptance of a mix that does not meet the specifications. Further acceptance testing will be performed to determine if the asphalt pavement specifications have been met. No payment for asphalt pavement will be made for asphalt pavement exceeding job mix design tolerances, or not meeting asphalt pavement specifications, until additional testing determines whether the asphalt pavement meets all other specifications.

For the purposes of this Contract, one lot of asphalt pavement is defined as 500 tons, or a single day's asphalt pavement production of at least 100 tons."

DRAWINGS – Volume I:

25. Sheet A010 Details 1 & 2: **Add** (1) horizontal and / or vertical mullion at each elevation as needed to meet curtain wall requirements. Placement of mullions to be coordinated with Architect after the reward of contract.
26. Sheet A011 Details 1 & 2: **Add** (1) horizontal and / or vertical mullion at each elevation as needed to meet curtain wall requirements. Placement of mullions to be coordinated with Architect after the reward of contract.
27. Sheet A014 Opening 106B: **Delete** 20 min rating.
28. Sheet A014 Opening 107F: **Replace** details with Jamb "2 & 3/A912", Head "6/A902", Sill "6/A902".
29. Sheet A014 Opening 107G: **Change** Type A to Type N. **Replace** details with Jamb "1 & 2/A912", Head "1/A912", Sill "1/A912".
30. Sheet A014 Opening 108D: **Delete** Hardware Group 07.
31. Sheet A014 Openings 115A, 116A & 117A. **Add** glass types to GL-2.
32. Sheet A014 All Openings with Glass: **Change** all glass types to GL-2 except the following openings: 150A, 152A, 152B, 152C, 152D, 155A, 255A, 255B. For these openings **change** the glass type to GL-3.
33. Sheet A014: **Delete** Opening 158A.
34. Sheet A014 Opening 205A: **Change** the Hardware Group to 47.
35. Sheet A014 Opening 303A: **Add** "Note 1". **Change** the Hardware Group to 26.

36. Sheet A201 Crawl space between grids B&V and 1&5. **Add** the following note: "Grade area to consistent slope and install 10 mil vapor barrier."
37. Sheet A204: **Add** General Note: "Note 1: See Mechanical for additional information on roof penetrations."
38. Sheet A204: **Delete** elevator machine room roof cap (Keynote 207) from east penthouse roof.
39. Sheet A402: **Delete** door 158A and G6 partition for door. **Delete** note "3 ¾" ea side". **Add** partition keynote "C6" at west partition, south of door 158A.
40. Sheet A413 Server 201A: **Replace** chase dimension 12" CLR with "20" CLR" and 24" CLR **with** "30" CLR".
41. Sheet A413 Server 201A, Stor 200C & Conference Room 200A: **Delete** existing rainwater leaders and accompanying furring. **Add** rainwater leaders per M214. Windows in Conference Room 200A to go to 2 inches of inside corner of wall, Windows BS & BZ (see Window Group G11) to be the appropriate width.
42. Sheet A500: Keynote 525, **Replace** "NOT USED" with "OPEN PLAM ADJUSTABLE SHELVING".
43. Sheet A500: Keynote 547, **Replace** "NOT USED" with "SLAT WALL".
44. Sheet A503 Elevation 2: **Delete** "18'-0" dimensions to top of wall grilles. **Add** "14'-0" dimensions to bottom of wall grilles, typical 2 locations.
45. Sheet A517 Elevation 1: **Replace** Keynote 539 with "547", all locations. Replace Keynote 545 with "539".
46. Sheets A601 and A602: **Add** at Legend, Suspended Wood Ceiling System "SEE 4/A912".
47. Sheet A602 Multi-Media 201: **Add** at south wall, GWB Soffit @ 7'-6" flush to face of chase.
48. Sheet A800 Keynote 807: **Delete** "(PAINT BLACK)".
49. Sheet A800 Keynote 809: **Replace** with "NOT USED".
50. Sheet A800 Keynote 826: **Replace** with "1x6 COMPOSITE DECKING RAINSCREEN".
51. Sheet A800 Keynote 842: **Replace** with "4X FASCIA – SEE STRUCTURAL". See also Detail 2/A804.
52. Sheet A800 Keynote 846: **Replace** with "ROOF DRAIN, SEE MECH FOR SIZE".
53. Sheet A800 Keynote 848: **Replace** with "RAIN WATER LEADER, SEE MECH FOR SIZE".
54. Sheet A800 Keynote 865: References several instances where drawing show as a single batt of insulation, this Keynote takes precedence over the drawings.
55. Sheet A800 Keynote 892: **Replace** with "BOARDS WITH EXPOSED ENDS TO ALTERNATE @ EACH ROW".
56. Sheet A802 Detail 6: **Delete** batt insulation in fin wall portion of detail.
57. Sheet A804 Detail 2: **Replace** existing 4x Fascia with new. See also Keynote 842.
58. Sheet A806 Detail 4: **Replace** Keynote 845 with Keynote 827 "R-26 MIN".
59. Sheet A808 Detail 6: **Delete** elevation datum, see mechanical for size and locations of louvers (see Sheet A200, Keynote 216). **Replace** Keynote 8152 with Keynote 8155.
60. Sheet A809 Detail 3: **Delete** note "DAM".
61. Sheet A810 Detail 3: Show rigid or spray insulation at Keynote 811.
62. Sheet A900 Keynote 938: **Replace** with "1x6 CEDAR BOARD".
63. Sheet A900 Keynotes 942, 955, 956, 957 & 959: **Replace** with "NOT USED".
64. Sheet A900 Keynote 946: **Replace** with "1/4" CONT PWD – INSTALL AFTER INSTALLATION OF CASEWORK MODULES".
65. Sheet A900 Keynote 9102: **Replace** with "BOARDS WITH EXPOSED ENDS TO ALTERNATE @ EACH ROW".
66. Sheet A900 Keynote 9116: **Replace** with "PERPENDICULAR BOX TRIM BEYOND – INSTALL FLUSH WITH ADJACENT BOX TRIM".

67. Sheet A900 Keynote 9164 : **Replace** with “REMOVABLE BAR GRILL – ROUTE OPENING SO THAT GRILL FLANGE IS FLUSH WITH ADJACENT SURFACES”.
68. Sheet A901 Detail 3: Dimensions to match those of the mullion on Detail 2/A901.
69. Sheet A902 Detail 6: **Delete** detail bubble, Section cut to reference Detail 2/A912. **Delete** 2x2 Wood Trim (Keynote 909) below counter – adjacent 2x2 Wood Trim to align with top of counter.
70. Sheet A905 Detail 2: Keynote 904 to point to dashed lines below double layer of GWB.
71. Sheet A905 Detail 6: **Replace** typical reveal of 3/8” with 1/4”. **Add** Keynote 910 to bottom board.
72. Sheet A907 Detail 5: **Replace** Keynote 9117 with Keynote 927.
73. Sheet A907 Detail 6: **Replace** Keynote 988 with “SS CORNER GUARD – 1” LEGS”.
74. Sheet A908 Details 1, 2 & 4: **Replace** 1x4 Wood Trim (Keynote 907) with 2x2 Wood Trim (Keynote 909), locate where indicated on Interior Elevation 5/A511. **Add** Sealant (Keynote 914) to all joints not covered with trim. **Replace** Keynote 907 with Keynote 909 located where indicated on Interior Elevation 5/A511. **Add** General Note: “APPLY SEALANT TO ALL JOINTS NOT COVERED WITH TRIM”, or change on drawing.
75. Sheet A908 Detail 3: **Add** Keynote 927 to all exposed sides of display.
76. Sheet A908 Detail 6: Add Base (Keynote 927) to outside of plywood @ Keynote 946. Raise the bottom shelf of unit so that the scheduled base fits without modification.
77. Sheet A910 Detail 2: **Replace** Keynote 927 with Keynote 910.
78. Sheet A912 Details 1, 2, 3 & 4: **Add** (see attachment).
79. Sheet C200 titled “Site Plan” **Replace** with Sheet C200 titled “Site Plan” (see attachment).
80. Sheet C201: **Delete** label on water line “12-inch DIP Water” and **Replace** with “8-inch DIP Water”.
81. Sheet C201: **Delete** the note “N=3757.84, E=3591.17 Install 45-degree 12” DIP bend, TOP EL=50.4” and **Replace** with “N=3757.84, E=3591.17 Install 45-degree 8” DIP bend, TOP EL=50.4”.
82. Sheet C203: **Delete** label on water line “12-inch DIP Water” and **Replace** with “8-inch DIP Water”.
83. Sheet C203: **Delete** the note “N=3778.44, E=3542.27 Install 12”x6”x12” DI tee, TOP EL=52.0’ and install (1) 6” GV & (1) 8” GV” and **Replace** with “N=3778.44, E=3542.27 Install 8”x6”x8” DI tee, TOP EL=52.0’ and install (1) 6” GV & (1) 8” GV”.
84. Sheet C203: **Delete** the note “N=3801.56, E=3487.36 Install 22.5-degree 12” DIP bend, TOP EL=52.0” and **Replace** with “N=3801.56, E=3487.36 Install 22.5-degree 8” DIP bend, TOP EL=52.0”.
85. Sheet C203: **Delete** the note “N=3824.61, E=3464.59 Install 45-degree 12” DIP bend, TOP EL=52.7” and **Replace** with “N=3824.61, E=3464.59 Install 45-degree 8” DIP bend, TOP EL=52.7”.
86. Sheet C203: **Delete** the note “N=3952.95, E=3455.90 Install 12” GV, LID EL=58.92” and **Replace** with “N=3952.95, E=3455.90 Install 8” GV, LID EL=58.92”.
87. Sheet C203: **Delete** the note “N=3963.50, E=3455.19 Install 90-degree 12” DIP bend, TOP EL=54.0” and **Replace** with “N=3963.50, E=3455.19 Install 90-degree 8” DIP bend and 8”x6” DI reducer, TOP EL=54.0’. Provide all necessary adapters and fittings to connect with building water, coordinate with mechanical”.
88. Sheet C206 titled “North Walk Replacement”: **Add** (see attachment).
89. Sheet C304 titled “Construction Details” **Replace** with Sheet C304 titled “Construction Details” (see attachment).
90. Sheet C305 titled “Construction Details” **Replace** with Sheet C305 titled “Construction Details” (see attachment).
91. Sheet S002: **Add** Detail J (see attachment).
92. Sheet SD100: **Replace** sheet (see attachment).
93. Sheet S200: **Replace** sheet (see attachment).
94. Sheet S203: **Add** sheet (see attachment).

95. Sheet S300: **Add** Note 1: "Provide backboard supports in gym walls per detail J/S002."
96. Sheet S400: **Add** Note 9: "Provide backboard supports in gym walls per detail J/S002."
97. Sheet S400: **Add** Note 10: "Provide 5 1/8"x12" GLB between exist 8x8 columns along Gridline 10 and between Gridlines 9.1 and 10 with bottom of beam elevation equal to 9'-2". Attach GLB to exist 8x8 column with Simpson A35 clip at top and bottom of GLB".
98. Sheet S500: **Add** Note to column at Gridlines C and 2 "See typical GLB to exist column connection detail NN/S507.
99. Sheet S507: **Add** Detail NN (see attachment).
100. Sheet M002: **Replace** entire M002 Drawing (see attachment).
101. Sheet MD701: **Add** new Drawing MD701 (see attachment). MD701 details the temporary ventilation system required to provide ventilation to the Occupied Phase 3 portion of the building during the school year.
102. Sheet MSK-1: **Add** (see attachment). Detail 1 details the revised location of return grilles, typical of Rooms 222, 223, 226, 227, and 228. Detail 2 clouded areas detail the revised location of ductwork from HP-1 serving the Multi-Media 201 room.
103. Sheet MD201 Construction Note 1: **Replace** last sentence with "Acceptable to reroute heating piping in ceiling of first floor classrooms to provide temporary heating flow to Occupied Phase 3 first floor south classrooms during school year. Remove temporary systems by end of Phase 3."
104. Sheets MD201 & MD202 Sheet Note 3: **Replace** entire Sheet Note 3 with the following:

"Phase 1 Work to be done during first summer work season as well as temporary connections to existing Phase 3 area heating piping. Temporarily connect existing Phase 3 piping to new Phase 1 piping prior to the start of the school year in order to have an operational heating system for the Occupied Phase 3 area during school year. Maintain existing thermostats and automatic valves for existing heating units during school year. Existing heating units within the Phase 3 portion of the building to be fully operational prior to the start of the school year. Remove temporary systems prior to the end of Phase 3."
105. Sheet MD300 Construction Note 3: **Replace** last sentence with "Acceptable to reroute heating piping in ceiling of first floor classrooms to provide temporary heating flow to Occupied Phase 3 first floor south classrooms during school year. Remove temporary systems by end of Phase 3."
106. Sheets MD301 & MD 302 Sheet Note 3: **Replace** entire Sheet Note 3 with the following:

"Phase 1 Work to be done during first summer work season as well as temporary connections to existing Phase 3 area domestic piping mains and branches. Temporarily connect existing Phase 3 piping to new Phase 1 piping prior to the start of the school year in order to have an operational plumbing system for the Occupied Phase 3 area during school year. Maintain existing plumbing fixtures in Phase 3 area during school year. Existing plumbing fixtures within the Phase 3 portion of the building to be fully operational prior to the start of the school year. Remove temporary systems prior to the end of Phase 3."
107. Sheets MD 501 & 502 Sheet Note 3: **Replace** entire Sheet Note 3 with the following:

"Phase 1 Work to be done during first summer work season as well as temporary connections to existing Phase 3 area sprinkler piping. Temporarily connect existing Phase 3 piping to new Phase 1 piping prior to the start of the school year in order to have an operational sprinkler system for the Occupied Phase 3 area during school year. Modify and cap existing sprinkler piping as needed. Occupied portions of the building shall have operational sprinkler systems during school year. Provide temporary connection as required to accomplish phasing of work as intended. Remove temporary systems prior to the end of Phase 3."

108. Sheet M203: **Change** '4" WSPR' in crawl space to "DSPR".
109. Sheet M210 Stair ST01: **Change** "FP-2" in Stair landing to "FP-4".
110. Sheet M402 Detail 2 – Enlarged Fan Room - Mechanical room 301. **Revise** 54x16 EA duct from AHU-2 to 54x24 size.
111. Sheet M403: **Replace** entire M403 Drawing (see attachment).
112. Sheet M507 Detail 2 – Enlarged Piping Plan – Boys 202: **Change** "CV-2" in Boys 202 to "CV-1".
113. Sheet M601: **Revise** HS piping connecting ET-1 to ST-1 outlet main to 1-1/2 inch size.

Enc.:

1. Section 057000 Ornamental Metal Grilles
2. Section 066120 Plastic Decking
3. Section 087100 Door Hardware
4. Section 235212 – Electric Boilers
4. Sheet A912 Interior Details
5. Sheet C200 Site Plan
6. Sheet C206 North Walk Replacement
7. Sheet C304 Construction Details
8. Sheet C305 Construction Details
9. Sheet S002 Typical Timber Details
10. Sheet SD100 Demo Plan Foundation
11. Sheet S200 Foundation Plan
12. Sheet S203 Foundation Details
13. Sheet S507 Roof Framing Details
14. Sheet M002 Schedules
15. Sheet MD701 First & Second Floor Plans – Temporary Ventilation System
16. Sheet MSK-1 Ductwork – Multimedia 201 – North Classrooms
17. Sheet M403 Sections



By: _____

Jennifer Mannix,
Contract Administrator

Date: January 30, 2012

Total number of pages contained within this Addendum: 56 (including specs and drawings)

SECTION 057000 - ORNAMENTAL METAL GRILLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Bar Grilles

1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: For each type of product.
- C. LEED Submittals:
 - 1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indication cost for each product having recycled content.
- D. Shop Drawings: Submit the following:
 - 1. Full size templates for products requiring templates for fabrication.
 - 2. Drawings indicating locations of products of this section in project.
 - 3. Drawings and details indicating sizes, materials and thicknesses, fabrication and installation techniques, provisions for reinforcement and anchoring.
- E. Samples: For each exposed product and each color and texture specified.
- F. Sample Warranty.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Packing, Shipping, Handling and Unloading: Pack products of this section to prevent damage to products and finishes.
- B. Storage and Protection:
 - 1. Store products in manufacturer's unopened packaging until installation.
 - 2. Maintain dry, heated storage area for products until installation.

SECTION 057000 - ORNAMENTAL METAL GRILLES

1.5 SCHEDULING

- A. Supply full size templates for products requiring templates for fabrication to manufacturer of products of this section in time for scheduled fabrication.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design Manufacturer: Subject to compliance with requirement provide product from the following:
 - 1. Architectural Grille
- B. Or equal as approved by ARCHITECT.

2.2 PRODUCTS

- A. Basis of Design Product: Subject to compliance with requirements, provide the following:
 - 1. Vertical Bar Grilles:
 - a. Core: Type AG10; 1/8 inch thick by 3/4 inch deep rectangular metal bars spaced 3/8 inch on center, interlocked and welded to 1/8 inch thick by 1/2 inch deep rectangular metal bar crosspieces spaced 10 inches on center. Metal and finish as follows:
 - 1) Aluminum: Clear anodized.
 - b. Fastening Devices: Weld anchor tabs Type 115, with countersunk pre-drilled fastener holes, for installation of grilles.
 - c. Bar Grille Sizes: Heights and widths indicated on drawings.
 - 2. Horizontal Bar Grilles:
 - a. Frame: Type AG10B; 1/8 inch thick by 3/4 inch deep rectangular metal bars spaced 3/8 inch on center, interlocked and welded to 1/8 inch thick by 1/2 inch deep rectangular metal bar crosspieces spaced 10 inches on center. Metal and finish as follows:
 - 1) Aluminum: Clear anodized.
 - b. Fastening Devices: Drop in Type 112, with pre-routed opening for flush mounting of grille.
 - 3. Bar Grille Sizes: Heights and widths indicated on drawings
- B. Or equal as approved by ARCHITECT.

SECTION 057000 - ORNAMENTAL METAL GRILLES

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:

1. Verify openings and substrates are prepared to receive products of this section.
2. Notify Architect of unsuitable conditions.
3. Beginning construction activities of this section indicates installer's acceptance of conditions.

3.2 INSTALLATION

- A. Install in accordance with the manufacturer's recommendations and the approved shop drawings.
- B. Where appropriate, supply products of this section for installation by installers of products of other sections.

3.3 PROTECTION

- A. Protect installed products from damage by subsequent construction activities.
- B. Replace products damaged by subsequent construction activities.

END OF SECTION

SECTION 066120 – PLASTIC DECKING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes.
 - 1. Cellular PVC decking, installed as siding in a rain screen system.

1.3 RELATED SECTIONS

- A. Section 061000 – Rough Carpentry
- B. Section 062013 – Exterior Rough Carpentry.

1.4 REFERENCES

- A. ASTM D 570 Standard Test Method for Water Absorption of Plastics.
- B. ASTM D 638 Standard Test Method for Tensile Properties of Plastics.
- C. ASTM D 648 Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.
- D. ASTM D 662 Standard Test Method for Evaluating Degree of Erosion of Exterior Paints.
- E. ASTM D 4726 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Exterior-Profile Extrusions.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- 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.
 - 4. Cleaning and maintenance instructions

SECTION 066120 – PLASTIC DECKING

- C. Shop Drawings: Provide shop drawings indicating details of construction, anchorage and installation. Include statement that anchorage methods comply with applicable building codes and loadings for the type of framing and condition of the supporting construction and details.
- D. Selection Samples: For each finish product specified, two complete sets of samples – minimum size 6 inches in length – representing manufacturer's full range of available colors and patterns for selection by Architect.
- E. Verification Samples: For each finish product specified, two samples – minimum size 6 inches in length – representing actual product, color, and patterns.
- F. Manufacturer's warranties. Manufacturer's standard warranty on products used in a non-residential installation.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A minimum of 10 years in the manufacture of PVC products.
- B. Installer Qualifications: A minimum of 3 years in the installation of PVC products.
- C. Pre-installation Conference: Conduct conference at Project site.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Reference Section 01 66 00 – Product Storage and Handling Requirements.
- B. Store products in manufacturer's unopened packaging until ready for installation. Do not stack bundles over 8 units high.
- C. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
- D. Store materials on a flat and level surface.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY

- A. Provide manufacturer's standard warranty against defects in materials and workmanship for the following duration:
 - 1. Warranty Period: 20 years.

SECTION 066120 – PLASTIC DECKING

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design Product:
 - 1. Azek Building Products.
- B. Substitutions: Equal products approved per Section 01 “Product Substitution Procedures”.

2.2 CELLULAR PVC DECKING

- A. Basis-of-Design Product: Azek Deck.
 - 1. Description: Natural deep wood grain embossing on at least one side.
 - 2. Material: Polyvinyl Chloride (PVC).
 - 3. Fasteners: Face-fastened with #8 x 1-3/4 inch stainless steel deck screws at each support.
 - 4. Color: To be determined by Architect from Manufacturers standard line of colors.
 - 5. Profiles: Solid cross-section.
 - 6. Performance Characteristics:
 - a. Structural performance demonstrated for a temperature range from -20 degrees F to 125 degrees F.
 - b. Wind Uplift Resistance Ratings: On support framing spaced at 16 inches:
 - 1) Solid Deck Board Face-Fastened: Using #8 x 2-1/2 inch #316 stainless steel deck screws. Match screw color to decking.
 - 2) Rating: 350 lb/ft².
 - c. Flame Spread Index (ASTM E 84): Not to exceed 40.
 - 8. Size: 1 inch x 5-1/2 inches, plus or minus 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify adequacy of backing and support framing.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

SECTION 066120 – PLASTIC DECKING

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's written instructions and recommendations including but not limited to the following.
 - 1. Install support framing spaced with maximum of 24 inches on center.
 - 2. Face-Fastened Decking: Screws at each support. Minimum edge and end distance for fasteners is 0.75 inches from the board edge and 1.5 inch from the end of each board.
 - 3. Expansion Joints:
 - a. Provide a gap between in-line boards per manufacturer's instructions.
 - b. Stagger Joints.

3.4 PROTECTION

- A. Clean using materials recommended by the manufacturer to remove stains, dirt and debris prior to final acceptance.
- B. Protect installed products until completion of project.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 087100 – DOOR HARDWARE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Mechanical Door Hardware for Swinging doors.
2. Electrified Door Hardware
3. Electronic Access Control system.
4. Items not specifically mentioned but required to complete the work.

B. Related Documents:

1. Division 06 Plastic Laminate Faced Architectural Cabinets for cabinet locks.
2. Division 08 Section Hollow Metal Doors and Frames
3. Division 08 Section Flush Wood Doors
4. Division 08 Aluminum Doors and Frames
5. Division 26 Electrical

1.3 REFERENCES:

- A. ANSI - American National Standards Institute.
 1. ANSI 156.18 – Materials and Finishes.
 2. ANSI A117.1 – Specifications for making buildings and facilities usable by physically handicapped people.
- B. BHMA – Builders Hardware Manufacturers Association
- C. DHI – Door and Hardware Institute
- D. NFPA – National Fire Protection Association

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
 1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 2. Organize vertically formatted schedule into “Hardware Sets” with index of doors and headings, indicating complete designations of every item required for each door or opening.
 3. Include following information:
 - a. Type, style, function, size, quantity and finish of hardware items.
 - b. Use BHMA Finish codes per ANSI A156.18.

SECTION 087100 – DOOR HARDWARE

- c. Name, part number and manufacturer of each item.
- d. Fastenings and other pertinent information.
- e. Location of hardware set coordinated with floor plans and door schedule.
- f. Explanation of abbreviations, symbols, and codes contained in schedule.
- g. Mounting locations for hardware.
- h. Door and frame sizes, materials and degrees of swing.
- i. Catalog cuts.
- j. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, wiring/riser diagrams, manufacturers' installation, adjustment and maintenance information, and supplier's final inspection report.
- k. Keying Schedule: Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

B. Shop Drawings: Details of electrified door hardware, indicating the following:

1. Wiring Diagrams: For power, signal, and control wiring and including the following:
 - a. Details of interface of electrified door hardware and building safety and security systems.
 - b. Schematic diagram of systems that interface with electrified door hardware.
 - c. Point-to-point wiring.
 - d. Risers.
 - e. Elevations doors controlled by electrified door hardware.
2. Operation Narrative: Describe the operation of doors controlled by electrified door hardware.

1.5 QUALITY ASSURANCE:

A. Qualifications:

1. Hardware supplier; a direct factory contract supplier who employs a certified architectural hardware consultant (AHC) who is:
 - a. Experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as follows.
 - b. Available at reasonable times during course of Work for project hardware consultation to Owner, Architect and Contractor.
 - c. Responsible for detailing, scheduling and ordering of finish hardware.

B. Hardware:

1. Provide new, free of defects, blemishes and excessive play.
2. Obtain each kind of hardware (latch and locksets, exit devices, hinges and closers) from one manufacturer.

C. Exit Doors:

1. Make operable from inside with single motion without the use of a key or special knowledge or effort.

D. Pre-Installation Meetings:

SECTION 087100 – DOOR HARDWARE

1. Initiate and conduct with supplier, installer and related trades, coordinate materials and techniques, and sequence complex hardware items and systems installation.
2. Convene at least one week prior to commencement of related work.

E. Fire-Rated Door Assemblies:

1. Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.

F. Electrified Door Hardware:

1. Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

G. Electronic Access Control Supplier Qualifications

1. An experienced installer who has completed electronic access control systems installations similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

H. Accessibility Requirements: For door hardware on doors in an accessible route, comply with ICC/ANSI A117.1.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than **5 lbf (22.2 N)**.
2. Comply with the following maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: **5 lbf (22.2 N)** applied perpendicular to door.
 - b. Sliding or Folding Doors: **5 lbf (22.2 N)** applied parallel to door at latch.
 - c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than **1/4 inch** high.
4. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point **3 inches (75 mm)** from the latch, measured to the leading edge of the door.

1.6 DELIVERY, STORAGE AND HANDLING:

A. Delivery:

1. Coordinate delivery to appropriate locations (shop or field).
2. Secure delivery of permanent keys and cores to Owner's representative.

B. Site Acceptance:

1. Deliver items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces.
2. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.

C. Storage:

1. Provide locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, etc.

1.7 PROJECT CONDITIONS:

SECTION 087100 – DOOR HARDWARE

- A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical as the same operation and quality as type specified, subject to Architect’s approval.

1.8 SEQUENCING:

- A. Furnish manufacturer templates to door and frame fabricators.
- B. Use hardware consultant to check Shop Drawings for doors and entrances to confirm that adequate provisions will be made for proper hardware installation.
 - 1. Confirm that door manufacturers furnish necessary UBC-7-2 compliant seal packages.

1.9 WARRANTY:

- A. Furnish warranty as part of respective manufacturers’ regular terms of sale.
- B. Provide manufacturers’ warranties as follows:
 - 1. Closers: Ten years mechanical, two years electrical.
 - 2. Hinges: Life of Building.
 - 3. Locksets 3 years
 - 4. Exit Devices 3 years mechanical
 - 5. Other Hardware: One year.
- C. Provide to the Owner/GC factory order numbers for hardware warranty purposes.

PART 2 PRODUCTS

2.1 MANUFACTURERS:

- A. Comply with list of acceptable and alternate manufacturers.
- B. Submit for review products with equivalent function and features of scheduled products below:

1. ITEM:	(ABRV) MANUFACTURER:	ACCEPTABLE SUB:
a. Hinges	(IVE) Ives	Hager, Stanley
b. Locks	(BES) Best	Owner’s Standard
c. Cylinders	(BES) Best	Owner’s Standard
d. Closers	(NOR) Norton	Owner’s Standard
e. Silencers	(IVE) H. B. Ives	Hager, Rockwood
f. Push & Pull Plates	(IVE) H. B. Ives	Hager, Rockwood
g. Kick plates	(IVE) H. B. Ives	Hager, Rockwood
h. Wall, Floor stops	(IVE) H. B. Ives	Hager, Rockwood
i. Overhead Stops	(GLY) Glynn-Johnson	Rixson, ABH
j. Thresholds	(NGP) National Guard	Pemko, Reese
k. Seals & Bottoms	(NGP) National Guard	Pemko, Reese
l. Continuous Gear Hinges	(IVE) Ives	Hager, Markar
m. Exit Devices	(PRE) Precision	Owners Standard
n. Magnetic Door Releases	(LCN)	Rixson

- C. Provide hardware items required to complete the work in accordance with these specifications and manufacturers’ instructions.

SECTION 087100 – DOOR HARDWARE

1. Include items inadvertently omitted from this specification and note these items in submittal for review.
2. Where scheduled item is now obsolete, bid and furnish manufacturers updated item at no additional cost to the project.

2.2 HANGING MEANS:

A. Conventional Hinges:

1. Hinge open widths minimum, but, of sufficient throw to permit maximum door swing.
2. Provide steel or stainless steel pins and concealed bearings.
3. Three hinges per leaf to 7 foot, 6 inch height. Add one for each additional 30 inches in height, or any fraction thereof.
4. Extra heavy weight hinges on doors over 3 foot, 5 inches in width.
5. Outswinging exterior doors: non-ferrous with non-removable (NRP) pins.
6. Non-ferrous material exteriors and at doors subject to corrosive atmospheric conditions.
7. Shims and shimming instructions for proper door adjustment.
8. Continuous Gear Hinges: As scheduled.

B. Electrified Functions for Hinges: Comply with the following:

1. Power Transfer: Concealed PTFE-jacketed wires, secured at each leaf and continuous through hinge knuckle.
2. Monitoring: Concealed electrical monitoring switch.
3. Power Transfer and Monitoring: Concealed PTFE-jacketed wires, secured at each leaf and continuous through hinge knuckle, and with concealed electrical monitoring switch.

2.3 LOCKING

A. Mortise type:

1. Provide mortise locksets that comply with ANSI A156.13, Series 1000, Operational Grade 1 and Security Grade 2 with all standard trims.
2. Provide mortise locksets that comply with UL10C and UBC 7-2 positive pressure requirements.
3. Lock cases are to be multi-functional that transform into different functions without opening the lock case.
4. Latchbolts to have a standard 2 ¾" backset with a full ¾" throw.
5. Latchbolts to be non-handed, field reversible without opening the lock case.
6. Deadbolts shall have standard 1" throw with a minimum ¾" internal engagement when fully extended.
7. Strikes to be non-handed and bridged to ensure dead latching. Manufactures utilizing fillers of any kind for deadlatch engagement are not acceptable.
8. Mounting tabs are to be automatic self adjusting, vertically and horizontally for door bevel and strike alignment.
9. Thumbturn and back-plate to be manufactured from castings and comply with ANSI 117 accessibility standard.
10. Provide locksets with Best interchangeable core cylinders.

B. Electrified Locking Devices: BHMA A156.25.

SECTION 087100 – DOOR HARDWARE

2.4 EXIT DEVICES/PANIC HARDWARE

A. General features:

1. Releasable with 32 lb. maximum pressure under 250 lb. load to the door.
2. Fire-Labeled Devices: UL label indicating “Fire Exit Hardware”. Vertical rod devices less bottom rod (LBR) unless otherwise scheduled.
3. Electrically Operated Devices: Single manufacturer source for electric latch retraction devices, electrically controlled trim, power transfers, power supplies, monitoring switches and controls.
4. Removable Mullions: Removable with single turn of building key. Securely reinstalled without need for key.
5. Stainless Steel ¾” deadlocking latchbolt.

2.5 CLOSERS

A. General: One manufacturer for closer units throughout the Work, including surface closers, high security closers, overhead concealed closers, floor closers, low-energy door operators and electromagnetic hold-open closers.

B. Surface Closers: Norton 7500

1. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast aluminum body.
2. Thru-bolts at wood doors unless doors are provided with closer blocking. Non-sized and adjustable. Place closers inside building, stairs and rooms.
3. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.
4. Opening pressure: Exterior doors 8.5 lb., interior doors 5 lb., labeled fire doors 15 lb.
5. Separate adjusting valves for closing speed, latching speed and backcheck, fourth valve for delayed action where scheduled.
6. Exterior door closers: tested to 100 hours of ASTM B117 salt spray test, furnish data on request.

2.6 OTHER HARDWARE

A. Overhead Stops:

1. Series 100, 900
 - a. Stainless steel.
 - b. Non-plastic mechanisms and finished metal end caps.
 - c. Field-changeable hold-open, friction and stop-only functions.

B. Kick Plates:

1. Four beveled edges, .050 inches minimum thickness, height and width as scheduled.
2. Sheet-metal screws of bronze or stainless steel to match other hardware.

C. Door Stops:

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1. Provide stops to protect walls, casework or other hardware.
 - a. Unless otherwise noted in Hardware Sets, provide wall type with appropriate fasteners.
 - b. Where wall type cannot be used, provide floor type.
 - c. If neither can be used, provide overhead type.

D. Thresholds:

1. Provide as scheduled and per details.
2. Proposed substitutions: Submit for approval.
 - a. Substitute products: Certify that the products equal or exceed specified material's thickness.
3. Metal Transitions: Pemko , ¼” rise max.

E. Fasteners:

1. For typical exposed screws, use Phillips or Robertson drive.
2. For high security areas, use pinned TORX drive.
3. For flat head sleeve anchors (FHSL), allow slotted drive.
4. For sheet metal and wood screws, use full-thread.
5. For sleeve nuts, use full length to prevent door compression.

F. Silencers:

1. For interior hollow metal frames, provide 3 for single doors, 4 for pairs of doors.
2. Omit where adhesive mounted seal occurs.
3. Leave no unfilled/uncovered pre-punched silencer holes.

2.7 FINISH:

A. Door Hardware:

1. Finishes in general to be Dull Chrome (626), Stainless Steel (630) Clear Anodized Aluminum (628, Sprayed Aluminum (689)
2. See hardware groups for scheduled finish.

B. Door Closers:

1. Factory powder coated to match other hardware, unless otherwise noted.

2.8 KEYING REQUIREMENTS:

A. Key System:

1. Provide Best Key System, interchangeable cores.
2. All locks to be construction keyed.
4. Initiate and conduct meeting(s) with Owner to determine system keyway(s) and structure, furnish Owner's written approval of the system.
 - a. Existing master key system.
 - b. Construction keying:
 - c. Furnish 6 construction keys.
 - d. Furnish 2 construction control keys.

SECTION 087100 – DOOR HARDWARE

2.9 ELECTRONIC ACCESS CONTROL SYSTEM:

- A. General: Match system implemented by the Juneau School District. Hardware items listed establish minimum standard for performance. Electric Key Card Access to be provided and programmed by manufacturer/supplier. Manufacturer/supplier to provide wiring diagrams for installation of system.
- B. Manufacturer: LENEL by Aronson Security Group (ASG)
- C. Description of System: Electronic access control system. The system shall control the designated doors in opening by time zone or computer control. Control access and prevent unauthorized entrance to building and selected areas from entrance during secure hours using proximity cards. System shall monitor the door status. Existing PC and software is located at the School District maintenance office off site and shall be connected to Intelligent Field Panel located in room Electrical room 213 via the School District's LAN/WAN.
- D. Description of Work: The hardware Subcontractor will supply and coordinate electronic access control equipment, wiring diagrams, and finish hardware. Electrical Subcontractor will install wire, conduit, mount enclosures and terminate electronic devices per wiring diagrams. The manufacturer approved installer of the electronic door control system will supervise final terminations; perform start up programming, trouble shooting, and training.

Field Control: The manufacturer of the electronic door control system shall supervise and assist the electrical subcontractor with final termination of devices and system testing. The representative of the installer of the electronic door control system and the Owner's network administrator shall make final connection to the Site Control Unit, PC and Owner's LAN/WAN.

- E. Field Control: The manufacturer of the electronic door control system shall supervise and assist the electrical subcontractor with final termination of devices and system testing. The manufacturer of the electronic door control system and the Owner's network administrator shall make final connection to the Site Control Unit, PC and Owner's LAN/WAN.
- F. Equipment:
 - 1. (1) Lenel – LNL500 controller
 - 2. (1) Lantronics MSS 1-T-01 Network Adaptor
 - 3. (2) Lenel LNL 1300 RDR Interface
 - 4. (2) Altronix – AL600ULX Power Supply
 - 5. (1) Lenel – LNL 1100 Input Board
 - 6. (200) HID 1326 Prox Card II (School District Facility code)
 - 7. NEMA Enclosures for all electronic components.

PART 3 EXECUTION

SECTION 087100 – DOOR HARDWARE

3.1 ACCEPTABLE INSTALLERS:

- A. Installer: Factory trained, certified, and carries a factory-issued card certifying that person as a “Certified Installer”.
- B. Substitute Installer: Use installer that can demonstrate suitably equivalent competence and experience.

3.2 PREPARATION:

- A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
- B. Wood Doors: Comply with DHI WDHS.5 “Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors.”
- C. Ensure that walls and frames are square and plumb before hardware installation.
- D. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.
 - 1. Notify Architect of any code conflicts before ordering material.
 - 2. Where new hardware is to be installed near existing doors/hardware scheduled to remain, match locations of existing hardware.
 - 3. Examine doors and frames with Installer present for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction and other conditions affecting performance.
 - 4. Examine rough-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
 - 5. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

- A. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections.
- B. Do not install surface-mounted items until finishes have been completed on substrate.
- C. Set units level, plumb and true to line and location.
- D. Adjust and reinforce attachment substrate for proper installation and operation.
 - 1. Install jamb-applied gaskets before closers, overhead stops, rim strikes, etc. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.
 - 2. When hardware is to be attached to existing metal surface and insufficient reinforcement exists, use RivNuts, NutSerts or similar anchoring device for screws.
 - 3. Locate floor stops not more than 4 inches from the wall.
 - 4. Drill pilot holes for fasteners in wood doors and/or frames.

3.4 ADJUSTING

- A. Adjust and check for proper operation and function.

SECTION 087100 – DOOR HARDWARE

- B. Replace units, which cannot be adjusted to operate freely and smoothly.
1. Repair or replace hardware damaged by improper installation or adjustment methods to Owner's satisfaction.
 2. For inspection, use hardware supplier; include suppliers with closeout documents.
 3. For follow-up inspection, provide letter of agreement to Owner that approximately 6 months after substantial completion, installer will visit Project with representatives of the manufacturers of the locking devices and door closers to accomplish following:
 - a. Re-adjust hardware.
 - b. Evaluate maintenance procedures and recommend changes or additions, and instruct Owner's personnel.
 - c. Identify items that have deteriorated or failed.
 - d. Submit written report identifying problems and likely future problems.

3.5 PROTECTION/CLEANING:

- A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc.
1. Remove covering materials and clean hardware just prior to substantial completion.
- B. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

3.6 SCHEDULE OF FINISH HARDWARE

- A. See door schedule in drawings for Hardware Set (group) assignments.

3.7 ABBREVIATIONS

Abbreviation	Description
BUTTS	3 hinges
CCL	Concealed closer
CDB	Concealed door bottom
CH	Continuous hinge
CL	Closer
COS	Concealed overhead stop Concealed vertical rod
CVE	Panic
DAH	Double acting hinges
EBUTT	Electric hinge
EPT	Electric power transfer
FC	Floor closer
FP	Flush pull
IPIVOT	Intermediate pivot
MS	Magnetic switch
PIVOT	Pivot set
PP	Push pull
PPIVOT	Pocket pivot
RACE	Electric raceway
RE	Rim panic
RL	Roller latch
SOS	Surface overhead stop
VE	Rim vertical rod panic

SECTION 087100 – DOOR HARDWARE

QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-01			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	OFFICE LOCKSET WITH THUMBTURN	BEST	45H7AT14M 630
1	CLOSER	NORTON	PR7500 689
1	WALL STOP AND HOLDER	ROCKWOOD	490 626 mount at top
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-02			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	STOREROOM LOCKSET	DOOR SUPPLIER	45H7D14M 630
1	OVERHEAD STOP	ABH	1020A
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	WEATHERSTRIP	PEMKO	290AS
1	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	176A x FHSL
HW-03			
1	CONTINUOUS HINGE EXIT DEVICE WITH ALARM (EXIT ONLY)	PEMKO	CFM83SLI-HD
1	MORTISE CYLINDER	PRECISION	2101 x ALK 630
1	CLOSER	BEST	1E74 626
1	CLOSER	NORTON	PR7500 x 9623JWG 689
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	EXTERIOR FLOOR STOP	ROCKWOOD	471EXT 626
1	WEATHERSTRIP	PEMKO	2891AS HEAD
2	WEATHERSTRIP	PEMKO	290AS JAMB
1	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	276A x FHSL
HW-04			
3	BUTTS	STANLEY	CB1901R 652 5 X 4.5 NRP
1	OFFICE LOCKSET	BEST	45H7A14M 630
1	CLOSER	NORTON	7500-ST x SNB 689
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D

SECTION 087100 – DOOR HARDWARE

QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-05			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	CLASSROOM DEADLOCK	BEST	48H7R 630
1	PULL PLATE	ROCKWOOD	107 x 70C 630
1	COMBINATION PUSH PULL PLATE	ROCKWOOD	91 630
1	CLOSER	NORTON	7500-ST x SNB 689
1	WALL STOP AND HOLDER	ROCKWOOD	490 626 mount at top
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-06			
3	BUTTS	STANLEY	CB1901R 652 5 X 4.5 NRP
1	OFFICE LOCKSET	BEST	45H7AT14M630
1	CLOSER	NORTON	7500-ST x SNB 689
2	ARMOR PLATE	ROCKWOOD	K1050 34 X 2"LTDW
1	EDGE GUARD	ROCKWOOD	300 SERIES
1	WALL STOP AND HOLDER	ROCKWOOD	490 626 mount at top
1	GASKET	PEMKO	S88D
HW-07			
	RIM OR MORTISE CYLINDER	BEST	1E72/1E74 AS REQUIRED
HW-08			
6	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
2	FLUSHBOLT	ROCKWOOD	550 626
1	DUSTPROOF STRIKE	ROCKWOOD	570 626
1	OFFICE LOCKSET	BEST	45H7A14M 630 7/8" STK
2	OVERHEAD STOP & HOLDER	ABH	1010A 630
4	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	ASTRAGAL	PEMKO	357SP x S88D
1	GASKET	PEMKO	S88D
HW-09			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	OFFICE LOCKSET	BEST	45H7A14M 630
1	CLOSER	NORTON	CPS7500 689
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D

SECTION 087100 – DOOR HARDWARE

QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-10			
3	BUTTS OFFICE LOCKSET WITH	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	THUMBTURN	BEST	45H7AT14M 630
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 24 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-11			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	STOREROOM LOCKSET	BEST	45H7D14M 630
1	CLOSER	NORTON	PR7500 689
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 24 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-12			
3	BUTTS	STANLEY	CB1901R 652 5 X 4.5 NRP
1	STOREROOM LOCKSET	BEST	45H7D14M 630
1	CLOSER	NORTON	7500-ST x SNB 689
1	OVERHEAD STOP	ABH	1020A
2	KICKPLATE	ROCKWOOD	K1050 24 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-13			
6	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
2	EXIT DEVICE	PRECISION	2108CD x V4908D 630
3	RIM CYLINDER	BEST	1E72 626
2	MORTISE CYLINDER	BEST	1E74 626
1	MULLION	PRECISION	KR822 689
2	CLOSER	NORTON	UNI-7500H
4	KICKPLATE	ROCKWOOD	K1050 24 X 2" LTDW 630
1	GASKET	PEMKO	S88D
1	THRESHOLD	PEMKO	272A x FHSL
HW-14			
3	BUTTS OFFICE LOCKSET WITH	STANLEY	CB1901R 652 5 X 4.5 NRP
1	THUMBTURN	BEST	45H7AT14M 630
1	CLOSER	NORTON	7500-ST x SNB 689
2	KICKPLATE	ROCKWOOD	K1050 24 X 2" LTDW 630
1	WEATHERSTRIP	PEMKO	290AS
1	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	176A x FHSL

SECTION 087100 – DOOR HARDWARE

QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-15			
3	BUTTS OFFICE LOCKSET WITH	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	THUMBTURN	BEST	45H7AT14M 630
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-16			
3	BUTTS OFFICE LOCKSET WITH	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	THUMBTURN	BEST	45H7AT14M 630
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-17			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	PRIVACY LOCK	BEST	45H0L14M VIN 630
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-18			
3	BUTTS OFFICE LOCKSET WITH	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	THUMBTURN	BEST	45H7AT14M 630
1	CLOSER	NORTON	7500-STH 689
1	WALL STOP AND HOLDER	ROCKWOOD	490 626 mount at top
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-19			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	CLASSROOM LOCKSET	BEST	45H7R14M 630
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-20			
3	BUTTS COMMUNICATING DOUBLE	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	CYLINDER LOCKSET	BEST	45H7G14M 630
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D

SECTION 087100 – DOOR HARDWARE

QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-21			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	OFFICE LOCKSET WITH THUMBTURN	BEST	45H7AT14M 630
1	WALL STOP AND HOLDER	ROCKWOOD	490 626 Mount at top of door
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-22			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	PRIVACY LOCK	BEST	45H0L14M VIN 630
1	CLOSER	NORTON	7500-ST x SNB 689
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-23			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	CLASSROOM LOCKSET	BEST	45H7R14M 630
1	CLOSER	NORTON	7500-ST x SNB 689
1	OVERHEAD STOP	ABH	1020A
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-24			
3	BUTTS	STANLEY	CB1901R 652 5 X 4.5 NRP
1	STOREROOM LOCKSET	BEST	45H7D14M 630
1	CLOSER	NORTON	PR7500 689
1	WALL STOP AND HOLDER	ROCKWOOD	490 626 Mount at top of door
2	KICKPLATE	ROCKWOOD	K1050 24 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-25			
2	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	BUTTS-SPRING	STANLEY	CB2060R 652 4.5 X 4.5
1	LATCH	STRYBUC	91-209
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630

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QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-26			
3	BUTTS	STANLEY	CB1901R 652 5 X 4.5 NRP
1	OFFICE LOCKSET	BEST	45H7A14M 630
1	CLOSER	NORTON	PR7500 x SNB 689
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-27			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	EXIT DEVICE	PRECISION	NCA-03 630
1	RIM CYLINDER	BEST	1E72 626
1	MORTISE CYLINDER	BEST	1E74 626
1	PULL	ROCKWOOD	RM3301- MEGATEK
1	CLOSER	NORTON	7500-ST x SNB 689
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	WEATHERSTRIP	PEMKO	290AS
1	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	176A x FHSL
HW-28			
6	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
2	FLUSHBOLT	ROCKWOOD	550 626
1	DUSTPROOF STRIKE	ROCKWOOD	570 626
1	STOREROOM LOCKSET	BEST	45H7D14M 630 7/8" STK
2	OVERHEAD STOP & HOLDER	ABH	1010A 630
4	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	ASTRAGAL	PEMKO	357SP x S88D
1	GASKET	PEMKO	S88D
HW-29			
2	CONTINUOUS HINGE WITH ELECTRIC TRANSFER ELECTRIC LATCH RETRACTION	PEMKO	CFM83SLI-HDxSER4 ELR-2403CD x Clinder only x
1	EXIT DEVICE	PRECISION	NCA-03 630
1	POWER SUPPLY	PRECISION	ELR152
2	RIM CYLINDER	BEST	1E72 626
2	MORTISE CYLINDER	BEST	1E74 626
1	MULLION	PRECISION	KR822 689
2	PULL	ROCKWOOD	RM3301- MEGATEK
2	CLOSER	NORTON	PR7500 x 7788 689
4	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
2	EXTERIOR FLOOR STOP WEATHERSTRIP BY DOOR	ROCKWOOD DOOR	471EXT 626
1	SUPPLIER	SUPPLIER	DOOR SUPPLIER
2	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	276A x FHSL
1	KEY SWITCH	ACSI	1310-2
1	WIRING DIAGRAMS		WIRING DIAGRAMS
1	CARD READER	LENEL	OPEN CARD - SECURE
2	MEETING STYLE SEAL	PEMKO	319CN

SECTION 087100 – DOOR HARDWARE

QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-30			
1	CONTINUOUS HINGE WITH ELECTRIC TRANSFER ELECTRIC LATCH RETRACTION	PEMKO	CFM83SLI-HD x SER4 ELR-2403CD x Clinder only x
1	EXIT DEVICE	PRECISION	NCA-03 630
1	RIM CYLINDER	BEST	1E72 626
1	MORTISE CYLINDER	BEST	1E74 626
1	POWER SUPPLY	PRECISION	ELR152
1	PULL	ROCKWOOD	RM3301- MEGATEK
1	AUTO OPERATOR	RECORD	8100
1	ACTUATOR	REES	1371-412 STYLE C 2-1/4" 630
1	ACTUATOR	MS SEDCO	59V-HSS 630
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	EXTERIOR FLOOR STOP WEATHERSTRIP BY DOOR SUPPLIER	ROCKWOOD DOOR SUPPLIER	471EXT 626
1	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	276A x FHSL
1	KEY SWITCH	ACSI	1310-2
1	MORTISE CYLINDER	BEST	1E74 626
1	WIRING DIAGRAMS		WIRING DIAGRAMS
1	CARD READER	LENEL	OPEN CARD - SECURE
HW-31			
2	CONTINUOUS HINGE WITH ELECTRIC TRANSFER ELECTRIC LATCH RETRACTION	PEMKO	CFM83SLI-HDxSER4 ELR-2403CD x Clinder only x
1	EXIT DEVICE	PRECISION	NCA-03 630
1	POWER SUPPLY	PRECISION	ELR152
2	MORTISE CYLINDER	BEST	1E74 626
1	MULLION	PRECISION	KR822 689
2	PULL	ROCKWOOD	RM3301- MEGATEK
2	CLOSER	NORTON	PR7500 x 7788 689
4	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	EXTERIOR FLOOR STOP	ROCKWOOD	471EXT 626
1	OVERHEAD STOP WEATHERSTRIP BY DOOR SUPPLIER	ABH DOOR SUPPLIER	1020A
2	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	276A x FHSL
1	KEY SWITCH	ACSI	1310-2
1	MORTISE CYLINDER	BEST	1E74 626
1	WIRING DIAGRAMS		WIRING DIAGRAMS
1	CARD READER	LENEL	OPEN CARD - SECURE
2	MEETING STYLE SEAL	PEMKO	319CN

SECTION 087100 – DOOR HARDWARE

QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-32			
1	CONTINUOUS HINGE	PEMKO	CFM83SLI-HD
1	DUMMY PUSH BAR	PRECISION	N673DR-3 630
1	PULL	ROCKWOOD	RM3301- MEGATEK
1	AUTO OPERATOR	RECORD	8100
1	ACTUATOR	MS SEDCO	59-HSS 630
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	WALL STOP WEATHERSTRIP BY DOOR SUPPLIER	ROCKWOOD DOOR SUPPLIER	406 (School Version)
1	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	276A x FHSL
1	KEY SWITCH	ACSI	1310-2
1	MORTISE CYLINDER	BEST DICK	1E74 626
1	WIRING DIAGRAMS	THOMPSONT	WIRING DIAGRAMS
HW-33			
2	CONTINUOUS HINGE	PEMKO	CFM83SLI-HD
2	DUMMY PUSH BAR	PRECISION	N673DR-3 630
2	PULL	ROCKWOOD	RM3301- MEGATEK
2	CLOSER	NORTON	PR7500 x 7788 689
4	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
2	OVERHEAD STOP WEATHERSTRIP BY DOOR SUPPLIER	ABH DOOR SUPPLIER	1020A
1	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	276A x FHSL
HW-34			
1	CONTINUOUS HINGE WITH ELECTRIC TRANSFER ELECTRIC LATCH RETRACTION	PEMKO	CFM83SLI-HDxSER4 ELR-2403CD x Clinder only x
1	EXIT DEVICE	PRECISION	NCA-03 630
1	POWER SUPPLY	PRECISION	ELR152
1	RIM CYLINDER	BEST	1E72 626
1	MORTISE CYLINDER	BEST	1E74 626
1	PULL	ROCKWOOD	RM3301- MEGATEK
1	CLOSER	NORTON	PR7500 x 7788 689
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	EXTERIOR FLOOR STOP WEATHERSTRIP BY DOOR SUPPLIER	ROCKWOOD DOOR SUPPLIER	471EXT 626
1	DOOR SWEEP	PEMKO	315CN
1	KEY SWITCH	ACSI	1310-2
1	THRESHOLD	PEMKO	276A x FHSL
1	WIRING DIAGRAMS		WIRING DIAGRAMS
1	CARD READER	LENEL	OPEN CARD - SECURE

SECTION 087100 – DOOR HARDWARE

QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-35	NOT USED		
6	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
2	PULL PLATE	ROCKWOOD	107 x 70C 630
2	PUSH PLATE	ROCKWOOD	70C 630
2	CLOSER	NORTON	PR7500 x SNB 689
4	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
2	MAGNETIC HOLDER	RIXSON	FM998 689
1	GASKET	PEMKO	S88D
2	MEETING STYLE SEAL	PEMKO	319CN
HW-36			
3	BUTTS OFFICE LOCKSET WITH	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	THUMBTURN	BEST	45H7AT14M 630
1	OVERHEAD STOP & HOLDER	ABH	1010A 630
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-37			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	STOREROOM LOCKSET	BEST	45H7D14M 630
1	OVERHEAD STOP & HOLDER	ABH	1010A 630
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-38			
2	CONTINUOUS HINGE	PEMKO	CFM83SLI-HD
2	EXIT DEVICE	PRECISION	2408CD x V4908D 630
3	RIM CYLINDER	BEST	1E72 626
2	MORTISE CYLINDER	BEST	1E74 626
1	MULLION	PRECISION	KR822 689
2	CLOSER	NORTON	UNI-7500H
4	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
1	THRESHOLD	PEMKO	272A x FHSL
HW-39			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	STOREROOM LOCKSET	BEST	45H7D14M 630
1	CLOSER	NORTON	CPS7500 x SNB 689
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D

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QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-40	NOT USED		
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	CLASSROOM LOCKSET	BEST	45H7R14M 630
1	CLOSER	NORTON	7500-ST x SNB 689
1	WALL STOP	ROCKWOOD	406 (School Version)
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-41			
3	BUTTS	STANLEY	CB1901R 652 5 X 4.5 NRP
1	OFFICE LOCKSET WITH THUMBTURN	BEST	45H7AT14M 630
1	CLOSER	NORTON	7500-ST x SNB 689
1	OVERHEAD STOP	ABH	1020A
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D
HW-42			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	PASSAGE LATCH	BEST	45HN 14D626
2	KICKPLATE	ROCKWOOD	K1050 24 X 2" LTDW 630
1	WALL STOP	ROCKWOOD	406 (School Version)
1	GASKET	PEMKO	S88D
HW-43	NOT USED		
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
1	OFFICE LOCKSET WITH THUMBTURN	BEST	45H7AT14M 630
1	CLOSER	NORTON	7500-STH 689
1	WALL STOP AND HOLDER	ROCKWOOD	491 626
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	GASKET	PEMKO	S88D

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QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-44			
1	CONTINUOUS HINGE WITH ELECTRIC TRANSFER	PEMKO	CFM83SLI-HD x SER4
1	CONTINUOUS HINGE	PEMKO	CFM83SLI-HD
1	EXIT DEVICE	PRECISION	2401CD 630
1	ELECTRIC LATCH RETRACTION		ELR-2403CD x Clinder only x
1	EXIT DEVICE	PRECISION	NCA-03 630
1	POWER SUPPLY	PRECISION	ELR152
2	RIM CYLINDER	BEST	1E72 626
2	MORTISE CYLINDER	BEST	1E74 626
1	MULLION	PRECISION	KR822 689
2	PULL	ROCKWOOD	RM3301- MEGATEK
1	AUTO OPERATOR	RECORD	8100
1	ACTUATOR	REES	1371-412 STYLE C 2-1/4" 630
1	ACTUATOR	MS SEDCO	59V-HSS 630
1	CLOSER	NORTON	PR7500 x 7788 689
4	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
2	EXTERIOR FLOOR STOP	ROCKWOOD	471EXT 626
	WEATHERSTRIP BY DOOR	DOOR	
1	SUPPLIER	SUPPLIER	
2	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	276A x FHSL
2	MEETING STYLE SEAL	PEMKO	319CN
1	KEY SWITCH	ACSI	1310-2
1	MORTISE CYLINDER	BEST	1E74 626
1	WIRING DIAGRAMS		WIRING DIAGRAMS
1	CARD READER	LENEL	OPEN CARD - SECURE
HW-45			
2	CONTINUOUS HINGE	PEMKO	CFM83SLI-HD
2	DUMMY PUSH BAR	PRECISION	N673DR-3 630
2	PULL	ROCKWOOD	RM3301- MEGATEK
1	AUTO OPERATOR	RECORD	8100
1	ACTUATOR	MS SEDCO	59-HSS 630
2	CLOSER	NORTON	PR7500 x 7788 689
4	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
2	OVERHEAD STOP	ABH	1020A
	WEATHERSTRIP BY DOOR	DOOR	
1	SUPPLIER	SUPPLIER	
1	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	276A x FHSL

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QTY IN GP	ITEM	MFR ABR	PRODUCT NO.
HW-46			
3	BUTTS	STANLEY	CB1961R 630 5 X 4.5 NRP
1	STOREROOM LOCKSET	BEST	45H7D14M 630
1	CLOSER	NORTON	UNI-7500 x 9624JWG 689
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	WEATHERSTRIP	PEMKO	2891AS HEAD
2	WEATHERSTRIP	PEMKO	290AS JAMB
1	DOOR SWEEP	PEMKO	315CN
1	THRESHOLD	PEMKO	176A x FHSL
HW-47			
3	BUTTS	STANLEY	CB1901R 652 4.5 X 4.5 NRP
	OFFICE LOCKSET WITH		
1	THUMBTURN	BEST	45H7AT14M 630
1	WALL STOP AND HOLDER	ROCKWOOD	491 626
2	KICKPLATE	ROCKWOOD	K1050 12 X 2" LTDW 630
1	SOUND SEAL	PEMKO	379CR
1	AUTOMATIC DOOR BOTTOM	PEMKO	4301CRL
1	THRESHOLD	PEMKO	276A x FHSL

END OF SECTION 087100

SECTION 235213 - ELECTRIC BOILERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Boiler.
- B. Boiler Controls.
- C. Water Connections.
- D. Electrical Hook-up.

1.2 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete.
- B. Section 232114 - Hydronic Specialties.
- C. Section 26 - Equipment Wiring: Electrical characteristics and wiring connections.
- D. Section 230926 – Sequence of Operations

1.3 REFERENCE STANDARDS

- A. ASME (BPV IV) - Boiler and Pressure Vessel Code, Section IV - Rules for Construction of Heating Boilers; The American Society of Mechanical Engineers; 2007.
- B. ASME (BPV VIII, 1) - Boiler and Pressure Vessel Code, Section VIII, Division 1 - Rules for Construction of Pressure Vessels; The American Society of Mechanical Engineers; 2007.
- C. HI BTS-2000 - Testing Standard, Method to Determine Heating Efficiency of Commercial Space Heating Boilers; The Hydronics Institute of AHRI; 2007.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association; 2008.
- E. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 834 - Heating, Water Supply, and Power Boilers - Electric; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.
- G. UL (HCVCE) - Heating, Cooling, Ventilating and Cooking Equipment Directory; Underwriters Laboratories Inc.; current edition.

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1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide literature indicating general assembly components, controls, safety controls, wiring diagrams with electrical characteristics and connection requirements, and service connections.
- C. Shop Drawings: Indicate assembly, weights, heater configuration, and electrical characteristics and connection requirements. Provide specific wiring diagram for this project.
- D. Manufacturer's Instructions: Indicate rigging, installation, and start-up procedures.
- E. Manufacturer's Field Reports: Indicate conditions observed after start-up, including control settings.
- F. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, cleaning procedures, replacement parts list, as-built wiring diagram, and maintenance and repair data.
- G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to ASME (BPV IV) and ASME (BPV VIII, 1) for boiler construction.
- B. Conform to NFPA 70 for internal wiring of factory wired equipment.
- C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. in UL (EAUED) as suitable for the purpose specified and indicated.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect units before, during, and after installation from damage to casing by leaving factory shipping packaging in place until immediately prior to final acceptance.

1.8 START-UP AND COMMISSIONING

- A. Phase 1 Start-Up: Factory technician start-up of electric boiler. Factory technician shall provide start-up of Electric boiler prior to end of Phase 1 Construction Season. Factory technician shall also work cooperatively with control contractor in order to fine tune electric

SECTION 235213 - ELECTRIC BOILERS

boiler operation with BAS control system, ground source heat pump (GSHP) system, and electric demand limiting system.

- B. Commissioning at end of Phase 3: Factory technician shall be available over 2 day period to work cooperatively with control contractor and commissioning agent in order to fine tune electric boiler operation with BAS control system, ground source heat pump (GSHP), and electric demand limiting system. Commissioning trip will be a separate visit from the initial start-up visit.

1.9 MAINTENANCE SERVICE

- A. Provide service and maintenance of boilers, burners, trim, and controls for one year from Date of Substantial Completion.

1.10 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year warranty to include coverage for boiler package.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Precision HW16D-252C-480
- B. Cleaver Brooks
- C. Teledyne Laars

2.2 MANUFACTURED UNITS

- A. Description: Electric hot water boiler, compact, completely packaged, factory assembled, ready for operation except for external connections of piping and electrical connections.

2.3 FABRICATION

- A. Assembly: Heavy Duty welded steel shell with heater support nipples or flanges and inspection hand hole. Provide necessary fittings to accept gages, safety and operating controls; threaded or flanged inlet and outlet connections; inlet diffuser; and lifting lugs, conforming to ASME (BPV IV) and ASME (BPV VIII, 1) requirements, and tested for maximum working pressure of 160 psig.
- B. Heating Elements: Threaded or flanged, incoloy or stainless steel sheathed, with maximum density of 75 watts per square inch, suitable for operation at 160 psig. Attach each element to

SECTION 235213 - ELECTRIC BOILERS

tube sheet by mechanical assembly permitting single elements to be replaced without replacing entire tube bundle. 14 elements minimum.

- C. Enclose in heavy duty steel jacket with factory applied baked enamel, insulated with 3 inch thick and 3 lb. density fiberglass insulation.

2.4 TRIM

- A. ASME rated pressure relief valve set at 45 psi.
- B. Assemble with pressure gage, thermometer in brass separable well, automatic air vent, and drain valve.
- C. Low water cut-off with manual reset and inlet flow switch to automatically prevent operation when water falls below safe level or on low flow through boiler.

2.5 CONTROLS

- A. Provide pre-wired, factory assembled electric controls enclosed in NEMA 250, Type 1 cabinet, factory mounted integral with unit.
- B. Controls shall include:
 - 1. Non-fused disconnect switch with door interlock. Each door shall have separate disconnect so that one or more doors cannot be opened without disconnecting power to panel.
 - 2. Splitter arrangement and fused magnetic contactors for each element.
 - 3. Circuit breaker.
 - 4. Ability for adjustable time delay 1-60 minutes for stage sequencing.
 - 5. Fused control circuit transformer with control circuit on/off switch.
 - 6. Proportioning step controller. Solid-state sequencer.
 - 7. Low water cut-off.
 - 8. Remote bulb operating thermostat complete with brass separable well.
 - 9. Two remote bulb high limit thermostats (1 auto reset, 1 manual reset) complete with brass separable well.
 - 10. Pilot lights for each step of control.
 - 11. Preheat manual limit switch.
 - 12. Demand limiting capability. Provide terminals to allow BAS system to limit staging through a 4-20 mA signal.
 - 13. Remote monitoring capability for each stage of operation.
 - 14. Kilowatt hour meter with connections for BAS monitoring.
 - 15. Remote enable capability for each boiler stage through 4-20 mA signal.
 - 16. Manual limit toggle switches for each stage.
 - 17. On/Off switch with pilot light.
 - 18. Local/Remote switch.
 - 19. Low select module (Peak load control system). Outputs the lowest of two 4-20 mA inputs signals.
 - 20. Red low water pilot light. Red common alarm light.

SECTION 235213 - ELECTRIC BOILERS

21. Alarm buzzer and silence push button.
 22. Terminal for connection of:
 - a. Peak load control system.
 - b. Flow switch.
 - c. Building Automation System connection for local/remote control.
 - d. General alarm with pilot light and dry contracts.
 - e. Demand limiting capability.
 - f. Remote monitoring capability for each boiler stage. Can be accomplished through KW monitoring.
 - g. Remote enable capability to allow remote staging through demand limiting system as needed to maintain setpoint on BAS system.
 - h. Terminals for boiler status, local/remote position status.
- C. Electric Boiler Performance:
1. Performance rating shall be in accordance with HI- Testing and Rating Standard for Cast Iron and Steel Heating Boilers.
 2. Rating:
 - a. Heating Capacity: 860,000 BTU/Hr or nominal 252 kW.
 - b. Numbers of Steps: 14 steps at 18 KW each.
- D. Electrical Characteristics and Components:
1. Disconnect Switch: Factory mount in control panel. Disconnect for each door.
 2. Design and Fabrication: Balanced 3-phase, 3 wire, delta load at 480 volts, 3-phase, 60 Hz.
 3. UL listed Control Panel.
 4. Circuit Breaker. Single point power connection.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install boiler on reinforced concrete housekeeping base, minimum 3 inches high and 6 inches larger on each side than boiler base. Secure to pad in conformance with Seismic Zone 3 requirements.
- C. Provide piping connections and accessories as indicated.
- D. Pipe relief valves to nearest floor drain.
- E. Provide for connection to electrical service. Refer to Division 26.
- F. Install in accordance with National Electrical Code.

SECTION 235213 - ELECTRIC BOILERS

3.2 START-UP AND COMMISSIONING

- A. Phase 1 Start-Up: Factory technician start-up and testing of electric boiler shall be complete prior to end of Phase 1 and start of school. Factory technician shall also work cooperatively with control contractor in order to fine tune electric boiler operation with BAS control system, ground source heat pump (GSHP) system, and electric demand limiting system.
- B. Commissioning at end of Phase 3: Factory technician shall be available over 2 day period to work cooperatively with control contractor and commissioning agent in order to fine tune electric boiler operation with BAS control system, ground source heat pump (GSHP), and electric demand limiting system. Commissioning trip will be a separate visit from the initial start-up visit.

3.3 TRAINING

- A. Train operating personnel in operation and maintenance of units. Factory technician shall provide minimum 2 hours training to Owner's representatives.
- B. Provide the services of manufacturer's field representative to conduct training.

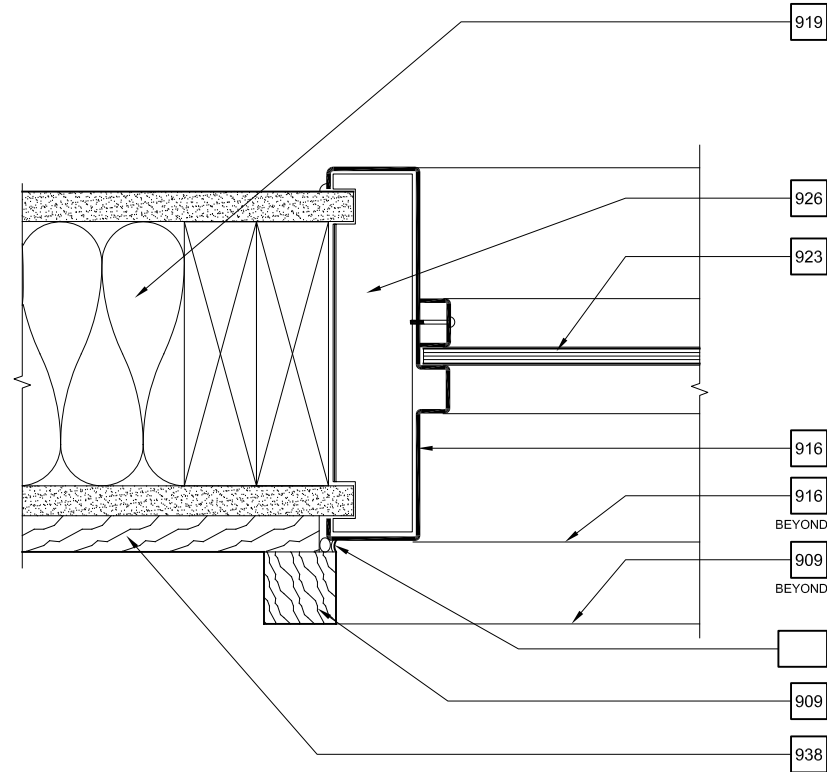
3.4 MAINTENANCE

- A. Provide service and maintenance of boilers, burners, trim, and controls for one year from Date of Substantial Completion.

END OF SECTION

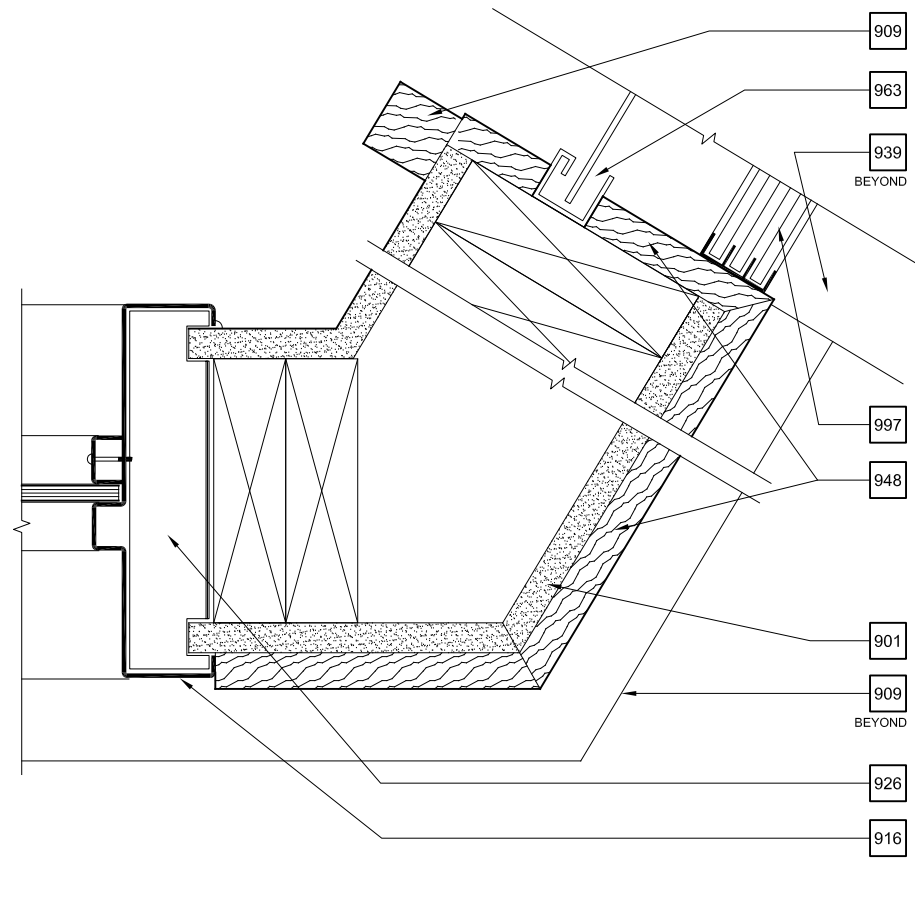
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NOTE: PAINT GWB BLACK @ CEDAR PANELING BEFORE INSTALLING PANELING



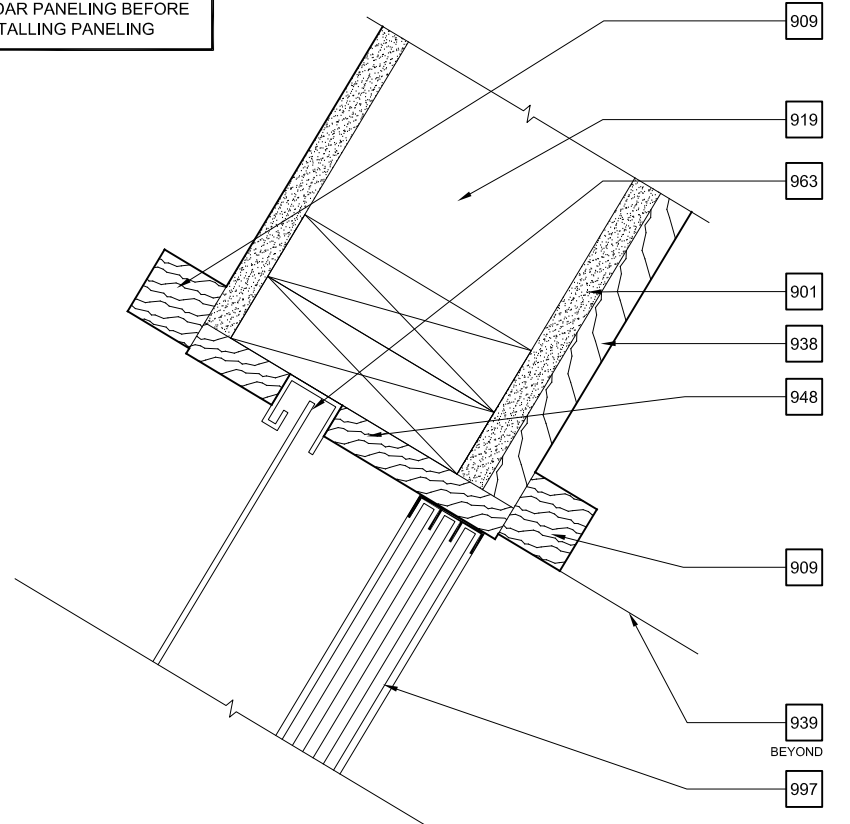
1 RECEPTION RELITE JAMB / HEAD SIM
10036/A912-1 SCALE: 0 3' 6'

NOTE: PAINT GWB BLACK @ CEDAR PANELING BEFORE INSTALLING PANELING

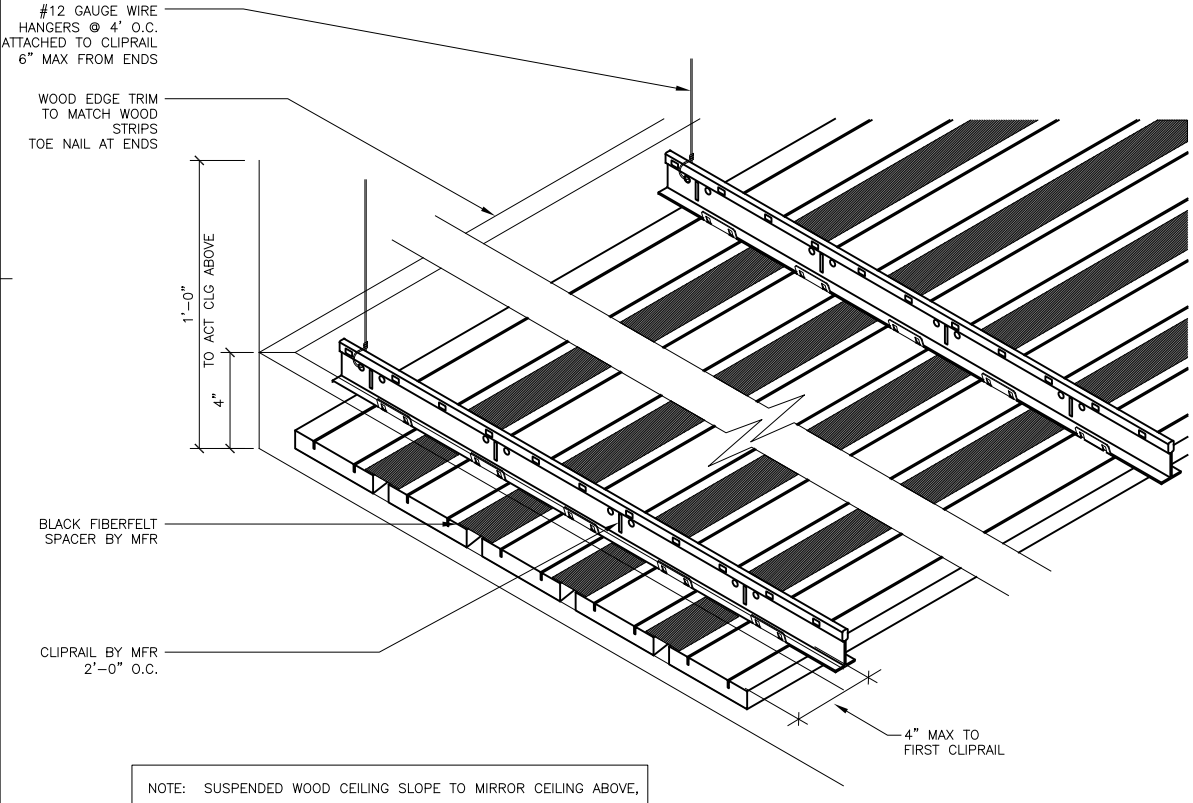


2 RECEPTION INTERMEDIATE JAMB
10036/A912-2 SCALE: 0 3' 6'

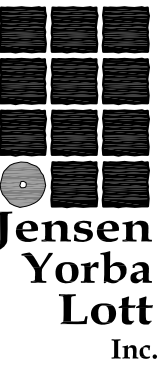
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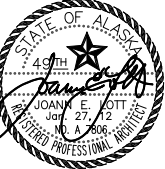
3 RECEPTION JAMB
10036/A912-3 SCALE: 0 3' 6'



4 WOOD CEILING DETAIL
10036/A912-4 SCALE: 0 3' 6' 12'



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CBJ Project No. E12-042
Juneau, Alaska

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SHEET TITLE
INTERIOR DETAILS

DATE: December 21, 2011
FILE: 10036

A912

SANITARY SEWER PIPE SUMMARY				
PIPE	DIA.	LENGTH	TYPE	SLOPE
SP-1	8"	271'	PVC	2.00%

NOTE: PIPE LENGTHS AND SLOPES ARE MEASURED AND CALCULATED FROM CENTER TO CENTER OF STRUCTURES, UON.

STORM DRAIN PIPE SUMMARY				
PIPE	DIA.	LENGTH	TYPE	SLOPE
P-1	36"	130'	CPP	2.56%
P-6*	12"	35'	CPP	0.77%
P-7	12"	29'	CPP	0.76%
P-8	18"	45'	CPP	2.33%
P-9	18"	19'	CPP	2.32%
P-10*	12"	42'	CPP	2.24%
P-11	12"	107'	CPP	2.25%
P-15	12"	148'	CPP	2.33%
P-22	12"	8'	CPP	18.75%

NOTE: PIPE LENGTHS AND SLOPES ARE MEASURED AND CALCULATED FROM CENTER TO CENTER OF STRUCTURES, UON.
* SEE DETAIL 1 ON SHEET C306.

S-3 CB TYPE-IV	
N=3490.91	E=3623.56
GRATE FL EL=	45.35'
P-6 I.E.=	42.88'
6" UD I.E.=	43.38'
SUMP=	16" MIN.

S-6 SDMH TYPE-I	
N=3600.92	E=3635.31
GRATE FL EL=	49.50'
P-9 I.E.=	43.81'
P-10 I.E.=	43.89'
P-15 I.E.=	43.89'
6" UD I.E.=	43.89'
SUMP=	16" MIN.

S-4 CB TYPE-IV	
N=3500.12	E=3590.13
GRATE FL EL=	45.26'
P-6 I.E.=	42.61'
P-7* I.E.=	42.53'
6" UD I.E.=	42.61'
SUMP=	36" MIN.

* INSTALL SNOT MODEL 18F BY BMP, INC. OR PRE-APPROVED EQUAL.

S-7 CB TYPE-IV*	
N=3636.09	E=3658.13
GRATE FL EL=	50.73'
P-10 I.E.=	44.83'
P-11 I.E.=	44.91'
6" UD I.E.=	45.33'
SUMP=	16" MIN.

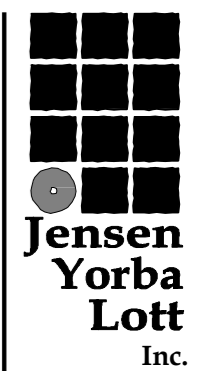
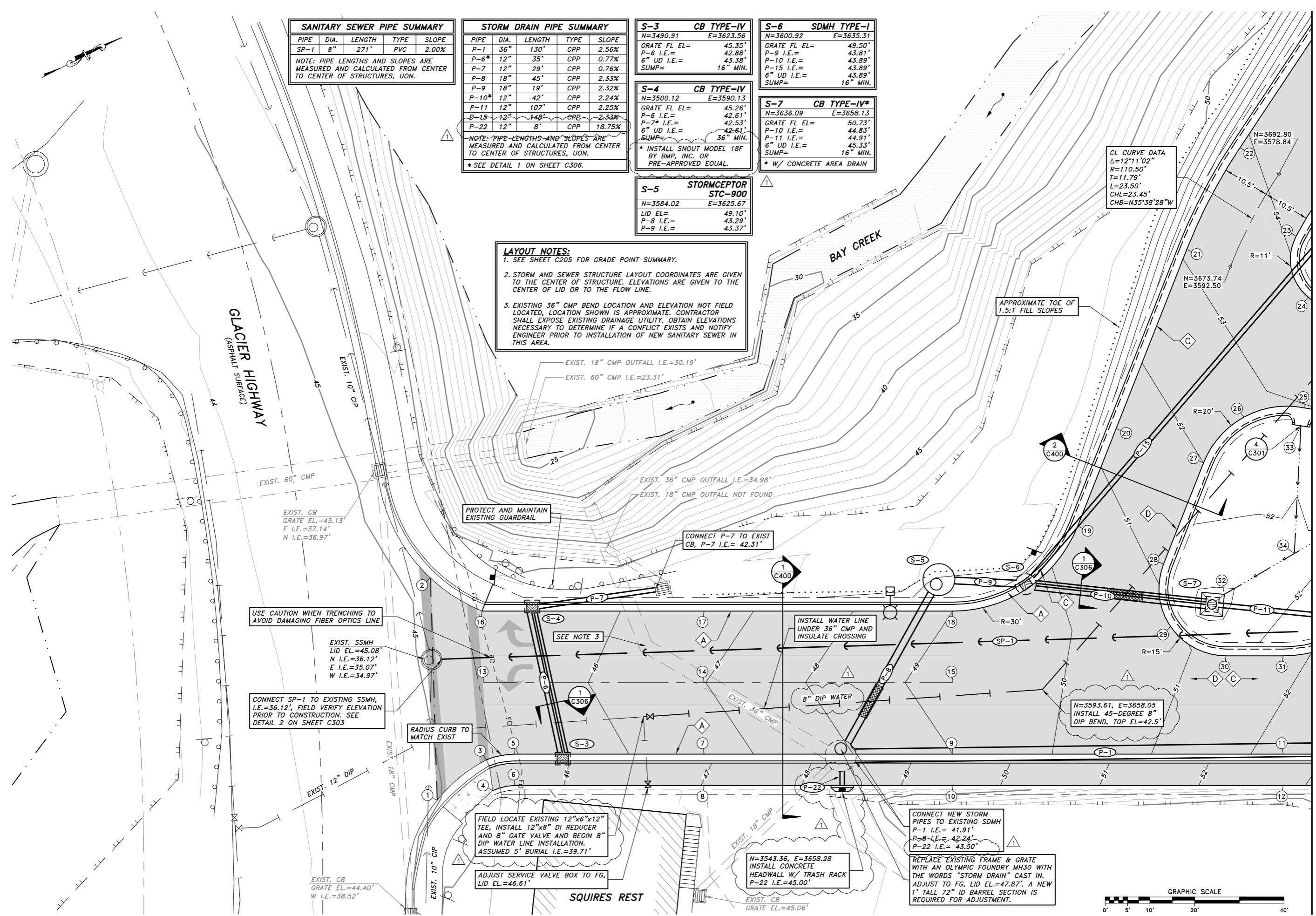
* W/ CONCRETE AREA DRAIN

S-5 STORMCEPTOR STC-900	
N=3584.02	E=3625.67
LID EL=	49.10'
P-8 I.E.=	43.29'
P-9 I.E.=	43.37'

LAYOUT NOTES:

- SEE SHEET C205 FOR GRADE POINT SUMMARY.
- STORM AND SEWER STRUCTURE LAYOUT COORDINATES ARE GIVEN TO THE CENTER OF STRUCTURE. ELEVATIONS ARE GIVEN TO THE CENTER OF LID OR TO THE FLOW LINE.
- EXISTING 36" CMP BEND LOCATION AND ELEVATION NOT FIELD LOCATED, LOCATION SHOWN IS APPROXIMATE. CONTRACTOR SHALL EXPOSE EXISTING DRAINAGE UTILITY, OBTAIN ELEVATIONS NECESSARY TO DETERMINE IF A CONFLICT EXISTS AND NOTIFY ENGINEER PRIOR TO INSTALLATION OF NEW SANITARY SEWER IN THIS AREA.

CL CURVE DATA
 $\Delta=12'11''02''$
 $R=110.50'$
 $T=11.79'$
 $L=23.50'$
 $CHL=23.45'$
 $CHB=N35^{\circ}38'28''W$



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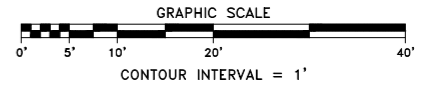


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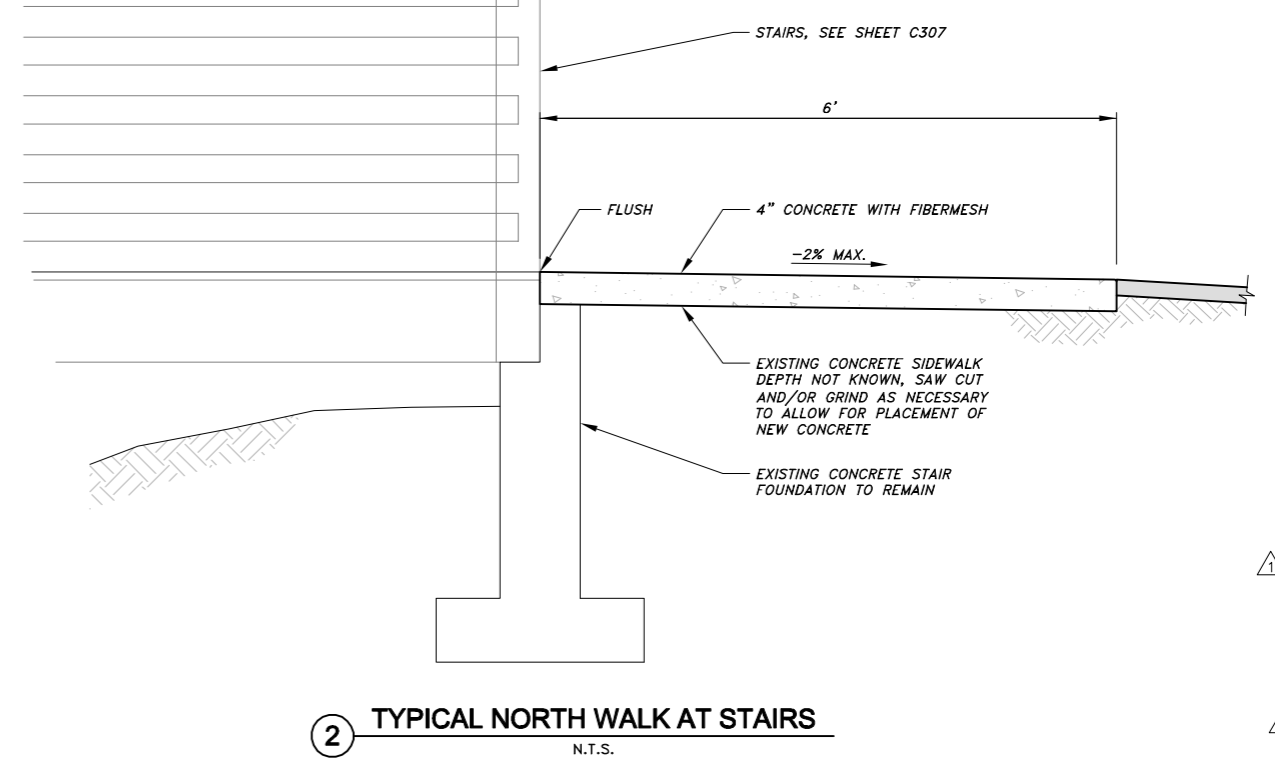
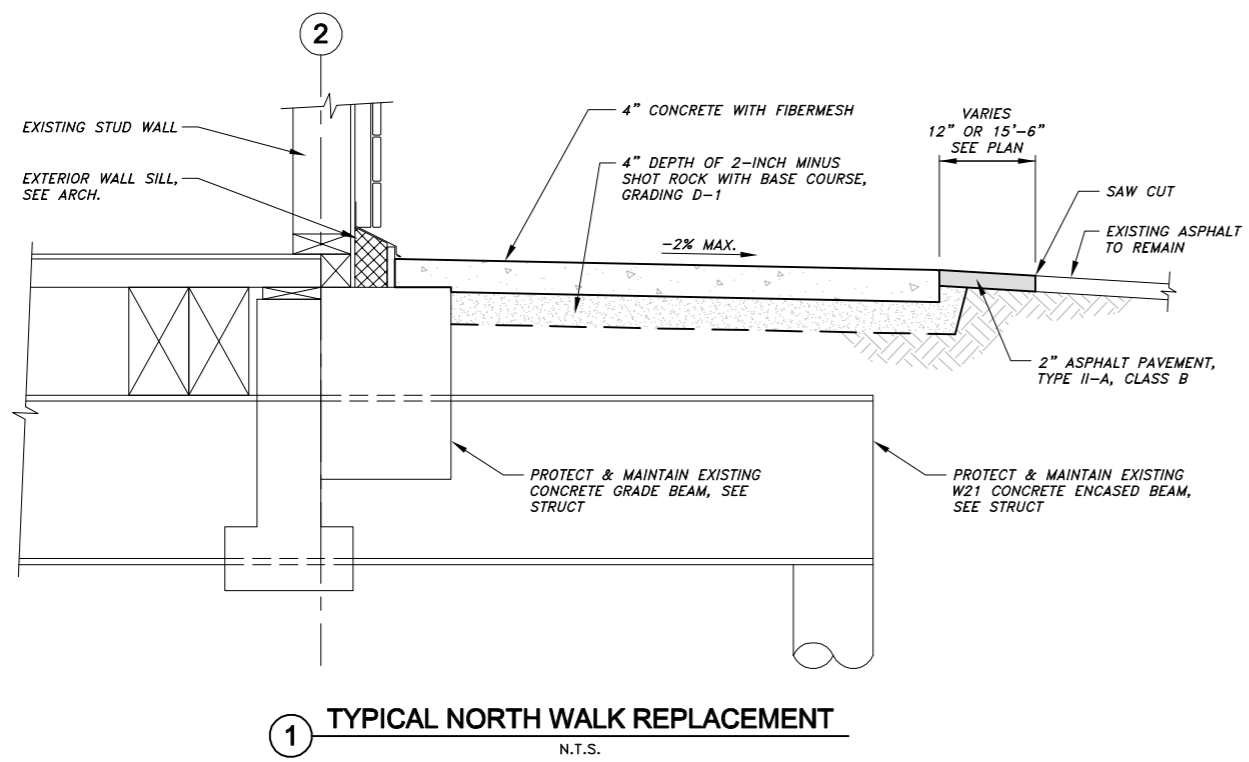
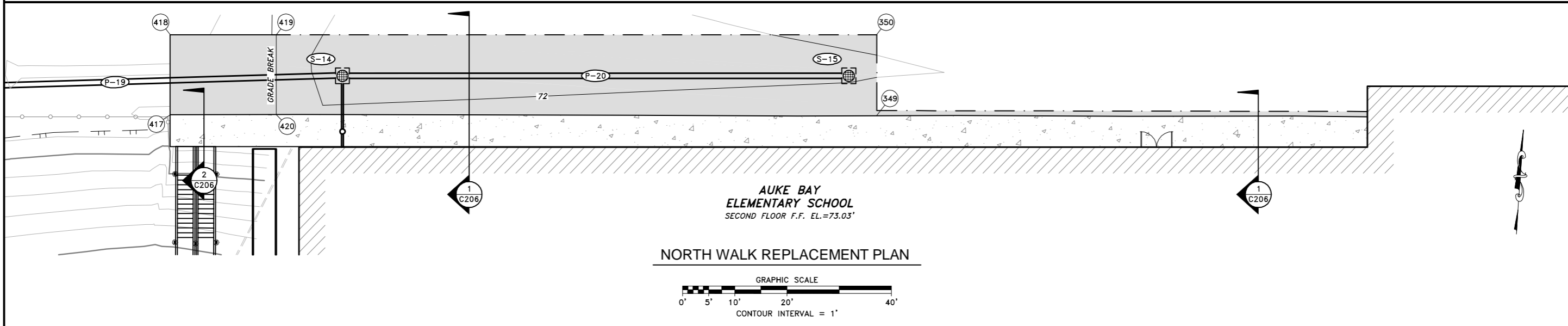
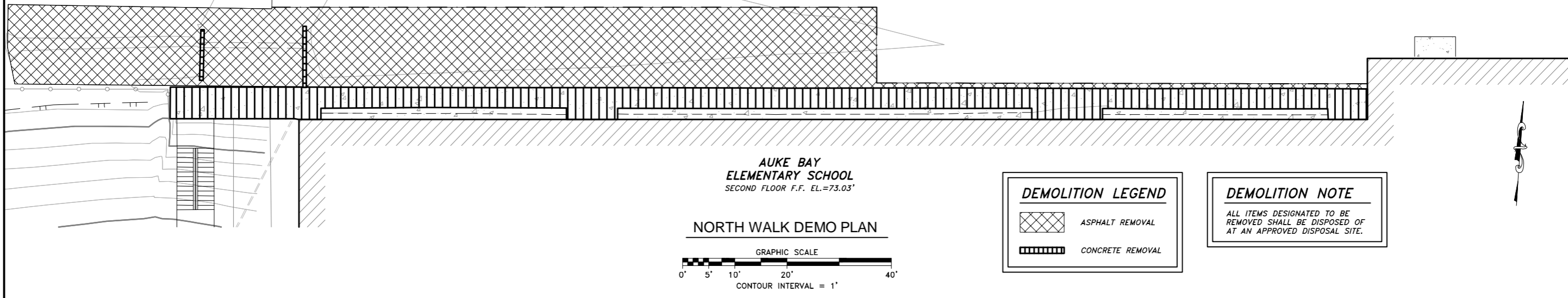
ADDENDUM NO. 1
 REVISIONS
 January 27, 2012

SHEET TITLE
 SITE PLAN
 DATE: December 21, 2011
 FILE: 10036

C200



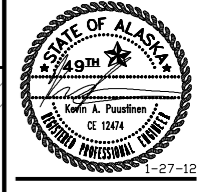
MATCH LINE, SHEET C201



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SHEET SITES

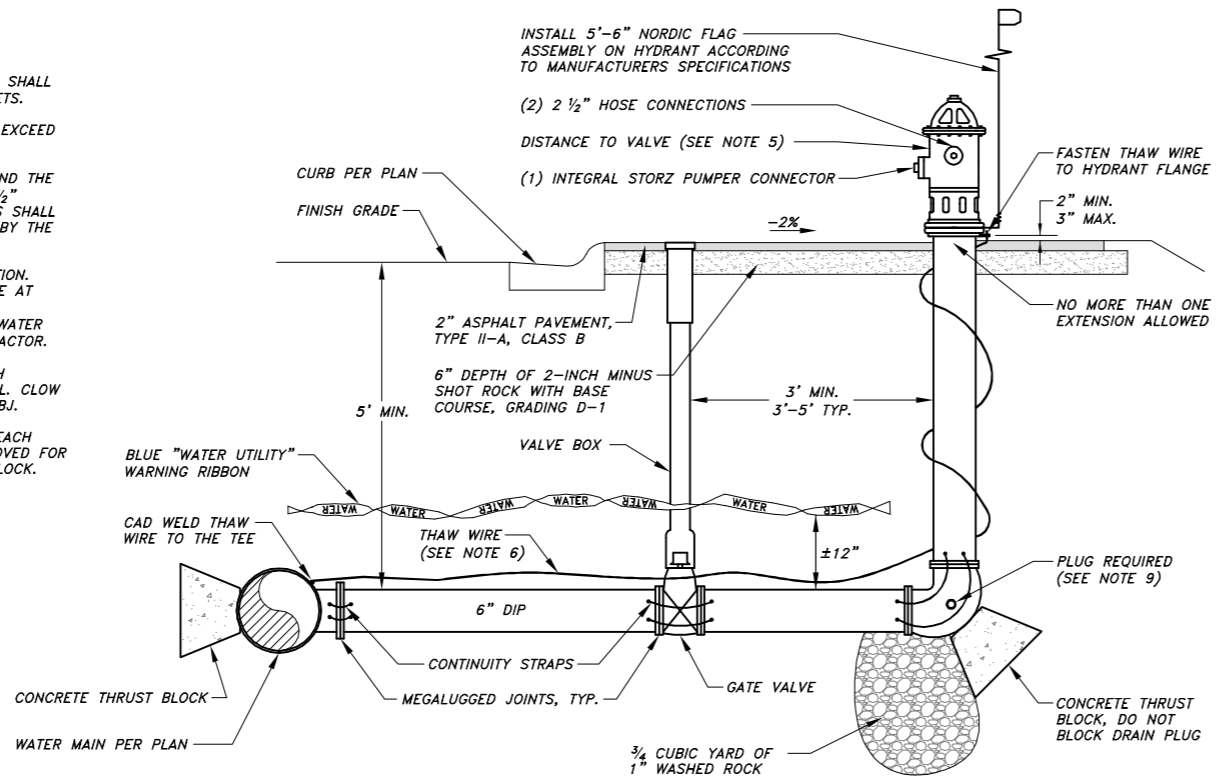
NORTH WALK REPLACEMENT

DATE: December 21, 2011
FILE: 10036

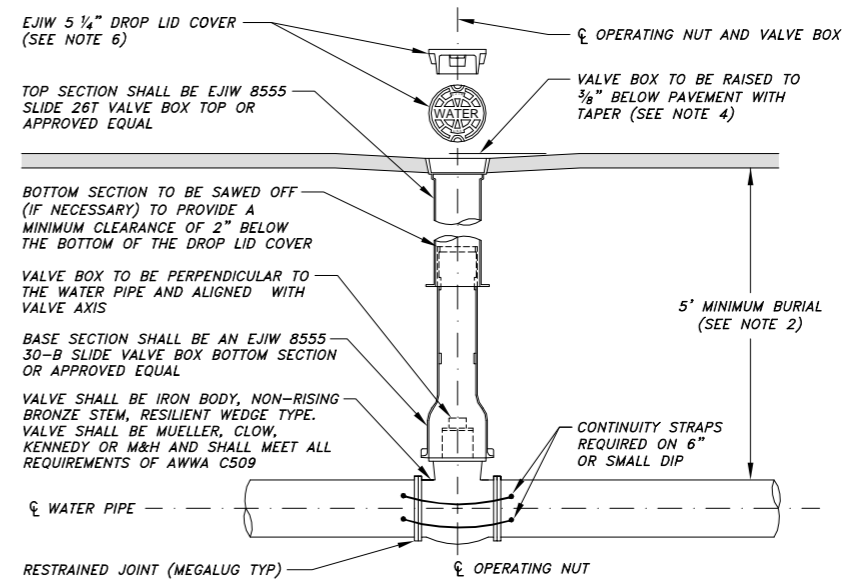
C206

NOTES:

- HYDRANT BARREL AND VALVE BOX SHALL BE PLUMB.
- GROUND COVER SHALL BE 5' MINIMUM.
- WATER PIPE SHALL BE 6" MIN. DIP AND ALL CONNECTIONS SHALL BE MEGALUGGED OR CONNECTED WITH LOCKING FIELD GASKETS.
- BENDS BETWEEN THE HYDRANT AND THE MAIN SHALL NOT EXCEED 11 1/4" UNLESS APPROVED BY THE ENGINEER.
- ALL HYDRANTS SHALL BE PAINTED CATERPILLAR YELLOW, AND THE NUMBER OF FEET TO VALVE SHALL BE PRINTED IN BLACK 1/2" BLOCK LETTERS JUST BELOW THE TOP BONNET. PORT CAPS SHALL BE COLOR CODED PER NFPA STANDARD 291 AS DIRECTED BY THE CBJ WATER UTILITIES DEPARTMENT.
- THAW WIRE SHALL BE #2 COPPER WITH TYPE THW INSULATION. THAW WIRE SHALL BE BOLTED OR CAD WELDED TO THE TEE AT THE MAIN. CONTINUITY STRAPS ARE REQUIRED BY THE CBJ WATER UTILITIES IS THE RESPONSIBILITY OF THE INSTALLER/CONTRACTOR.
- HYDRANT SHALL BE MUELLER CENTURION 200 OR 250 WITH INTEGRAL STORZ PUMPER CONNECTION OR APPROVED EQUAL. CLOW F2500 SERIES HYDRANTS ARE NO LONGER ACCEPTED BY CBJ.
- CBJ WATER UTILITIES DEPARTMENT SHALL DETERMINE FOR EACH HYDRANT INSTALLATION IF HYDRANT PLUGS SHALL BE REMOVED FOR SELF DRAINING. DO NOT BLOCK PLUG WITH THE THRUST BLOCK.

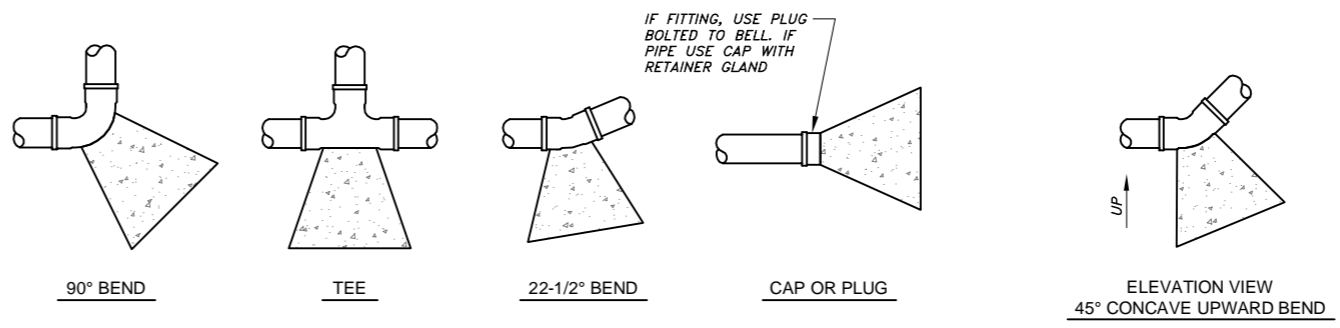


1 FIRE HYDRANT DETAIL
N.T.S.



- NOTES:**
- MAINLINE VALVES REQUIRE THRUST BLOCKS PER DETAIL ON THIS SHEET.
 - IF WATER MAIN IS MORE THAN 6" DEEP, USE 4" ID CAST IRON SOIL PIPE WITH TOP SECTION EJIW 8555 SLIDE (26T OR 16T) VALVE BOX.
 - THIS DETAIL APPLIES TO ALL MAINLINE VALVES AND WATER VALVES 4" IN DIAMETER OR GREATER.
 - VALVE BOXES ARE TO BE RAISED DURING PAVING OPERATIONS A MINIMUM OF 3/8", MAXIMUM OF 5/8" BELOW FINISHED PAVEMENT. VALVE BOXES THAT DO NOT MEET GRADE SPECIFICATIONS SHALL BE SAW CUT, RAISED TO GRADE WITH 4" AC PAVEMENT (NO CONCRETE).
 - NO MORE THAN (1) VALVE BOX PAVING RISER IS ALLOWED PER VALVE.
 - VALVE BOX COVER SHALL BE 5 1/4" DROP LID TYPE WITH 1" RAISED LETTERING (RECESSED FLUSH) AND (2) CLOSED PICK HOLES.

2 MAINLINE VALVE DETAIL
N.T.S.



PLAN VIEWS

PIPE SIZE	TEES, CAPS, AND PLUGS		90° BENDS		ALTERNATIVE RESTRAINED LENGTH IN ALL DIRECTIONS (FEET) - SEE NOTE 5		
	MIN. CONCRETE VOLUME (CY)	MIN. BEARING AREA (SF)	MIN. CONCRETE VOLUME (CY)	MIN. BEARING AREA (SF)	TEES	90° BENDS	CAPS & PLUGS
6"	0.2	3.5	0.4	4.9	15	23	47
8"	0.5	6.0	0.9	8.5	20	30	62

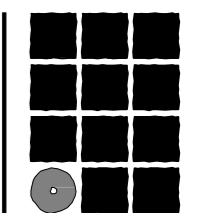
SMALL ANGLE ADJUSTMENT	
FOR ANGLES LESS THAN 90° MULTIPLY VOLUMES, AREAS AND LENGTHS FOR 90° ANGLE BY THIS FACTOR	
ANGLE	FACTOR
45°	0.414
22-1/2°	0.199
11-1/4°	0.098

4 HORIZONTAL AND CONCAVE UPWARD THRUST BLOCKS
N.T.S.

NOTES:

- CENTER OF MASS OF THRUST BLOCK MUST LAY OPPOSITE TO AND ALIGNED AGAINST THE DIRECTION OF THRUST.
- THRUST BLOCKS SHALL BE POURED SO THAT JOINTS OF FITTINGS, INCLUDING ALL NUTS AND FOLLOWERS REMAIN ACCESSIBLE.
- CONCRETE THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED EARTH. UNSTABLE OR UNSUITABLE MATERIALS SHALL BE REMOVED, REPLACED AND/OR COMPACTED AS DETERMINED BY THE ENGINEER.
- VOLUME AND BEARING SURFACE OF 2,500 P.S.I. CONCRETE THRUST BLOCKS ARE BASED ON 150 P.S.I. WATER PRESSURE AND SOIL BEARING CAPACITY OF 2,000 P.S.F. ALL OTHER PRESSURE AND/OR SOIL CONDITIONS ARE SUBJECT TO THE ENGINEER'S REVIEW AND APPROVAL.
- THRUST BLOCKS MAY BE OMITTED IF ALL JOINTS WITHIN MINIMUM DISTANCE GIVEN BY THE ABOVE TABLE ARE RESTRAINED AND PIPE IS BEDDED IN SAND. THE DISTANCES APPEARING IN THE TABLE ASSUME THAT THE PIPE BURIED AT LEAST 5- FEET DEEP AND THAT SOIL CONDITIONS ARE AS LISTED IN NOTE 4. THE INFORMATION IN THE TABLE IS BASED ON DIPRA'S "THRUST RESTRAINT FOR DUCTILE IRON PIPE" WHICH SHOULD BE CONSULTED IF THESE ASSUMPTIONS ARE NOT MET. SUBJECT TO THE CONDITIONS LISTED IN NOTE 4, A COMBINATION OF A SMALLER THRUST BLOCK AND A REDUCED LENGTH OF RESTRAINED PIPE IS ALLOWED PER THE FOLLOWING FORMULA:

$$\frac{\text{ACTUAL BEARING AREA OF BLOCK}}{\text{BEARING AREA REQUIRED BY TABLE}} + \frac{\text{ACTUAL RESTRAINED LENGTH OF PIPE}}{\text{RESTRAINED LENGTH REQUIRED BY TABLE}} \geq 1.1$$
- THRUST BLOCKS ARE REQUIRED FOR ALL BENDS, TEES, PLUGS AND CAPS IN PIPE 4-INCH AND LARGER EXCEPT AS LISTED IN NOTE 5.
- REGARDLESS OF SIZE OF THRUST BLOCKS ALL JOINTS AT BENDS, TEES, PLUGS AND CAPS MUST BE RESTRAINED.
- RESTRAINED LENGTHS USED IN PLACE OF THRUST BLOCKS MAY NOT OVERLAP.
- FIELD-LOCK GASKETS, MEGA-LUG AND UNIFLANGE COUPLINGS ARE THE ONLY APPROVED MEANS OF RESTRAINING PIPE.



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ADDENDUM NO. 1

- REVISIONS
- January 27, 2012

SHEET TITLE
CONSTRUCTION DETAILS

DATE: December 21, 2011
FILE: 10036

C304

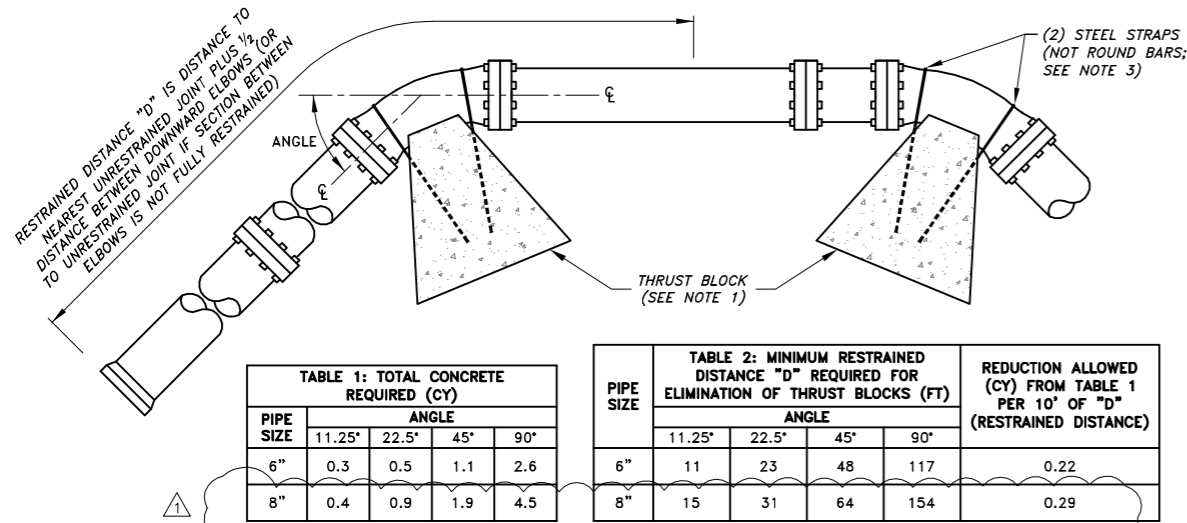


TABLE 1: TOTAL CONCRETE REQUIRED (CY)

PIPE SIZE	ANGLE			
	11.25'	22.5'	45'	90'
6"	0.3	0.5	1.1	2.6
8"	0.4	0.9	1.9	4.5

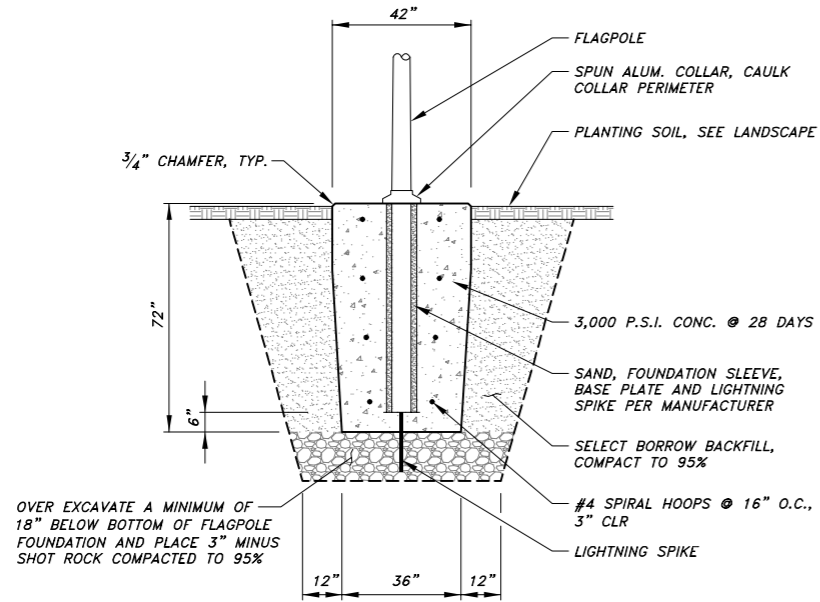
TABLE 2: MINIMUM RESTRAINED DISTANCE "D" REQUIRED FOR ELIMINATION OF THRUST BLOCKS (FT)

PIPE SIZE	ANGLE				REDUCTION ALLOWED (CY) FROM TABLE 1 PER 10' OF "D" (RESTRAINED DISTANCE)
	11.25'	22.5'	45'	90'	
6"	11	23	48	117	0.22
8"	15	31	64	154	0.29

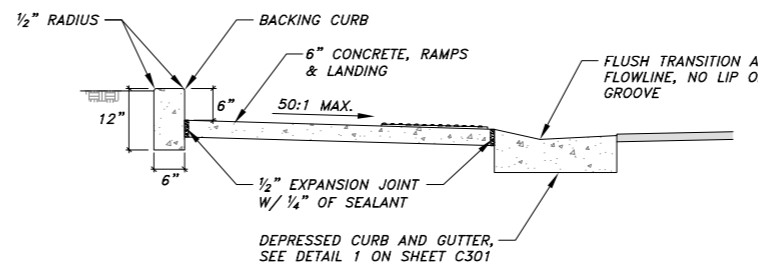
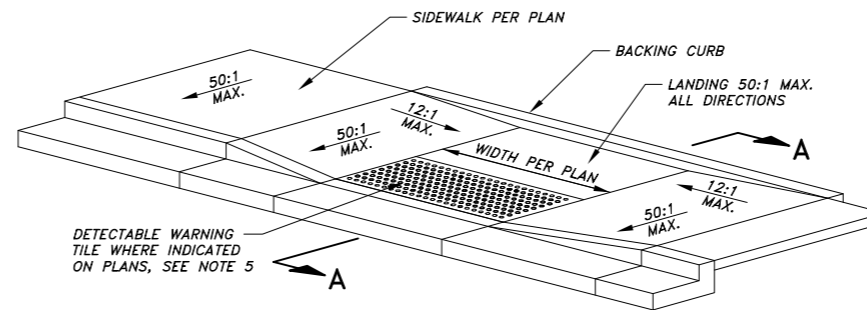
NOTES:

- ALL DOWNWARD CONCAVE BENDS MUST EITHER BE CONNECTED TO A CONCRETE THRUST BLOCK AT LEAST AS LARGE AS INDICATED IN TABLE 1, BE CONNECTED TO RESTRAINED PIPE FOR THE MINIMUM DISTANCE GIVEN IN TABLE 2, OR A COMBINATION OF THE TWO. EXAMPLE OF COMBINATION: 45-DEGREE BEND IN 16" PIPE 16' FROM ANOTHER CONCAVE DOWNWARD BEND AND 4 STICKS (18' EACH) FROM NEAREST UNRESTRAINED JOINT - IF NOT RESTRAINED, THE VOLUME OF THE REQUIRED THRUST BLOCK WOULD BE 6.9 CY AS GIVEN BY TABLE 1. HOWEVER SINCE THERE IS A RESTRAINED LENGTH "D" = (1/2 x 16') + (4 x 18') = 80' THE SIZE OF THE BLOCK CAN BE REDUCED. THIS REDUCTION IS GIVEN BY THE LAST COLUMN OF TABLE 2 TO BE 8 x 0.59 CY = 4.7 CY SO THAT THE BLOCK NEEDS TO BE ONLY 6.9 - 4.7 = 2.2 CY.
- THRUST BLOCKS SHALL BE POURED SO THAT JOINTS OF FITTINGS, INCLUDING ALL NUTS AND FOLLOWERS, REMAIN ACCESSIBLE.
- CENTER OF MASS OF THRUST BLOCK MUST BE BELOW PIPE AND CONNECTED TO PIPE WITH TWO STEEL STRAPS. EACH STRAP IS TO HAVE A CROSS-SECTIONAL AREA OF AT LEAST 1/2 SQUARE INCH PER 4 CUBIC YARDS OF CONCRETE. IF STRAPS ARE NOT STAINLESS, PIPE AND STRAPS SHALL BE ISOLATED FROM DIRECT CONTACT WITH A PLASTIC INSULATOR.
- REGARDLESS OF SIZE OF THRUST BLOCK, WATER PIPE JOINTS AT ANGLE MUST BE RESTRAINED.
- CONCRETE THRUST BLOCKS SHALL BE 2500 PSI AND ARE BASED ON 150 PSI WATER PRESSURE. ALL OTHER CONDITIONS ARE SUBJECT TO THE ENGINEER'S REVIEW AND APPROVAL.
- DEDUCTION D IS ALLOWED ONLY WHEN CONDITIONS LISTED IN NOTE 5 ARE MET. ENTIRE SECTION D IS BURIED AT LEAST 5' DEEP, AND PIPE IS BEDDED IN CLEAN SAND FOR ENTIRE LENGTH OF D.
- FIELD-LOCK GASKETS, MEGA-LUG COUPLINGS AND FORD UNIFLANGE COUPLINGS ARE THE ONLY APPROVED MEANS OF RESTRAINING JOINTS.
- RESTRAINED LENGTHS USED IN PLACE OF HORIZONTAL THRUST BLOCKS MAY NOT OVERLAP.

1 DOWNWARD CONCAVE THRUST BLOCK
N.T.S.

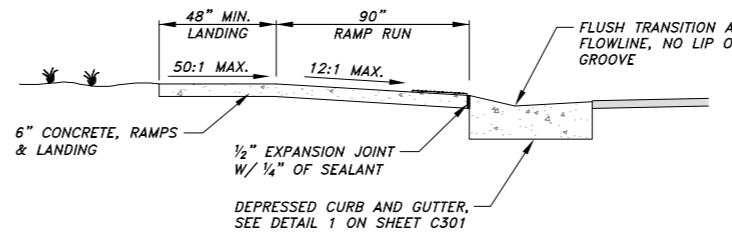
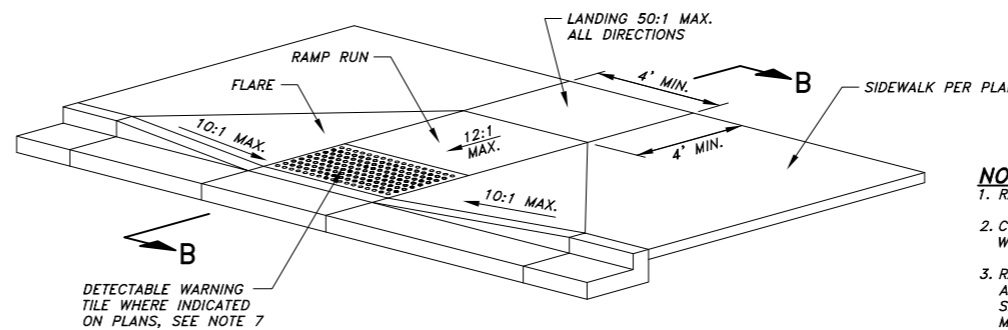


3 FLAGPOLE FOUNDATION DETAIL
N.T.S.



SECTION A-A

2 PARALLEL CURB RAMP DETAIL
N.T.S.



SECTION B-B

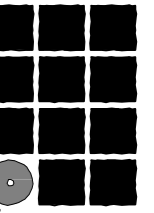
4 PERPENDICULAR CURB RAMP DETAIL
N.T.S.

NOTES:

- CONSTRUCT RAMP RUNS AND LANDINGS OF CONCRETE, REGARDLESS OF WHETHER THE SIDEWALK IS ASPHALT OR CONCRETE.
- RAMP RUN LENGTHS SHOWN PERTAIN TO 6" CURB HEIGHTS AND NO LONGITUDINAL SIDEWALK SLOPE. FOR OTHER HEIGHTS AND SLOPES, INCREASE OR DECREASE RUN LENGTHS TO MAINTAIN THE SLOPES SHOWN. IN CASES WHERE SIDEWALK SLOPE MAKES IT NECESSARY TO LENGTHEN A RAMP RUN TO AVOID EXCEEDING THE ALLOWABLE SLOPE, IT SHOULD NOT BE MADE LONGER THAN 15 FEET FOR A 6" CURB HEIGHT OR, IN GENERAL, 30 TIMES THE CURB HEIGHT. THE SLOPE RESULTING FROM THAT RUN LENGTH IS ACCEPTABLE, EVEN IF IT EXCEEDS THE MAXIMUM SLOPE SHOWN.
- THE 12:1 AND 50:1 SLOPES SHOWN ARE THE STEEPEST SLOPES ALLOWED BY LAW (EXCEPT AS PROVIDED UNDER NOTE 2).
- CONCRETE SHALL RECEIVE A COARSE BROOM FINISH RUNNING PERPENDICULAR TO THE CURB ON RAMP RUNS AND UPPER LANDINGS AND PARALLEL TO THE CURB ON LOWER LANDINGS.
- INSTALL 24" WIDE STRIPS OF SAFETY YELLOW CAST-IN-PLACE COMPOSITE DETECTABLE WARNING TILES WITH TRUNCATED DOME DETECTABLE WARNING TEXTURE ON THE STREET SIDE EDGE OF LOWER LANDINGS AS SHOWN. DOMES SHALL BE IN A SQUARE PATTERN. ALIGN TRUNCATED DOME PATTERN IN THE PREDOMINANT DIRECTION OF WHEELCHAIR TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN THE DOMES.

NOTES:

- RAMP RUNS SHALL BE PERPENDICULAR TO THE FACE OF CURB.
- CONSTRUCT RAMP RUNS AND FLARES OF CONCRETE, REGARDLESS OF WHETHER THE SIDEWALK IS ASPHALT OR CONCRETE.
- RAMP RUN AND FLARE LENGTHS SHOWN PERTAIN TO 6" CURB HEIGHTS AND NO LONGITUDINAL SIDEWALK SLOPE. FOR OTHER HEIGHTS AND SLOPES, INCREASE OR DECREASE RUN AND FLARE LENGTHS TO MAINTAIN THE SLOPES SHOWN.
- WHERE SIDEWALK SLOPE MAKES IT NECESSARY TO LENGTHEN A RAMP RUN TO AVOID EXCEEDING THE ALLOWABLE SLOPE, IT SHOULD NOT BE MADE LONGER THAN 15 FEET FOR A 6" CURB HEIGHT OR, IN GENERAL, 30 TIMES THE CURB HEIGHT. SIMILARLY A FLARE SHOULD NOT BE MADE LONGER THAN 6 FEET FOR A 6" CURB HEIGHT OR, IN GENERAL, 12 TIMES THE CURB HEIGHT. THE SLOPES RESULTING FROM THOSE RUN OR FLARE LENGTHS ARE ACCEPTABLE, EVEN IF THEY EXCEED THE MAXIMUM SLOPES SHOWN.
- THE 10:1, 12:1 AND 50:1 SLOPES SHOWN ARE THE STEEPEST SLOPES ALLOWED BY LAW (EXCEPT AS PROVIDED UNDER NOTE 4).
- PROVIDE A COARSE BROOM FINISH RUNNING PARALLEL TO THE CURB ON RAMP RUNS AND FLARES.
- INSTALL 24" WIDE STRIPS OF SAFETY YELLOW CAST-IN-PLACE COMPOSITE DETECTABLE WARNING TILES WITH TRUNCATED DOME DETECTABLE WARNING TEXTURE ON THE STREET SIDE EDGE OF RAMP RUNS AS SHOWN. DOMES SHALL BE ARRANGED IN A SQUARE PATTERN. ALIGN TRUNCATED DOME PATTERN IN THE PREDOMINANT DIRECTION OF WHEELCHAIR TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN THE DOMES.



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City and Borough of Juneau - Juneau School District
**Auke Bay Elementary
School Renovation**
CBJ Project No. E12-042
Juneau, Alaska

ADDENDUM NO. 1

REVISIONS
▲ January 27, 2012

SHEET TITLE
**CONSTRUCTION
DETAILS**

DATE: December 21, 2011
FILE: 10036

C305

EQUIPMENT SCHEDULE

EQUIPMENT	FUNCTION	LOCATION	SIZE/CAPACITY	DESIGN MANUFACTURE AND MODEL	FEATURES AND ACCESSORIES
BOILER, B-1 ELECTRIC	BLDG HEATING	MECHANICAL 122	860 MBH NET IBR, 252 KW	PRECISION	ELECTRIC BOILER, WATER, 252kW, 480 VOLT, 3 PHASE. 14 STEPS AT 18 KW EACH. INTEGRAL PID SEQUENCING STAGE CONTROLS. SINGLE POINT POWER CONNECTIONS. CIRCUIT BREAKER.
GROUND SOURCE HEAT PUMP, GSHP-1	GROUND SOURCE HEAT PUMP-HEATING	MECHANICAL 122	870 MBH	TRANE RTWD-90	WATER TO WATER HEAT PUMP. 78 KW, 480V, 3φ. 90 TON NOMINAL. TWIN SCREW COMPRESSORS. SINGLE POINT POWER CONNECTION. CIRCUIT BREAKER.
DWH-1 ELECTRIC	DOMESTIC WATER HEATING	MECHANICAL 122	120 GALLON	PVI	120 GALLON ELECTRIC WATER HEATER. 6 ELEMENTS. 30 KW. 120 GPH RECOVERY AT 100°F TEMPERATURE RISE. ASME. 480 VOLT, THREE PHASE. 6 STEPS @ 5 KW EACH. INTEGRAL PROGRAMMABLE SEQUENCER. 6 THERMOSTATS AND SEPARATE STAGES. CIRCUIT BREAKER.
EXPANSION TANK (ET-1) HEATING	HYDRONIC HEATING THERMAL EXPANSION	MECHANICAL 122	150 GALLON	AMTROL 600-L SERIES	ASME. BLADDER TYPE. SEISMIC RESTRAINT.
EXPANSION TANK (ET-2) GROUND SOURCE	GROUND SOURCE THERMAL EXPANSION	MECHANICAL 122	80 GALLON	AMTROL 300-L SERIES	ASME. BLADDER TYPE. SUITABLE FOR USE WITH METHANOL. SEISMIC RESTRAINT.
EXPANSION TANK (ET-3) DOMESTIC	DOMESTIC HOT WATER THERMAL EXPANSION	MECHANICAL 122	25 GALLON TANK 11 GALLON ACCEPTANCE	AMTROL ST-60V-C SERIES	ASME. SUITABLE FOR POTABLE WATER.
EXPANSION TANK ET-4/ET-5	HEAT RECOVERY SYSTEM EXPANSION	MECHANICAL 301/302	5 GALLON TANK	AMTROL ST SERIES	ASME. IN LINE TYPE.
AIR SEPARATOR, AS-1	AIR/DIRT REMOVAL GROUND SOURCE	MECHANICAL 122	5-INCH	SPIRO THERM DRAIN	DIRT/AIR TYPE. REMOVABLE HEAD.
AIR SEPARATOR, AS-2	AIR/DIRT REMOVAL HEATING SYSTEM	MECHANICAL 122	4-INCH	SPIRO THERM DRAIN	DIRT/AIR TYPE. REMOVABLE HEAD.
HEATING WATER STORAGE TANK, ST-1	HEATING SYSTEM	MECHANICAL 122	400 GALLON	PRECISION	400 GALLON, 36"φ, INSULATED AND JACKETED, HOT WATER STORAGE TANK. (4) PIPING CONNECTIONS AS SHOWN. EPOXY LINED.
AIR SEPARATOR, AS-3/AS-4	AIR REMOVAL HEAT RECOVERY SYSTEM	MECHANICAL 301/302	1-1/2"AS-3 2"AS-4	SPIRO THERM SENIOR	INLINE AIR REMOVAL DEVICE.
ANTIFREEZE FEEDER SYSTEM	GEOTHERMAL HYDRONICS	CRAWLSPACE	50 GALLON 1/2 HP, 115V	J.L.WINGERT CO. GL50-E1	ANTIFREEZE FEED SYSTEM SINGLE PUMP, PRESSURE SWITCHES, CONTROL PANEL, INTEGRAL ELECTRONICS. LOW LIMIT ALARM CONNECTION FOR DDC.

PUMP SCHEDULE

PUMP NUMBER	FUNCTION	GALLONS PER MINUTE (GPM)	HEAD DEVELOPED (FT. OF WATER)	DESIGN MANUFACTURE AND MODEL	MINIMUM HORSEPOWER ELECTRICAL CHARACTERISTICS	FEATURES
P-1A	GROUND SOURCE LOOP	250	110	B&G 2-1/2AB SERIES 1510	15 HP, 480V, THREE PHASE PREMIUM EFFICIENCY MOTOR VARIABLE FREQUENCY DRIVE	BASE MOUNTED PUMP. STAINLESS STEEL SHAFT SLEEVE. 5.625"φ CUSTOM IMPELLER. 74.5% MINIMUM EFFICIENCY. VARIABLE FREQUENCY DRIVE FOR EACH PUMP. 3,500 RPM. PUMP TO OPERATE IN LEAD/LAG.
P-1B	GROUND SOURCE LOOP	250	110	B&G 2-1/2AB SERIES 1510	15 HP, 480V, THREE PHASE PREMIUM EFFICIENCY MOTOR VARIABLE FREQUENCY DRIVE	BASE MOUNTED PUMP. STAINLESS STEEL SHAFT SLEEVE. 5.625"φ CUSTOM IMPELLER. 74.5% MINIMUM EFFICIENCY. VARIABLE FREQUENCY DRIVE FOR EACH PUMP. 3,500 RPM. PUMP TO OPERATE IN LEAD/LAG.
P-2	GSHP PUMP	130	30	B&G 2-1/2x2-1/2x7 SERIES 80	2 HP, 480V THREE PHASE PREMIUM EFFICIENCY MOTOR	IN LINE MOUNTED CENTRIFUGAL PUMP. 6.5"φ CUSTOM IMPELLER. 64% MINIMUM EFFICIENCY. 1,750 RPM.
P-3	ELECTRIC BOILER PUMP	130	22	B&G 3x3x7B SERIES 80	1-1/2 HP, 480V THREE PHASE PREMIUM EFFICIENCY MOTOR	IN LINE MOUNTED CENTRIFUGAL PUMP. 5.375"φ CUSTOM IMPELLER. 62% MINIMUM EFFICIENCY. 1,750 RPM.
P-4A	BUILDING PUMP	168	42	B&G 2-1/2AB SERIES 1510	3 HP, 480V THREE PHASE PREMIUM EFFICIENCY MOTOR VARIABLE FREQUENCY DRIVE	BASE MOUNTED PUMP. STAINLESS STEEL SHAFT SLEEVE. 6.75"φ CUSTOM IMPELLER. SUCTION DIFFUSER ON INLET. 74.3% MINIMUM EFFICIENCY. VARIABLE FREQUENCY DRIVE FOR EACH PUMP. 1,750 RPM. PUMP TO OPERATE IN LEAD/LAG.
P-4B	BUILDING PUMP	168	42	B&G 2-1/2AB SERIES 1510	3 HP, 480V THREE PHASE PREMIUM EFFICIENCY MOTOR VARIABLE FREQUENCY DRIVE	BASE MOUNTED PUMP. STAINLESS STEEL SHAFT SLEEVE. 6.75"φ CUSTOM IMPELLER. SUCTION DIFFUSER ON INLET. 74.3% MINIMUM EFFICIENCY. VARIABLE FREQUENCY DRIVE FOR EACH PUMP. 1,750 RPM. PUMP TO OPERATE IN LEAD/LAG.
P-5	HRC-1	35	28	B&G 1-1/2x1-1/2x6-1/4 SERIES 60	1 HP, 480V THREE PHASE	IN LINE MOUNTED CENTRIFUGAL PUMP. 5.375"φ CUSTOM IMPELLER. 52.6% MINIMUM EFFICIENCY. 1,750 RPM.
P-6	HRC-2	20	32	B&G 1-1/2x1-1/2x6-1/4 SERIES 60	1 HP, 480V THREE PHASE	IN LINE MOUNTED CENTRIFUGAL PUMP. 5.625"φ CUSTOM IMPELLER. 40.8% MINIMUM EFFICIENCY. 1,750 RPM.
HWRP	DOMESTIC HW RECIRCULATING	3	22	B&G	1/8 HP, 120V SINGLE PHASE	CARTRIDGE PUMP, PIPE MOUNTED
SP-1	ELEVATOR SUMP PUMP	15	40	HYDRAMATIC	1/2 HP, 120V SINGLE PHASE	SUBMERSIBLE SUMP PUMP. DUPLEX RECEPTACLE.

ROOF CAP SCHEDULE

ROOF CAP	SERVICE	LOCATION	SIZE
RC-1A, RC-1B	GYM EA	GYM ROOF	(2) 24x36
RC-2	EF-2 SYSTEM	LIBRARY ROOF	16x20
RC-3	KILN HOOD	ROOF	12x12

FILTER BOX SCHEDULE

EQUIPMENT	SERVICE	LOCATION	CFM	SIZE	MAXIMUM VELOCITY	TYPE
FB-1	EF-1	MECHANICAL 302	2750	24x24	250 FPM	VEE TYPE. MERV 8.
FB-2	EF-2	CRAWL SPACE	1300	24x24	250 FPM	VERTICAL. MERV 8.
FB-3	AHU-2 OSA	MECHANICAL 301	6630	48x30	335 FPM	VEE TYPE. MERV 8.

TEMPERING VALVE SCHEDULE

TEMPERING VALVE *	LOCATION	AREA SERVED	DOMESTIC HOT WATER SET POINT (°F)	MAXIMUM FLOW	MANUFACTURER & MODEL
TV-1	MECHANICAL 122	BUILDING DOMESTIC WATER	115°F	20 GPM @ 20 PSI DROP	LEONARD TM-186-30TA-PRV

* ALL TEMPERING VALVES SHALL BE DUAL VALVE MIXING TYPE.

WATER TO AIR HEAT PUMP SCHEDULE

EQUIPMENT	LOCATION SERVED	MANUFACTURER AND MODEL	FEATURES/OPTIONS
HP-1	MULTI-MEDIA 201	CLIMATE MASTER TSH-36	WATER TO AIR GROUND SOURCE HEAT PUMP. COOLING CAPACITY 34,600 BTU/HR AT EWT OF 77°F. HORIZONTAL UNIT, NOMINAL AIR FLOW 1000 CFM. 208V, 3 PHASE.
HP-2	ELECTRICAL ROOM 122A	CLIMATE MASTER TSH-36	WATER TO AIR GROUND SOURCE HEAT PUMP. COOLING CAPACITY 34,600 BTU/HR AT EWT OF 77°F. HORIZONTAL UNIT, NOMINAL AIR FLOW 800 CFM. 208V, 3 PHASE.
HP-3	MECHANICAL ROOM 122	CLIMATE MASTER TSH-36	WATER TO AIR GROUND SOURCE HEAT PUMP. COOLING CAPACITY 34,600 BTU/HR AT EWT OF 77°F. HORIZONTAL UNIT, NOMINAL AIR FLOW 800 CFM. 208V, 3 PHASE.
HP-4	SERVER ROOM 201A	CLIMATE MASTER TSH-18	WATER TO AIR GROUND SOURCE HEAT PUMP. COOLING CAPACITY 20,000 BTU/HR AT EWT OF 77°F. HORIZONTAL UNIT, NOMINAL AIR FLOW 400 CFM. 208V, 1 PHASE.
HP-5	ELECTRICAL 213	CLIMATE MASTER TSV-18	WATER TO AIR GROUND SOURCE HEAT PUMP. COOLING CAPACITY 20,000 BTU/HR AT EWT OF 77°F. VERTICAL UNIT, NOMINAL AIR FLOW 400 CFM. 208V, 1 PHASE.

FAN SCHEDULE

EQUIPMENT	AREA SERVED	CFM	TSP. INCHES OF WATER	HEATING COIL SIZE (MBH)	DESIGN MANUFACTURE & MODEL	MIN. HP	VOLTS / PHASE	FEATURES AND ACCESSORIES
AHU-1 SF	CLASSROOM DISPLACEMENT VENTILATION	16,440	3.25	275	HAAKON	20	480V/3 PHASE	CUSTOM HEAT RECOVERY TYPE AIR HANDLING UNIT. CLASS II FANS. VFD.
AHU-1 RF		13,100	2.375			15		
AHU-2 SF	COMMONS/RALLY MUSIC/LIBRARY VENTILATION	6,630	2.675	220	HAAKON	5	480V/3 PHASE	CUSTOM AIR HANDLING UNIT.
AHU-2 RF		5,000	1.375			3		
AHU-3	GYM	6,000	1.75	230	HAAKON	5	480V/3 PHASE	CUSTOM SINGLE FAN AIR HANDLING UNIT.
EF-1	BUILDING-WEST EXHAUST	2,750	1.75	-	GREENHECK SWB	1-1/2	480V/3 PHASE	CENTRIFUGAL UTILITY FAN. UPBLAST. CLOCKWISE ROTATION. BELT DRIVE. MAXIMUM 1241 RPM. MAXIMUM 14.4 SONES INLET. PROVIDE BOLTED ACCESS. RESTRAINED SPRING VIBRATION ISOLATORS. PROVIDE SPARE SET OF BELTS.
EF-2	BUILDING-EAST EXHAUST	1,300	1.675	-	GREENHECK BSQ	1	480V/3 PHASE	INLINE EXHAUST FAN, PROVIDE 1 INCH CASING INSULATION, PROVIDE MOTOR COVER. MAXIMUM 1939 RPM, MAXIMUM 14.1 SONES INLET.
EF-3	KITCHEN GREASE HOOD EXHAUST	1,100	1.50	-	GREENHECK USGF	3/4	480V/3 PHASE	UPBLAST ROOFTOP FAN UNIT. UL LISTED FOR GREASE LADEN AIR. MAXIMUM 2000 RPM. MAXIMUM 12.1 SONES. VENTILATED CURB EXTENSION.
EF-4	ELEVATOR ROOM EXHAUST	80	0.25	-	GREENHECK SP	50W	120V/1 PHASE	CEILING MOUNTED EXHAUST FAN WITH INTEGRAL GRILLE AND BACKDRAFT DAMPER.

HEATING UNIT SCHEDULE

EQUIPMENT	DESIGN MANUFACTURER	MODEL	CONTROLS/OPTIONS
CABINET UNIT HEATER, CUH-1, WALL MOUNTED	RITTLING	RWI-310-04	42 MBH STEAM RATING. WALL MOUNTED, INVERTED BLOW. 2 ROW COIL. UNIT PROVIDED WITH DISCONNECT. FINISH COLOR SELECTED BY ARCHITECT.
CABINET UNIT HEATER, CUH-2, CEILING MOUNTED	RITTLING	RFRC-420-04	42 MBH STEAM RATING. CEILING MOUNTED, 2 ROW COIL. UNIT PROVIDED WITH INTERNAL DISCONNECT. FINISH COLOR SELECTED BY ARCHITECT.
CONVECTOR, CV-1	RITTLING	TYPE SL	9.0 MBH STEAM RATING. WALL HUNG, SLOPING TOP. 36"L x 26"H x 6" DEEP. FINISH COLOR SELECTED BY ARCHITECT.
CONVECTOR, CV-2	RITTLING	TYPE SL	4.2 MBH STEAM RATING. WALL HUNG, SLOPING TOP. 28"L x 26"H x 4" DEEP. FINISH COLOR SELECTED BY ARCHITECT.
CONVECTOR, CV-3	RITTLING	TYPE PL	20 MBH STEAM RATING. FULLY RECESSED. 60"L x 32"H x 6" DEEP. FINISH COLOR SELECTED BY ARCHITECT.
CONVECTOR, CV-4	RITTLING	TYPE PL	11 MBH STEAM RATING. FULLY RECESSED 36"L x 32"H x 6" DEEP. FINISH COLOR SELECTED BY ARCHITECT.
FINNED PIPE, FP-1	RITTLING	TYPE FS-5	THREE-TIER, 3500 BTU/HR/FT STEAM RATING. 1" COPPER TUBE WITH 4-1/4"x4-1/4" ALUMINUM FINNS. MAXIMUM 48 FPF. IBR RATED. 24" HIGH SLOPING TOP, WALL-MOUNTED CABINET. ACCESS DOORS AT ALL VALVES. FINISH COLOR SELECTED BY ARCHITECT.
FINNED PIPE, FP-2	RITTLING	TYPE FS-5	SINGLE-TIER, 2060 BTU/HR/FT STEAM RATING. 1" COPPER TUBE WITH 4-1/4"x4-1/4" ALUMINUM FINNS. MAXIMUM 48 FPF. IBR RATED. 14" HIGH SLOPING TOP, WALL-MOUNTED CABINET. ACCESS DOORS AT ALL VALVES. FINISH COLOR SELECTED BY ARCHITECT.
FINNED PIPE, FP-3	RITTLING		SINGLE-TIER, BARE ELEMENT 2060 BTU/HR/FT STEAM RATING. 1" COPPER TUBE WITH 4-1/4"x4-1/4" ALUMINUM FINNS. MAXIMUM 48 FPF. IBR RATED.
FINNED PIPE, FP-4	RITTLING	PIB65	SINGLE-TIER, PEDESTAL TYPE. 1620 BTU/HR/FT STEAM RATING. 1" COPPER TUBE WITH 4-1/4"x4-1/4" ALUMINUM FINNS. MAXIMUM 48 FPF. IBR RATED.
UNIT HEATER, UH	RITTLING	HR-86	MINIMUM 60.0 MBH WITH 20°F Δ T WATER, 60°F EAT, 200°F EWT. HORIZONTAL BLOW. 4-WAY ADJUSTABLE VANES. UNIT PROVIDED WITH DISCONNECT.

SOUND TRAP SCHEDULE

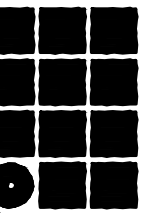
EQUIPMENT	SYSTEM	LOCATION	AIR VOLUME CFM	VELOCITY FPM	SIZE (WxH)	LENGTH	PRESSURE DROP	MANUFACTURER
ST-1	AHU-1 SA	CRAWLSPACE	3700	1400	22"φ	3'-0"	0.08	IAC FCS
ST-2	AHU-1 RA	CRAWLSPACE	3680	1400	22"φ	3'-0"	0.08	IAC FCS
ST-3	AHU-1 SA	CORRIDOR 155	7760	1400	36x24	5'-0"	0.16	IAC LFL
ST-4	AHU-1 RA	CORRIDOR 155	2970	1050	24x18	5'-0"	0.10	IAC LFL
ST-5	AHU-2 SA	MECHANICAL 301	6580	1200	36x24	5'-0"	0.12	IAC LFL
ST-6	AHU-2 RA	MUSIC 205	4960	1100	30x24	5'-0"	0.10	IAC LFL
ST-7	AHU-1 SA	TOILET 221A	2480	1100	12x30	5'-0"	0.12	IAC LFL
ST-8	AHU-1 SA	TOILET 221A	2500	1000	24x18	5'-0"	0.10	IAC LFL
ST-9	AHU-1 RA	ELEC 213	6460	1200	36x24	5'-0"	0.12	IAC LFL

LOUVER SCHEDULE

LOUVER	SERVICE	LOCATION	SIZE	DESIGN MANUFACTURE & MODEL
LV-1A & LV-1B	AHU-1 OSA	MECHANICAL 302	(2) 66x54	RUSKIN ELF 6375 DXH
LV-2A & LV-2B	AHU-1 EA	MECHANICAL 302	(2) 66x54	RUSKIN ELF 6375 DXH
LV-3	AHU-2 AND AHU-3 OSA	MECHANICAL 301	96x48	RUSKIN ELF 6375 DXH
LV-4	AHU-2 EA	MECHANICAL 301	60x48	RUSKIN ELF 6375 DXH

SHEET NOTES:

- SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION ON EQUIPMENT AND SYSTEMS REQUIREMENTS.



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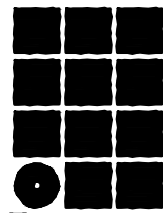
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SHEET TITLE
SCHEDULES

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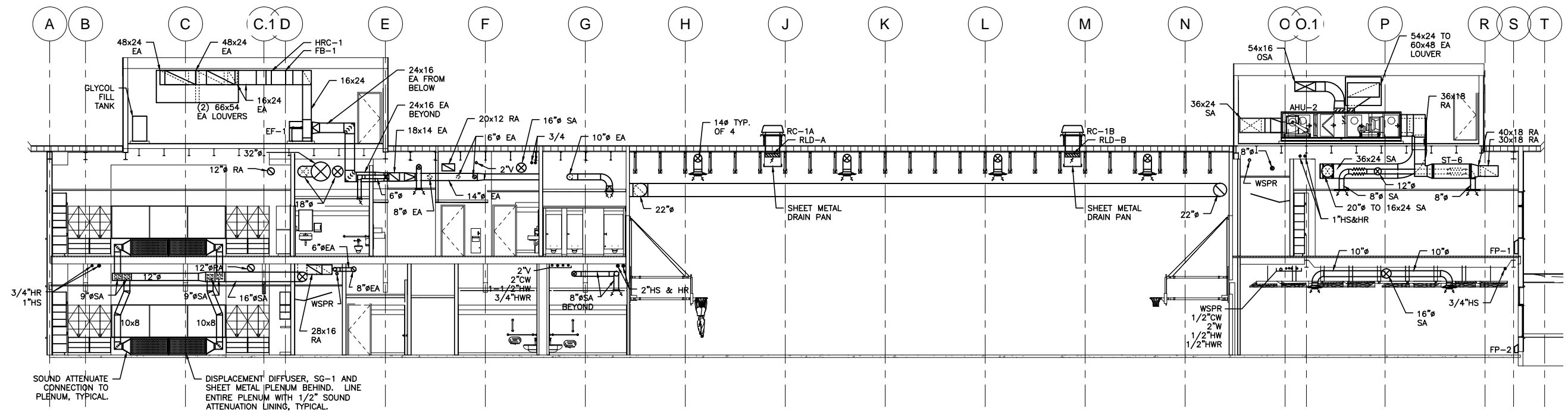
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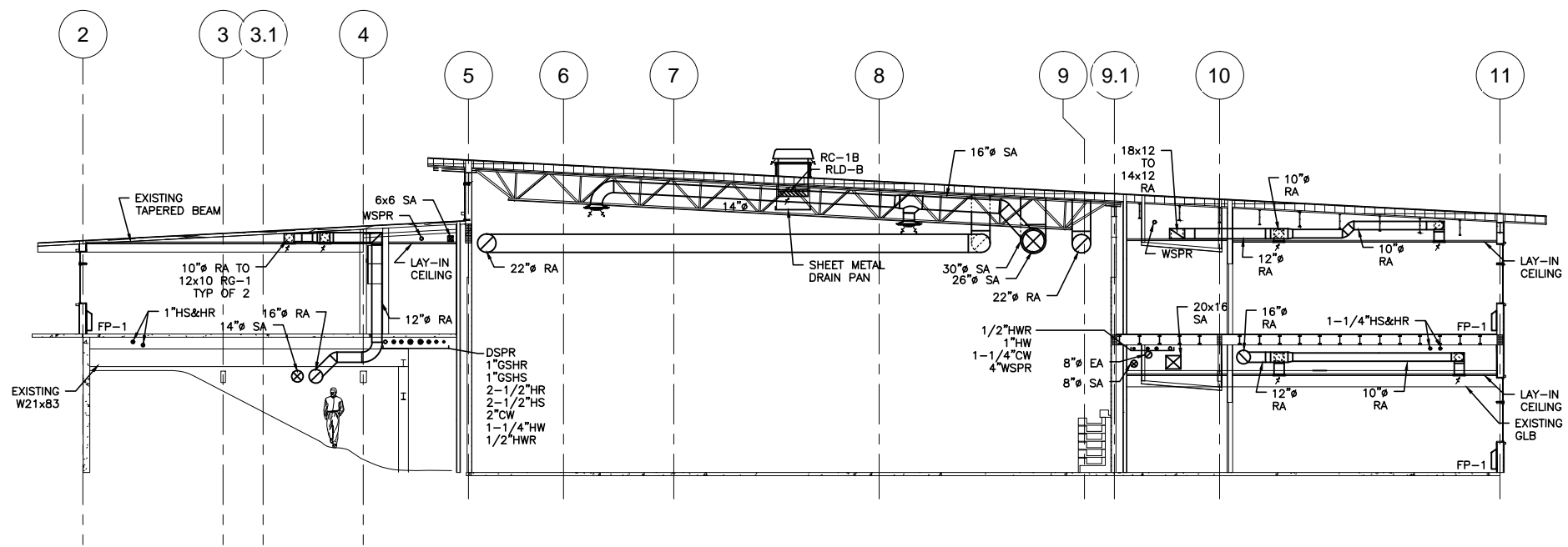
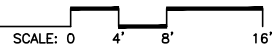
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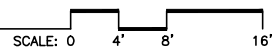
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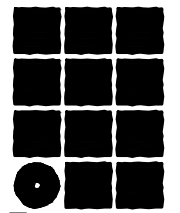


1 BUILDING SECTION ▲



2 BUILDING SECTION ▲





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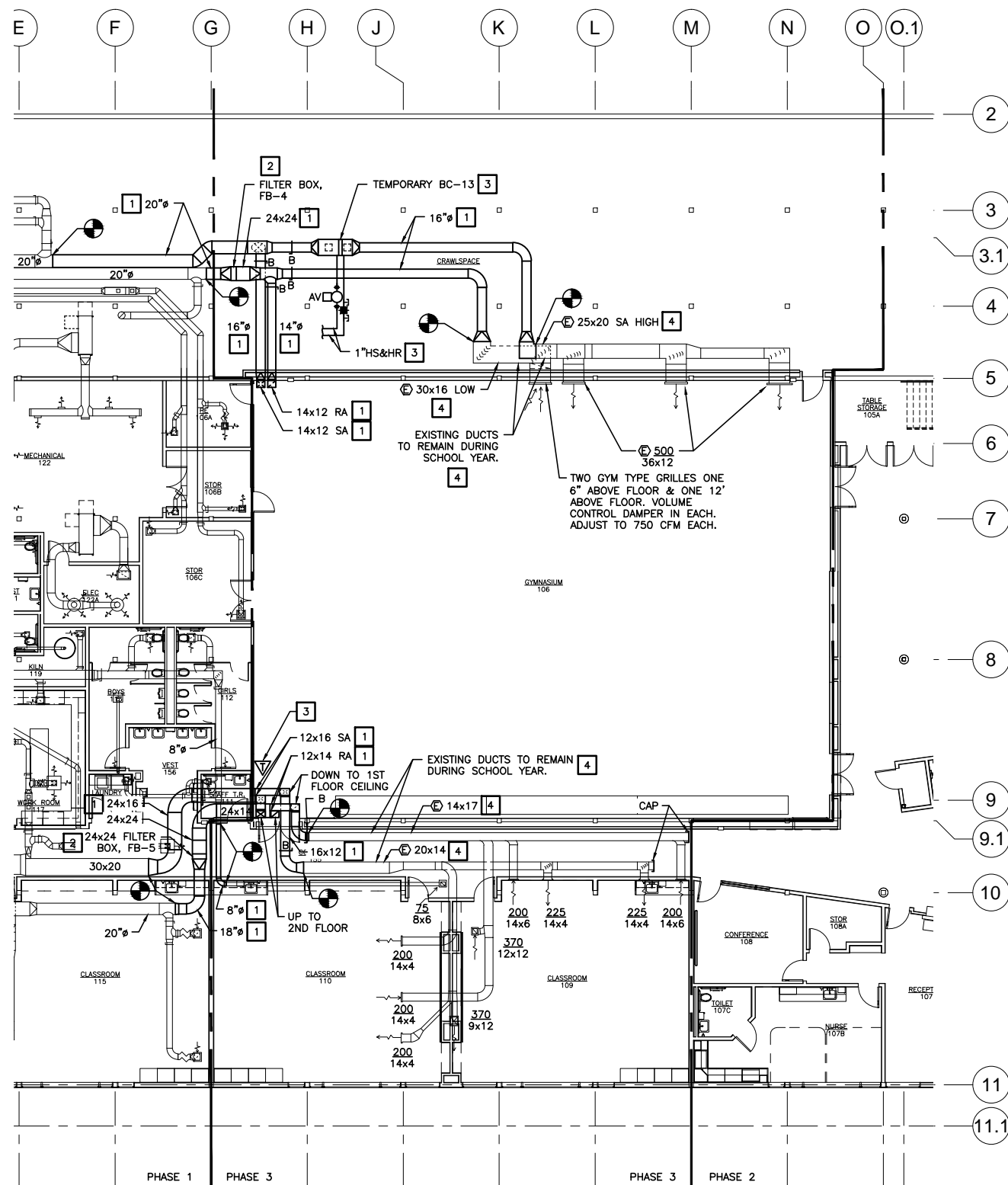
REVISIONS
▲ January 27, 2012
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SHEET TITLE
FIRST & SECOND
FLOOR PLANS -
TEMPORARY
VENTILATION
SYSTEM

DATE: December 21, 2011

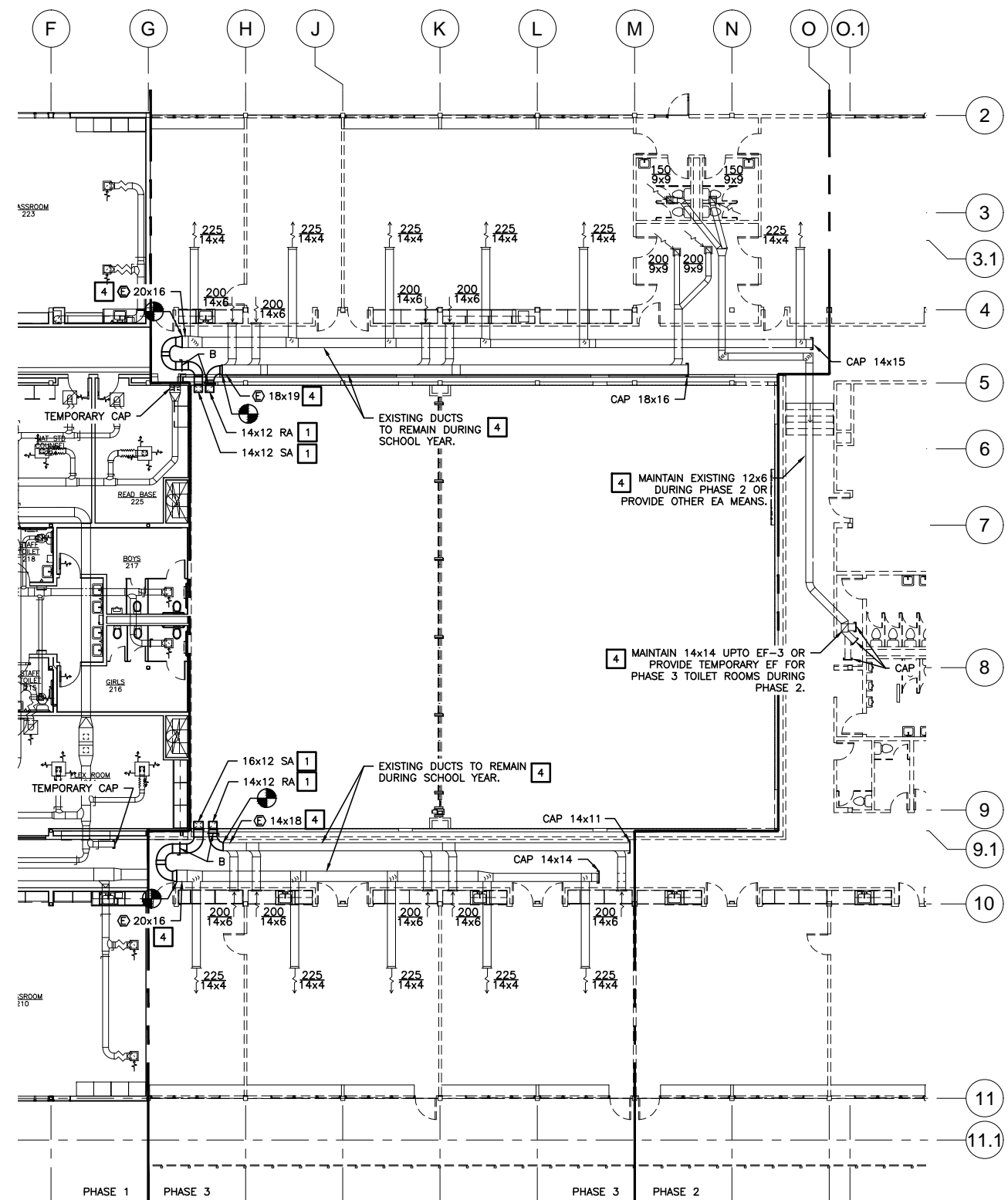
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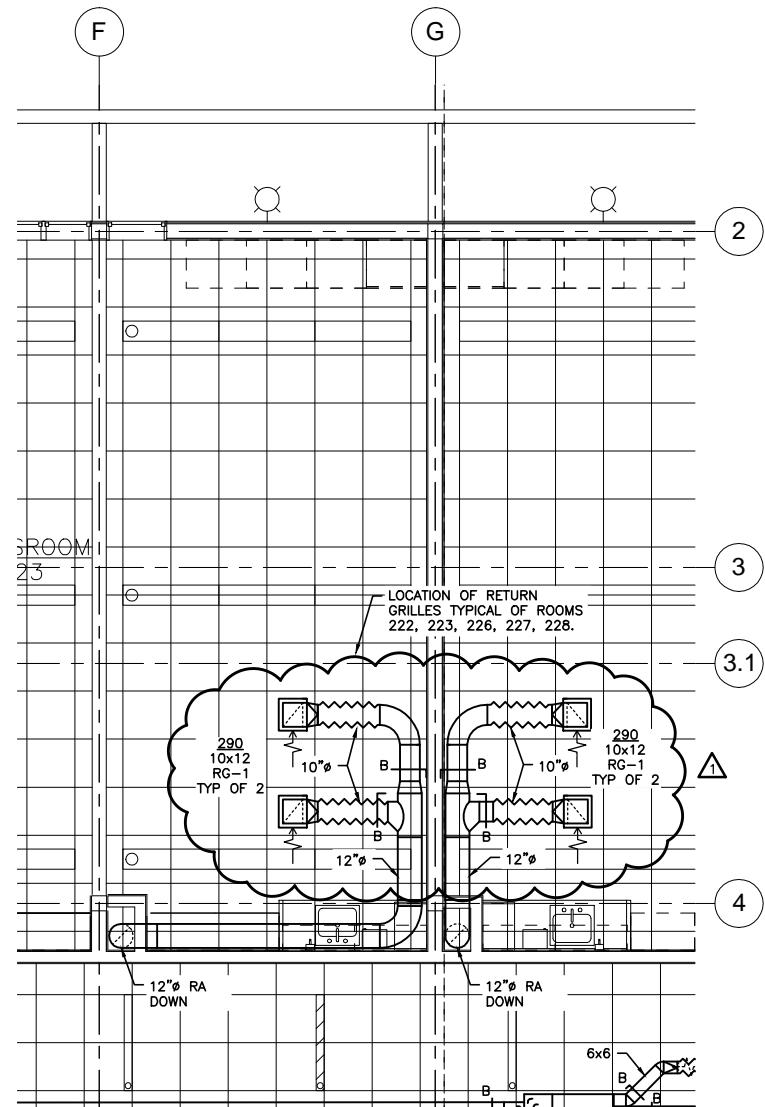
1 FIRST FLOOR PLAN - TEMPORARY VENTILATION SYSTEM SCALE: 0 5' 10' 20'

- CONSTRUCTION NOTES:**
- 1** INSTALL TEMPORARY VENTILATION SYSTEM TO PROVIDE VENTILATION AIR TO PHASE 3 OCCUPIED SPACES DURING PHASE 2 SCHOOL YEAR. REMOVE TEMPORARY SYSTEM INCLUDING ALL APPURTENANCES PRIOR TO COMPLETION OF PHASE 3.
 - 2** PROVIDE AND INSTALL TEMPORARY 24x24 VEE TYPE FILTER BOX (TEMPORARY FB-4 AND FB-5) IN TEMPORARY RETURN AIR DUCT SYSTEM. REMOVE PRIOR TO PHASE 3 COMPLETION.
 - 3** PROVIDE AND INSTALL TEMPORARY BOOSTER COIL (TEMP BC-13) IN TEMPORARY SUPPLY AIR DUCT SYSTEM SERVING THE GYMNASIUM. TEMP BC-13 SHALL BE 30x18 SIZED FOR 41.25 MBH (65F-90F AIR; 160F-140F WATER) AND 1500 CFM AT 0.10 MAXIMUM SP DROP. INSTALL 1-INCH TEMPORARY HEATING PIPING, VALVES, FLOWSETTER, AND MODULATING 2-WAY AUTOMATIC VALVE. CONNECT 1-INCH HS AND HR TEMPORARY PIPING TO PHASE 1 HEATING MAINS. SIZE AV AND SET FLOWSETTER FOR 4.5 GPM. LOCATE TEMPORARY THERMOSTAT IN GYMNASIUM 106, SET AT 68F TO CONTROL AUTOMATIC VALVE. REMOVE TEMPORARY SYSTEM PRIOR TO PHASE 3 COMPLETION.
 - 4** EXISTING DUCT SYSTEM TO BE USED TEMPORARILY DURING SCHOOL YEAR TO PROVIDE VENTILATION AIR TO PHASE 3 OCCUPIED SPACES. ADJUST EXISTING DIFFUSERS/GRILLES IN PHASE 3 AREA TO AIR VOLUMES SHOWN PRIOR TO SCHOOL YEAR. REMOVE ENTIRE EXISTING DUCT SYSTEM AND APPURTENANCES PRIOR TO PHASE 3 COMPLETION.

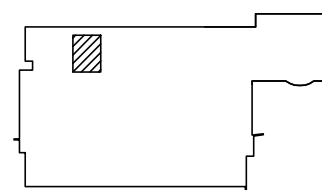


2 SECOND FLOOR PLAN - TEMPORARY VENTILATION SYSTEM SCALE: 0 5' 10' 20'

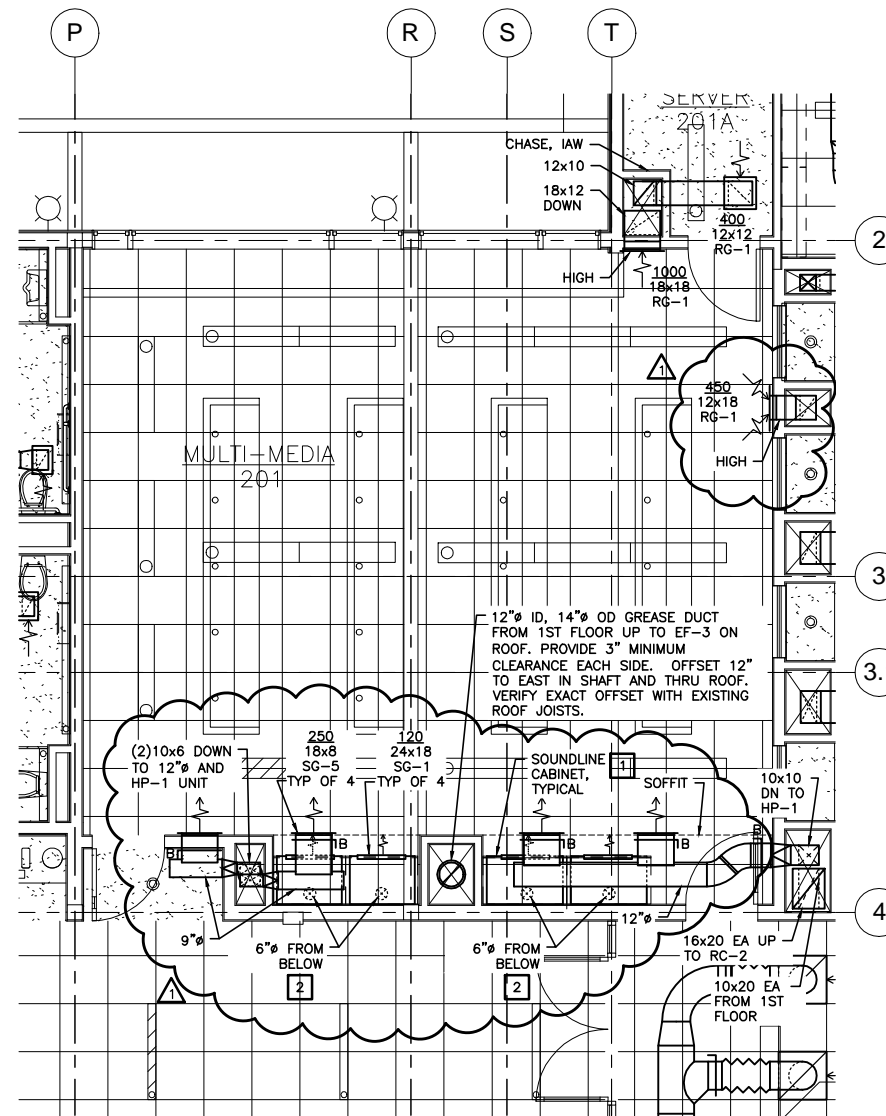
- SHEET NOTES:**
- 1.** INSTALL TEMPORARY VENTILATION SYSTEM TO SERVE PHASE 3 AREA OF BUILDING DURING SCHOOL YEAR. ADJUST AND BALANCE PHASE 1 AREA AND TEMPORARY PHASE 3 AREA VENTILATION SYSTEM TO AIR VOLUME SHOWN ON MD701 AND M300 DRAWINGS. ADJUSTMENT TO BE COMPLETE PRIOR TO SCHOOL YEAR.



1 NORTH CLASSROOM RA GRILLE LOCATIONS
TYPICAL OF CLASSROOMS 222,223,226,227,228 SCALE: 0 2' 4' 8'



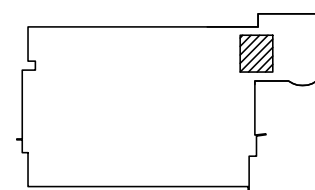
KEY PLAN



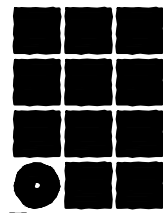
CONSTRUCTION NOTES:

- 1 COMPLETELY COVER INSIDE OF CABINET WITH 1/2-INCH SOUND ATTENUATION LINING. ALL CABINET PLENUM INTERIOR WALLS, FLOORS, CEILING, AND SUPPORTS SHALL BE COVERED WITH LINING.
- 2 PROVIDE 22 DEGREE ELBOW ON 6-INCH DUCT DIRECTED TOWARD BACK OF CABINET.

2 MULTI-MEDIA 201 DUCTWORK SCALE: 0 2' 4' 8'



KEY PLAN

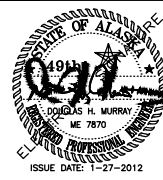


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City and Borough of Juneau - Juneau School District
**Auke Bay Elementary
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CBJ Project No. E12-042
Juneau, Alaska

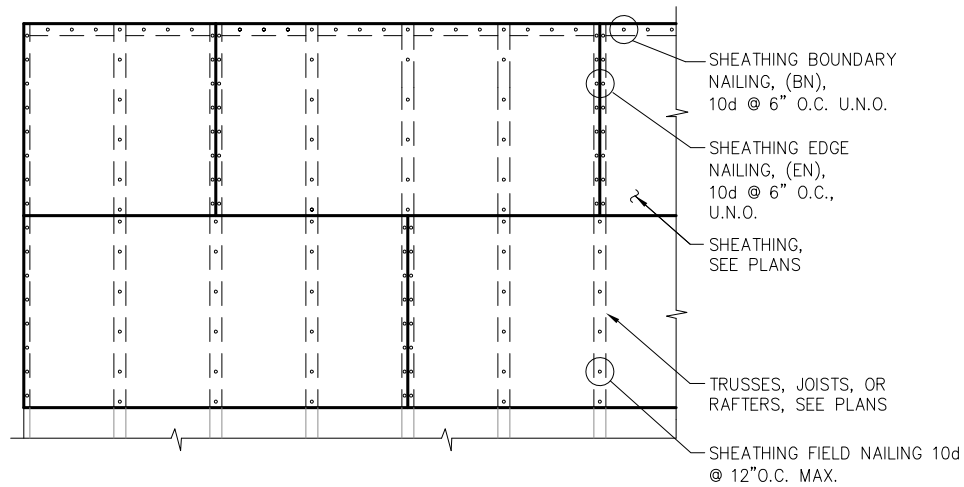
ADDENDUM NO. 1

- REVISIONS
- ▲ January 27, 2012
 - ▲
 - ▲

SHEET TITLE
▲ DUCTWORK -
MULTIMEDIA 201 -
NORTH CLASSROOMS

DATE: December 21, 2011
FILE: 10036

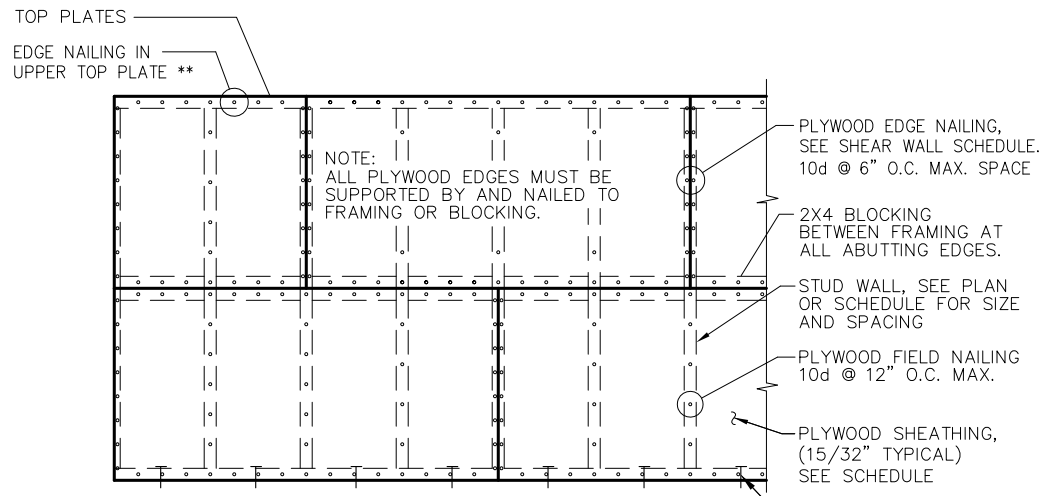
▲ **MSK-1**



PLAN

- NOTES:
1. STAGGER SHEATHING JOINTS A MINIMUM OF TWO JOIST SPACES
 2. NAILS AT ABUTTING SHEATHING EDGES MUST PENETRATE THE SAME PIECE OF FRAMING OR BLOCKING.

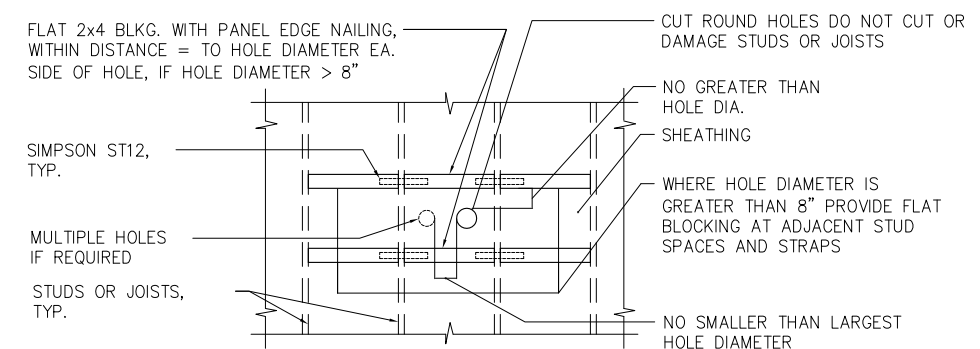
A TYPICAL PLYWOOD DIAPHRAGM FOR FLOOR OR ROOF DETAIL



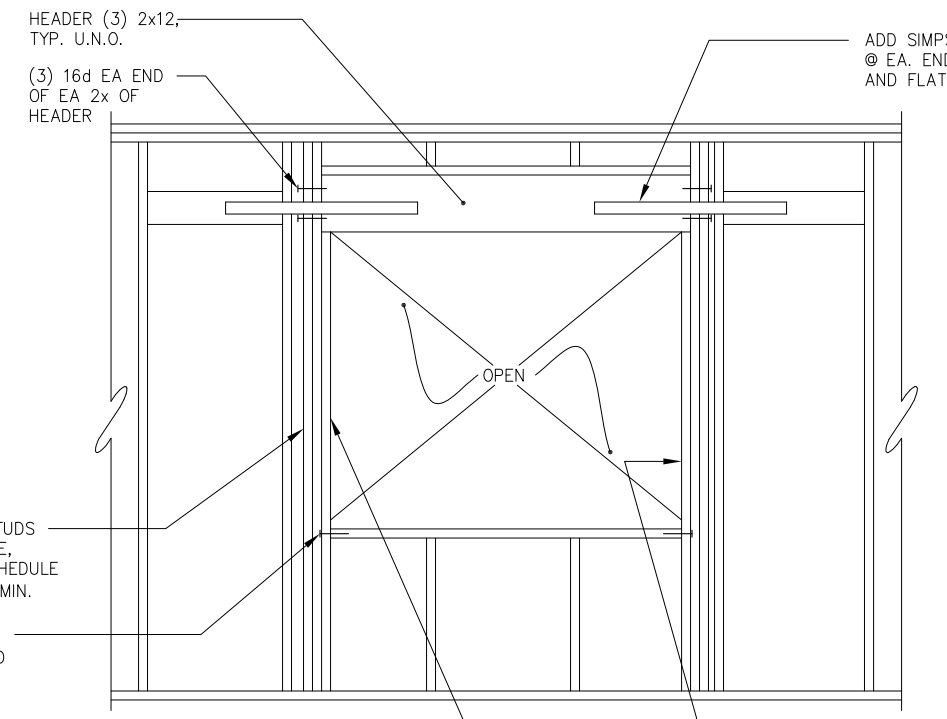
ELEVATION

- NOTES:
1. PLYWOOD IS SHOWN HORIZONTAL, IT MAY ALSO BE POSITIONED VERTICAL.
 2. STAGGER PLYWOOD JOINTS A MINIMUM OF TWO STUD SPACES.
 3. NAILS AT ABUTTING PLYWOOD EDGES MUST PENETRATE THE SAME PIECE OF FRAMING OR BLOCKING.
 4. SEE TYPICAL WALL ELEVATIONS AND PLANS FOR HOLD DOWNS, STRAPS AND ADDITIONAL BLOCKING.

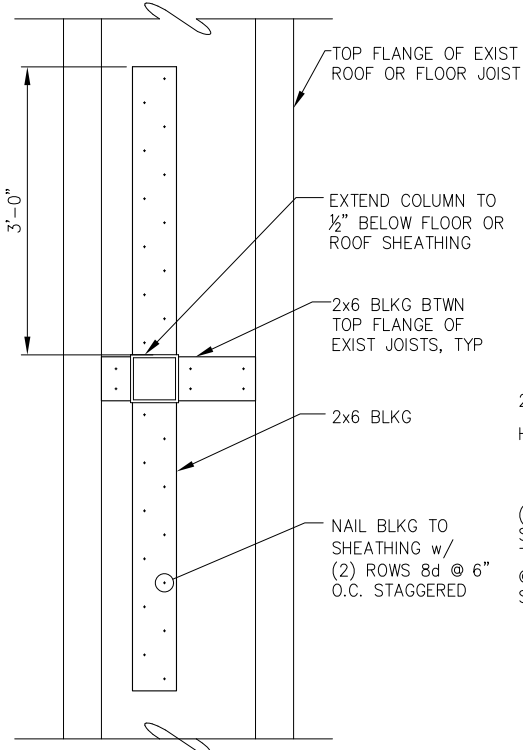
B TYPICAL SHEAR WALL DETAIL



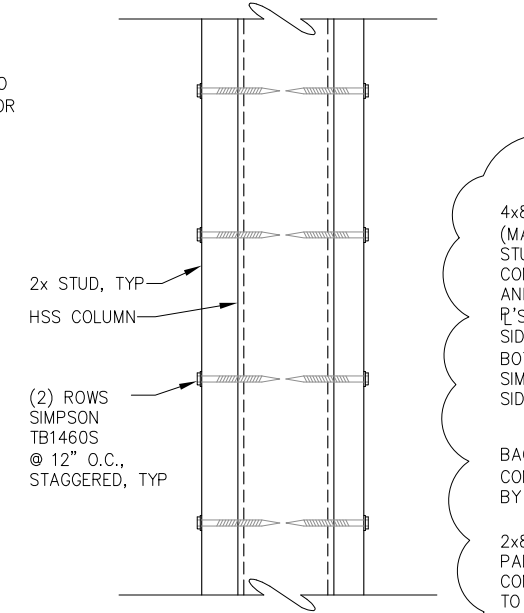
C TYPICAL SHEAR WALL AND DIAPHRAGM PENETRATION DETAIL



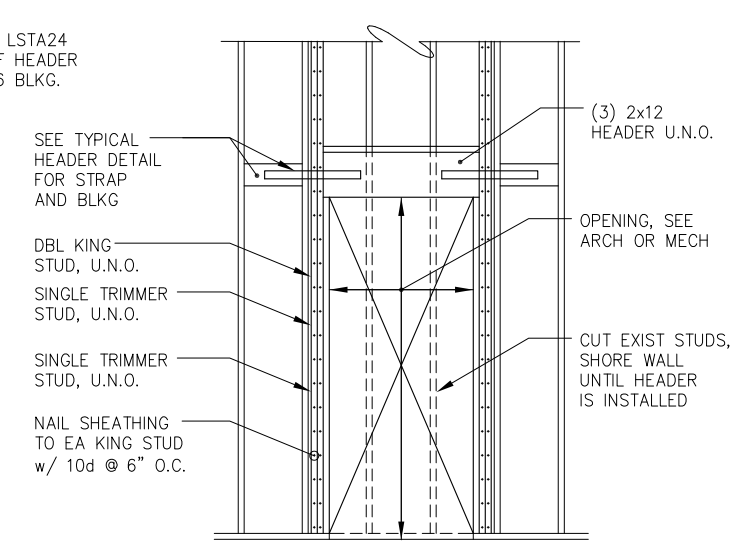
D TYPICAL HEADER DETAIL



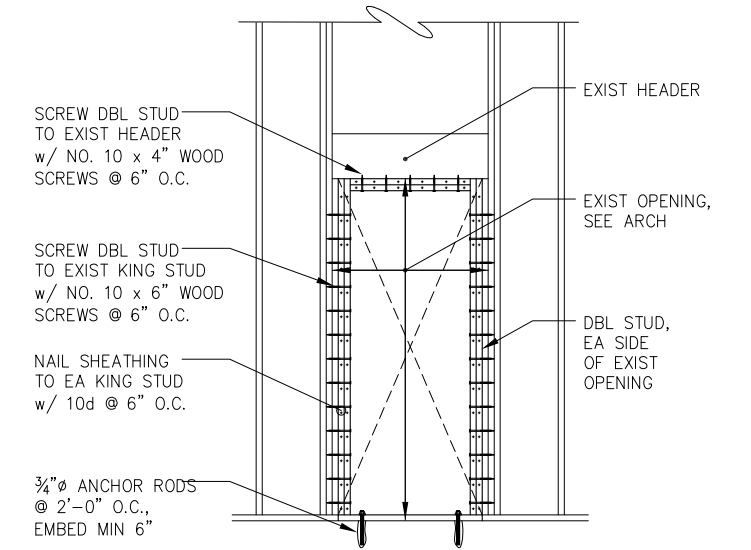
E TOP OF COLUMN BRACE DETAIL



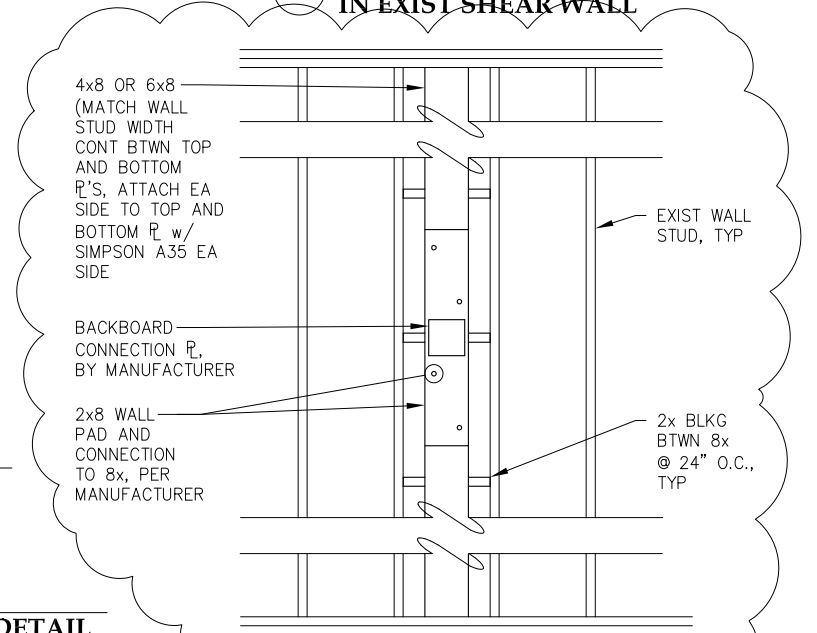
F TYPICAL STUD TO HSS COLUMN CONNECTION DETAIL



G TYPICAL OPENING IN EXIST SHEAR WALL

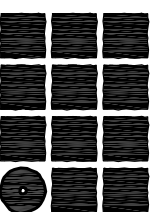


H TYPICAL INFILL IN EXIST SHEAR WALL



J TYPICAL BACKBOARD SUPPORT DETAIL

NOTE: 5 LOCATIONS PER BACKBOARD



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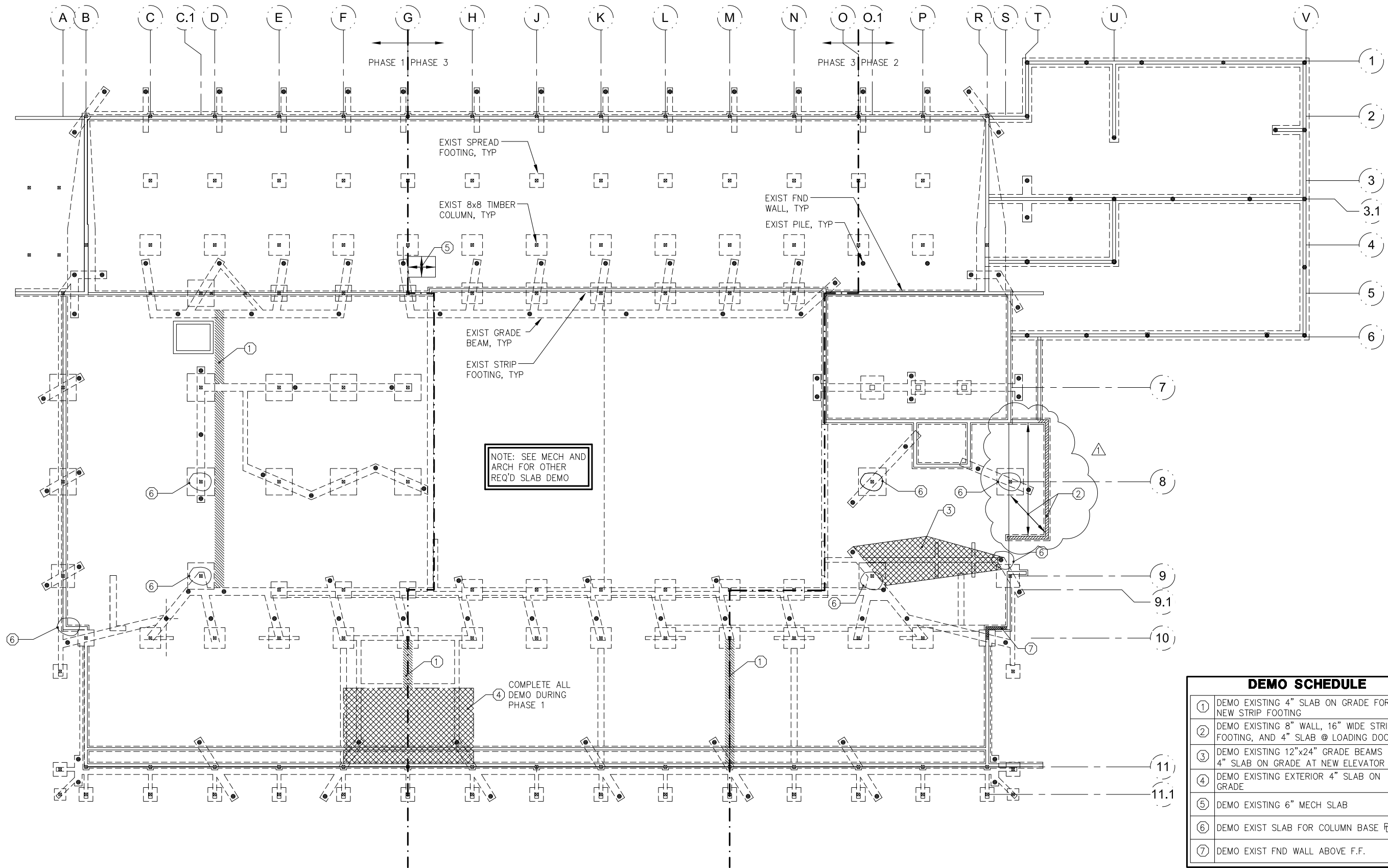
City and Borough of Juneau - Juneau School District
Auke Bay Elementary School Renovation
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Juneau, Alaska

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▲	January 27, 2012
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SHEET TITLE
TYPICAL TIMBER DETAILS

DATE: December 21, 2011
FILE: 102042

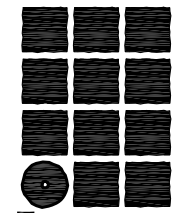
S002



NOTE: SEE MECH AND ARCH FOR OTHER REQ'D SLAB DEMO

COMPLETE ALL DEMO DURING PHASE 1

DEMO SCHEDULE	
①	DEMO EXISTING 4" SLAB ON GRADE FOR NEW STRIP FOOTING
②	DEMO EXISTING 8" WALL, 16" WIDE STRIP FOOTING, AND 4" SLAB @ LOADING DOCK
③	DEMO EXISTING 12"x24" GRADE BEAMS AND 4" SLAB ON GRADE AT NEW ELEVATOR PIT
④	DEMO EXISTING EXTERIOR 4" SLAB ON GRADE
⑤	DEMO EXISTING 6" MECH SLAB
⑥	DEMO EXIST SLAB FOR COLUMN BASE R
⑦	DEMO EXIST FND WALL ABOVE F.F.



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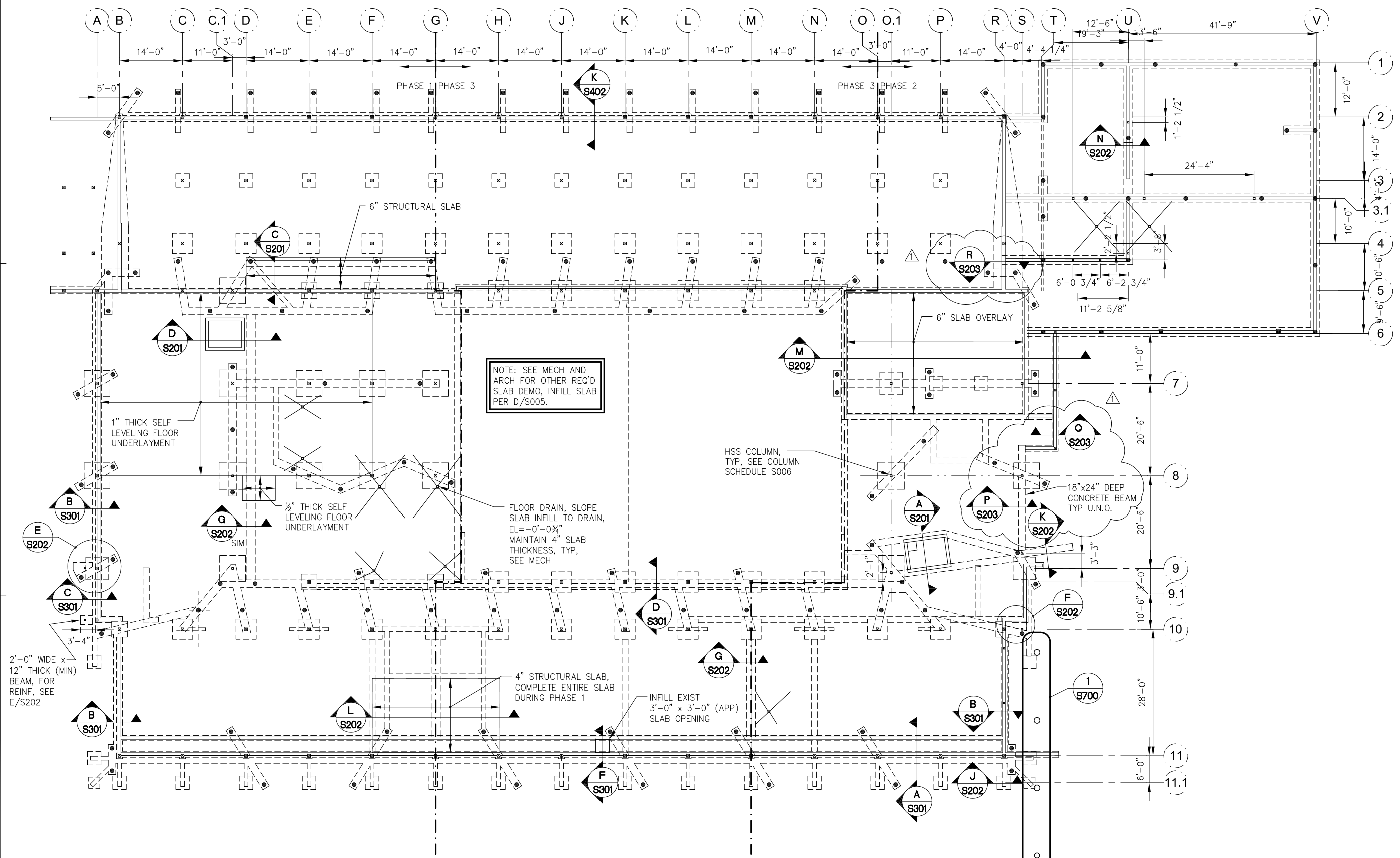
SHEET TITLE
**DEMO PLAN
FOUNDATION**

DATE: December 21, 2011
FILE: 102042

SD100

1 FOUNDATION AND SLAB DEMO PLAN
SCALE: 0 5' 10' 20'





NOTE: SEE MECH AND ARCH FOR OTHER REQ'D SLAB DEMO, INFILL SLAB PER D/S005.

FLOOR DRAIN, SLOPE SLAB INFILL TO DRAIN, EL=-0'-0 3/4" MAINTAIN 4" SLAB THICKNESS, TYP, SEE MECH

2'-0" WIDE x 12" THICK (MIN) BEAM, FOR REINF, SEE E/S202

HSS COLUMN, TYP. SEE COLUMN SCHEDULE S006

4" STRUCTURAL SLAB, COMPLETE ENTIRE SLAB DURING PHASE 1

INFILL EXIST 3'-0" x 3'-0" (APP) SLAB OPENING

18"x24" DEEP CONCRETE BEAM TYP U.N.O.

1 FOUNDATION AND SLAB PLAN SCALE: 0 5' 10' 20'

NOTES:
1) FIELD VERIFY ALL DIMENSIONS

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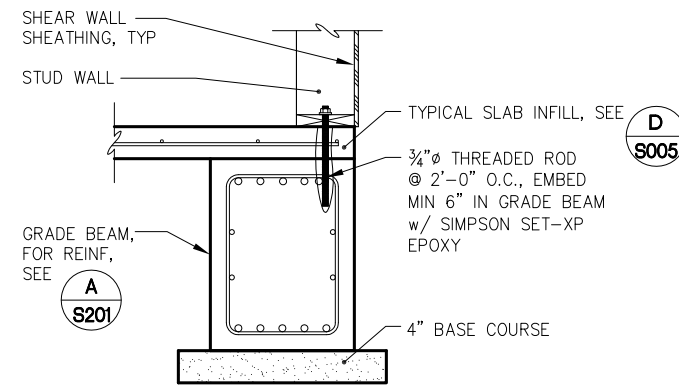
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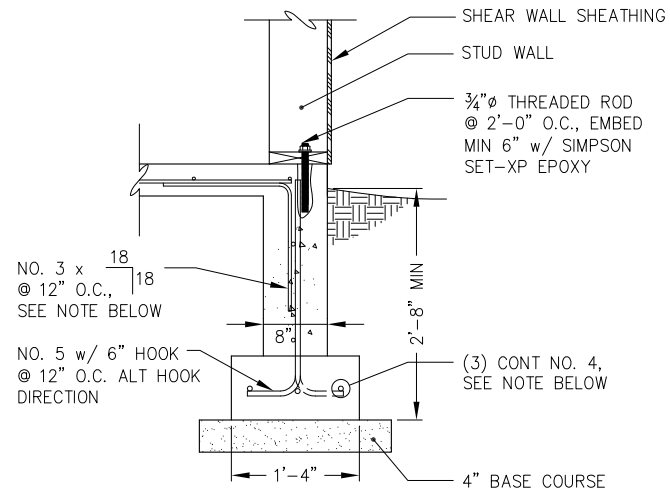
SHEET TITLE
FOUNDATION PLAN

DATE: December 21, 2011
FILE: 102042

S200

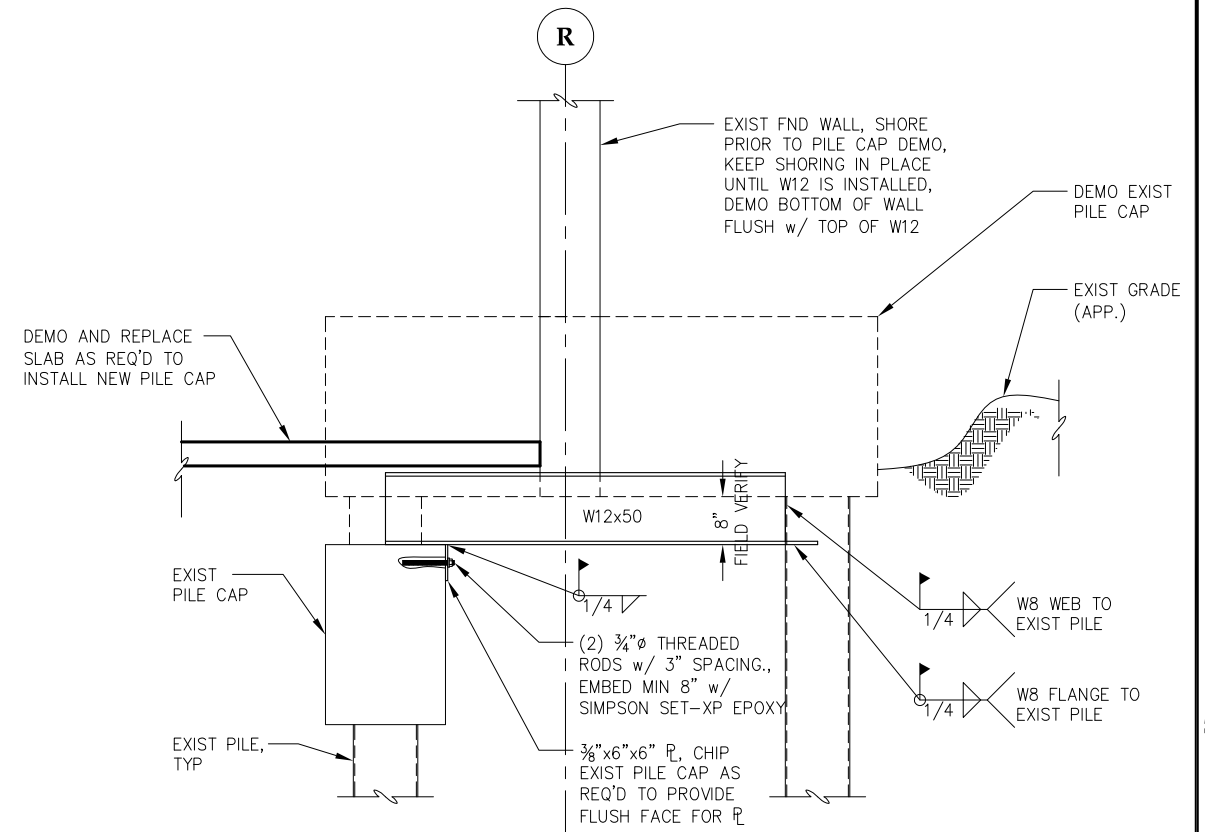


P SECTION AT EXTERIOR WALL SCALE: 0 6" 1' 2'

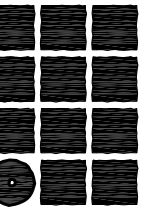


Q SECTION AT EXTERIOR WALL SCALE: 0 6" 1' 2'

NOTE: EMBED HORIZ REBAR 8" w/ SIMPSON SET-XP EPOXY IN GRADE BEAM OR EXIST FOUNDATION EA END



R SECTION AT EXIST PILE CAP SCALE: 0 6" 1' 2'



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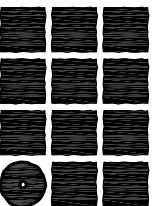
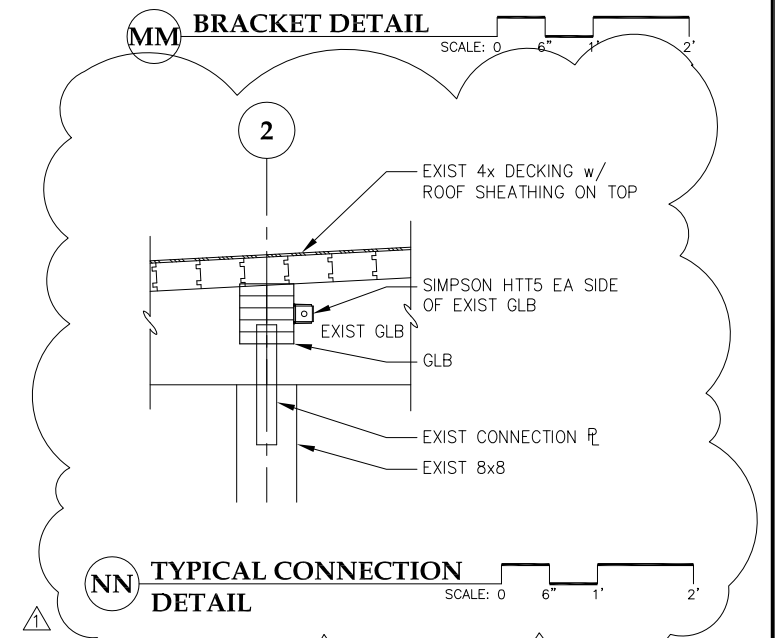
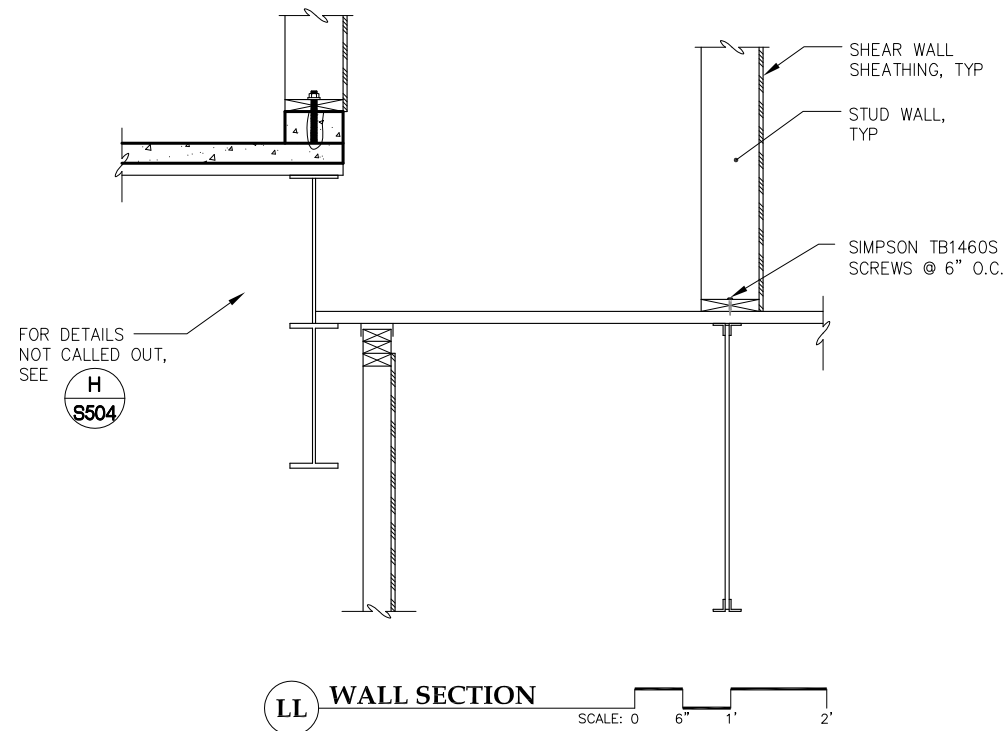
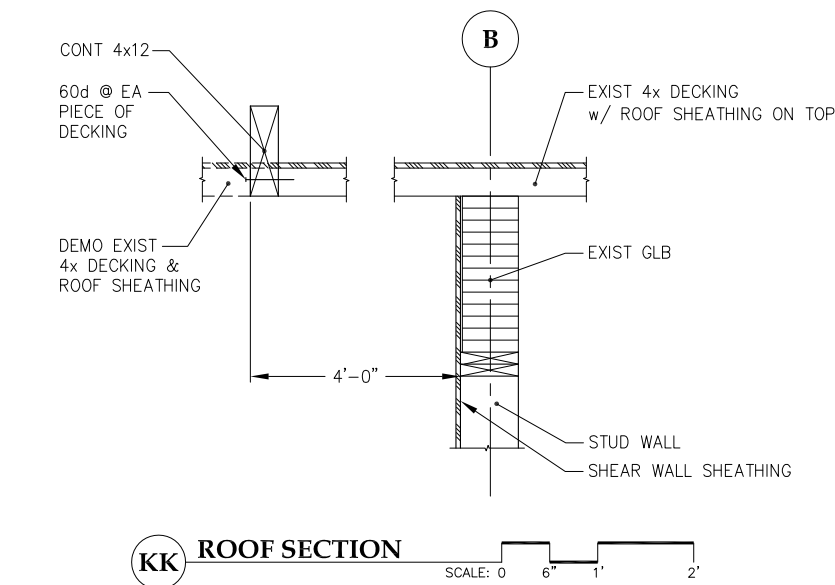
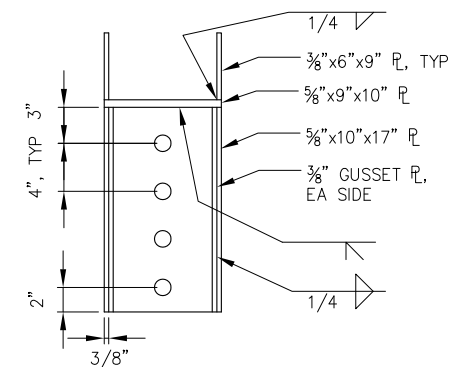
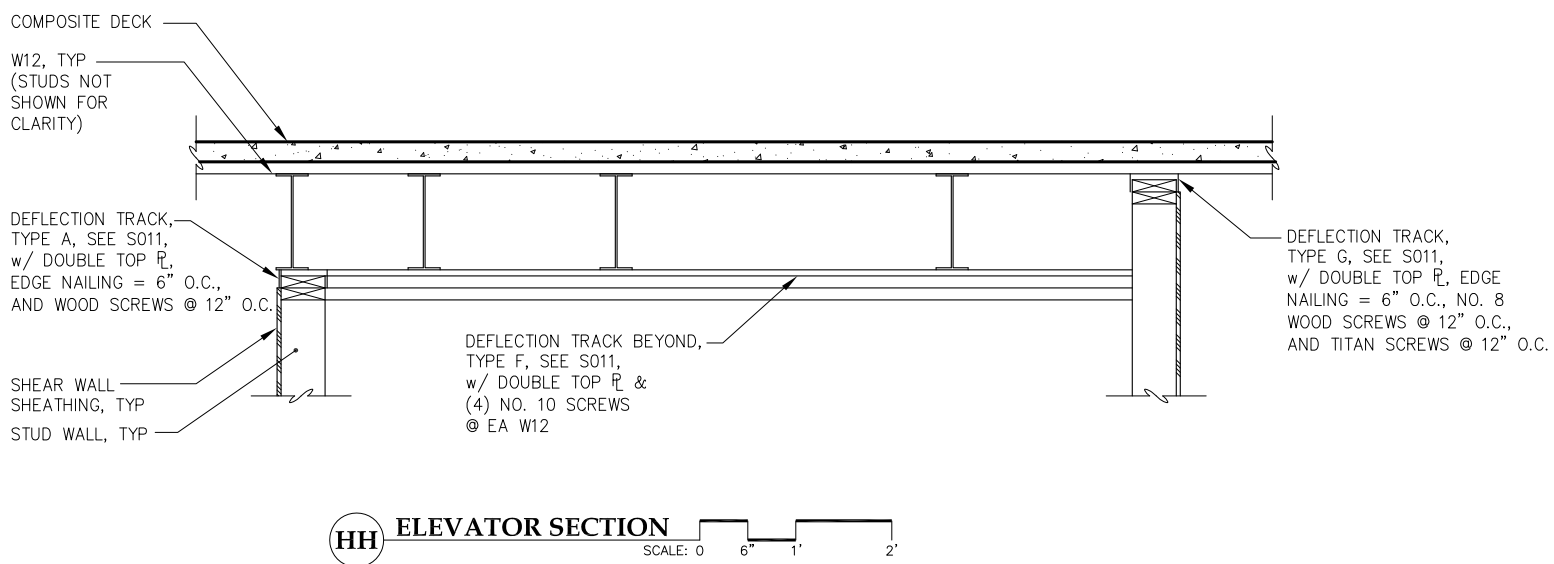
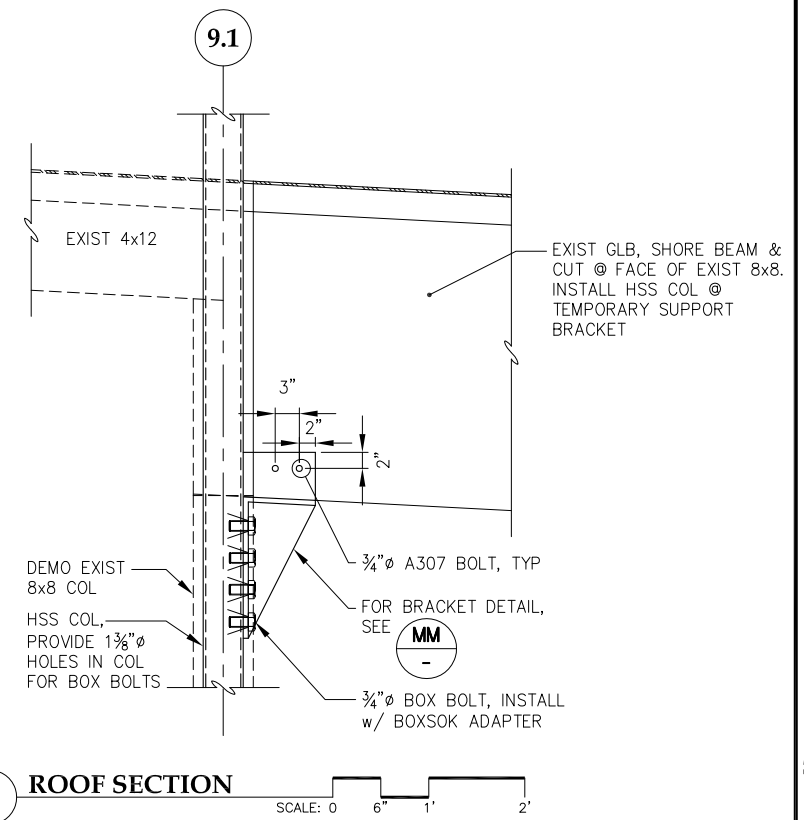
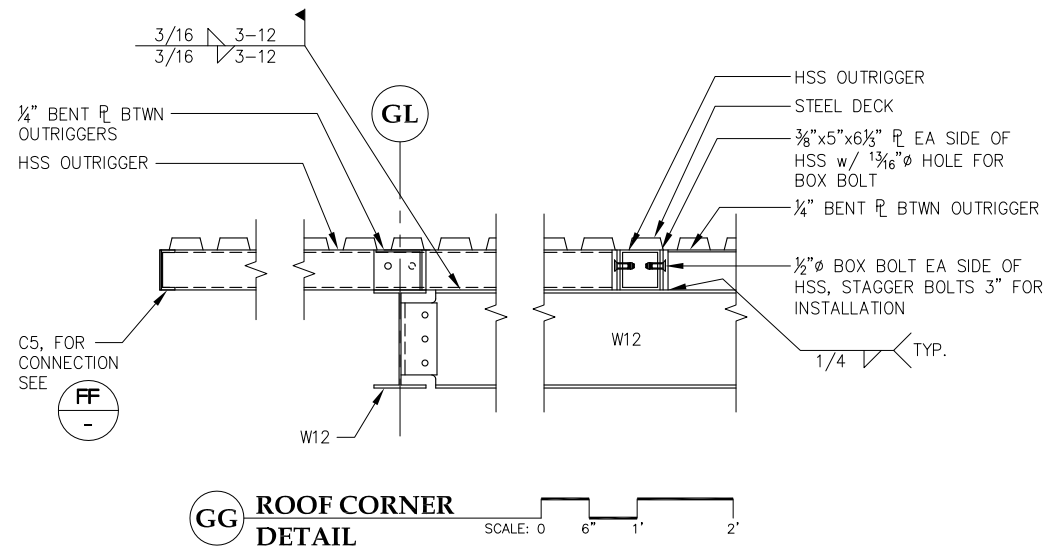
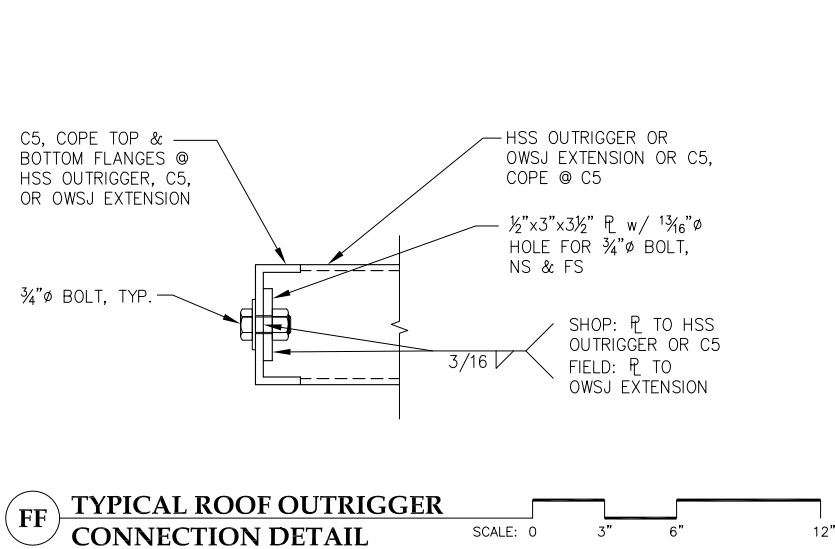
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SHEET TITLE
**FOUNDATION
DETAILS**

DATE: December 21, 2011
FILE: 102042

S203

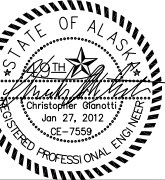


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SHEET TITLE
**ROOF FRAMING
DETAILS**

DATE: December 21, 2011
FILE: 102042

S507