

**Meridian Airport Authority, Dean Aircraft Services
Hangar Additions & Alterations**

ADDENDUM NO. 2

TO: All Bidders on the Above Referenced Product
FROM: Davis Purdy Architects, PLLC
DATE: March 12, 2020
SUBJECT: **ADDENDUM NO. 2**

ACKNOWLEDGEMENT OF RECEIPT OF ADDENDUM IS REQUIRED ON BID FORM.

Clarifications and revisions to Contract Documents for the referenced project are as follows:

1. CLARIFICATION: The following items reference and pertain to **AIA document A101 – 2017 Exhibit A Insurance and Bonds** and shall supplement such document. A sample A101 – 2017 Exhibit A is attached.

a. ARTICLE A.3 Contractor's Insurance and Bonds

- i. **A.3.2.2.1 Commercial General Liability** shall have the following limits not less than: Five Million Dollars (\$5,000,000) for each occurrence, Five Million Dollars (\$5,000,000) general aggregate, and Five Million Dollars (\$5,000,000) aggregate for products-completed operations hazard, providing coverage for claims including
 - 1. Damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
 - 2. Personal injury and advertising injury;
 - 3. Damages because of physical damage to, or destruction of, tangible property, including the loss of use of such property;
 - 4. Bodily injury or property damage arising out of completed operations; and

5. The Contractor's indemnity obligations under Section 3.18 of the General Conditions.
- ii. **A.3.2.3 Automobile Liability** covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than Five Million Dollars (\$5,000,000) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.
 - iii. **A.3.2.6 Employers' Liability** shall have the following limits not less than: One Million Dollars (\$1,000,000) for each accident, One Million Dollars (\$1,000,000) for each employee, and One Million Dollars (\$1,000,000) policy limit.
 - iv. **A.3.2.8** shall have policy limits not less than: Five Million Dollars (\$5,000,000) per claim and Five Million Dollars (\$5,000,000) in the aggregate.
 - v. **A.3.2.9** shall have policy limits not less than: Five Million Dollars (\$5,000,000) per claim and Five Million Dollars (\$5,000,000) in the aggregate.
 - vi. **A.3.2.10** shall have policy limits not less than: Five Million Dollars (\$5,000,000) per claim and Five Million Dollars (\$5,000,000) in the aggregate.
 - vii. **A.3.2.12** shall have policy limits not less than: Five Million Dollars (\$5,000,000) per claim and Five Million Dollars (\$5,000,000) in the aggregate.
- b. A.3.3.2** The following types of insurance shall be required by the Contractor:
- i. **A.3.3.2.1** as described in A101 – 2017 Exhibit A
 - ii. **A.3.3.2.4** as described in A101 – 2017 Exhibit A
 - iii. **A.3.3.2.5** as described in A101 – 2017 Exhibit A
 - iv. **A.3.3.2.6** - Owners and Contractors Protective (OCP) Liability Coverage with a Five Million Dollars (\$5,000,000).
- c. A.3.4 Performance Bond and Payment Bond** – Refer to Specification section 00 22 13 Supplementary Instructions to Bidders, 1.7 Article 7 – Performance Bond and Payment Bond, A, 7.1 – Bond Requirements.

2. **DELETE:** Delete ALL **Factory Mutual (FM) Global** requirements. There are no FM Global requirements for this project.
3. **CLARIFICATION:** Awarded bidder shall provide Builder's Risk policy that includes "Business Interruption".
4. **CLARIFICATION:** Davis Bacon and DBE requirements DO NOT APPLY to this project.
5. **ADD:** Add Geotechnical Investigation dated 10/21/20 prepared by Engineering Plus, Inc to the bid documents. Geotechnical Investigation is attached.

GENERAL ARCHITECTURAL CLARIFICATIONS

6. **CLARIFICATION:** Alternate No. 1 and Alternate No. 2 independent alternates from one another.
7. **DELETE:** Delete **cabinets & sinks** in all crew lounges as shown on Alternate No. 2 plans.
8. **CLARIFICATION:** Alternate No. 4 only pertains to the existing Hangar Bay floor.
9. **ADD:** Add **perforated metal panel screen wall** around South equipment yard. See Architectural sheet A-422 for similar details. See Structural sheet S-500 for post footing details.
10. **CLARIFICATION:** The applicable building code for this project is IBC 2012 as indicated on Architectural sheet AG-100.
11. **CHANGE:** Architectural sheet **A-131 LEVEL 03 OFFICE FLOOR PLAN**
ALTERNATE NO. 3 indicates an 8' Plywood wall dividing Future Expansion-2 (303) and Corridor 304. Change to be wall type A20c0.

- 12. CLARIFICATION:** Alternate 8 – provide MP4 in lieu of MP1 for field panel. MP4 is also referred to as a “ribbed metal panel”.
- 13. DELETE:** Delete all **baby changing stations**.
- 14. DELETE:** Delete all **cabinetry** in New Machine Shop 106.
- 15. CHANGE:** All cabinet doors shall open into large portion of New Parts 117 instead of opening towards door 1-117a.
- 16. CLARIFICATION:** 3rd floor **Window 12** located in SW corner on Architectural sheets A-130 and 131 is labeled incorrectly. It is actually **Window 11** as shown on Architectural sheet A-902. Architectural sheet A-902 indicates Window 11 as being located in 3rd Floor Conference Room.
- 17. DELETE:** Delete 3rd floor **Window 11** located in SW corner of 3rd floor. Architectural sheet A-902 indicates Window 11 as being located in 3rd Floor Conference Room.
- 18. CLARIFICATION:** 3rd floor **Window 14** located in SE corner on Architectural sheets A-130 and 131 is labeled incorrectly. It is actually **Window 9** as shown on Architectural sheet A-902.
- 19. CLARIFICATION:** 3rd floor **Window 9** located in Stair No. 10n is labeled incorrectly. It is actually **Window 16** as shown on Architectural sheet A-903.
- 20. DELETE:** Delete **door 237** on Architectural sheet A-910.
- 21. DELETE:** Delete **door 238** on Architectural sheet A-111. Door is located in NE corner of existing hangar.
- 22. CLARIFICATION:** All interior partitions shall have sound attenuation batts.
- 23. CHANGE:** Change all solid surface countertops to be 1/2” thick instead of 3/4” thick.

- 24. CLARIFICATION:** Provide 7/8" steel hat channels on 5/8" glass-mat sheathing for MP1 on the East and West elevations. Contractor shall attach MP1 through 5/8" glass-mat sheathing directly to metal studs in all other locations.

GENERAL CIVIL CLARIFICATIONS

- 25. DELETE:** Delete **handrails** for concrete steps on Civil sheet C-201.

- 26. CLARIFICATION:** The following is note applies to Staking and Testing:

- a. It shall be the owner's responsibility to stakeout the construction, establish lines and grade, temporary benchmarks, centerlines and reference points for work and verify all dimensions relating to interconnection with existing features. Contractor shall report any inconsistencies in the proposed work to the Project Architect before commencing work.
- b. Owner shall be responsible for all quality control testing related to concrete, soil and compaction testing.

SPECIFICATIONS

- 27. CLARIFICATION:** Specification section **00 21 13 – Instructions to Bidders** dated 2/18/20 indicates that a copy of **AIA Document A701, "Instructions to Bidders"** is bound in the Project Manual. A copy of AIA Document A701 2018 was not originally included. A sample copy of AIA Document A701 2018 is attached.

- 28. ADD:** Add **Allowance No. 7: Dimensional Letters** to Specification section **00 43 21 – Allowance Form** dated 2/18/20. Allowance No. 7 is as follows:

- a. Include in the Bid amount of Five Thousand Dollars (\$5,000.00) for dimensional letters as described in Specification Section 10 14 19.

- 29. CLARIFICATION:** Specification section **00 43 22 – Unit Prices** dated 2/18/20 only pertains to Aircraft Concrete Apron as shown on Civil sheet C-104 dated 2/14/20.

- 30. CLARIFICATION:** Specification section **00 43 22 – Unit Prices, 1.3 Unit Prices, A. Unit-Price No. 1: Removal of Obstructions** refers to required material to be removed for HDPE Drainage Pipe Construction.
- 31. CLARIFICATION:** **Liquidated Damages** are referenced on the Bid Form and in Specification Section 01 29 00 – Payment Procedures with no amount indicated. Liquidated Damages shall be in the amount of **Five Hundred Dollars (\$500.00) per day** for every day beyond the allotted project as described in Specification Section 00 44 13 – Bid Form dated 2/28/20.
- 32. CLARIFICATION:** Specification section **06 41 16 – Plastic Laminate-Faced Architectural Cabinets** indicates requirements for AWI/QCP certifications. Waive all AWI/QCP certification requirements.
- 33. ADD:** Add Specification section **07 14 13 – Hot Fluid-Applied Rubberized Asphalt Waterproofing** dated 3/12/20. Specification section 07 14 13 is attached.
- 34. CLARIFICATION:** Specification section **07 41 13.16 – Standing Seam Metal Roof, 2.5, Fabrication, B** indicates that metal panels may be fabricated on site. All roof metal panels **MUST** be fabricated to be continuous and full length of roof with **NO EXCEPTIONS**. On-site fabrication may be required to achieve full length panels.
- 35. DELETE:** Delete specification section **07 42 13 .53 – Metal Soffit Panels** dated 2/18/20.
- 36. CHANGE:** Specification section **08 11 13 – Hollow Metal Doors and Frames** indicates construction to be full profile welded. Frame construction needs to change to knock down construction in lieu of welded profiles.
- 37. ADD:** Add the following to specification section **08 34 16 – Steel Sliding Hangar Doors, Part 2 – Products, 2.1 Manufacturers:** Add Fleming Steel Company to list of comparable manufacturers.
- 38. CLARIFICATION:** Specification section **09 51 23 – Acoustical Tile Ceilings** indicates the following acoustical ceiling types:

- a. Type 1
- b. Type 2
- c. Wet Space Ceilings

All ceiling types are indicated on Architectural sheet A-920 dated 2/28/20.

39. DELETE: Delete specification section **09 54 23 Linear Metal Ceilings** dated 2/18/20.

40. ADD: Add Specification section **09 54 26 – Linear Wood Ceilings** dated 3/12/20.
Specification section 09 54 26 is attached.

41. ADD: Add Specification section **09 54 45 – Exterior Linear Ceiling System** dated 3/12/20. Specification section 09 54 26 is attached.

42. ADD: Add Specification section **09 85 00 – Acoustical Baffles** dated 3/12/20.
Specification section 09 85 00 is attached.

43. DELETE: Delete specification section **11 31 00 – Residential Appliances** dated 2/18/20. Appliances referred to in specifications shall be provided by the owner.

44. ADD: Add the following note to Specification section **13 34 10 – Pre-Engineered Metal Building Systems, 2.7 Thermal Insulation, A:**

- a. Wall and Roof insulation shall have a minimum R-Value of R-19

45. REPLACE: Replace specification section **21 13 00 Fire Suppression Systems** dated 2/18/20 with specification section 21 13 00 Fire Suppression Systems dated 3/12/20.

46. CLARIFICATION: Add the following note to specification section **21 31 13 Electric-drive, Centrifugal Fire Pumps, 2.4, G** dated 2/18/20.

- a. General Note: Fire Pump controller to be equal to Metron Electric Fire Pump Controller, Model Number MP300-124-480C sized appropriately for fire pump and per fire engineers stamped calculations.

DRAWINGS

47. REPLACE: Replace the Architectural sheet A-622 MILLWORK dated 2/28/20 with Architectural sheet **A-622** dated 3/12/20. Sheet A-622 is attached.

48. ADD: Add the following Architectural sheets dated 3/12/20:

- a. **AD2-112**
- b. **AD2-403**
- c. **A-810** UL DESIGNATIONS
- d. **A-811** UL DESIGNATIONS.

Sheets AD2-112, AD2-403, A-810, and A-811 are attached.

49. REPLACE: Replace the following Civil sheets dated 2/14/20 with the same sheets dated 3/12/20:

- a. **C-100** PROJECT SAFETY PLAN
- b. **C-103** DEMOLITION PLAN
- c. **C-104** SITE PLAN
- d. **C-105** GRADING AND DRAINAGE PLAN
- e. **C-106** UTILITY PLAN
- f. **C-107** JOINT LAYOUT PLAN

Sheets C-100, C-103, C-104, C-105, C-106, and C-107 are attached.

50. DELETE: Delete the following Structural sheets:

- a. **S-105** FOUNDATION FRAMING PLAN – OFFICE ADDITION, replace with S-105R
- b. **S-106** SECOND FLOOR FRAMING PLAN – OFFICE ADDITION, replace with S-106R
- c. **S-107** THIRD FLOOR FRAMING PLAN – OFFICE ADDITION, replace with S-107R
- d. **S-108** ROOF FRAMING PLAN – OFFICE ADDITION, replace with S-108R

51. ADD: Add the following Structural sheets dated 3/12/20:

- a. **S-105R** FOUNDATION FRAMING PLAN – OFFICE ADDITION
- b. **S-106R** SECOND FLOOR FRAMING PLAN – OFFICE ADDITION
- c. **S-107R** THIRD FLOOR FRAMING PLAN – OFFICE ADDITION
- d. **S-108R** ROOF FRAMING PLAN – OFFICE ADDITION.

Sheets S-105R, S-106R, S-107R, and S-108R are attached.

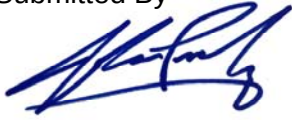
52. REPLACE: Replace the following Plumbing and Fire Protection sheets dated 2/14/20 with the same sheets dated 3/12/20:

- a. **P-102** 1ST FLR PLAN – OFFICE – PLBG SUPPLY
 - i. Add the following note to P-102: Provide and install pressure reducing valve in domestic water main above ceiling to Zurn ZW209. Install per manufacturers recommendations with bypass and shutoff valves.
- b. **P-103** 1ST FLR PLAN – HANGAR – PLBG SANITARY
- c. **P-104** 1ST FLR PLAN – HANGAR – PLBG SUPPLY
- d. **P-105** 2ND FLR PLAN – OFFICE – PLUMBING – BASE BID
- e. **P-108** UPPER LEVEL PLAN – HANGAR PLUMBING
- f. **P-401** PLUMBING SCHEDULES
- g. **FP-100** 1ST FLOOR PLAN NEW ADDITION FIRE PROTECTION “BASE BID”
- h. **FP-101** 1ST FLOOR PLAN EXISTING BUILDING FIRE PROTECTION “BASE BID”
- i. **FP-102** 2ND FLOOR PLAN FIRE PROTECTION “BASE BID” & ALT. 1
- j. **FP-103** 2ND FLOOR PLAN FIRE PROTECTION ALT. 2
- k. **FP-104** 3RD FLOOR PLAN FIRE PROTECTION “BASE BID” & ALT. 3
- l. **FP-501** FIRE PROTECTION DETAILS & SCHEDULES

53. REPLACE: Replace the following Mechanical sheets dated 2/14/20 with the same sheets dated 3/12/20:

- a. **M-102** 1ST FLOOR OFFICE – HVAC
- b. **M-201** 1ST FLOOR OFFICE – THERMOSTAT
- c. **M-603** MECHANICAL SCHEDULES

Submitted By



John L. Purdy, AIA

Davis Purdy Architects, PLLC

March 12, 2020

**ACKNOWLEDGEMENT OF RECEIPT OF THIS ADDENDUM IS
REQUIRED AND SHALL BE INDICATED ON BID FORM**



AIA Document A101™ – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the _____ day of _____ in the year _____
(In words, indicate day, month and year.)

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)

THE CONTRACTOR:
(Name, legal status and address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Document A201™–2017, General Conditions of the Contract for Construction. Article 11 of A201™–2017 contains additional insurance provisions.

TABLE OF ARTICLES

- A.1 GENERAL
- A.2 OWNER'S INSURANCE
- A.3 CONTRACTOR'S INSURANCE AND BONDS
- A.4 SPECIAL TERMS AND CONDITIONS

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ A.2.2 Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual general liability insurance.

§ A.2.3 Required Property Insurance

§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's

property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:

(Indicate below the cause of loss and any applicable sub-limit.)

Cause of Loss	Sub-Limit
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§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:

(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage	Sub-Limit
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§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ A.2.3.3 Insurance for Existing Structures

If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ A.2.4 Optional Extended Property Insurance.

The Owner shall purchase and maintain the insurance selected and described below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

- ☐ § A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.
- ☐ § A.2.4.2 Ordinance or Law Insurance, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.
- ☐ § A.2.4.3 Expediting Cost Insurance, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.
- ☐ § A.2.4.4 Extra Expense Insurance, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.
- ☐ § A.2.4.5 Civil Authority Insurance, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.
- ☐ § A.2.4.6 Ingress/Egress Insurance, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.
- ☐ § A.2.4.7 Soft Costs Insurance, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

§ A.2.5 Other Optional Insurance.

The Owner shall purchase and maintain the insurance selected below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

- ☐ § A.2.5.1 Cyber Security Insurance for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information.
(Indicate applicable limits of coverage or other conditions in the fill point below.)

- ☐ § A.2.5.2 Other Insurance
(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage

Limits

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 **Certificates of Insurance.** The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 **Deductibles and Self-Insured Retentions.** The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 **Additional Insured Obligations.** To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than _____ (\$) each occurrence, _____ (\$) general aggregate, and _____ (\$) aggregate for products-completed operations hazard, providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal injury and advertising injury;
- .3 damages because of physical damage to, or destruction of, tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

- .1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- .2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- .3 Claims for bodily injury other than to employees of the insured.
- .4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured
- .5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
- .6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
- .7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
- .8 Claims related to roofing, if the Work involves roofing.
- .9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
- .10 Claims related to earth subsidence or movement, where the work involves such hazards.
- .11 Claims related to explosion, collapse, and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than _____ (\$__) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than _____ (\$__) each accident, _____ (\$__) each employee, and _____ (\$__) policy limit.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than _____ (\$__) per claim and _____ (\$__) in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than _____ (\$__) per claim and _____ (\$__) in the aggregate.

§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than _____ (\$__) per claim and _____ (\$__) in the aggregate.

§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than _____ (\$__) per claim and _____ (\$__) in the aggregate.

§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than _____ (\$__) per claim and _____ (\$__) in the aggregate.

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

- ☐ § A.3.3.2.1 Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below.

(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

- ☐ § A.3.3.2.2 Railroad Protective Liability Insurance, with policy limits of not less than _____ (\$___) per claim and _____ (\$___) in the aggregate, for Work within fifty (50) feet of railroad property.
- ☐ § A.3.3.2.3 Asbestos Abatement Liability Insurance, with policy limits of not less than _____ (\$___) per claim and _____ (\$___) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.
- ☐ § A.3.3.2.4 Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.
- ☐ § A.3.3.2.5 Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.
- ☐ § A.3.3.2.6 Other Insurance
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage

Limits

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:

(Specify type and penal sum of bonds.)

Type	Penal Sum (\$0.00)
Payment Bond	
Performance Bond	

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:



AIA[®] Document A701[™] – 2018

Instructions to Bidders

for the following Project:

(Name, location, and detailed description)

THE OWNER:

(Name, legal status, address, and other information)

THE ARCHITECT:

(Name, legal status, address, and other information)

TABLE OF ARTICLES

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| 8 | ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS |

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612[™]–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning _____ days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

- 1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- 2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- 3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- 4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013.)

.5 Drawings

Number	Title	Date
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.6 Specifications

Section	Title	Date	Pages
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.7 Addenda:

Number	Date	Pages
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.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

☐ AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017.)

☐ The Sustainability Plan:

Title	Date	Pages
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☐ Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
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.9 Other documents listed below:

(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

SECTION 07 14 13
HOT FLUID-APPLIED RUBBERIZED
ASPHALT WATERPROOFING

1.6 QUALITY ASSURANCE

- A. Applicator Qualifications: Applicator shall be experienced in applying the same or similar materials and shall be specifically approved in writing by the membrane manufacturer.
- B. Regulatory Requirements: Comply with applicable codes, regulations, ordinances, and laws regarding use and application of products that contain volatile organic compounds (VOC).
- C. Pre-Application Conference: Prior to beginning work, convene a conference to review conditions, installation procedures, schedules and coordination with other work.

1.7 WARRANTY

Provide a written, single-source-year warranty for all system components agreeing that during the warranty period to promptly make repairs or replacement of defective materials of the waterproofing system.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in original, factory-sealed, unopened containers bearing manufacturer's name and label intact and legible with following information.
 - 1. Name of material.
 - 2. Manufacturer's stock number and date of manufacture.
 - 3. Material safety data sheet.
- B. Store materials in a protected area out of direct sunlight. Protect from rain and physical damage.

1.9 PROJECT CONDITIONS

- A. Do not apply membrane if temperature is less than 0°F or to a damp, frosty, snow covered or contaminated surface.
- B. Coordinate waterproofing work with other trades. The applicator shall have sole right of access to the specified areas for the time needed to complete the application.
- C. Protect adjoining surfaces not to be waterproofed against damage or soiling. Protect plants, vegetation and animals which might be affected by waterproofing operations.
- D. Warn personnel against breathing of vapors and contact of material with skin or eyes. Wear applicable protective clothing and respiratory protection gear.
- E. Keep flammable products away from spark or flame. Do not allow the use of spark producing equipment during application until all vapors have dissipated. Post "NO SMOKING" signs.
- F. Maintain work area in a neat and orderly condition, removing empty containers, rags, and rubbish daily from the site.

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HOT FLUID-APPLIED RUBBERIZED
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PART 2 - PRODUCTS

2.1 MANUFACTURERS

Basis of Design Manufacturer – Carlisle Coatings and Waterproofing Incorporated, 900 Hensley Lane, Wylie Texas 75098, phone (800) 527-7092, fax (972) 442-0076.

2.2 PRODUCTS

- A. Basis of Design – CCW-500 Hot-applied liquid membrane, or equal:
- Hot-Applied Membrane, rubberized asphalt compound, and shall meet or exceed the requirements of CGSB-37.50-M89.
 - Reinforcing fabric: Shall be CCW-500 Reinforcing Fabric which is a 1.18oz/square yard spunbond polyester fabric

2.3 ACCESSORY PRODUCTS

- A. Flashings: Shall be CCW-711-90 or CCW 60-mil uncured neoprene for non-exposed areas. Shall be Sure-Seal® EPDM, Sure-Weld® 120-mil AFX TPO, Sure-Seal Fleeceback™ 115-mil EPDM or CCW-570 PMMA for exposed areas.
- B. Surface Primer: Shall be CCW-550, CCW-702, CCW-702LV or CCW-AWP.
- C. Sealants: Shall be CCW-703 Vertical Grade LIQUISEAL™ Membrane or CCW-201 two-component Polyurethane Sealant.
- D. Backer Rod: Shall be closed-cell polyethylene foam rod.
- E. Expansion Joints: Shall be the EJ-500
- F. Protection Course: Shall be CCW Protection Board-H, CCW Protection Board-HS or CCW-190FR.
- G. Root Barrier: Shall be the CCW Root Barrier
- H. Drainage Composite: Shall be CCW MiraDRAIN™ as recommended by the manufacturer for each condition.
- I. Insulation: Shall be extruded or expanded polystyrene insulation with a minimum 60 psi (or as specified by architect) compressive strength as manufactured by Insulfoam, Foamular or Dow.
- J. Protection Fabric/Mat: CCW 200V, CCW 300 HV or H.P Protective Mat shall be applied over insulation prior to ballast placement.
- K. Pavers: Where required, shall be as recommended and supplied by the membrane manufacturer.
- L. Perimeter Drainage System: Where required, shall be MiraDRAIN HC.
- M. Miscellaneous: Carlisle SecurTAPE™ double-sided adhesive tape for sealing CCW Root Barrier splices.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Before any waterproofing work is started the waterproofing applicator shall thoroughly

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- B. examine all surfaces for any deficiencies. Should any deficiencies exist, the architect , owner, or general contractor shall be notified in writing and corrections made.
- C. Condition of Concrete Surfaces:
 - 1. The concrete surfaces shall be of sound structural grade, 3500 psi minimum, and shall have a wood float or fine broom finish, free of fins, ridges, voids or entrained air holes.
 - 2. Concrete shall be cured by water curing method. Curing compounds must be of the pure sodium silicate type and be approved by the Carlisle representative.
 - 3. Concrete shall be cured at least 14 days and shall be sloped for proper drainage.
 - 4. Voids, rock pockets and excessively rough surfaces shall be repaired with approved non-shrink grout or ground to match the un-repaired areas.
 - 5. Two-stage drains shall have a minimum three-inch flange and be installed with the flange flush and level with the concrete surface.
 - 6. Surfaces at cold joints shall be on the same plane.

3.2 SURFACE PREPARATION

- A. The concrete surface must be thoroughly clean, dry and free from any surface contaminants or cleaning residue that may harmfully affect the adhesion of the membrane.
- B. Detail expansion joints per manufacturer's recommendation using the EJ-500.
- C. Apply a thin film of CCW-550, CCW-702, CCW-702LV or CCW-AW P primer 16" wide, centered over sealed cracks and joints. Apply CCW-550, CCW-702, CCW-702LV or CCW-AWP membrane to cover primed areas. Install a 12" wide strip of CCW-711-90 centered over joints and cracks greater than 1/16" in width.
- D. Preferred Flashing Method (500-48): Apply CCW-550, CCW-702, CCW-702LV or CCW-AWP Primer at the juncture of all horizontal surfaces and vertical surfaces to the height indicated on the drawings (eight inches min. recommended), such as parapet walls, curbs, columns and all penetrations through the deck at the published sq.ft. per gallon rate recommended. Avoid puddles. Allow primer to dry for 1 hour minimum, 8 hours maximum. Membrane will not properly adhere to wet primer. Apply 60-90 mils of CCW-500 membrane to cover primed areas. Install CCW-711-90 milsheet membrane or uncured neoprene flashing into this first course of CCW-500 to cover the vertical section and extend six inches onto deck surface. Flashing installation may be done during crack and joint treatment or during installation of the first layer of CCW-500 membrane. Completely cover all flashing material during installation of the subsequent layers of CCW-500 membrane.
- E. Install Sure-Seal EPDM, Sure Weld 120-mil AFX TPO, Sure Seal Fleeceback 115-mil EPDM or CCW570 PMMA flashings in exposed areas per Carlisle recommendations (500-4A). Always clean and prime per Carlisle splice procedure prior to application of CCW-500 membrane.
- F. Apply a thin film of CCW-550, CCW-702, CCW-702LV or CCW-AW P Primer in a four foot square area around drains. Allow primer to dry, one hour minimum, eight hours maximum. Apply 60-90 mils of CCW-500 membrane to cover primed areas. Install a three foot square section of CCW-711-90 or uncured neoprene flashing over the drain and onto the deck. No splices or seams are allowed within three inches of the drain flange. Terminate the flashing under the clamping ring of the drain and cut away the inner portion of the flashing. Use firm pressure to press the flashing against the CCW- 500

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surface and ensure good adhesion. Do not interfere with weep holes. Completely cover all flashing material during installation of the subsequent layers of CCW-500 membrane.

3.3 APPLICATION

- A. Apply CCW-550, CCW-702, CCW-702LV or CCW-AWP primer to all surfaces and at the juncture of all horizontal surfaces and vertical surfaces, to the height indicated on the drawings (eight inches min. recommended), such as parapet walls, curbs, columns and all penetrations through the deck, to receive CCW-500 Waterproofing Membrane, including over flashings at the published sq. ft. per gallon rate recommended. Avoid puddles. Allow primer to dry for one hour minimum, eight hours maximum. Membrane will not properly adhere to wet primer.
- B. Heat CCW-500 Membrane blocks in a twin wall kettle with continuous agitation and apply at 350°F or between temperatures of 325°F to 375°F. (*Caution: Do not exceed maximum safe operating temperature of 375°F.*)
- C. Apply heated CCW-500 Hot Applied Membrane to primed area and any pre-installed flashings at a rate of 18 sq. ft. per gallon or as required to obtain an average thickness of 90 mils.
- D. Apply CCW-500 Reinforcing Fabric and any required flashings while CCW-500 is still warm and tacky. Cut and trim off any wrinkles or overlap sections of the reinforcing fabric or hot the fabric splices together with CCW-500.
- E. Apply a second coat of CCW-500 Hot Applied Membrane at a rate of 13 sq. ft. per gallon or as required to obtain an average thickness of 125 mils. Total thickness of the CCW-500-R System shall be 215 mils.
- F. Apply CCW Protection Board H, CCW Protection Board-HS or CCW-190FR into the last course of CCW-500 while the CCW-500 is still warm and tacky, and splice the protection course seams together with CCW-500.

3.4 INTEGRITY TESTING

- A. Test is required for all expanded warranties beyond the standard material warranty of horizontal applications.
- B. The test can be done with Electronic Leak Detection or flood testing. Flood testing requires 2" minimum head of water for a period of 24 hours.

3.5 PROTECTION

- A. Protect waterproofing from damage during construction. Protect the building and adjacent construction from damage resulting from spillage, dripping and dropping of materials. Prevent materials from running into and clogging drains.
- B. Install CCW MiraDRAIN HC Perimeter Drainage System as the first course of drainage composite immediately after membrane has cured on vertical surfaces. Install CCW MiraDRAIN Drainage Composite to complete the drainage and protection System on Vertical installations.
- C. Install CCW MiraDRAIN 9000 or 9900 over CCW Protection Board immediately after flood testing on horizontal surfaces. If flood testing is delayed, install a temporary covering to protect the CCW-500 membrane from damage by other trades.

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- D. Apply CCW Root Barrier in planter areas and green roofs covered with soil and plants over Protection Course but beneath the MiraDRAIN. CCW Root Barrier loose overlaid splices are a minimum of four feet or a minimum of 6 inches when sealed with Carlisle SecurTAPE. Apply CCW MiraDRAIN Drainage Composite Board.

END OF SECTION

SECTION 09 54 26
LINEAR WOOD CEILINGS

SECTION 09 54 26 – LINEAR WOOD CEILINGS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Concealed suspension system for Wood Grille ceiling panels.
 - 2. Wood Grille ceiling panels for concealed suspension system.
 - 3. Trim and accessories.

1.2 RELATED WORK IN OTHER SECTIONS:

- A. Division 1 – “General Conditions” for substitution requests, submittals, etc.
- B. Division 9 – “Acoustic Ceilings.”
- C. Division 13 – “Integrated Assemblies.”
- D. Division 15 – “Mechanical” for work to be coordinated with ceiling.
- E. Division 16 – “Electrical” for light fixture coordination.

1.3 REFERENCES

- A. ASTM A 641: Standard Specification for Zinc Coated (Galvanized) Carbon Steel Wire; 1992.
- B. ASTM C 423: Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 1990.
- C. ASTM C 635: Standard Specifications for Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
- D. ASTM C 636: Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 1992.
- E. ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials; 1991.
- F. ASTM E 580: Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint; 1991.
- G. AWI (QSI): Architectural Woodwork Quality Standards Illustrated; 2003.
- H. CISCA: Ceiling Systems Handbook.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturers other than those listed in Paragraph 2.1 are required to submit for approval prior to bidding per Section One.
- B. Installer Qualifications: Engage an experienced Installer, approved by wood ceiling manufacturer, who has completed panel ceilings similar in species, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- C. Inspection: All work must pass inspection and approval of architect, as well as the local codes and regulations or authorities having jurisdiction.
- D. Single-Source Responsibility for Wood Ceiling System: Obtain each type of Wood Grille ceiling panels from a single fabricator, with in-house Shop Drawing capabilities, in-house assembly and finishing capabilities, and with resources to provide products of consistent quality in appearance and physical properties without delaying the project.

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LINEAR WOOD CEILINGS

- E. Single-Source Responsibility for Suspension System: Obtain each type of suspension system from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying project.
- F. Pre-Installation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings."

1.5 SUBMITTALS

- A. General: Submit each item in this Section according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data: For each type of product specified.
- C. Samples: For verification of each type of exposed finish required, prepared on samples of size indicated below. Where finishes involve normal color and texture variations, include sample sets showing the range of variations expected.
 - 1. 12" x 18" samples of each panel type, pattern, and color.

1.6 SHOP DRAWINGS & COORDINATION WITH OTHER TRADES

- A. Shop Drawings: Provide Shop Drawings/Coordination Drawings for all ceilings, which should include RCP and product details. Coordinate Wood Grille ceiling panels layout and installation of wood panels and suspension system components with other construction elements that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system components, partition assemblies and all perimeter conditions.

1.7 PROJECT CONDITIONS

- A. Space Enclosure and Environmental Limitations: Do not install wood panel ceilings until spaces are enclosed and weatherproof, wet-work in spaces is completed and dry, work above ceilings is complete, and ambient temperature and humidity conditions are being maintained at the levels indicated for Project when occupied for its intended use.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Delivery & Unloading: Coordinate crate sizes, weights, unloading options, and delivery schedule with manufacturer prior to fabrication. Deliver wood panels and suspension system components to Project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other mistreatment.
- B. Acclimatization: Before installing wood panels, permit them to reach room temperature and a stabilized moisture content (at least 72 hours) per AWI standards.
- C. Handling: Handle Wood Grille ceiling panels carefully to avoid chipping edges or damaging units in any way.
- D. Protection:
 - 1. Personnel: Follow good safety and industrial hygiene practices during handling and installing of all products and systems, with personnel to take necessary precautions and

SECTION 09 54 26
LINEAR WOOD CEILINGS

wear appropriate protective equipment as needed. Read related literature for important information on products before installation. Contractor to be solely responsible for all personal safety issues during and subsequent to installation; architect, specifier, owner, and manufacturer will rely on contractor's performance in such regard.

2. Existing completed work: Protect completed work above suspension system from damage during installation of suspension system components.

1.9 WARRANTIES

- A. Warranties: Provide owner with a (1) year warranty for material and workmanship on all installed products.
 1. Manufacturers: All materials, wood ceiling and grid, shall be warranted for (1) one year for material and workmanship.
 2. Installer: All work shall be warranted for (1) year from final acceptance of completed work.

PART 2 – PRODUCTS

2.1 WOOD GRILLE CEILING PANELS AND SUSPENSION SYSTEM

- A. General: The following manufacturer is basis of design:
 1. 9Wood, Inc. (www.9wood.com): 1100 Cross Piece Backer.
- B. Or approved equal.

2.2 WOOD GRILLE CEILING PANELS – CEILING TYPE 4

- A. Basis of Design: 9Wood, Inc. Wood Grille, Series 1000
 1. Wood Panels: 1100 Cross Piece Backer, SKU 11
 - 1) Species: Western Hemlock with Stain
 - 2) Member Size: 5/8" x 3 1/4"
 - 3) Edge Profile: Square
 - 4) Members/LF: 6 Members/LF
 - 5) Assembly Style: Cross Piece Backer
 - 6) Panel Sizes: 1' x 8' (Nom)
 - 7) Fire Rating: Class 1(A) Fire Rating>
 - 8) Finish: Dressed-to-the-Nines™ Clear Interior Finish

2.3 METAL SUSPENSION SYSTEMS, GENERAL

- A. Metal T-Grid Suspension System: Provide standard interior Metal Heavy Duty 15/16" suspension T-Grid system using Main Runners, Cross-tees, Wall Angle or Shadow Moldings of types, structural classifications, and black finishes indicated and that comply with applicable ASTM C 635 requirements.

SECTION 09 54 26
LINEAR WOOD CEILINGS

- B. Attachment Devices: Size for 3 times the design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
- C. Wire, Braces, Ties, Hanger Rods, Flat Hangers and Angle Hangers: Provide wires, rods and hangers that comply with applicable ASTM specifications.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. General: Examine substrates and structural framing to which ceilings attach or abut, with installer present, for compliance with requirements specified in this and other sections that affect ceiling installation and anchorage. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Coordination: Furnish layouts for cast-in-place anchors, clips, and other ceiling anchors whose installation is specified in other Sections.
- B. Layout: Measure each ceiling area and establish the layout of Wood Grille Panel to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and conform to the layout shown on reflected ceiling plans in accordance with wood ceiling manufacturer's approved Shop Drawings.

3.3 INSTALLATION

- A. General: Install 9Wood, Inc. Interior Wood Grille Style 1100 to comply with manufacturer's instructions and CISCA "Ceiling Systems Handbook."
- B. Attachments: Suspend ceiling hangers from building's structural members per manufacturer's instructions and in compliance with all local codes and regulations.
- C. Installation of Metal T-Bar Grid: Install, align, brace, tie-off, mount, handle interferences, and space suspension T-Grid in accordance with suspension manufacturer's instructions and in compliance with all local codes and regulations.
- D. Installation of Wood Grille (Series 1000): Install Wood Grille ceiling panels in accordance with manufacturer's installation instructions and in compliance with all local codes and regulations. Install with undamaged edges and fitted accurately to suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit, as required.
- E. Suspension Runners: Install suspension system runners so they are square and securely interlocked with one another. Install number and use on-center spacing per wood ceiling manufacturer's instructions, as indicated on approved Shop Drawings and in compliance with all local codes.

3.4 CLEANING

SECTION 09 54 26
LINEAR WOOD CEILINGS

- A. General: Clean exposed wood surfaces of 9Wood, Inc. Style 1100 Wood Grille ceiling panels. Comply with manufacturer's instructions for cleaning and touchup of minor finish damage. Remove and replace wood ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09 54 26

SECTION 09 54 45
EXTERIOR LINEAR METAL CEILING SYSTEM

SECTION 09 54 45 – EXTERIOR LINEAR METAL CEILING SYSTEM (SOFFIT PANEL)

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Non-perforated metal ceiling panels
 - 2. Suspension systems
 - 3. Accessories; provide other necessary items including devices for attachment overhead construction, secondary members, splines, splices, connecting clips, wall connectors, wall angles, and other devices required for a complete installation.
 - 4. Supplemental support framing: Provide fully engineered secondary framing as required to meet code, conforming to layout shown in drawings, to support direct-hung metal ceilings suspension system.
- B. Related Sections / Work:
 - 1. Sections 05 40 00 – Cold-Formed Metal Framing
 - 2. Sections 09 20 00 – Plaster and Gypsum Board
 - 3. Sections 09 50 00 – Acoustical Ceilings
 - 4. Sections 09 90 00 – Paintings and Coatings
 - 5. Division 23 – Heating, Ventilating and Air Conditioning
 - 6. Division 26 – Electrical
- C. This Section covers the general requirements only for Acoustical Metal Ceilings as shown on the drawings. The supplying and installation of additional accessory features and other items not specifically mentioned herein, but which are necessary to make a complete installation, shall also be included or clarified accordingly.
- D. Qualification Data:

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1. Manufacturer's Instructions: Detailed installation instructions Base on 40 PSF Design Wind Pressure and maintenance data.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM)

1. E 84 – "Standard Test Method for Surface Burning Characteristics of Building Materials"
2. E 488 – "Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements"
3. B 209 – "Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate"
4. C 423 – "Sound Absorption and Sound Absorption Coefficients by Reverberation Room Method"
5. E 580 – "Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Moderate Seismic Restraint"
6. C 635 – "Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings"
7. C 636 – "Recommended Practice for Installation of Metal Ceiling Suspensions Systems for Acoustical and Lay-in Panels"
8. A 641 – "Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire"
9. A 653 – "Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip process"
10. E 1264 – "Classification for Acoustical Ceiling Products"
11. E 1477 – "Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by use of Integrating-Sphere Reflectometers"
12. D 1044 – "Practice for Abrasion Resistance"
13. D 1002 – "Practice for Adhesion Resistance"

1.4 SUBMITTALS

- A. Product Data: Manufacturer's published literature, including specifications.

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- B. Product Certification: Manufacturer's certifications that products comply with specified requirements and governing codes including product data, laboratory test reports and research reports showing compliance with specified standards.
- C. Shop Drawings: Submit shop drawings for reflected ceiling plans (RCP's), drawn to scale, and indicating penetrations and ceiling mounted items. Show the following details:
 - 1. Reflected Ceiling Plan(s): Indicating metal ceiling layout, ceiling mounted items and penetrations.
 - 2. Suspension System, Carrier and Component Layout.
 - 3. Details of system assembly and connections to building components.
- D. Samples for Verification: Full-size units (or as specified below) of each type of ceiling assembly indicated; in sets for each color, texture, and pattern specified, showing the full range of variations expected in these characteristics. Submit samples for each type specified.
 - 1. 11" square metal panel units.
 - 2. 11" long samples of each exposed molding or trim.
 - 3. 11" long samples of each suspension component.

1.5 QUALITY ASSURANCE

- A. Manufacturer/Installer Qualifications:
 - 1. Provide metal ceiling system components produced by a single manufacturer with a minimum 10 years' experience in actual production of specified products and with resources to provide consistent quality in appearance and physical properties, including production in an environmentally controlled indoor factory facility and having previously certified Miami-Dade County NOA certifications.
 - 2. Provide suspension system components produced by a single manufacturer to provide compatible components for a complete metal ceiling system installation.
 - 3. Perform installations using a firm with installers having no less than 3 years of successful experience on projects of similar size and requirements.
- B. Regulatory Requirements:
 - 1. Fire Rating Performance Characteristics: Install system to provide a flame spread of 0 - 25, complying with certified testing to ASTM E 84.

SECTION 09 54 45
EXTERIOR LINEAR METAL CEILING SYSTEM

2. Structural Criteria: Install and certify system to comply with structural and wind load requirements of governing codes.
3. Installation Standard for Suspension System: Comply with ASTM C 636.
4. Miami-Dade County, Florida Notice of Acceptance No. 17-0807.10

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver system components in manufacturer's original unopened packages, clearly labeled.
- B. Store components in fully enclosed dry space. Carefully place on skids, to prevent damage from moisture and other construction activities.
- C. Handle components to prevent damage to surfaces and edges, and to prevent distortion and other physical damage.

1.7 PROJECT CONDITIONS

- A. Begin system installations only after spaces are enclosed and weather-tight, and after all wet work and overhead work have been completed.
- B. Prior to starting installations, allow materials to reach ambient room temperature and humidity intended to be maintained for occupancy.

1.8 WARRANTY

- A. Provide specified manufacturer's warranty against defects in workmanship, discoloration, or other defect considered undesirable by the Architect or Employer.
- B. This warranty shall remain in effect for a minimum period of one (1) year from date of initial acceptance.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Basis of Design: Provide 150F metal plank ceiling system manufactured by Hunter Douglas Ceilings & Walls exclusively from CertainTeed, Inc., 5015 Oakbrook Parkway, Suite 100, Norcross, GA 30093. Tel: (800) 366-4327; www.CTSpecialtyCeilings.com
- B. Or Approved equal

2.2 SYSTEM MATERIALS

- A. Linear metal plank soffit system for exterior installations:

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EXTERIOR LINEAR METAL CEILING SYSTEM

1. Miami-Dade County, Florida Notice of Acceptance No. 17-0807.10
 - B. Panel Profile Type: 150F, roll formed .025" thick aluminum; 5-29/32" (150 mm) wide, 3/4" deep, with square interlocking, integral reveal closure edges.
 1. Length: 8' to 12' Lengths
 - C. Suspension System (Concealed):
 1. Carrier: V-shaped roll-formed aluminum section with hook-shaped tabs spaced to receive panels. Finish is factory applied black enamel.
 2. Hanger Wire: 12 Ga. galvanized carbon steel.
 3. Wind Uplift Compression Struts: Verify and insert proper sizes required to comply with governing codes.
 - D. Panel Finish: Paint; color to be selected by architect
 1. Luxacote Exterior Paint
- 2.3 ACCESSORY MATERIALS
- A. Panel Splice: Formed aluminum finished in black
 - B. Edge trim: Manufacturer's standard edge trim moldings.
 - C. Air Distribution Devices: Provide distribution devices that are independently suspended, relocatable, adjustable from below finished ceiling, and capable of being concealed behind (invisible to view) and fully integrated with ceiling system so as to allow no interruption of ceiling components.
 - D. Lighting Fixtures: Provide fixtures capable of being fully integrated with ceiling system and requiring no interruption of ceiling components, that are independently suspended, and as selected to conform to lighting criteria specified in Division 16.

PART 3- EXECUTION

3.1 EXAMINATION

- A. Examine substrates and structural framing to which acoustical metal panels attach or abut, with installer present, for compliance with requirements specified in this and other Sections that affect installation and anchorage, and other conditions affecting performance of metal panel ceilings.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

SECTION 09 54 45
EXTERIOR LINEAR METAL CEILING SYSTEM

3.2 PREPARATION

- A. Coordination: Furnish layouts for cast-in-place anchors, clips, and other ceiling anchors whose installation is specified in other Sections.
- B. Measure each ceiling area and establish layout of acoustical metal pan units to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width units at borders, and comply with layout shown on reflected ceiling plans.
- C. Survey substrate for wall attachment to assure squareness and proper elevation for wall panel installation.

3.3 INSTALLATION

- A. General: Install acoustical metal pan ceilings, per manufacturers shop drawings provided, per manufacturer's written instructions and to comply with publications referenced below.
 - 1. CISCA "Ceiling Systems Handbook"
 - 2. Standard for Ceiling Suspension System Installations - ASTM C 636
 - 3. Standard for Ceiling Suspension Systems Requiring Seismic Restraint - ASTM E 580
 - 4. IBC (International Building Code) Standard for Seismic Zone for local area
- B. Suspend ceiling hangers from building's approved structural substrates and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, counter-splaying, or other equally effective means.
 - 3. Where width of ducts and other construction within ceiling plenum produce hanger spacings that interfere with location of hangers at spacing required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Utilize supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
 - 4. Where used secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure; that are appropriate for substrate; and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.

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EXTERIOR LINEAR METAL CEILING SYSTEM

5. Space hangers not more than 48" on-center, along each member supported directly from hangers, unless otherwise indicated; and provide hangers not more than 12" from ends of each member. Supply supporting calculations from licensed Structural Engineer verifying hanger spacing meets all requirements, when spacing exceeds those recommended.
 6. Level grid to 1/8" in 10' from specified elevation(s), square and true.
 7. Adjust suspension system runners so they are square (within .5 degree from 90 degrees) and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- C. Secure bracing wires to ceiling suspension members and to supports acceptable to Architect/Engineer and/or inspector. Suspend bracing from building's structural members and/or structural deck, as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs (unless directed otherwise).
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical metal pan. Method of edge trim attachment and design of edge trims to be approved by Architect.
1. Screw attach moldings to substrate at intervals not more than 18" on-center and not more than 6" from ends, leveling with ceiling suspension system to a tolerance of 1/8" in 10'. Miter corners accurately and connect securely.
 2. Do not use exposed fasteners, including pop rivets, on moldings and trim without prior written approval, or unless detailed otherwise.
- E. Scribe and cut acoustical metal panel units for accurate fit at penetrations by other work through ceilings. Stiffen edges of cut units as required to eliminate evidence of buckling or variations in flatness exceeding referenced standards for stretcher-leveled metal sheet.
- F. Install acoustical metal panel units in coordination with suspension system. Fit adjoining units to form flush, tight joints. Scribe and cut units for accurate fit at borders and around construction penetrating ceiling.

3.4 ADJUST AND CLEAN

- A. Adjust components to provide uniform tolerances.
- B. Replace all ceiling panels that are scratched, dented or otherwise damaged.
- C. Clean exposed surfaces with non-solvent, non-abrasive commercial type cleaner.

End of Section

SECTION 09 85 00
ACOUSTICAL BAFFLES

SECTION 09 85 00 – ACOUSTICAL BAFFLES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Ceiling baffles.

1.2 REFERENCES

- A. ASTM C 423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 2000.
- B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2000a.

1.3 PERFORMANCE REQUIREMENTS

- A. Acoustical Absorption: Perform testing in accordance with ASTM C 423, Type A mounting method unless otherwise specified.
- B. Flame Spread Rating: Provide all components with Class A flame spread rating when tested in accordance with ASTM E 84, unless otherwise specified.

1.4 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. Independent testing agency test reports.
- C. Selection Samples: For each product specified, two complete sets of color samples representing manufacturer's full range of available colors and patterns.
- D. Verification Samples: For each product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 10 years of experience in producing acoustical products of the types specified herein.
- B. Installer Qualifications: Acceptable to the manufacturer of the acoustical products being installed.

1.6 DELIVERY, STORAGE, AND HANDLING

SECTION 09 85 00
ACOUSTICAL BAFFLES

- A. Protect acoustical products from moisture during shipment, storage, and handling.
- B. Store products in manufacturer's unopened packaging until ready for installation.
 - 1. Store materials flat, in dry, well-ventilated space.
 - 2. Do not stand panels on end.
 - 3. Protect edges from damage.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

- A. Do not begin installation of acoustical products until building has been enclosed and environmental conditions approximate those that will prevail when building is occupied.
- B. Environmental Requirements: Do not install panels until wet work, such as concrete and plastering, is complete; the building is enclosed; and the temperature and relative humidity are stabilized at 60 – 80 degrees F (16 – 27 degrees C) and 40% to 50%, respectively.

1.8 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.
- B. Provide 1 of each type of acoustical unit actually installed, for Owner's use in maintenance.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. BASIS OF DESIGN: G&S Acoustics; 3555 Scarlet Oak Blvd., St. Louis, MO 63122. ASD. Tel: (636) 225-8800 or (800) 737-0307. Fax: (636) 225-2966. Email: inquiry@gsacoustics.com. www.gsacoustics.com.
- B. OR Approved equal.
- C. Provide all acoustical products specified herein by a single manufacturer.

2.2 CEILING TYPE 3

- A. Accent Baffles (AB): Wrapped panels, with core of 1.65 to 7 pcf (24 to 112 kg/cu m) fiberglass, seamless finish material wrapped and bonded on centerline of panels.
 - 1. Core Thickness: 2 inches (51 mm); NRC 1.60.. (Pinta)
 - 2. Size: 2" thick x 6" high x 8' long and 4' long.
 - 3. Finish Material: Pinta
 - a. Edges: Square and chemically hardened.
 - 4. Color: As selected from manufacturer's standards.
 - 5. Mounting: Eye Bolt
 - 6. Baffle Spacing: 8" O.C

2.3 ACCESSORIES

SECTION 09 85 00
ACOUSTICAL BAFFLES

- A. Mounting: Chain/wire for mounting not included in this specification section.

PART 3 EXECUTION

3.1 EXAMINATION

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

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 acoustical units in accordance with manufacturer's instructions.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

Section 21 13 00
FIRE SUPPRESSION SYSTEMS

SECTION 21 13 00 – FIRE SUPPRESSION SYSTEMS

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 WORK INCLUDED

- A. This section is a performance specification section only. The design build fire protection contractor shall be fully responsible for the design and to provide necessary equipment and hardware per the Authority Having Jurisdiction (AHJ) and Owner's Insurance Underwriter's requirements.
- B. Furnish all labor, materials, tools, and equipment to complete the automatic fire sprinkler system and standpipe system as hereinafter described, ready for service to the entire satisfaction of the Owner, Architect, AHJ and Owner's Insurance Underwriter. Provide hydraulically calculated systems as defined in the adopted edition of NFPA 13 and NFPA 14 and in accordance with the AHJ and Owner's insurance requirements.
- C. The fire sprinkler system shall fully comply with the Mississippi Conveyance Safety Act (MCSA). Specifically, the sprinkler system shall comply with (but not limited to) the MCSA regarding sprinklers in the elevator shafts, elevator pits, and elevator equipment (machine) rooms.
- D. Fire Sprinkler System Notes:
 - 1. The automatic sprinkler system shall conform to the requirements of the adopted edition of NFPA Standard 13.
 - 2. The standpipe and hose systems shall conform to the requirements of the adopted edition of NFPA Standard 14.
 - 3. Provide a complete automatic fire sprinkler system for all new and/or existing interior and exterior covered spaces, interstitial spaces, attics, overhangs, canopies, etc. as required for a comprehensive fire sprinkler system.
 - 4. Installation of the sprinkler system shall not be started until complete plans and specifications including water supply design information and type of existing sprinkler system, if any have been submitted and approved by the State Fire Marshal, Fire/Life Safety Section. At various stages and upon completion, the system shall be tested in the presence of the Inspector of Record (IOR) and/or AHJ.

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5. Underground firewater and sprinkler system work shall conform to the requirements of NFPA 24 and NFPA 13n. Prior to installation of the underground fire water supply system, submit shop drawings and specifications of system, including water flow test data to the State Fire Marshal, Fire/Life Safety Section for approval. Submittal shall include thrust block location and size, type of piping and catalog cut sheets on all valves and fittings. An inspection of the underground installation, back flush and hydrostatic test shall be conducted and witnessed by the Architect, IOR and/or AHJ prior to backfill.
 6. Provide foam generation system as described on plans per latest version of NFPA 409.
- E. Verify electrical requirements of alarm valves, flow switches, valve supervision switches, alarm bells and pumps with electrical contractor.

1.3 RELATED WORK AND REQUIREMENTS

- A. All Division 21 sections.
- B. Section 230010 – Mechanical General Provisions.
- C. Division 26, Fire Alarm System Sections.

1.4 REFERENCE STANDARDS

- A. American National Standards Institute (ANSI).
 1. B16.1 Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250 and 800.
 2. B16.3 Malleable-Iron Castings.
 3. B16.4 Cast-Iron Threaded Fittings Class 125 and 300.
 4. B16.5 Pipe Flanges and Flanged Fittings.
 5. B16.9 Factory-Made wrought Steel Butt welding Fittings.
 6. B16.11 Forged Fittings, Socket-Welding and Threaded.
 7. B16.22 Wrought Copper and Bronze Solder Joint Pressure Fittings.
 8. B16.25 Butt welding Ends.
- B. American Society for Testing and Materials (ASTM).
 1. A36 Structural Steel.
 2. A47 Ferritic, Malleable Iron Castings.
 3. A53 Pipe, Steel, Black and Hot-Dipped, Zinc Coated.
 4. A135 Specification for Electric-Resistance-Welded Steel Pipe.
 5. A194 Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure and High-Temperature Service.
 6. A320 Specification for Alloy Steel Bolting Materials for Low-Temperature Service.
 7. A795 Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use.
 8. B88 Seamless Copper Water Tube.

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- C. American Water Works Association (AWWA).
 - 1. DDC104 Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
 - 2. C110 Gray Iron and Ductile Iron Fittings.
 - 3. C111 Rubber Gasket Joints for Ductile-Iron and Grey-Iron Pressure: Pipe and Fittings.
 - 4. C151 Thickness of Ductile-Iron Pipe – Centrifugally Cast.
 - 5. C200 Steel Water Pipe 6" and larger.
 - 6. C503 Wet-Barrel Fire Hydrants.
- D. International Association of Plumbing and Mechanical Officials (IAPMO).
 - 1. PS 31 Backflow Prevention Devices.
- E. National Fire Protection Association (NFPA)
 - 1. 13 – Standard for the Installation of Sprinkler Systems.
 - 2. 14 – Standard for the Installation of Standpipe and Hose Systems.
 - 3. 16 - Installation of Foam-Water Sprinkler and Foam-Water Spray Systems
 - 4. 409 – Standard on Aircraft Hangers
- F. Underwriter's Laboratory (UL).
 - 1. 262 Gate Valves for Fire Protection Service.
 - 2. Indicator Post for Fire-Protection Service.

1.5 DESIGN CRITERIA

- A. Design sprinkler systems and obtain approval from AHJ.
- B. Determine the static and residual pressure for the site as required for accurate determination of system requirements. Base system calculations on the lowest expected static and residual pressure for the area.
 - 1. Test data for static and residual pressure shall be measured by the Contractor. Test shall be made within the presence of the Architect and at a time approved by the Architect and Owner.
- C. It is the intent of these Specifications and Drawings to provide for a complete and operating automatic fire protection sprinkler system in full compliance with the standards of the National Fire Protection Association as set forth in NFPA 13, NFPA 14, NFPA 16 and NFPA 409, latest editions.
- D. Review Architectural and Structural Drawings to determine the extent of construction and resultant fire protection coverage to comply with NFPA. Interstitial spaces, if utilized, will require sprinkler protection.

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- E. Provide fire sprinklers to protect all building overhangs greater than 4 feet wide, or as required by local authority.
- F. Provide additional fire sprinklers where required to meet the requirements of NFPA13 and/or AHJ(s). Coordinate with the work of other trades especially when it may create interferences and or obstructions requiring special protection, additional piping and heads and drains.
- G. Use of piping lighter than Schedule 10 is not allowed.
- H. The initial building shall contain basic sprinkler coverage which can be modified and extended for the future build-out of unimproved spaces.
- I. Design shall comply with the Owner's Insurance Underwriters' requirements.

1.6 COORDINATION/SPECIAL CONSIDERATIONS

- A. Coordinate with other trades all equipment locations, pipe, duct and conduit run's, electrical outlets and fixtures, air inlets and outlets, and structural and architectural features. Provide information on location of piping and bracing to all other trades as required for a completely coordinated project.
- B. Contract Drawings: All piping and sprinkler heads required for the sprinkler and standpipe systems are not shown. Sprinkler heads shown are minimum required.
- C. Where heads are located at suspended ceiling, spacing shall be as required by NFPA 13, except as follows: In all locations, sprinkler heads shall be equidistant between lights, between wall and lights, between lights and air diffusers, and between wall, lights, and air diffusers. Provide uniform and repetitive pattern for each room. Locate by reflected ceiling plan where shown.
- D. Install all sprinkler heads in center of ceiling tiles.
- E. Provide approved dry pendant sprinkler heads in spaces subject to freezing.
- F. Provide high temperature sprinkler heads in all electrical rooms or other areas with elevated temperatures such as mechanical rooms.
- G. Coordinate Work among the trades in accordance with Division 01 avoid any interference with the effectiveness of the fire protection system. Shop drawings shall include elevations of equipment and piping to assure coordination. The fire protection system shall be coordinated with other trades to assure that conflicts will not arise with structural, mechanical, electrical or architectural features of the building.
- H. Coordinate with the fire alarm contractor to ensure full awareness of the location of control valves, flow switches, tamper switches, and alarm and signal switches.

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1.7 QUALITY ASSURANCE

- A. Provide stamped plans for the foam generation system and fire protection systems including all calculations, fire pump sizes, floor plans, risers, etc. Drawings provided are for reference only. All systems shall be designed by a fire protection engineer for submittal.
- B. Fire protection engineer to provide complete specifications and working plans shall be drawn to scale showing all essential details, and plans shall be easily reproducible to provide necessary copies.
- C. Fire Protection Engineer to provide information supplied in plans and specifications shall be in accordance with NFPA 13 and shall include the following:
 - 1. Design purpose of the systems
 - 2. Discharge densities and the period of discharge
 - 3. Hydraulic calculations
 - 4. Details of tests of the available water supply
 - 5. Details of proposed water supplies
 - 6. Detailed layout of the piping and of the detection systems
 - 7. Make and type of discharge devices, operating equipment, and foam concentrate to be installed
 - 8. Location and spacing of discharge devices
 - 9. Pipe hanger and bracing location and installation details
 - 10. Location of draft curtains
 - 11. Accurate and complete layout of the area to be protected, including drainage layout
 - 12. Details of any foam concentrate, its storage and injection, and other pertinent data to provide a clear explanation of the proposed design.
 - 13. Location and spacing of supplementary or low-level agent distributors, showing the area of coverage.
 - 14. Installation layout of the actuation systems.
 - 15. Detailed layout of water supply piping, agent storage, pumping and piping, power sources, and location and details of mechanical foam-liquid concentrate injection equipment.
- D. Manufacturers: Firms regularly engaged in manufacture of fire protection products, of types, materials, and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.
- E. Installer: A firm with at least five years of successful installation experience on projects with fire sprinkler piping similar to that required for this project.
- F. Requirements of Regulatory Agencies:
 - 1. Install fire protection systems in accordance with IBC current edition, Chapter 9 "Fire Protection Systems".
 - 2. NFPA Compliance: Install fire protection systems in accordance with NFPA 13 "Standard for the Installation of Sprinkler Systems", and other applicable NFPA

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requirements. Additionally, comply with NFPA 14 "Standard for the installation of Standpipe and Hose Systems".

3. FM Compliance: Comply with Factory Mutual "Approval Guide".
4. UL Labels: Provide fire sprinkler piping products which have been approved and labeled by Underwriters' Laboratories.
5. Fire Marshal Compliance: Install fire protection systems in accordance with Fire Marshal or other AHJ.
6. Owner's Insurance Underwriter's Compliance: Install fire protection systems in accordance with Owner's Insurance Underwriter's requirements.
7. Screw Thread Connections: Comply with local fire department/marshal regulations for sizes, threading, and arrangement of connections for fire department equipment to systems.

- G. Fire stop penetrations with an approved material as prescribed in the International Building Code (IBC).
- H. Installation of the sprinkler system shall not be started until complete plans and specifications (including water supply information and type of existing sprinkler system, if any) have been reviewed and approved by the AHJ and the Owner's Insurance Underwriter.
- I. At various stages and upon completion, the system shall be tested in the presence of the enforcing agency.
- J. The fire extinguishing system shall be installed by a licensed fire systems contractor.
- K. The fire sprinkler contractor shall furnish evidence of a full-time employee who poses a NICET Level 3 or higher certification in Automatic Sprinkler System Layout. A signed and notarized written statement from the fire sprinkler contractor stating the name and NICET certification of the full time employee who oversees the shop drawings and installation shall accompany the shop drawing submittal.

1.8 SUBMITTALS

- A. See Section 230010 Mechanical General Provisions.
- B. Submit product data, O&M data, and samples and show item on shop and coordination drawings according to the following table.
1. "R" means required.
 2. "R2" means required only for products and equipment differing for the specified manufacturer and model and for "or equals" where specified.

Item	Product Data	O&M Manual	Samples	Shop Drawing
Pipe, fittings, valves	R			
Sprinkler heads	R			R

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Gauges	R			R
Sleeves and Escutcheons	R			
Flow and tamper switches	R			R
Alarm bells	R			R
Pipe hangers and supports	R			R
Identification signs	R			
Sprinkler head cabinets	R			R
Hose Valve cabinets	R			R
Coordination drawings				R
AHJ approval letter				R
Insurance Underwriter's approval letter				R
Hydraulic calculations				R
Static and residual flow tests results				R
Written Statement with NICET Level 3 Employee	R			

C. Submit shop drawings as follows:

1. Prepare and submit preliminary drawing to the Owner showing the proposed location of the fire sprinkler heads coordinated with and in relation to the ceiling tile pattern, light fixture and duct inlets/outlets. Review of this drawing and the AHJ's review stamp thereon shall be a prerequisite for the preparation of further working plans.
2. Detailed working drawings and hydraulic calculations shall be prepared and submitted for approval before fabrication of the project. Working drawings shall be submitted in complete sets (partial submission will not be acceptable) and shall bear the Contractor's license stamp, identity of the system designer and computer program used in the calculation of hydraulic information.
3. AHJ approval of submittals is for permission to proceed and does not authorize design, products or installation not conforming to referenced codes and standards and this specification. Substitutions or alternates require specific approval by the Owner.
4. Upon completion of the Work, the Contractor shall provide AutoCAD Record Drawings to the Architect. Refer also to Division 01. Final approvals are subject to receipt of acceptable Record Drawings.

D. Submittals having any content that is incomplete or unclear will be returned without review or approval.

E. Deferred Approval Documents: Do not proceed with fabrication or installation of fire sprinkler system until deferred approval documents have been approved by AHJ and Architect.

1. General: Provide detailed drawings, specifications, hydraulic calculations, and any other documentation as required by the AHJ and Owner's insurance underwriter.
2. Make additions, changes and corrections as directed by Architect and resubmit.

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3. Agency Review: Submit documents to Owner and/or AHJ. Make additions, changes and corrections required by Owner / AHJ at no cost to Owner and resubmit to Architect.
- F. Provide all necessary information to ceiling suspension work of Division 09, Finishes, to provide coordinated submittals.
- G. Discharge patterns and application data shall be included in submittals for sidewall, water curtain, and similar special purpose sprinklers.
- H. Operating Instructions: Provide instruction charts describing operation and proper maintenance of system equipment per Division 01 and Section 230010 Mechanical General Provisions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Provide piping materials and factory-fabricated piping products of sizes, types, pressure rating, temperature ratings, and capacities as required. Provide sizes and types matching piping and equipment connections; provide fittings of materials that match pipe materials used in fire protection systems.
- B. Equipment to be furnished under this specification shall be essentially standard product of manufacturer. Where two or more units of same class of equipment are required, these units shall be products of a single manufacturer. However, component parts of system need not be products of same manufacturer.
- C. Manufacturers: Subject to compliance with requirements, manufacturer offering automatic sprinklers which may be incorporated in the work include the following:
 1. Specialty Valves and Devices:
 - a. Badger Fire Protection, Inc.
 - b. Grinnell Corp.
 - c. Viking Corp.
 - d. Or equal.
 2. Water-Flow Indicators and Supervisory Switches:
 - a. Grinnell Corp.
 - b. Potter Electric Signal Co.
 - c. Viking Corp.
 - d. Or equal.
 3. Sprinkler, Drain, and Alarm Test Fittings:

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- a. Central Sprinkler Corp.
 - b. Grinnell Corp.
 - c. Victaulic Co.
 - d. Or equal.
4. Sprinkler, Branch-Line Test Fittings:
- a. Elkhart Brass Mfg. Co. Inc.
 - b. Smith Industries, Inc; Potter-Roemer Div.
 - c. Or equal.
5. Sprinkler, Inspector's Test Fittings:
- a. G/J Innovations, Inc.
 - b. Triple R Specialty of Ajax, Inc.
6. Fire Department Connections:
- a. Badger Fire Protection, Inc.
 - b. Elkhart Brass Mfg. Co., Inc.
 - c. Grinnell Corp.
 - d. Or equal.
7. Sprinklers:
- a. Badger Fire Protection, Inc.
 - b. Grinnell Corp.
 - c. Viking Corp.
 - d. Or equal.
8. Indicator Posts and Indicator-Post, Gate Valves:
- a. Grinnell Corp.
 - b. McWane, Inc.; Kennedy Valve Div.
 - c. Nibco, Inc.
 - d. Or equal.
9. Indicator Valves:
- a. Grinnell Corp.
 - b. McWane, Inc.; Kennedy Valve Div.
 - c. Nibco, Inc.
 - d. Or equal.
10. Fire-Protection-Service Valves:
- a. Grinnell Corp.
 - b. McWane, Inc.; Kennedy Valve Div.
 - c. Nibco, Inc.

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- d. Or equal.

11. Grooved-End Fittings for Steel Piping:

- a. Victaulic Co.
- b. Or equal.

2.2 VALVE AND ALARM SYSTEM IDENTIFICATION

- A. Provide identification complying with Section 230553 Mechanical Identification section in accordance with the following listing:
 - 1. Fire Protection Valves: Brass valve tags.
 - 2. Fire Protection Signs: Provide the following signs:
 - a. At each sprinkler valve, including roof manifold, sign indicating what portion of system valve controls.
 - b. At each outside alarm device, sign indicating what authority to call if device is activated.

2.3 BASIC PIPES AND TUBES

- A. Piping shall be new, designed for 300 psi working pressure, conforming to ASTM specifications and have the manufacturer's name or brand along with the pipe applicable ASTM standard marked on each length of pipe.
- B. All piping shall be UL listed and FM approved.
- C. Piping installed above ground 2 inch and smaller shall be Schedule 40 black steel pipe. Pipe shall be manufactured in accordance with specifications ASTM A-135 and A-53.
- D. Piping installed above ground 2-1/2 inch and larger shall be Schedule 10 black steel pipe. Pipe shall be manufactured in accordance with specification ASTM A-135.
- E. All fire protection piping shall be provided with factory-applied antimicrobial coatings to inhibit Microbiologically-Influenced Corrosion (MIC). Allied Tube and Conduit "ABF II", Wheatland Tube Company "MIC Shield" or equal.
- F. Sprinkler piping and fittings exposed to weather, used in a corrosive atmosphere or as noted on drawings shall be galvanized.
- G. In-Building Risers shall be installed as indicated on the plans. Risers shall be composed of a single extended 90 degree, fitting of fabricated 304 stainless steel tubing, maximum working pressure 300 psi. The fitting shall have a grooved-end connection on the outlet (building) side and a CIPS coupler on the inlet (underground) side. The In-Building Riser shall be an Ames Fire & Waterworks Series IBR (or equal).

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2.4 PIPE AND TUBE FITTINGS

- A. Cast-Iron Threaded Flanges: ASME B16.1.
- B. Cast-Iron Threaded Fittings: ASME B16.4.
- C. Malleable-Iron Threaded Fittings: ASME B16.3.
- D. Steel, Threaded Couplings: ASTM A 865.
- E. Steel Welding Fittings: ASTM A 234/A 234M, ASME B16.9, or ASME B16.11.
- F. Steel Flanges and Flanged Fittings: ASME B16.5.

2.5 PIPING SPECIALTIES

- A. Provide piping specialties in accordance with the following listing:
 - 1. Pipe escutcheons.
 - 2. Dielectric unions.
 - 3. Pipe sleeves.
 - 4. Sleeve seals.

2.6 JOINING MATERIALS

- A. Grooved-End Pipe Couplings: UL 213 and AWWA C606, rigid pattern, unless otherwise indicated; gasketed fitting matching steel pipe OD. Include ductile-iron housing with keys matching steel pipe fitting grooves, pre-lubricated rubber gasket listed for use with housing and steel bolts and nuts. Include listing for dry-pipe service for couplings for dry piping.
- B. Steel, Grooved-End Fittings: UL-listed and FM approved, ASTM A47, malleable iron or ASTM A 536, ductile iron, with dimensions matching steel pipe and ends factory grooved according to AWWA C606.
- C. Transition Couplings: AWWA C219, sleeve type, or other manufactured fitting the same size as, with pressure rating at least equal to, and with ends compatible with piping to be joined.

2.7 POLYETHYLENE ENCASEMENT

- A. Polyethylene Encasement for Ductile-Iron Piping: ASTM A674 or AWWA C105 film, 0.008-inch minimum thickness, tube or sheet.

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2.8 SUPPORTS AND ANCHORS

- A. Spacing and details of the support and bracing of fire sprinkler piping shall comply with the currently adopted edition of NFPA 13. U-hook hangers used as sway bracing shall have legs bent out 10 degrees and shall have a slenderness ratio not exceeding 200.
- B. Concrete Inserts: Uni-Strut P-3200 continuous insert or M24 spot insert Kin-line or equal. Do not use powder actuated fasteners for support of overhead piping unless approved by Architect.

2.9 VALVES

- A. Provide valves, UL listed, and FM approved, in accordance with the following listing. Provide sizes and types which mate and match piping and equipment connections.
 - 1. Gate Valves: Provide iron gate control valve, outside screw and yoke (OS&Y), 175-lb rated working pressure, of sizes indicated, to close by turning to the right and to be sealed with approved metal seals. Valves shall be iron body, bronze fitted. Valves 2 inches and smaller shall be screwed and valves over 2 inches shall be flanged. For reference purposes, Mueller A-2073-6. Grinnell, Kennedy, Stockham or equal.
 - 2. Butterfly Valve: Provide UL listed FM approved butterfly valves (slow-close) with position indicators. Electric motor operated valves shall be normally open and shall fail in the open position. For reference purposes, Mueller B-3211. Grinnell, Kennedy, Stockham or equal.
 - 3. Swing Check Valves: Provide UL listed flanged, swing type, iron body, bronze seat ring and disc ring, and 175 psi pressure rating. For reference purposes, Mueller A-2120-6, Grinnell, Kennedy, Stockham or equal.
 - 4. Riser Drain Valves: Main Riser Drain valves shall be angle or globe type, bronze body, screwed, 200 psi pressure rating, 2 inches size, with renewable composition soft disc. For reference purposes, Grinnell 3210, Stockham, NIBCO, Fairbanks or equal.
 - 5. Auxiliary Drain Valve: Valves for auxiliary drains and Owner's Test connections shall be globe type, bronze body, screwed, 200 psi pressure rating, 1-inch size with a renewable composition soft disc, For reference purposes, Grinnell 3210, Stockham, NIBCO, Fairbanks or equal.
 - 6. Indicating Valves, 2-1/2 inches and Smaller: UL 1091; butterfly or ball-type, bronze body with threaded ends; and integral indicating device.
 - 7. Indicator Posts: UL 789, vertical type, cast iron body, with windows for target plates that indicate valve position, extension rod and coupling, locking device, and red enamel finish.
 - 8. Swing Check Valves, 2 inches and Smaller: UL 312 or MSS SP-80, Class 150; bronze body with bronze disc and threaded ends.
 - 9. Swing Check Valves, 2-1/2 inches and Larger: UL 312, cast-iron body and bolted cap, with bronze disc or cast-iron disc with bronze-disc ring and flanged ends.
 - 10. Split-Clapper Check Valves, 4 inches and Larger: UL 312, cast-iron body with rubber seal, bronze-alloy discs, and stainless-steel spring and hinge pin.

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11. For other valves not required to be UL listed and FM approved refer to Section 230523 Valves.

2.10 METERS AND GAUGES

- A. Provide meters and gauges complying with Section 230519 Meters and Gauges, in accordance with the following listing:

1. Pressure gauges: UL 393, 3-1/2- to 4-1/2-inch- diameter dial with dial range of 0 to 300 psig.

2.11 SPECIALTY VALVES

- A. Sprinkler System Control Valves: UL listed or FMG approved, cast or ductile-iron body with flanged or grooved ends, and 175-psig minimum pressure rating.

1. Available Manufacturers:

- a. Grinnell Corp.
- b. Victaulic Co.
- c. Viking Corp.
- d. Or equal.

2. Alarm Check Valves: UL 193, designed for horizontal or vertical installation, with bronze grooved seat with O-ring seals, single-hinge pin, and latch design. Include trim sets for bypass, drain, electrical sprinkler alarm switch, pressure gauges, retarding chamber, and fill-line attachment with strainer.

- a. Drip Cup Assembly: Pipe drain without valves and separate from main drain piping.

3. Ball Drip Valves: UL 1726, automatic drain valve, NPS 3/4, ball check device with threaded ends.

2.12 FIRE PROTECTION SPECIALTIES

- A. Provide fire protection specialties, UL listed, in accordance with the following listing. Provide sizes and types that match piping and equipment connections.

1. Install drains on main risers and auxiliary drains at all low points in the system.
2. One Owner's test drain shall be installed for each sprinkler system.
3. Drains and Owner's tests shall be at locations approved by the Architect.
4. Drains and Owner's tests shall be installed at locations as shown on the Drawings.
5. Provide drain line to floor sink or to outside, as required, to suit Project conditions.

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6. Five or fewer trapped heads will not require a drain valve but may be drained through a plugged fitting.
7. Drain valve shall be of the angle type. Install in accordance with the requirements of NFPA 13.
8. Pipe drain valves to a floor sink or to the outside of the building. Discharge shall be visible from sight drain fitting or open end, drain pipe. Provide flushing connections at ends of all cross mains.
9. Flow Alarm: Furnish and install a flow alarm system for each main sprinkler riser as shown on the Drawings. The systems shall be complete with Grinnell F-620, Viking or equal, flow switch. As part of Division 26, wire flow alarm to the fire alarm control panel. Provide 3/4-inch conduit and two #14 wires from the tamper switch to the fire department control panel.
10. Provide wiring between switch, bell, and junction box. Provide junction box under Division 26. Wiring shall meet the requirements of Division 26. All controls shall be identified by permanent metal tags or other approved means. Alarm switch shall be UL or FM approved and shall have adjustable retard mechanism and two sets of contacts. Wiring between electrical distribution panel and junction box will be provided under Division 26.
11. Water-Flow Indicators: UL 346; electrical-supervision, vane-type water-flow detector; with 250-psig pressure rating; and designed for horizontal or vertical installation. Include two single-pole, double-throw, circuit switches for isolated alarm and auxiliary contacts, 7 A, 125-V ac and 0.25 A, 24-V dc; complete with factory-set, field-adjustable retard element to prevent false signals and tamperproof cover that sends signal if removed.
12. Pressure Switches: UL 753; electrical-supervision-type, water-flow switch with retard feature. Include single-pole, double-throw, normally closed contacts and design that operates on rising pressure and signals water flow.
13. Valve Supervisory Switches: UL 753; electrical; single-pole, double throw; with normally closed contacts. Include design that signals controlled valve is in other than fully open position, Grinnell Model F640, Viking or equal, with single pole double throw switch actuator installed to change switch position when OS&Y valve is being closed.
14. Indicator-Post Supervisory Switches: UL 753; electrical; single-pole, double throw, with normally closed contacts. Include design that signals controlled indicator-post valve is in other than fully open position.
15. As part of Division 26, wire supervisory switch to the fire alarm control panel. Provide 3/4-inch conduit and two #14 wires from the tamper switch to the fire department control panel.

2.13 AUTOMATIC SPRINKLERS

- A. Provide automatic sprinklers in accordance with the following listing. Provide fusible links or glass bulbs for 165 degrees F. unless otherwise noted; UL or FM approved.
- B. Automatic Sprinklers: With heat-responsive element complying with the following:
 1. UL 199, for applications except residential.
 2. UL 1767, for early suppression, fast-response applications.

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- C. Type: Spray pattern type, automatic closed-type heads of ordinary degree temperature rating, except that sprinklers to be installed in vicinity of heating equipment shall be of temperature ratings required for such locations by the currently adopted edition of NFPA 13.
1. Flush ceiling sprinklers, including escutcheon.
 2. Pendent, dry-type sprinklers.
 3. Quick-response sprinklers.
 4. Sidewall, dry-type sprinklers.
 5. Upright sprinklers.
 6. Concealed ceiling sprinklers, including cover plate.
- D. Sprinkler heads shall be UL or FM listed.
1. Exposed Locations: Provide upright type heads at all areas with no finished ceilings.
 2. Where heads are located at height of less than 8 feet above finished floor, or where heads are located in mechanical equipment areas, provide wire guards to protect heads from damage.
 3. Concealed Locations: Provide upright-type heads or pendent-type heads.
 4. Sidewall Locations: Where required and where approved by the Architect.
 5. Finished Ceilings: Locate at all ceilings with lay-in acoustical tile ceiling and at plaster or gypsum board type ceilings. Provide satin chrome finish and adjustable chrome finish metal ceiling escutcheons. Provide fully recessed pendant type and white enamel metallic cover in ceilings of finished spaces.
 6. Where fire sprinkler heads are located in rooms with surface mounted lights, provide multiple fully recessed pendant type with white enamel metallic cover in ceilings of finished spaces.
 7. Sprinkler heads in light hazard area shall be quick response type.
- E. Sprinkler Finishes: Chrome-plated, bronze, and painted.
- F. Sprinkler Escutcheons: Materials, types, and finishes for the following sprinkler mounting applications. Escutcheons for concealed, flush, and recessed-type sprinklers are specified with sprinklers.
1. Ceiling Mounting: Chrome-plated steel, one piece, flat.
 2. Sidewall Mounting: Chrome-plated steel, one piece, flat.
- G. Sprinkler Guards: Wire-cage type, including fastening device for attaching to sprinkler.
- H. Sprinkler Cabinet and Wrench: Furnish steel, baked red enameled, sprinkler box with capacity to store sprinklers and wrench sized to sprinklers. Spare sprinklers and wrenches called for under "Extra Stock."

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2.14 SPECIALTY SPRINKLER FITTINGS

- A. Specialty Fittings: UL listed, and FM approved; made of steel, ductile iron, or other materials compatible with piping.
- B. Drop-Nipple Fittings: UL 1474, with threaded inlet, threaded outlet, and seals; adjustable.
- C. Sprinkler, Drain, and Alarm Test Fittings: UL-listed, cast- or ductile-iron body; with threaded inlet and outlet, test valve, and orifice and sight glass.
- D. Sprinkler, Branch-Line Test Fittings: UL-listed, brass body; with threaded inlet and capped drain outlet and threaded outlet for sprinkler.
- E. Sprinkler, Inspector's Test Fittings: UL-listed, cast- or ductile-iron housing; with threaded inlet and drain outlet and sight glass.
- F. Flexible Hose Assemblies: FlexHead Industries flexible stainless steel, hose assembly consisting of a mounting bracket and a one-piece, leak tested sprinkler drop. The mounting bracket shall be compatible with any suspended or gypsum board ceiling system and FM/UL approved sprinklers. Assembly shall be FM approved and UL listed for use intended. Lengths of assemblies shall be selected with minimum length required to connect sprinkler without loops, traps, etc.

2.15 FIRE DEPARTMENT CONNECTIONS

- A. Exposed Inlet type, Fire Department Connections: UL 405, 175-psig minimum pressure rating; with corrosion-resistant-metal body with brass inlets, brass wall escutcheon plate, brass lugged caps with gaskets and brass chains, and brass lugged swivel connections. Include inlets with threads according to NFPA 1963 and matching local fire department sizes and threads, outlet with pipe threads, check devices or clappers for inlets, and escutcheon plate with marking similar to "AUTO SPKR."
 - 1. Finish: Polished chrome-plated.
- B. Exposed, Free-Standing type, Fire Department Connections: UL 405, 175-psig minimum pressure rating; with corrosion-resistant-metal body with brass inlets, brass wall escutcheon plate, brass lugged caps with gaskets and brass chains, and brass lugged swivel connections. Include inlets with threads according to NFPA 1963 and matching local fire department sizes and threads, outlet with pipe threads, check devices or clappers for inlets, and escutcheon plate with marking similar to "AUTO SPKR."
 - 1. Finish: Polished chrome-plated.

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2.16 FOAM STATION

- A. UL Listed hose reel foam station.
- B. Ansul 36 gallon bladder tank foam station.
- C. Steel pressure vessel, pre-piped with a proportioner and hose reel in a skid configuration.

2.17 HIGH EXPANSION FOAM GENERATORS

- A. Manufacturer: ANSUL JET-X
- B. UL Listed for use with either the ANSUL JET-X 2% High-Expansion Foam Concentrate or ANSUL JET-X 2.75% High-Expansion Foam Concentrate.
- C. FM Approved for use with ANSUL JET-X 2% High-Expansion Foam Concentrate.
- D. Capable of producing large volumes of foam by coating a stainless steel perforated metal screen with high-expansion foam solution and expanding it with airflow generated by a water-powered fan.
- E. Constructed of galvanized or bare carbon steel base material and are painted using a UL Listed paint system. All fans are painted using a marine-grade powder paint system tested to a minimum of 3,000 hours in salt spray corrosion testing to ensure adherence and durability. Stainless steel foam screens.

2.18 HORIZONTAL BLADDER TANKS

- A. Manufacturer: ANSUL Foam Bladder Tank
- B. Steel pressure vessel, which stores a foam concentrate within an elastomeric bladder. The concentrate is discharged from the tank by incoming water applying pressure to the bladder. This applied energy is transferred to the concentrate, supplying pressurized concentrate to the proportioner.
- C. Top discharge foam concentrate connections and the option to pipe using either grooved or NPT threaded connections. Trim piping to be stainless steel. All valves to be clearly identified by permanently attached nameplates and can be secured in position with included ring pins and tamper seals.
- D. Horizontal tanks are supported by two saddles with slotted holes for mounting.
- E. Provide with a high-build epoxy internal coating. Standard exterior paint. Paint systems to have been subjected and passed salt spray corrosion testing per ASTM B117-90. Standard paint has been tested to a minimum of 240 hours in accordance with UL 162, UL Subject 139, and FM 5130.

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- F. Elastomeric bladder that has been approved for use by Underwriter's Laboratory and FM Approvals for use with ANSUL foam concentrates. Center tubes to facilitate agent discharge.
- G. This contractor to provide storage of foam as required per latest version of NFPA 409 to ensure a reserve tank is not required.

2.19 DETECTION AND ACTUATION SYSTEM DESIGN

- A. Detection and actuation system to be provided and installed by fire protection contractor.
- B. Actuation systems shall be provided with complete circuit supervision and shall be arranged in accordance with Section 6.4 of NFPA 409, latest version.
- C. Detectors shall be installed in accordance with NFPA 72, latest version.
- D. Detection systems shall be provided with supervision as required by NFPA 72, latest version.
- E. Foam protection system to be activated via manual pull or combination of any closed-head sprinkler system and heat detection activating. Actuation of a closed-head sprinkler system shall generate an alarm. The goal of the detection and actuation system is to meet NFPA 409, latest version, and prevent false activations.

PART 3 - EXECUTION

3.1 FOAM PERFORMANCE TESTS

- A. All performance tests must be by written approval of the AHJ.
- B. Hydrostatic pressure tests shall be conducted on each system as specified in NFPA 11, NFPA 13, NFPA 14, or NFPA 16, latest version.
- C. All devices and equipment installed as part of the system shall be tested
- D. Full-flowing tests with water only shall be made on each foam-water deluge system as a means of checking the sprinkler distribution and to ensure against clogging of piping and sprinklers by foreign matter carried by the water. The maximum number of systems that are designed to operate in case of fire, including supplementary systems, shall be in full operation simultaneously to provide a check on the adequacy and condition of the water supply. Suitable gauge connections and gauges shall be provided to verify hydraulic calculations.
- E. The smallest single foam-water deluge system shall be discharged using foam concentrate or a listed or approved alternative test method (see NFPA 11). This test

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shall be run for a length of time to stabilize discharge before test samples are taken to determine the proportioning rate.

- F. The maximum number of systems expected to operate shall be simultaneously discharged with foam or a listed or approved alternative test method (see NFPA 11). This test shall be run for a length of time to stabilize discharge before test samples are taken to determine the proportioning rate.
- G. Supplementary and low-level protection systems shall be subjected to foam flow tests with foam, or a listed or approved alternative test method (see NFPA 11), flowing simultaneously from the maximum number of sprinkler systems expected to operate, to ensure that the hazard is protected in conformance with the design specification and to determine whether the flow pressures, agent discharge capacity, foam coverage, proportioning rate, and other operating characteristics are satisfactory.
- H. Where separate proportioning systems are utilized for the foam-water deluge sprinklers and the supplementary protection systems, water only shall be permitted to be flowed in the foam-water deluge sprinkler systems simultaneously with foam or a listed or approved alternative test method (see NFPA 11) in the supplementary protection system.
- I. Supplementary and low-level protection systems shall be examined visually to determine that they have been installed correctly. Checks shall be made for such items in conformity with installation plans, continuity of piping, tightness of fittings, removal of temporary blank flanges, and accessibility of valves and controls. Devices shall be identified and operating instructions prominently posted.
- J. The timing of the foam system discharge shall be measured beginning at the time of system actuation.
- K. Foam remnants from the test must be vacuumed out and disposed of off site.
- L. Final Approval.
 - 1. The installing company shall furnish a written statement that the work has been completed in accordance with 6.2.1 and tested in accordance with the provisions of NFPA 6.2.11.

3.2 PRODUCT HANDLING AND PROTECTION

- A. Deliver packaged materials in their original, unopened wrapping with labels intact. Protect materials from water, the elements and other damage during delivery, storage and handling.

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3.3 PREPARATORY PROVISIONS

- A. The Contractor shall be responsible for the examination and acceptance of all conditions affecting the proper construction and/or installation of the Work of this Section and shall not proceed until all unsatisfactory conditions have been corrected. Commencing work shall be construed as acceptance of all conditions by the Contractor as satisfactory for the construction and/or installation of the Work
- B. Perform fire-hydrant flow test according to NFPA 13 and NFPA 291. Use results for system design calculations.
- C. Report test results promptly and in writing

3.4 EARTHWORK

- A. Refer to Section 312000 Earth Moving for excavating, trenching, and backfilling.

3.5 PIPING APPLICATIONS

- A. Do not use welded joints with galvanized steel pipe.
- B. Flanges, unions, and transition and special fittings with pressure ratings the same as or higher than system's pressure rating may be used in aboveground applications, unless otherwise indicated.
- C. Piping between Fire Department Connections and Check Valves: Use galvanized, standard-weight steel pipe with threaded ends; cast- or malleable-iron threaded fittings; and threaded joints.
- D. Underground Water Supply and Service-Entrance Piping: Use ductile-iron, mechanical-joint pipe and fittings and restrained joints. Include corrosion protective encasement. Use In-Building Riser for service-entrance piping

3.6 VALVE APPLICATIONS

- A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
 - 1. Fire-Protection-Service Valves: UL listed, and FM approved for applications where required by NFPA 13.
 - a. Shutoff Duty: Use gate valves.
 - 2. General-Duty Valves: For applications where UL-listed and FM-approved valves are not required by NFPA 13.
 - a. Shutoff Duty: Use gate, ball, or butterfly valves.

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- b. Throttling Duty: Use globe, ball, or butterfly valves.

3.7 JOINT CONSTRUCTION

- A. Threaded Joints: Comply with NFPA 13 for pipe thickness and threads. Do not thread pipe smaller than NPS 8 with wall thickness less than Schedule 40 unless approved by authorities having jurisdiction and threads are checked by a ring gauge and comply with ASME B1.20.1.
- B. Steel-Piping, Grooved Joints: Use Schedule 30 or Schedule 10 steel pipe with roll-grooved ends; steel, grooved-end fittings; and steel, keyed couplings. Assemble joints with couplings, gaskets, lubricant, and bolts according to coupling manufacturer's written instructions. Use gaskets listed for dry-pipe service for dry piping.
- C. Dissimilar-Metal Piping Joints: Construct joints using dielectric fittings compatible with both piping materials.
 - 1. 2 inch and Smaller: Use dielectric couplings or nipples.
 - 2. 2-1/2 to 4 inches: Use dielectric flanges.
 - 3. 5 inch and Larger: Use dielectric flange insulation kits.
- D. Dissimilar-Piping-Material Joints: Construct joints using adapters or couplings compatible with both piping materials. Use dielectric fittings if both piping materials are metal. Refer to Section 230500 Basic Materials and Methods for dielectric fittings.

3.8 WATER SUPPLY AND SERVICE-ENTRANCE PIPING AND PIPING TO FIRE DEPARTMENT CONNECTION

- A. Connect water supply piping to fire main; connect sprinkler piping to fire-service piping of size and in location indicated for service entrance to building.
- B. Install shut-off valve, backflow preventer, pressure gauge, and other accessories indicated at connection to water supply piping.

3.9 INSTALLATION OF FIRE SPRINKLER PIPING

- A. General: Comply with the requirements of the Division 21 sections and referenced NFPA standards for installation of fire sprinkler piping material. Install fire sprinkler piping products where shown, in accordance with the manufacturer's written instructions, and in accordance with recognized industry practices to ensure that fire sprinkler piping complies with requirements and serves its intended purpose.
- B. Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated, as far as practical.

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1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Architect before deviating from approved working plans.
- C. Coordination: Coordinate all piping, heads, and sprinkler work to Architectural, Structural, Mechanical, and Electrical Work. Conceal piping, except where so indicated otherwise or where absolutely necessary. Place exposed piping where required by the Architect. Provide any offsets or additional piping required to coordinate this system with all other Work.
 1. If piping is installed such that it is exposed to view in any location normally available to the users of the building or the public, it shall be relocated and concealed to the Architect's satisfaction, and at no additional cost to the Owner.
- D. Any differences or disputes concerning coordination, interference, head and pipe locations or extent of work shall be decided by Architect and his decision shall be final.
- E. Supply System: Provide supply connections as required to service the sprinkler system.
 1. Installation shall conform to the applicable requirements of NFPA 13 and IBC.
 2. Make joints as specified herein and in a manner approved by Architect. Leave joints exposed until final inspection and tests have been made.
 3. Brace or clamp bends in accordance with the requirements. The clamp rods at the flange and spigot piece shall be long enough to pass through the flange.
 4. Before connection of sprinkler system to underground supply, flush supply connections out thoroughly in accordance with NFPA.
- F. Supply System: Provide supply connections as required to service the sprinkler system.
 1. Install pipe, fittings, and hangers in accordance with requirements of IBC current adopted edition, "Fire Protection Systems".
 2. Cutting structural members for passage of sprinkler piping or for pipe hanger fastening will not be permitted except on review of Architect for each specific case.
 3. Holes through walls, floors, and ceilings shall be large enough to accommodate pipe expansion. Provide suitable plates at each hole to ensure the effectiveness of floor or wall as a fire stop. Foundation penetration shall have a 2-inch annular space around pipe sealed watertight.
 4. Provide long runs of pipe with suitable means to permit free movement due to expansion and contraction.
 5. Make reduction in pipe sizes with one-piece concentric tapered reducing fittings. Bushings will not be acceptable.
 6. Couplings shall not be used except where the length of pipe between fittings exceeds 20 feet 0 inches.
 7. Use flanged fittings in control valves and drain assembly and at the base of risers.

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8. Use malleable iron unions of the ground joint type in looped sprinkler systems where pipe is 2 inches in diameter or smaller. Where loops larger than 2 inches are used, companion flanges shall be installed.
 9. Special couplings approved for use in sprinkler systems may be used in place of unions and flanged connections where applicable.
 10. Install sectional valves in inlet piping, at bottom of each riser, and in all loops as required.
 11. Mount supervisory switches on each sectional valve.
 12. Install pressure gauges at top of each standpipe.
 13. Install valved hose connections 3/4-inch size on sprinkler at ends of branch lines and cross mains.
 14. Install Owner's test connection at most remote point from riser.
- G. Install ductile iron underground water supply and service-entrance piping according to NFPA 24 and with restrained joints. Encase piping in corrosion-protective encasement.
- H. Install unions adjacent to each valve in pipes 2 inches and smaller. Unions are not required on flanged devices or in piping installations using grooved joints.
- I. Install flanges or flange adapters on valves, apparatus, and equipment having 2-1/2 inches and larger connections.
- J. Install "Inspector's Test Connections" in sprinkler piping, complete with shutoff valve, sized and located according to NFPA 13.
- K. Install sprinkler zone control valves, test assemblies, and drain risers adjacent to sprinkler risers when sprinkler branch piping is connected to sprinkler risers.
- L. Install ball drip valves to drain piping between fire department connections and check valves. Drain to floor drain or outside building.
- M. Install sectional valves in piping.
- N. Mount supervisory switches on each sectional valve.
- O. Install valved hose connections of the sizes indicated, or 3/4 inch size if not otherwise indicated, on sprinklers at ends of branch lines and cross mains at locations where indicated.
- P. Install drain piping at low points of fire sprinkler piping.
- Q. Identification: Apply signs to control, drain, test and alarm valves to identify their purpose and function. Provide lettering size and style selected by Authority Having Jurisdiction.
- R. Hangers and Supports: Comply with NFPA 13 for hanger materials and installation.
- S. Install piping with grooved joints according to manufacturer's written instructions. Construct rigid piping joints, unless otherwise indicated.

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- T. Install new pressure gauges on riser or feed main, at each sprinkler test connection, and at top of each standpipe. Include pressure gauges with connection not less than NPS 1/4 and with soft metal seated globe, valve, arranged for draining pipe between gauge and valve. Install gauges to permit removal and install where they will not be subject to freezing.
- U. Fill wet-pipe sprinkler and standpipe system piping with water.

3.10 SPECIALTY SPRINKLER FITTING INSTALLATION

- A. Install specialty sprinkler fittings according to manufacturer's written instructions.

3.11 VALVE INSTALLATION

- A. Refer to Section 230523 Valves for installing general-duty valves. Install fire-protection specialty valves, trim, fittings, controls, and specialties according to NFPA 13, manufacturer's written instructions, and authorities having jurisdiction.
- B. Install listed fire-protection shutoff valves supervised-open, located to control sources of water supply except from fire department connections. Install permanent identification signs indicating portion of system controlled by each valve.
- C. Specialty Valves:
 - 1. Alarm Check Valves: Install in vertical position for proper flow, including bypass check valve and retarding chamber and drain-line connections.

3.12 FIRE DEPARTMENT CONNECTION INSTALLATION

- A. Install Exposed-Inlet wall or free-standing type (See Drawings), fire department connections.
- B. Install ball drip valve at each valve for fire department connection.

3.13 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment to allow service and maintenance.
- C. Connect water-supply piping to fire-suppression piping. Include backflow preventer between potable-water piping and fire-suppression piping. Refer to Section 221119 Domestic Water Piping Specialties for backflow preventers.
- D. Install ball drip valves at each check valve for fire department connection. Drain to floor drain or outside building.

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- E. Connect piping to specialty valves, hose valves, specialties, fire department connections, and accessories.
- F. Connection of alarm devices to fire alarm system by Division 26 Contractor.
- G. Ground equipment according to Division 26 Section, "Grounding and Bonding Systems".
- H. Connect wiring according to Division 26 Section "Conductors".
- I. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.14 SLEEVES AND FLASHINGS

- A. All sleeves shall be properly anchored in place during pouring of slabs. All pipe sleeves through water resistant floors shall extend at least 1-1/2 inches above the finished floor and shall be watertight with the pipes passing through the sleeves. Sleeves passing through all other floors shall be of sufficient length to be flush with bottom of slab and extend one inch above the finished floor and shall be securely anchored to the slab.
- B. All piping passing through membrane water resistant walls and floors shall be provided with a water resistant, type pipe sleeve, with Schedule 40 pipe extension or equal. Pack water resistant sleeves with white oakum and mastic.
- C. Wherever pipes are exposed and pass through walls, floors, partitions or ceilings, they shall be fitted with chromium plated cast steel escutcheons held in place with setscrews. Care shall be taken to protect the escutcheons during the course, of construction.
- D. Sleeves in masonry or other walls shall be put in place as the construction progresses, avoiding the cutting of completed work.
- E. All piping passing through fire-rated assemblies shall be installed within fire-rated pipe sleeves.

3.15 INSPECTION

- A. Examine areas and conditions under which fire protection materials and products are to be installed.
- B. After completion of the fire protection installation and at the start of the guarantee period, execute the National Automatic Sprinkler and Fire Control Association, Inc. standard form of "Inspection Agreement", at no increase in Contract Sum, calling for four inspections of the sprinkler system during the guarantee year, plus the following maintenance to be performed during the course, of the fourth inspection.

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1. Operating of all control valves.
 2. Lubrication of operating stems of all control valves.
 3. Operating of electrical alarms.
 4. Cleaning of alarm valves.
 5. Lubrication of Fire Department hose connection inlets.
- C. Fill out "Inspection Agreement" in triplicate after each inspection and send copies to the Owner, Insurance Carrier and Fire Department.
- D. Welding inspection of the sprinkler system is to be done by the Architect.

3.16 INSTALLATION OF BASIC IDENTIFICATION

- A. Install mechanical identification in accordance with Section 230553.
- B. Install fire protection signs on piping in accordance with NFPA requirements.
- C. Paint all exposed piping and including fire protection riser, color shall be selected by the Architect. See Division 09 Painting.

3.17 FIELD QUALITY CONTROL

- A. Sprinkler Piping Flushing: Prior to connecting sprinkler risers for flushing, flush water feed mains, lead-in connections, and control portions of sprinkler piping. After fire sprinkler piping installation has been completed and before piping is placed in service, flush entire sprinkler system as required to remove foreign substances under pressure as specified in NFPA 13. Continue flushing until water is clear, and check to ensure that debris has not clogged sprinklers.
- B. Hydrostatic Testing: After flushing system, test fire sprinkler piping hydrostatically for period of 2 hours at not less than 200 psi or at 50 psi greater than system pressure where pressure is anticipated to be in excess, of 150 psi. Check system for leakage of joints. Measure hydrostatic pressure at low point of each system or zone being tested.
- C. Repair or replace broken, damaged, or otherwise defective parts, materials, and work. Leave entire work in condition satisfactory to Architect. At completion, carefully clean and adjust equipment and trim that are installed as part of this work. Leave systems and equipment in satisfactory operating condition. Repair or replace piping system as required to eliminate leakage in accordance with NFPA standards for "little or no leakage," and retest as specified to demonstrate compliance.

3.18 EXTRA STOCK

- A. Heads: For each style and temperature range required, furnish additional sprinkler heads, amounting to one unit for every 100 installed units but not less than 10 heads, in proportion to the total number of each style of head.

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- B. Wrenches: Furnish two sprinkler wrenches for each type and size of sprinkler connection.
- C. Obtain receipt from Owner that extra stock has been received.

3.19 CLEANING AND PROTECTION

- A. Clean dirt and debris from sprinklers and other equipment.
- B. Remove and replace sprinklers having paint other than factory finish.
- C. Protect sprinklers from damage until Substantial Completion.

3.20 COMMISSIONING

- A. Verify that specialty valves, trim, fittings, controls, and accessories are installed and operate correctly.
- B. Verify that specified tests of piping are complete.
- C. Verify that potable-water supplies have correct types of backflow preventers.
- D. Verify that hose connections and fire department connections have threads compatible with local fire department equipment.
- E. Fill wet-pipe standpipe piping with water.
- F. Verify that hose connections are correct type and size.
- G. Energize circuits to electrical equipment and devices.
- H. Adjust operating controls and pressure settings.
- I. Coordinate with fire alarm tests. Operate as required.

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Fire Suppression Piping Test Log (per NFPA Requirements)						
Date	System	Description of Piping Section Tested	Test Press. (psig)	Test Duration (hours)	Results Pass/Fail	Witness (Contractor) Initials

This form shall be completed and submitted with the project closeout documents. Contractor shall copy this form if more sheets are required. Piping pressure test log shall be kept at project site and shall be made available to the Architect upon request.

END OF SECTION 21 13 00

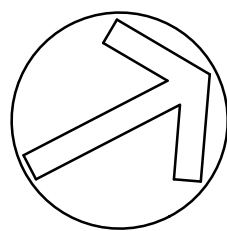


MS One Call Center
CALL BEFORE YOU DIG
1-800-227-6477

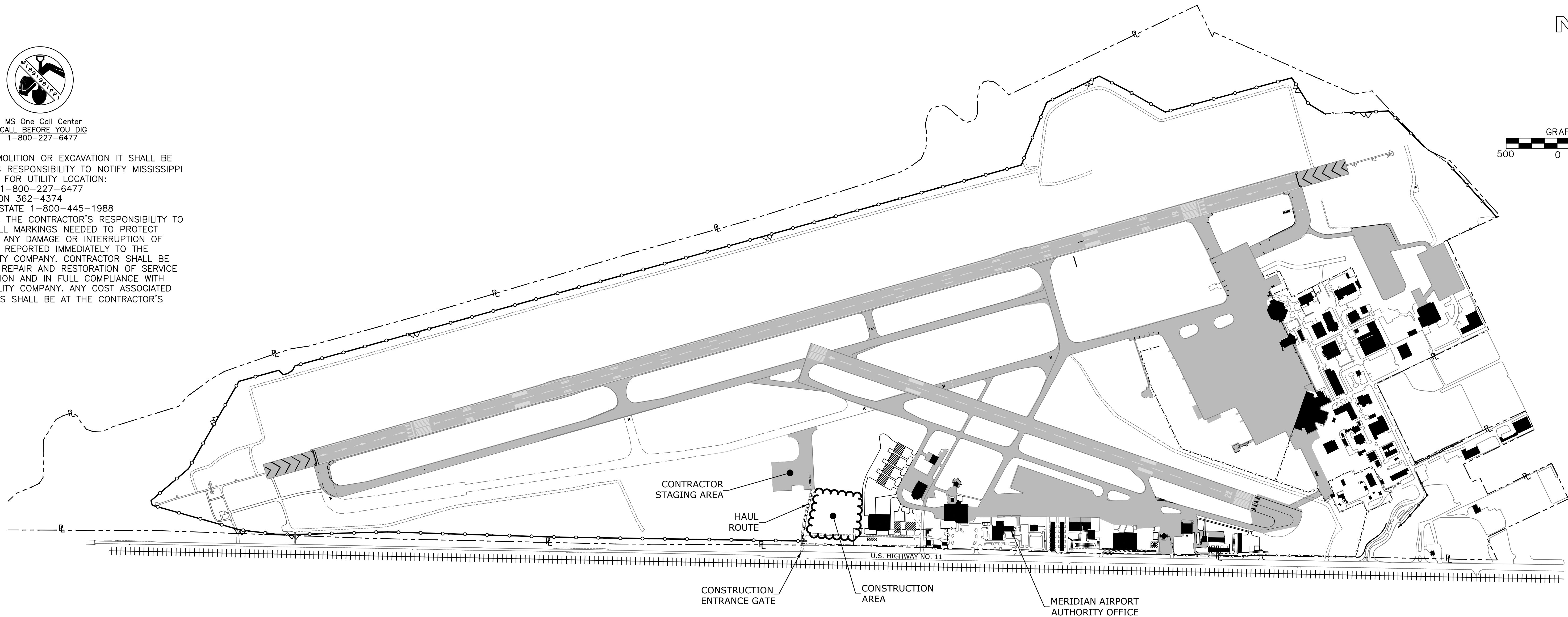
PRIOR TO ANY DEMOLITION OR EXCAVATION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY MISSISSIPPI ONE-CALL CENTER FOR UTILITY LOCATION:
IN MISS. 1-800-227-6477
IN JACKSON 362-4374
OUT-OF-STATE 1-800-445-1988

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ANY & ALL MARKINGS NEEDED TO PROTECT EXISTING UTILITIES. ANY DAMAGE OR INTERRUPTION OF SERVICE SHALL BE REPORTED IMMEDIATELY TO THE APPROPRIATE UTILITY COMPANY. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND RESTORATION OF SERVICE IN FULL COOPERATION AND IN FULL COMPLIANCE WITH THE AFFECTED UTILITY COMPANY. ANY COST ASSOCIATED WITH SUCH REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE.

NORTH



GRAPHIC SCALE IN FEET
500 0 500 1000 1500



SAFETY/SECURITY NOTES

1. GENERAL — THE CONTRACTOR SHALL COMPLY WITH ALL SECURITY REQUIREMENTS SPECIFIED HEREIN AND AS DIRECTED BY OWNERS APPROVED REPRESENTATIVE (O.A.R.)

2. CONTRACTOR PERSONNEL SECURITY ORIENTATION — THE CONTRACTOR SECURITY OFFICER SHALL BE RESPONSIBLE FOR BRIEFING ALL CONTRACTOR PERSONNEL ON THESE REQUIREMENTS AND, FROM TIME TO TIME, OTHER SECURITY PROVISIONS ADOPTED BY THE CONSTRUCTION SECURITY COMMITTEE. ALL NEW CONTRACTOR EMPLOYEES SHALL BE BRIEFED ON THESE REQUIREMENTS PRIOR TO WORKING IN THE CONSTRUCTION AREA.

3. ACCESS TO THE SITE — CONTRACTOR'S ACCESS TO THE SITE SHALL BE AS SHOWN ON THIS PLAN AND AS DIRECTED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL NOT PERMIT ANY UNAUTHORIZED CONSTRUCTION PERSONNEL OR TRAFFIC ON THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL TO AND FROM THE VARIOUS CONSTRUCTION AREAS ON THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR THE IMMEDIATE CLEAN UP OF ANY DEBRIS DEPOSITED ALONG ANY ACCESS ROAD AS RESULT OF HIS/HER CONSTRUCTION TRAFFIC. DIRECTIONAL SIGNING AT THE ACCESS GATE AND ALONG THE DELIVERY ROUTE TO THE STORAGE AREA OR WORK SITE SHALL BE AS DIRECTED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL ONLY USE THE DISGNATED GATE FOR ENTRANCE TO THE PROJECT. THIS GATE SHALL REMAIN LOCKED OR MANNED AT ALL TIMES.

4. MATERIALS DELIVERY TO THE SITE — ALL CONTRACTOR'S MATERIAL ORDERS FOR DELIVERY TO THE SITE WILL USE THE ACCESS POINT AT THE CONTRACTOR'S STORAGE SITE AS A DELIVERY ADDRESS AT THE AIRPORT. THIS WILL PRECLUDE DELIVERY TRUCKS FROM ENTERING INTO THE AIRPORT OR TAKING SHORT CUTS THROUGH THE PERIMETER GATES AND ENTERING AIRCRAFT OPERATIONS AREAS INADVERTENTLY.

5. CONSTRUCTION AREA LIMITS — THE LIMITS OF CONSTRUCTION MATERIAL STORAGE AREAS, EQUIPMENT STORAGE AREA, PARKING AREA AND OTHER AREAS REQUIRED FOR THE CONTRACTOR'S EXCLUSIVE USE DURING CONSTRUCTION SHALL BE MARKED BY THE CONTRACTOR AND APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL ERECT AND MAINTAIN SUITABLE FENCING, SIGNAGE AND WARNING DEVICES VISIBLE FOR BOTH DAY/NIGHT USE TO DELINEATE THE PERIMETER OF ALL SUCH AREAS.

6. CONSTRUCTION HEIGHT RESTRICTIONS — ANY CRANE USE BY THE CONTRACTOR SHALL BE COORDINATED WITH THE MERIDIAN AIRPORT AUTHORITY AT MINIMUM 90 DAYS PRIOR TO FIRST USE.

CONTRACTOR STORAGE, STAGING, DUST AND HAUL ROADS

A. STORAGE AND STAGING

1. THE CONTRACTOR'S STAGING AREA SHALL BE AS SHOWN ON PLANS OR AS APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. CONTRACTOR SHALL MAINTAIN STAGING AREA AND SHALL BE RESPONSIBLE FOR RESTORING THE STAGING AREA TO AT MINIMUM PRE-CONSTRUCTION CONDITIONS. THE CONTRACTOR SHALL MAKE PROVISIONS FOR ANY REQUIRED UTILITIES, AFTER APPROVAL OF MERIDIAN AIRPORT AUTHORITY.

C. DUST CONTROL

1. DURING ALL PHASES OF CONSTRUCTION, CONTRACTOR SHALL TAKE MEANS NECESSARY TO PREVENT THE OCCURRENCE OF DUST WHICH WILL BE OBJECTIONABLE TO THE OPERATION OF THE AIRPORT. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO, AIRPORT AUTHORITY OPERATIONS, MAINTENANCE AREAS, RENTAL CAR FACILITIES AND AIRCRAFT OR AIRFIELD OPERATIONS. CONTRACTOR SHALL DISCONTINUE WORK IMMEDIATELY IN WHICH DUST IS CREATING A UNIQUE HAZARD TO AIR TRAFFIC. ALL COSTS FOR CONTROLLING DUST OR POLLUTANTS TO THE AIR OF ANY KIND SHALL BE INCIDENTAL TO THE CONTRACT.

B. HAUL ROADS

1. HAUL ROADS TO BE USED UNDER THIS PROJECT SHALL BE THOSE INDICATED ON THE DRAWINGS OR OTHERWISE SPECIFICALLY DESIGNATED BY THE OWNER'S AUTHORIZED REPRESENTATIVE (OAR). IN GENERAL, THE CONTRACTOR SHALL CONFINE EQUIPMENT AND HAULING TO THE AREAS UNDER CONSTRUCTION. NO DEBRIS SHALL BE ALLOWED ON THE ROADWAYS. THE PAVEMENT WILL BE CLEANED BY THE CONTRACTOR USING POWER BROOMS OR SWEEPERS, AS REQUIRED, TO KEEP THE AREA CLEAR OF ALL SOILS, CLODS OR OTHER DEBRIS.

2. THE CONTRACTOR IS NOT PERMITTED TO OPERATE ANY CONSTRUCTION RELATED VEHICLES ON THE AIRPORT ENTRANCE ROAD SYSTEM, EXCEPT AS SHOWN. ALL DELIVERIES TO THE STAGING AREA SHALL BE VIA THE ACCESS ROADS AS SHOWN ON THIS SHEET.

3. THE ACCESS POINTS TO THE PROJECT SITE SHALL BE AS DEFINED ON THIS SHEET. THE SPECIFIED GATE AREAS SHALL BE MONITORED BY A CONTRACTOR FURNISHED GATE GUARD AS NEEDED OR WHEN CONTRACTOR OPERATIONS INVOLVE ENTERING AND EXITING THE AIRFIELD ON A REGULAR BASIS.

4. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR RESTORING ALL AIRPORT SERVICE ROADS TO THEIR PRE-CONSTRUCTION CONDITION WHERE SUCH ROADS ARE DAMAGED BY THE CONTRACTOR'S HAULING OPERATIONS. ANY ENHANCEMENTS PLACED BY THE CONTRACTOR, INCLUDING STONE, CULVERTS, ETC. SHALL REMAIN IN PLACE. THE CONTRACTOR AND THE OWNER SHALL JOINTLY DETERMINE THE EXISTING CONDITIONS AS A BASIS FOR THIS RESTORATION REQUIREMENT.

5. THE CONTRACTOR SHALL RESTORE ALL TURF AND PAVED AREAS OF THE MERIDIAN AIRPORT PROPERTY TO THEIR ORIGINAL CONDITION, INCLUDING THE ESTABLISHMENT OF TURF. ALL HAULING ALONG OR CROSSING THE AIRPORT ROADS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE MISSISSIPPI DEPARTMENT OF TRANSPORTATION STANDARDS AND SHALL BE COORDINATED BY AND ACCOMPLISHED BY THE CONTRACTOR.

6. ALL COSTS FOR CONSTRUCTING, REMOVING AND RESTORING OF HAUL ROADS AND ADJACENT AREAS REQUIRED FOR THE COMPLETION OF THE WORK SHALL BE INCLUDED AS AN INCIDENTAL TO CONSTRUCTION CONTAINED IN THE PROPOSAL.

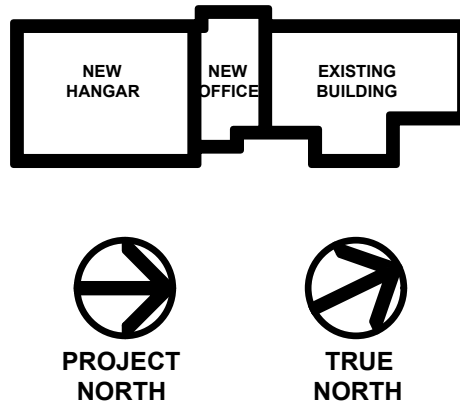


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KEY PLAN



Seal



No.	Description	Date

	Addendum No. 2	
3	100% Construction Documents	2/14/20
2	100% Design Development	10/17/19
1	100% Schematic Design	8/7/19

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

HANGAR ADDITIONS & ALTERATIONS

2913 Airport Blvd. South St.
Meridian, MS 39307

Sheet Title

PROJECT SAFETY PLAN

Project No.	Date
17-278	2/14/20

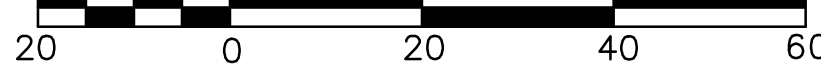
C-100

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C-103

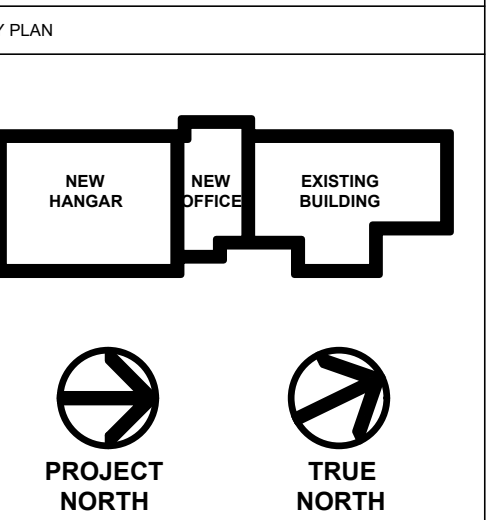
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C-103



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No.	Description	Date
A	Addendum No. 2	3/12/20
	100% Construction Documents	2/14/20
	100% Design Development	10/17/19
	100% Schematic Design	8/7/19

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

HANGAR ADDITIONS & ALTERATIONS

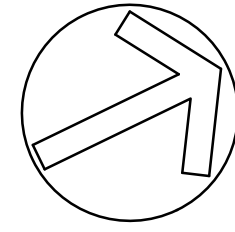
2913 Airport Blvd, South St.
Meridian, MS 39307

GRADING AND DRAINAGE PLAN

Project No.	Date
17-278	02/14/2020

C-105

NORTH



SCALE: 1"= 20'

GRAPHIC SCALE IN FEET

20 0 20 40 60

STUB OUT WATER LINE
AND ELECTRICAL CONDUIT
FOR FUTURE CONNECTION
TO WASH DOWN STATION

390 L/F. 1" GALVANIZED
STEEL WATER LINE FOR
NEW PLANE WASHDOWN
AREA

TIE NEW 6" SEWER PIPE TO
EXISTING 8" SEWER PIPE
INVERT IN. 287.68

EXISTING 500 GAL
OIL/WATER SEPARATOR
TOP EL. 292.20
PIPE IN 287.68

66 L.F. 6" PVC SDR-26
SEWER PIPE
@ 0.67% SLOPE

340 L.F. 15" N-12
HDPE DRAINAGE PIPE
FOR ROOF DRAIN
CONNECTION

SOUTH
MECHANICAL
YARD

EXISTING 8" PVC
SDR-26 SANITARY
SEWER

GAS LINE, METER AND REGULATOR TO
BE INSTALLED BY UTILITY COMPANY
CONTRACTOR SHALL COORDINATE WITH
UTILITY COMPANY AND PROJECT
ARCHITECT FOR GAS LINE
INSTALLATION

EXTEND 12" DUCTILE IRON WATER LINE FROM
HYDRANT AND CAP

EXISTING FIRE
HYDRANT

EXISTING SANITARY
SEWER MANHOLE
TOP EL. 289.26
INV. EL. 286.01

EXISTING 12" DUCTILE IRON
WATER LINE

SECTION OF FENCE TO BE REMOVED
FOR 15" DRAINAGE CONSTRUCTION
& PUT BACK IN PLACE
NO GAP SHALL BE ALLOWED IN
SECURITY FENCE

15" N-12 HDPE
DRAINAGE PIPE
INV. 283.00

EXISTING INLET AND 8" SEWER PIPE
TO REMAIN

EXISTING AIRCRAFT CONCRETE APRON

START OF 15" DRAINAGE PIPE
INV. EL. 286.40

390 L.F. 2" COMPRESSED AIR
TUBING

NEW AIRCRAFT
CONCRETE APRON
(SEE SHEET C-200)

TWO-WAY SEWER
CLEANOUT, TYP.
INV. 288.12
SEE PLUMBING
DETAILS

4" PVC SDR-26
CONDENSATE DRAIN

2" PVC SDR-26
DRAIN LINE

FOR CONTINUATION
OF GAS LINE
SEE PLUMBING PLANS

SEE P-103 FOR
CONTINUATION

50 L.F. 10" DUCTILE IRON
FIRE PROTECTION LINE

NEW AIRCRAFT HANGAR
(SEE ARCH PLANS)

FOR CONTINUATION
OF AIR AND WATER
SEE PLUMBING PLAN

8 L.F. 2" HDPE
DRAINAGE PIPE
FROM SUMP PUMP
INV. EL. 289.15

NEW AIRCRAFT HANGAR BUILDING
(SEE ARCH PLANS)

72 L.F. 2" HDPE DRAINAGE PIPE
FROM ELEVATOR SHAFT SUMP PUMP
TIE TO EXISTING 8" DRAINAGE PIPE
(FOR CONTINUATION SEE PLUMBING PLAN)

60 L.F. 3" SCH. 40 PVC
WATER SERVICE LINE
SEE PLUMBING PLAN FOR
CONTINUATION

13 L.F. 3" HDPE DRAINAGE PIPE
TIE TO NEW INLET
INV. IN 289.15
(FOR CONTINUATION SEE PLUMBING
PLAN)

74 L.F. 4" PVC SDR-26
SANITARY SEWER SERVICE LINE
SEE PLUMBING PLAN FOR
CONTINUATION

TWO-WAY SEWER CLEANOUT, TYP.
SEE PLUMBING DETAILS

EXISTING 8" DUCTILE IRON WATER LINE
EXISTING 8" PVC SEWER LINE

DEAN AIRCRAFT MAINTENANCE HANGAR
(EXISTING)

EXISTING CONCRETE PAVEMENT

EXISTING SANITARY
SEWER MANHOLE
TOP EL. 291.33
INV. EL. 285.54

TIE TO EXISTING
8" SANITARY
SEWER
INVERT TO BE
VERIFIED

EXISTING 8" N-12
HDPE DRAINAGE PIPE

AIRCRAFT SECURITY FENCE

MDOT RIGHT-OF-WAY

U.S. HIGHWAY NO. 11



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KEY PLAN



PROJECT
NORTH

TRUE
NORTH



No.	Description	Date

3	100% Construction Documents	2/14/20
2	100% Design Development	10/17/19
1	100% Schematic Design	8/7/19

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

HANGAR ADDITIONS &
ALTERATIONS

2913 Airport Blvd. South St.
Meridian, MS 39307

Sheet Title

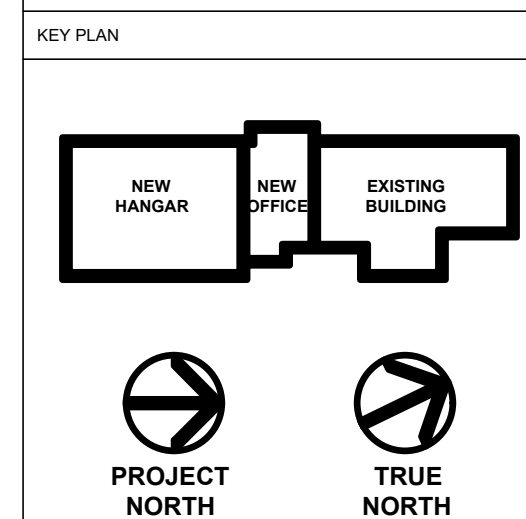
UTILITY PLAN

Project No.	Date
17-278	02/14/2020

C-106

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1. EACH SPECIFIC TYPE OF JOINT SHALL ONLY BE USED AS INDICATED ON THE JOINT LAYOUT PLAN
2. ALL CONSTRUCTION JOINTS (I.E. A JOINT BETWEEN SEPARATE PLACEMENTS OF CONCRETE PAVEMENT) SHALL BE A TYPE E DOWELED JOINT. THE CONTRACTOR MAY ELECT TO PLACE CONCRETE ON THE CIRCULAR DRIVE AREA IN ONE POUR IN WHICH CASE DOWELS ARE NOT REQUIRED.
3. ALL CONSTRUCTION JOINTS NOT SHOWN (SUCH AS A JOINT BETWEEN SEPARATE PLACEMENTS OF CONCRETE) SHALL BE A DOWEL CONSTRUCTION JOINT. A THICKENED EDGE SHALL BE USED AROUND THE PERIMETER OF THE APRON.
4. FOR CONSTRUCTION OF THE APRON, JOINT LOCATIONS SHALL MATCH EXISTING SPACING AND DOWELS SHALL BE 1" X 18" SOLID STEEL BARS SPACED AT 12" ON CENTER
5. FOR CONSTRUCTION OF THE APRON, ANY TIE BARS SHALL BE #5 BARS, 30" LONG SPACED AT 30" ON CENTER
6. JOINT SPACING ON DROP-OFF AREA SHALL NOT EXCEED 10 FEET, ON CENTER, IN EITHER DIRECTION AS SHOWN. JOINTS SHALL BE SPACED TO ELIMINATE ODD OR NARROW JOINTS.
7. IF MORE THAN ONE POUR IS REQUIRED FOR THE CIRCULAR DRIVE AREA AND DOWELS ARE NEEDED, DOWELS SHALL BE $\frac{3}{4}$ " X 18" SOLID STEEL BARS SPACED AT 12" ON-CENTER
8. FOR CIRCULAR DRIVE AREA, TIE BARS SHALL BE #4 BARS 20" LONG SPACED AT 36" ON-CENTER
9. NO CONCRETE SHALL BE PLACED WITHOUT JOINT SAWING EQUIPMENT AND OPERATORS ON-SITE. ALL EQUIPMENT SHALL BE IN ADEQUATE OPERATING CONDITION.

- | | | |
|---|-----------------------------|----------|
|  | | |
| No. | Description | Date |
| | | |
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| | | |
| | | |
| 3 | Addendum No. 2 | 3/12/20 |
| 1 | 100% Construction Documents | 2/14/20 |
| 2 | 100% Design Development | 10/17/19 |
| 1 | 100% Schematic Design | 8/7/19 |

Sheet Title

JOINT
LAYOUT PLAN

C-107

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EARTHWORK NOTES:

1. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION REGARDING THE SUBSURFACE CONDITIONS FOR THIS SITE. ALL EARTHWORK, SITE GRADING, AND SUBGRADE PREPARATION FOR THE FOUNDATION SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.

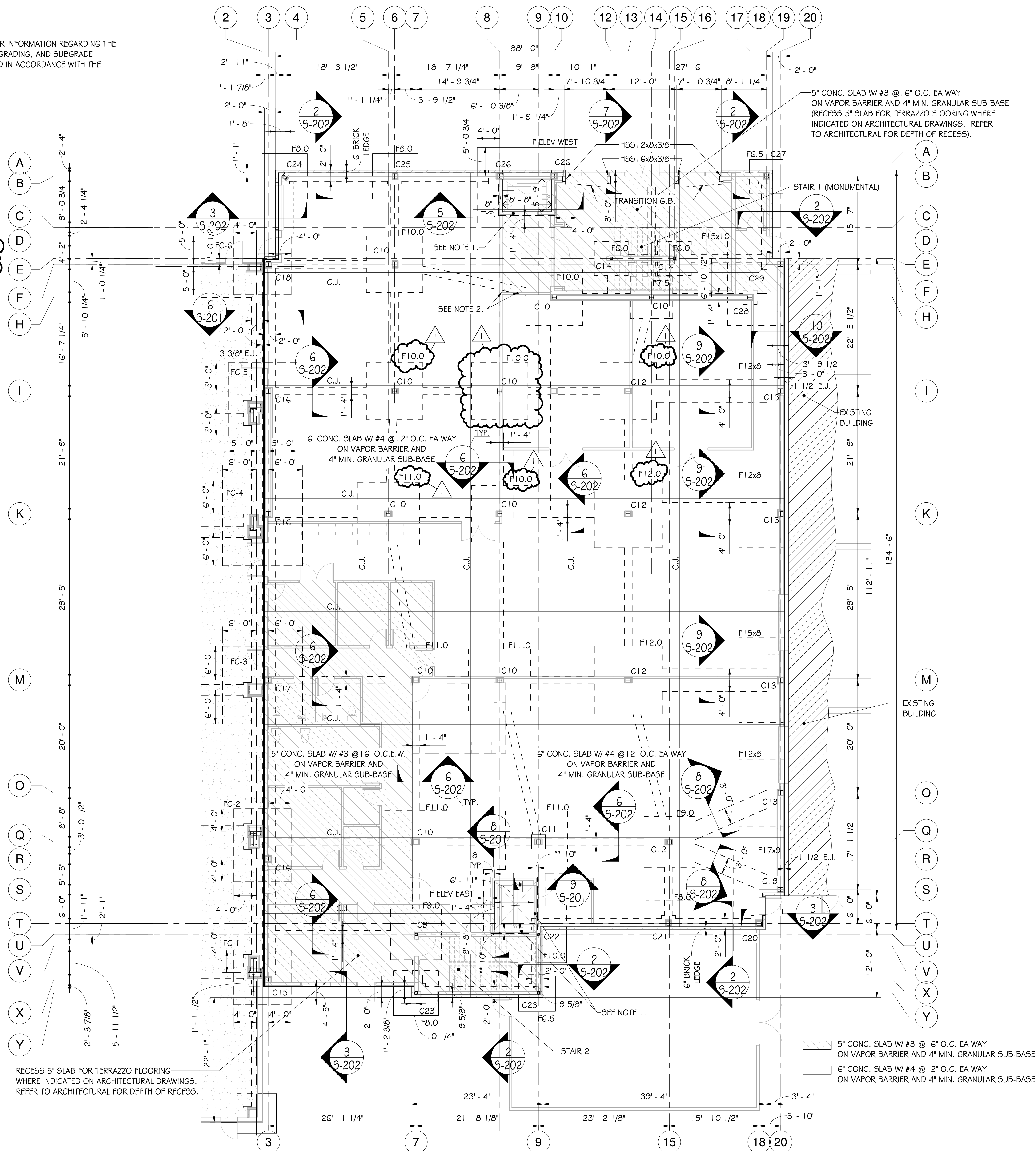
NOTES:

1. THE CONTRACTOR IS TO VERIFY ELEVATOR PIT DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO THE SUBMITTAL OF ANY SHOP DRAWINGS.

2. FOR 5" TO 6" SLAB-ON-GRADE TRANSITION, VERIFY WITH ARCHITECTURAL FLOORPLAN PRIOR TO CONCRETE PLACEMENT.

3. SLOPE SLAB TO DRAIN IN PARTS WASH 104.

4. CONTRACTOR IS TO INCLUDE IN HIS BASE BID THE EXCAVATION OFF 300 CUBIC YARDS OF EXISTING SOILS AT NEW SPREAD FOOTING LOCATIONS AND 300 CUBIC YARDS OF SUITABLE REPLACEMENT MATERIALS AS INDICATED IN THE GEOTECHNICAL REPORT. LOCATIONS FOR REMOVAL AND REPLACEMENT OF MATERIALS SHALL BE AS DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER DURING CONSTRUCTION.



FOUNDATION FRAMING PLAN - OFFICE ADDITION

1/8" = 1'-0"



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KEY PLAN



Scale



No.	Description	Date
1	COL. AT GRID 101 MOVED TO GRID 81.	03-11-20
1	SOME WF BMS, JOISTS & FOOT MOD.	03-11-20

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

HANGAR ADDITIONS &
ALTERATIONS

2913 Airport Blvd., South St.
Meridian, MS 39307

FOUNDATION
FRAMING PLAN -
OFFICE ADDITION

Project No. 19-006 Date 02/14/20

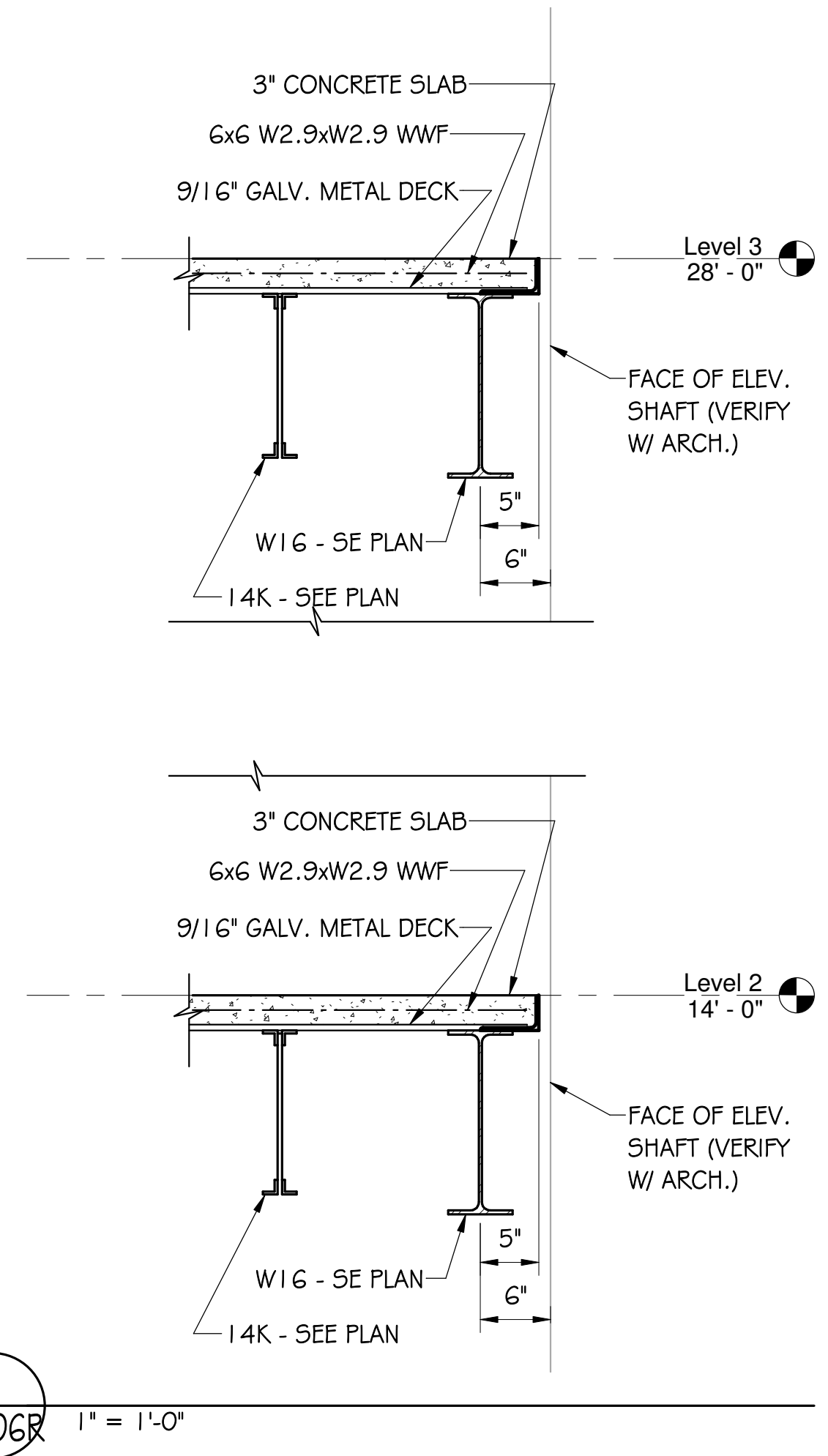
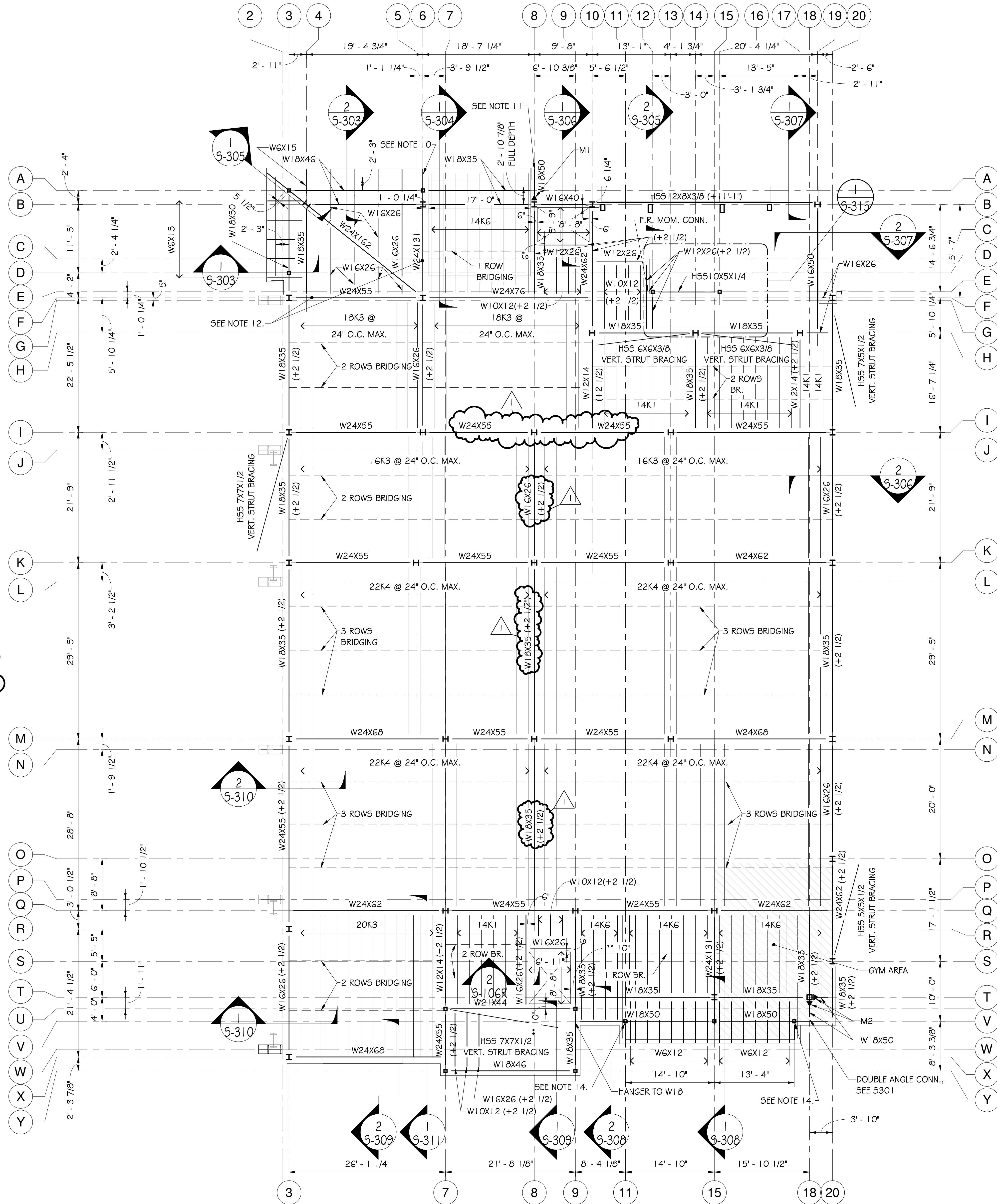
S-105R



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MS Civil Code - 1500 (Professional Engineer) 1/1/10 MS 39307

NOTES:

- FLOOR SYSTEM: 3" THICK CONCRETE SLAB WITH 6x6-W2.9xW2.9 (FLAT SHEETS ONLY) MESH ON 9/16", 28 GAGE TYPE C GALVANIZED METAL DECK (3 SPAN MINIMUM).
- FLOOR SYSTEM: 4" THICK CONCRETE SLAB WITH 6x6-W2.9xW2.9 (FLAT SHEETS ONLY) MESH ON 1", 24 GAGE TYPE C GALVANIZED METAL DECK (3 SPAN MINIMUM).
- TOP OF STEEL FOR SECOND FLOOR FRAMING AT 3" CONC. SLAB, UNO: T.O. STEEL = +13' - 6 1/2".
- TOP OF STEEL FOR SECOND FLOOR FRAMING AT 4" CONC. SLAB, UNO: T.O. STEEL = +13' - 5 1/2".
- (+2 1/2) INDICATES TOP OF STEEL ELEVATION 2 1/2' ABOVE NORMAL TOP OF STEEL.
- PROVIDE 15x3x1/4 CONT. AROUND ALL OPENINGS AND @ EXTERIOR EDGE @ 3" CONCRETE SLAB. HORIZONTAL BRIDGING FOR SECOND FLOOR FRAMING SHALL BE 11x1x1/8, UNLESS NOTED OTHERWISE.
- * INDICATES DIMENSION FOR THE GENERAL CONTRACTOR TO VERIFY WITH ELEVATOR PROVIDED AND DIMENSIONS REQ'D BY MANUFACTURER.
- ** VERIFY DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
- PROVIDE BAR JOISTS SHOWN @ MAXIMUM SPACING OF 24" O.C.
- 6" DEEP PROJECTION OFF OF W24 BEAM SIMILAR TO 2/5303.
- 6" DEEP PROJECTION OFF OF W18 SIMILAR TO 2/5303.
- LOCATION OF 9/16" DECK TO 1" DECK TRANSITION.
- CONTRACTOR TO PROVIDE 4-- H554X4X3/8 TUBE COLUMNS TO SUPPORT THE ELEVATOR GUIDE RAILS FROM THE GROUND LEVEL (+0'-0") TO ROOF FRAMING LEVEL (+47'-0") AND ALL CONNECTIONS AS REQUIRED FOR A COMPLETE ASSEMBLY. TUBES SHALL NOT BE INSTALLED UNTIL ALL DEAD LOAD (STRUCTURAL FRAMING & CONCRETE FLOORS) HAVE BEEN INSTALLED AND VERTICAL SLIP CONNECTIONS SHALL OCCUR AT THE TOP OF THE TUBE COLUMNS.
- H556x6 COLUMN W/ 3/4" X 14" X 6" BASEPLATE DIRECTLY WELDED TO W18 BEAM.
- WHERE ON DETAIL 9/A-9 1/2 - MEZZANINE DOOR SILL INDICATES "STEEL ANGLE, SEE STR. DWGS." THE CONTRACTOR IS TO PROVIDE A CONT 18x4x1/2 STEEL ANGLE AT THE DOOR FOR BIDDING PURPOSES. THE CONTRACTOR IS TO FIELD MEASURE THE REQUIRED HORIZONTAL LEG LENGTH FOR AN ANGLE AT THE DOOR AND INDICATE ON SUBMITTED STRUCTURAL STEEL SHOP DRAWINGS TO THE ENGINEER.



SECOND FLOOR FRAMING PLAN - OFFICE ADDITION

1/8" = 1'-0"

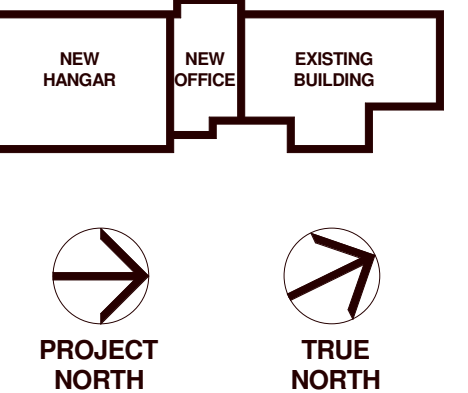


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KEY PLAN



Scale



No.	Description	Date
1	COL. AT GRID 101 MOVED TO GRID 81	03-11-20
1	SOME WF BMS, JOISTS & FOOT MOD.	03-11-20

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

HANGAR ADDITIONS & ALTERATIONS

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Sheet Title

SECOND FLOOR FRAMING PLAN - OFFICE ADDITION

Project No.	Date
19-006	02/14/20

S-106R

DRAWN BY: MMD CHECKED BY: HGD



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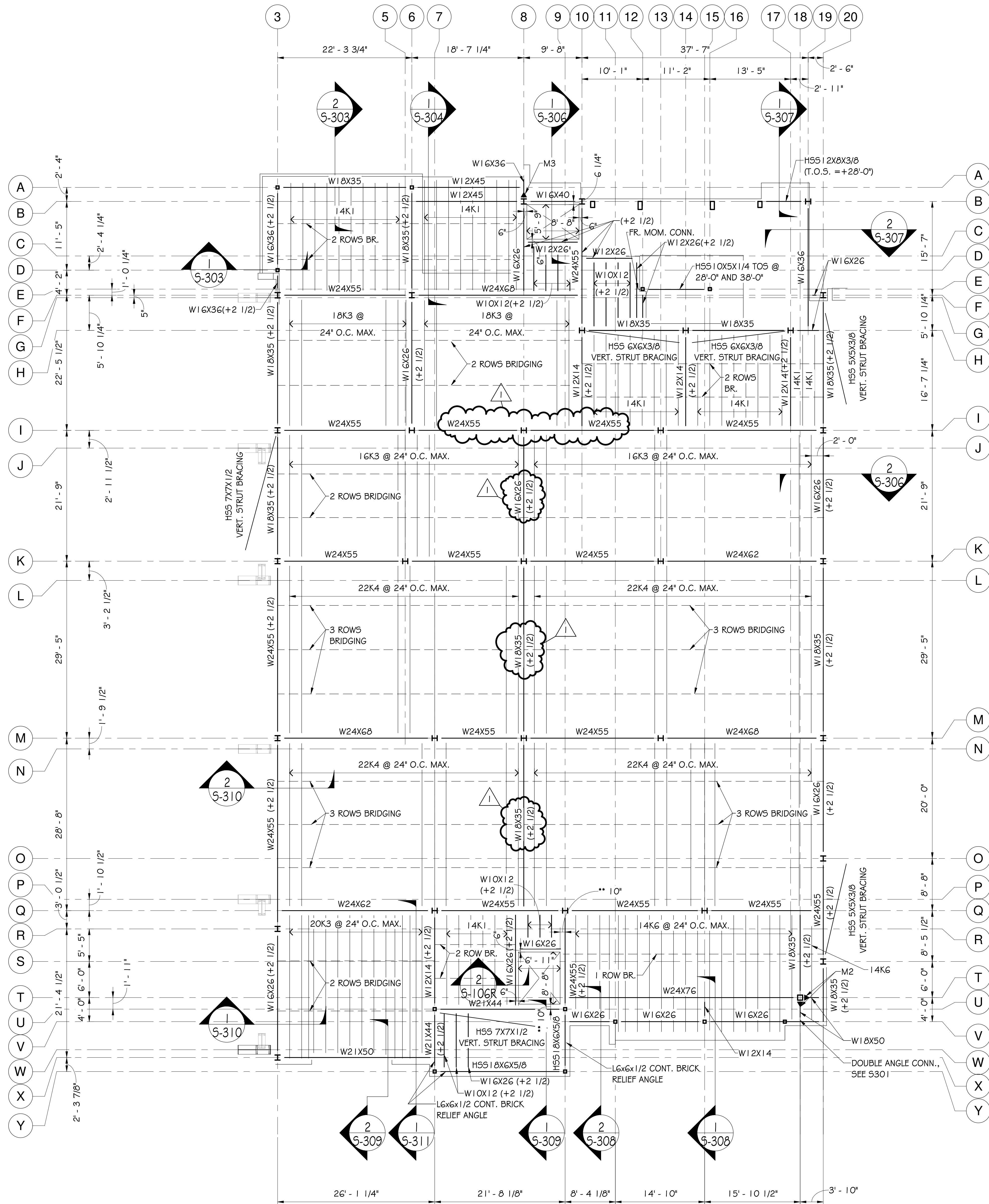
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NOTES:

- FLOOR SYSTEM: 3" THICK CONCRETE SLAB WITH 6x6-W2.9xW2.9 (FLAT SHEETS ONLY) MESH ON 9" I G, 26 GAGE TYPE C GALVANIZED METAL DECK (3 SPAN MINIMUM).
- TOP OF STEEL FOR SECOND FLOOR FRAMING AT 3" CONC. SLAB, UNO: T.O. STEEL = +27' - 6 1/2".
- (+2 1/2) INDICATES TOP OF STEEL ELEVATION 2 1/2' ABOVE NORMAL TOP OF STEEL.
- PROVIDE L5x3x1/4 CONT. AROUND ALL OPENINGS AND @ EXTERIOR EDGE, U.N.O.
- HORIZONTAL BRIDGING FOR SECOND FLOOR FRAMING SHALL BE L1x1x1/8, UNLESS NOTED OTHERWISE.
- * INDICATES DIMENSION FOR THE GENERAL CONTRACTOR TO VERIFY WITH ELEVATOR PROVIDED AND DIMENSIONS REQD BY MANUFACTURER.
- ** VERIFY DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
- CONTRACTOR TO PROVIDE 4~ HSS4X4X3/8 TUBE COLUMNS TO SUPPORT THE ELEVATOR GUIDE RAILS FROM THE GROUND LEVEL (+0'-0") TO ROOF FRAMING LEVEL (+47'-0") AND ALL CONNECTIONS AS REQUIRED FOR A COMPLETE ASSEMBLY. TUBES SHALL NOT BE INSTALLED UNTIL ALL DEAD LOAD (STRUCTURAL FRAMING + CONCRETE FLOORS) HAVE BEEN INSTALLED AND VERTICAL SLIP CONNECTIONS SHALL OCCUR AT THE TOP OF THE TUBE COLUMNS.
- PROVIDE BAR JOISTS SHOWN @ MAXIMUM SPACING OF 24" O.C.



1. PRE-ENGINEERED LIGHT GAUGE ROOF TRUSSES AND ROOF PARAPET SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER, DESIGNATED AS THE SPECIALTY ENGINEER, WHO SPECIALIZES IN THE DESIGN OF COLD FORM STEEL ASSEMBLIES. THE SPECIALTY ENGINEER SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT/ENGINEER FOR THE DESIGN OF THE LIGHT GAUGE ROOF TRUSSES AND THE ROOF PARAPET AND THE SHOP DRAWINGS (BOTH PLANS AND CALCULATIONS) SHALL BEAR THE SEAL OF THE SPECIALTY ENGINEER. SHOP DRAWINGS SHALL INCLUDE AT A MINIMUM: PLANS, DETAILS, SPACING, BRACING FOR TEMPORARY STABILITY, BRACING FOR LONG TERM STABILITY, BRIDGING, HOLDOWNS REQUIRED, AND DEFLECTIONS FOR LIVE AND TOTAL LOADING.

ROOF LIVE LOAD -----	20 PSF
TOP CHORD DEAD LOAD -----	10 PSF
BOTTOM CHORD DEAD LOAD -----	15 PSF
WIND LOAD -----	ASCE 7-16
(SEE SHEET S100 FOR WIND DESIGN CRITERIA)	

FOR CONCENTRATED MECHANICAL AND/OR ELECTRICAL LOADS, SEE
MECHANICAL & ELECTRICAL DRAWINGS.

ROOF TRUSSES (DEAD +LIVE LOAD) ----- L/360
ROOF CFS PARAPETS (SERVICE WIND) ----- H/360

5. TRUSS BEARING SHALL BE DESIGNED TO TRANSFER LATERAL FORCE FROM THE ROOF DIAPHRAGM TO THE BEAMS PERPENDICULAR TO THE TRUSSES. TEMPORARY AND PERMANENT BRACING REQUIRED FOR THIS CAPACITY SHALL BE DESIGNED, DETAILED, AND PROVIDED BY THE TRUSS SYSTEM ENGINEER.

7. TRUSS ANCHORAGES, AS A RESULT OF ACTUAL TRUSS CALCULATIONS, TO TOP PLATE OR SUPPORTS SHALL BE DESIGNED AND SPECIFIED BY THE TRUSS SYSTEM ENGINEER. ANCHORAGES AND BRACING SPECIFIED BY TRUSS SYSTEM ENGINEER MUST MEET THE REQUIREMENT FOR LATERAL CAPACITY PREVIOUSLY INDICATED IN THESE NOTES.

9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL BRACING ELEMENTS REQUIRED FOR TEMPORARY AND LONG TERM STABILITY AS INDICATED ON THE APPROVED SHOP DRAWINGS.

1. 1/2" STEEL DECK ON TOP OF CFS TRUSSES SHALL BE 22 GAGE AND HAVE THE MINIMUM PROPERTIES INDICATED IN THE STRUCTURAL GENERAL NOTES.
2. T.O. STEEL = 47'-0", UNLESS INDICATED OTHERWISE ON THE PLANS OR SECTIONS.
3. CONTRACTOR TO PROVIDE 4~ H554X4X3/8 TUBE COLUMNS TO SUPPORT THE ELEVATOR GUIDE RAILS FROM THE GROUND LEVEL (+0'-0") TO ROOF FRAMING LEVEL (+47'-0") AND ALL CONNECTIONS AS REQUIRED FOR A COMPLETE ASSEMBLY. TUBES SHALL NOT BE INSTALLED UNTIL ALL DEAD LOAD (STRUCTURAL FRAMING & CONCRETE FLOORS) HAVE BEEN INSTALLED AND VERTICAL SPLY CONNECTIONS SHALL OCCUR AT THE TOP OF THE TUBE COLUMNS. HOISTWAY BEAMS ARE TO BE A MINIMUM OF 2' CLEAR FROM TOP OF STEEL TO BOTTOM OF TRUSSES.

5. FOR HORIZONTAL ROOF BRACING SEE SHEET S302.

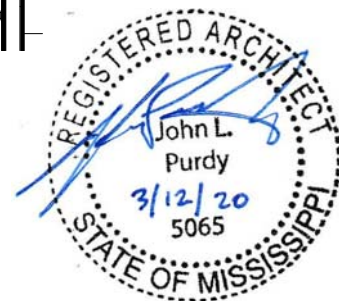
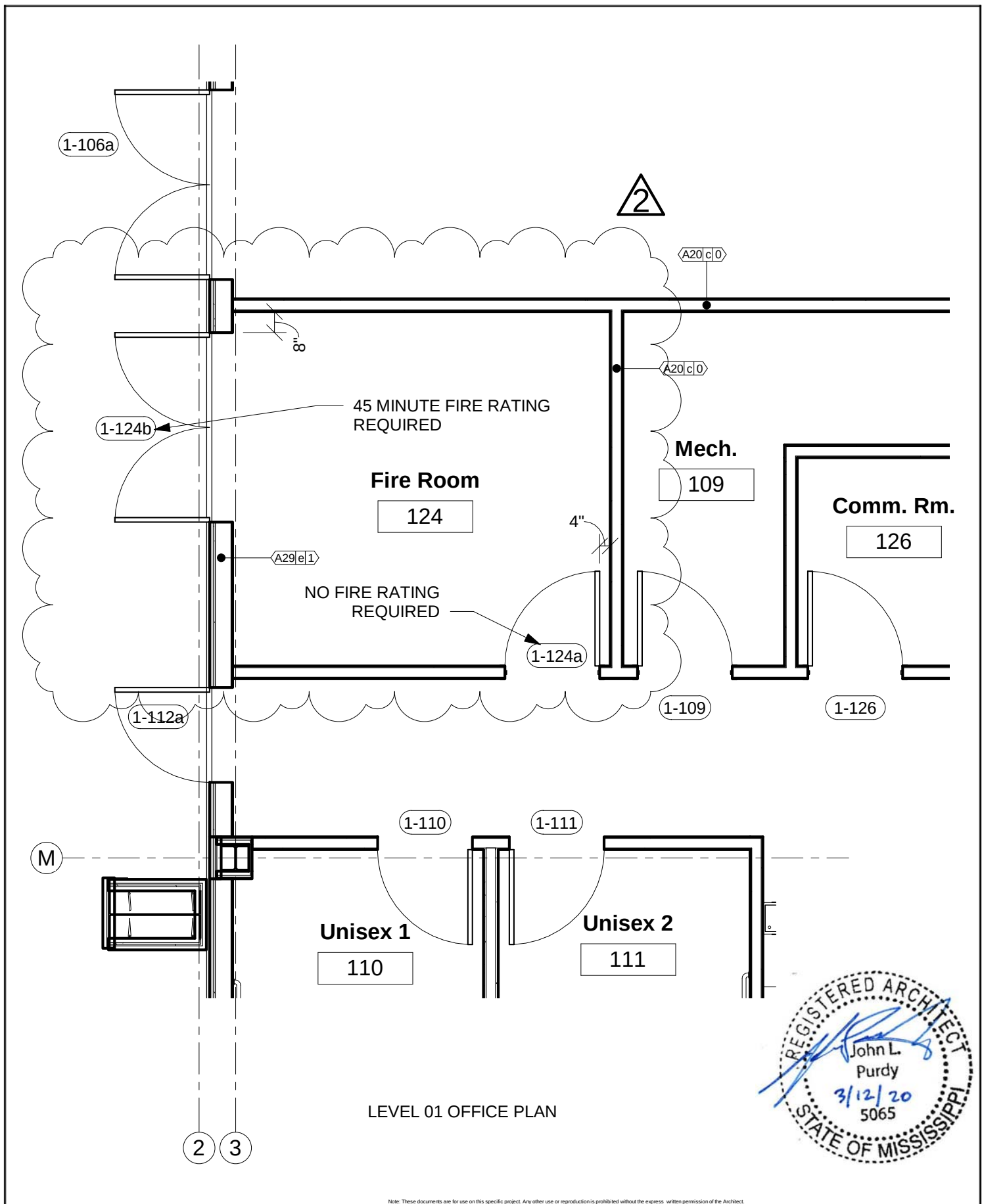
7. AT THIS W/8x35, WELD 1/2" CONT. PLATE TO TOP FLANGE OF BEAM TO SUPPORT BRICK VENEER. IN ADDITION WELD 3/8" STIFFENER PLATES TO BEAM @ 48" O.C. MAX, SIMILAR TO DETAIL 1/5311 AT GRID Q. FROM CENTERLINE OF GRID 7 TO EDGE OF PLATE = 9 3/4" (VERIFY THIS DIMENSION WITH ARCH. DRAWINGS).



MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

**HANGAR ADDITIONS &
ALTERATIONS**

2913 Airport Blvd. South St.
Meridian, MS 39307



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Drawing No.
AD2-112

Addendum No. 2
 03/12/20
 Date Revised
 Date 1

HANGAR ADDITIONS & ALTERNATIONS

MERIDIAN AIRPORT AUTHORITY DEAN AIRCRAFT SERVICE
 2913 Airport Blvd, South St. Meridian, MS 39307

D+P DAVIS-PURDY
 ARCHITECTS

G

J

PEMB ROOF :
SEE 2/A-403

MP3

MP3

EXTEND DOOR SUPPORT
SOFFIT TO GRID LINE "J"

HANGAR DOOR
TRACK SYSTEM,
COORDINATE WITH
DOOR MANUFACTURER

HANGAR DOORS,
SEE A-913

Hangar

100

30' - 0"
(CLEAR OPENING)

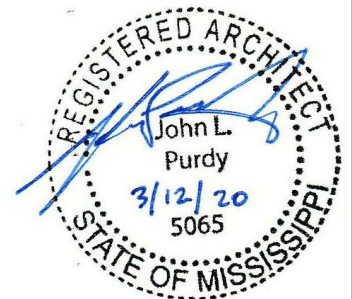
30' - 6"



Level 1
0' - 0"

1

WALL SECTION @ HANGAR DOOR-AD2
1/8" = 1'-0"



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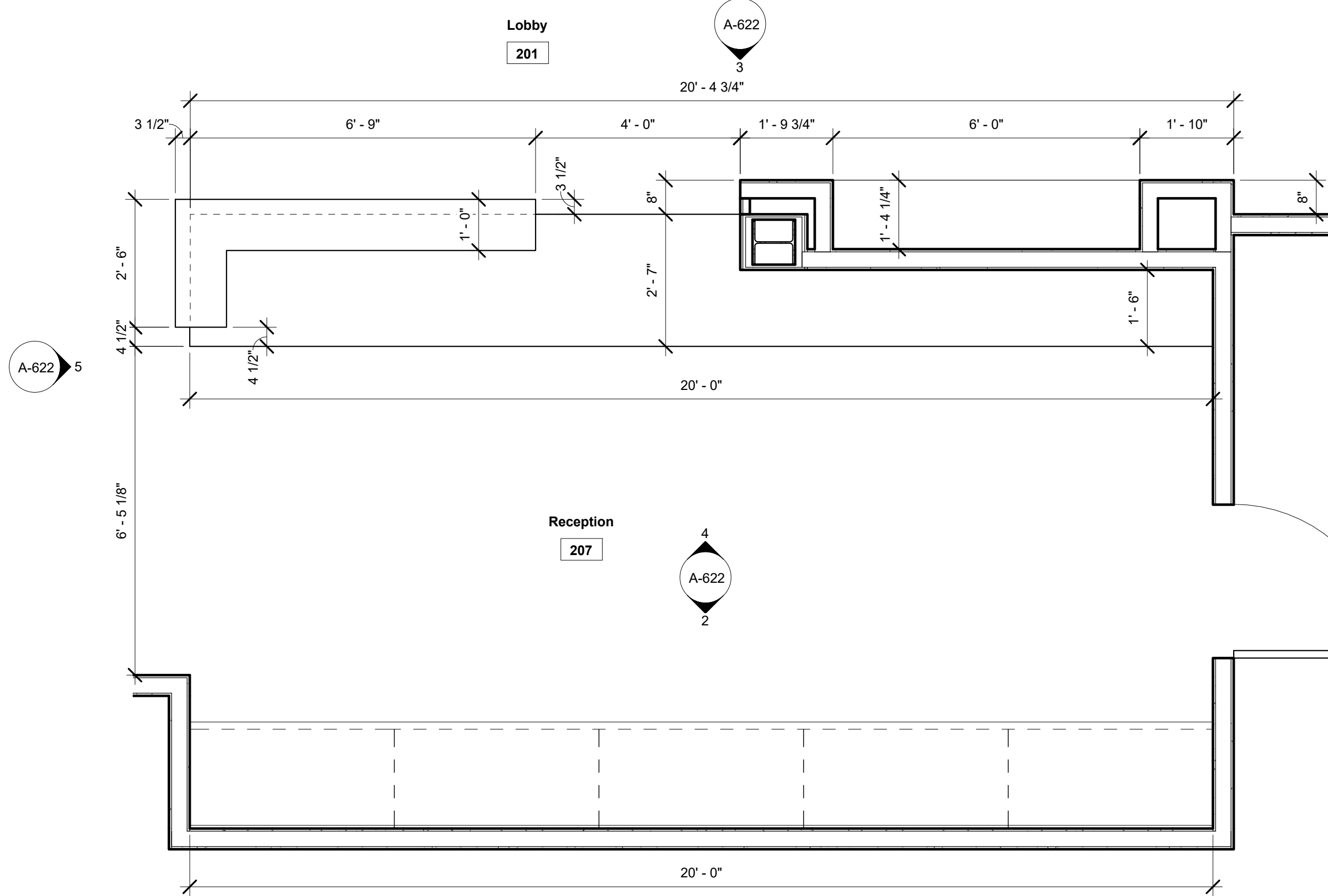
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Addendum No. 2
03/12/20
Date Revised

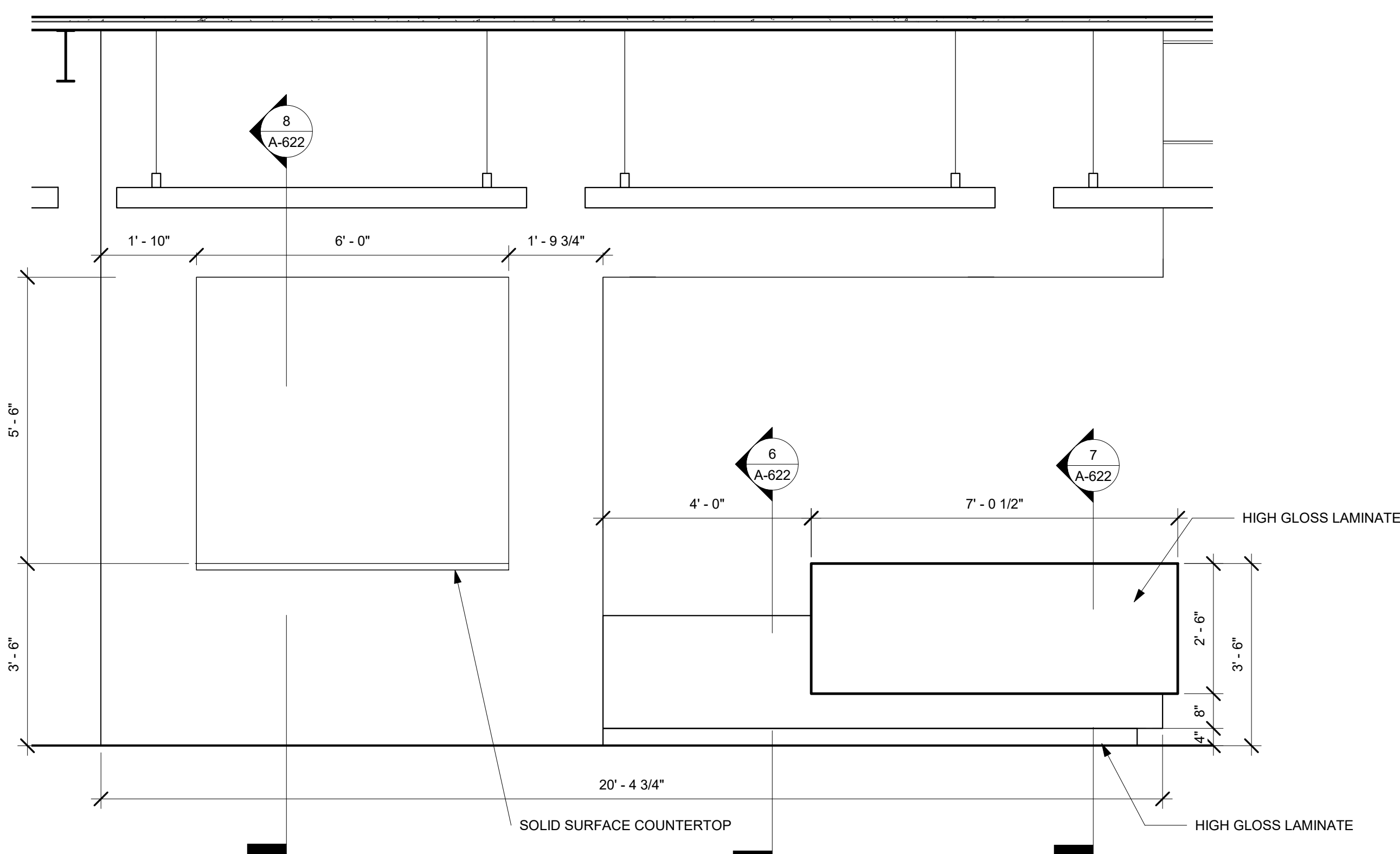
HANGAR ADDITIONS & ALTERNATIONS

MERIDIAN AIRPORT AUTHORITY DEAN AIRCRAFT SERVICE
2913 Airport Blvd, South St. Meridian, MS 39307

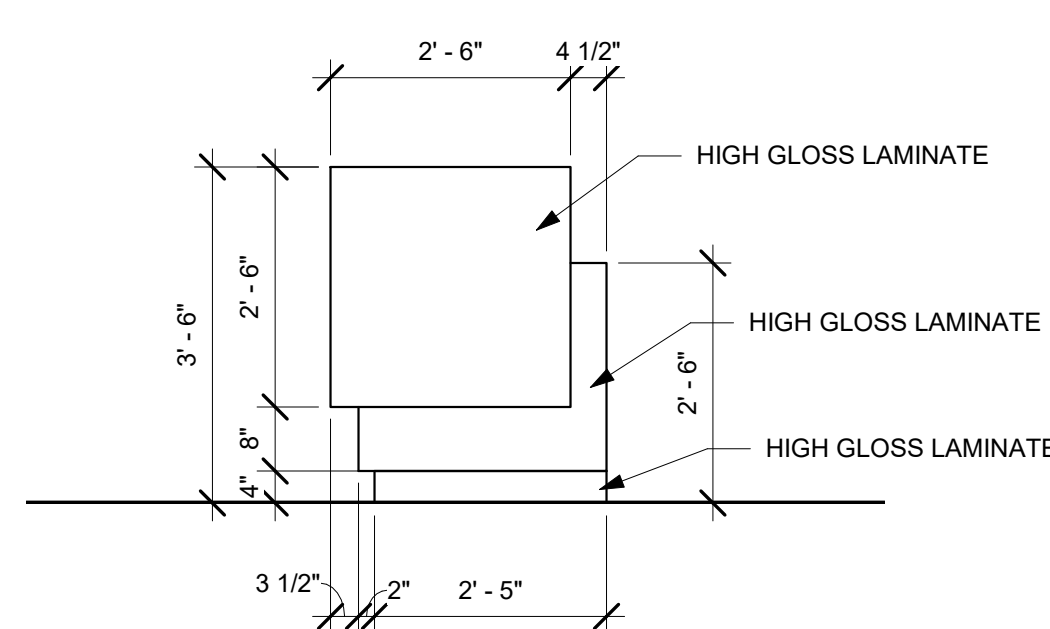
D+P **DAVIS-PURDY**
ARCHITECTS



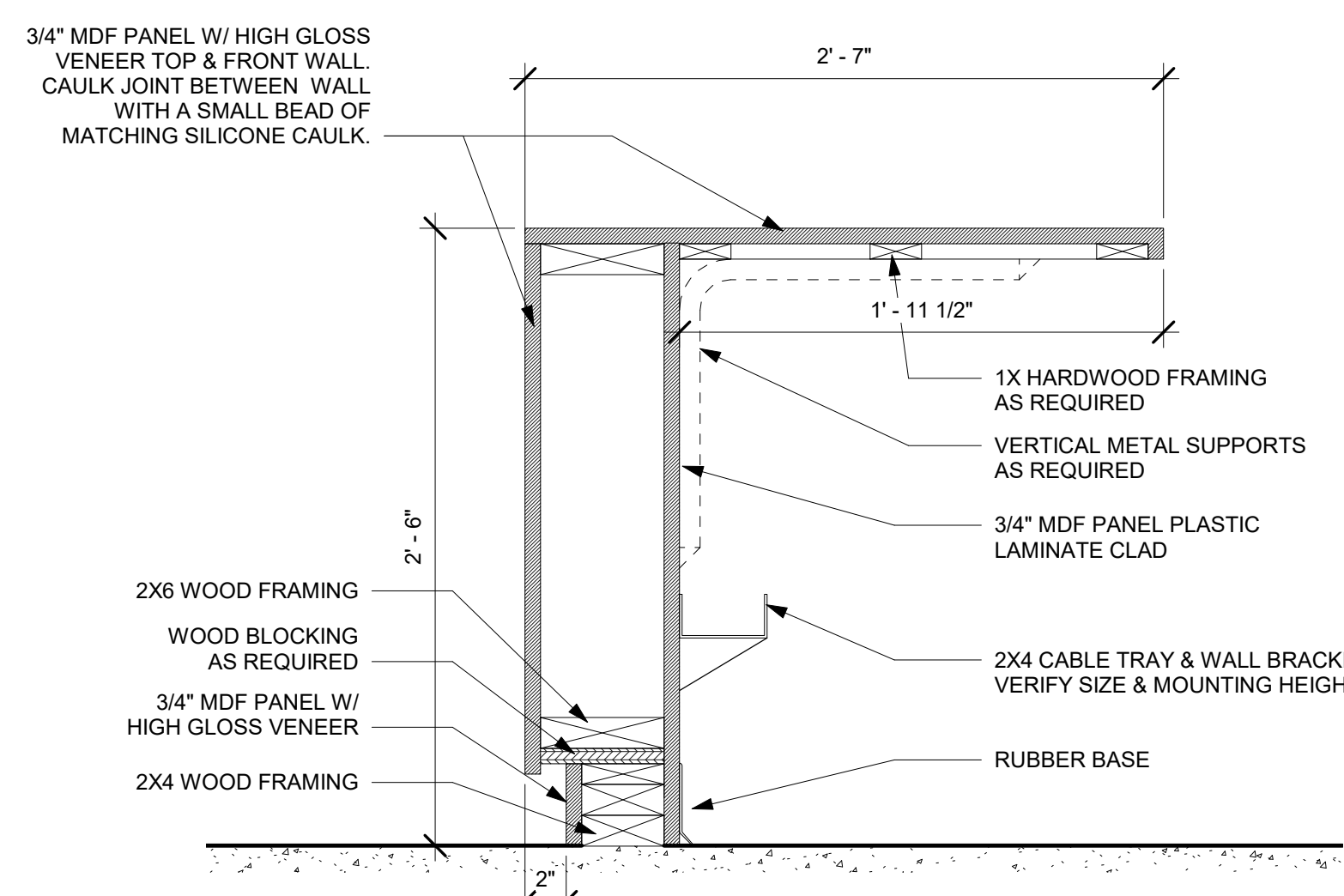
1 RECEPTION DESK MILLWORK PLAN
1/2" = 1'-0"



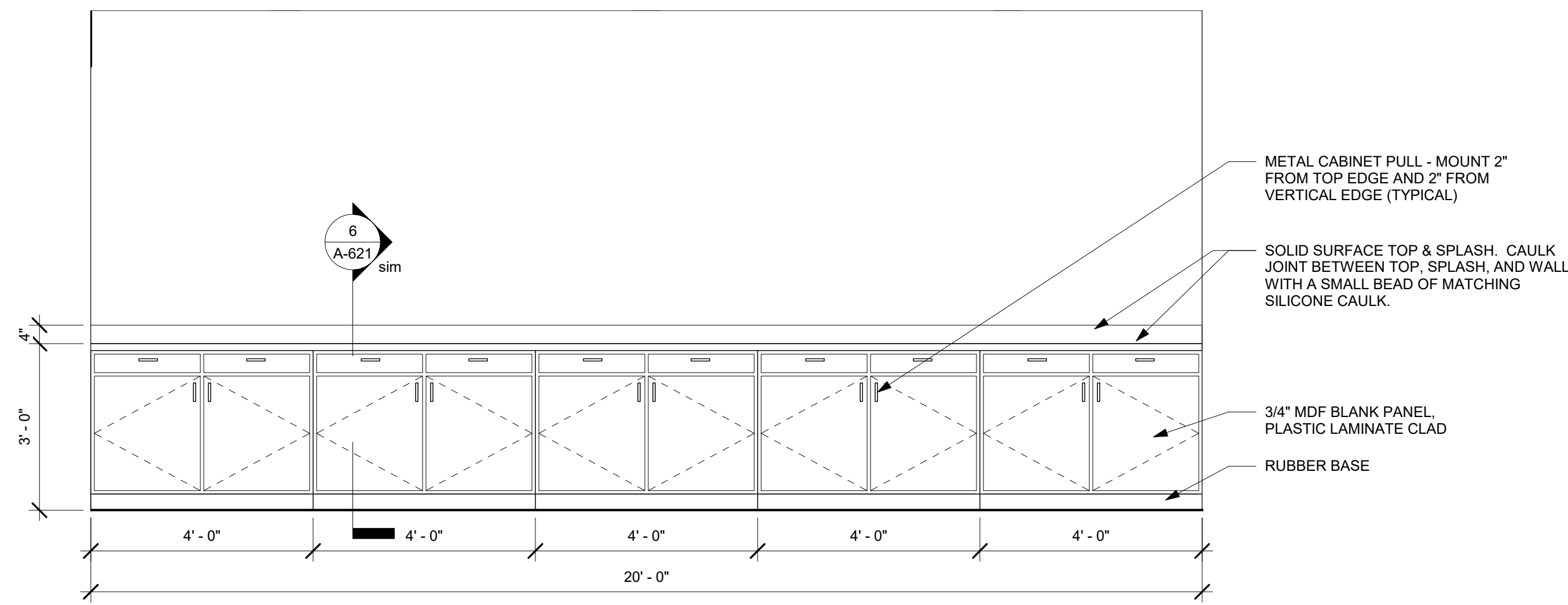
3 RECEPTION DESK FRONT
1/2" = 1'-0"



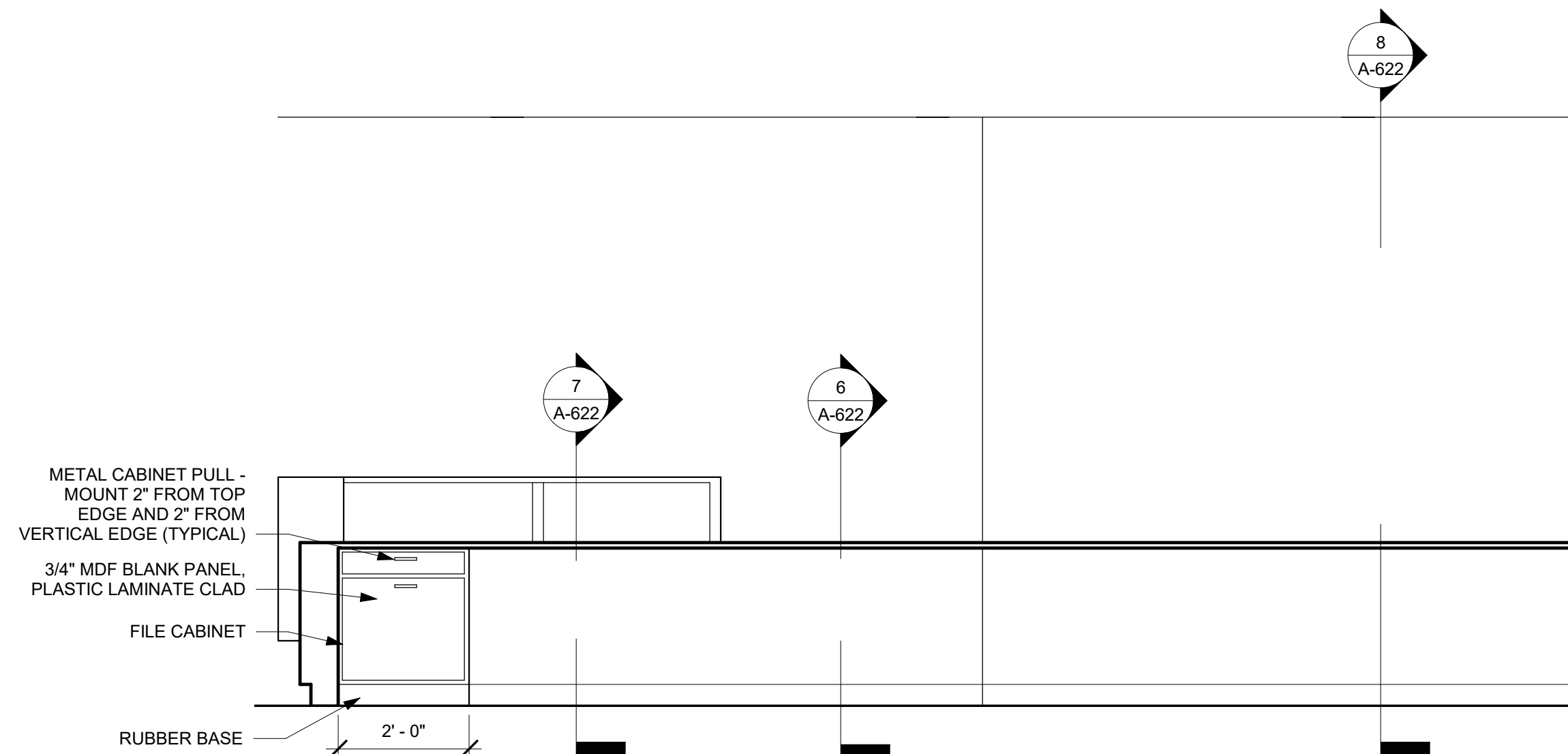
5 RECEPTION DESK SIDE
1/2" = 1'-0"



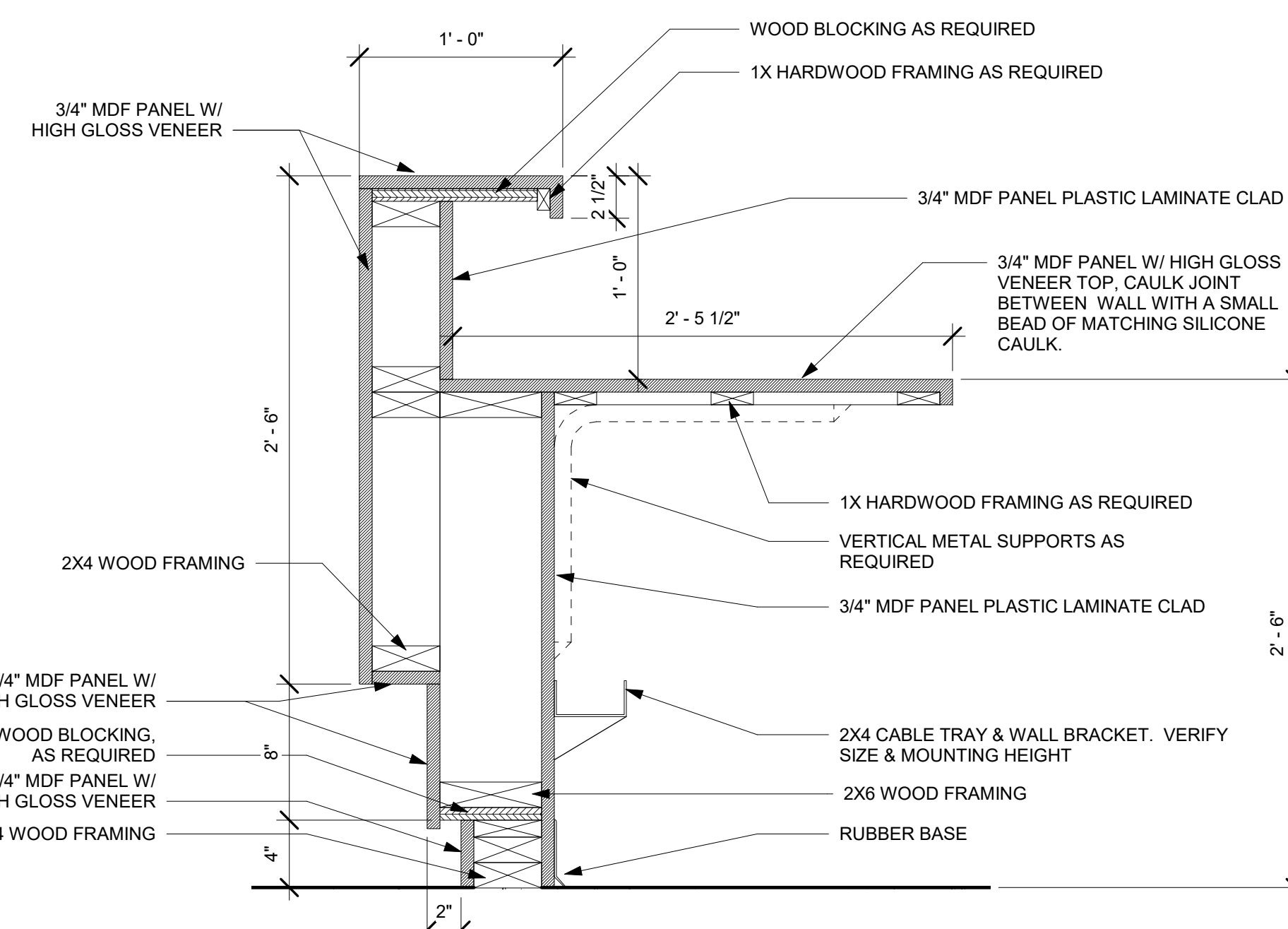
6 RECEPTION DESK SECTION
1 1/2" = 1'-0"



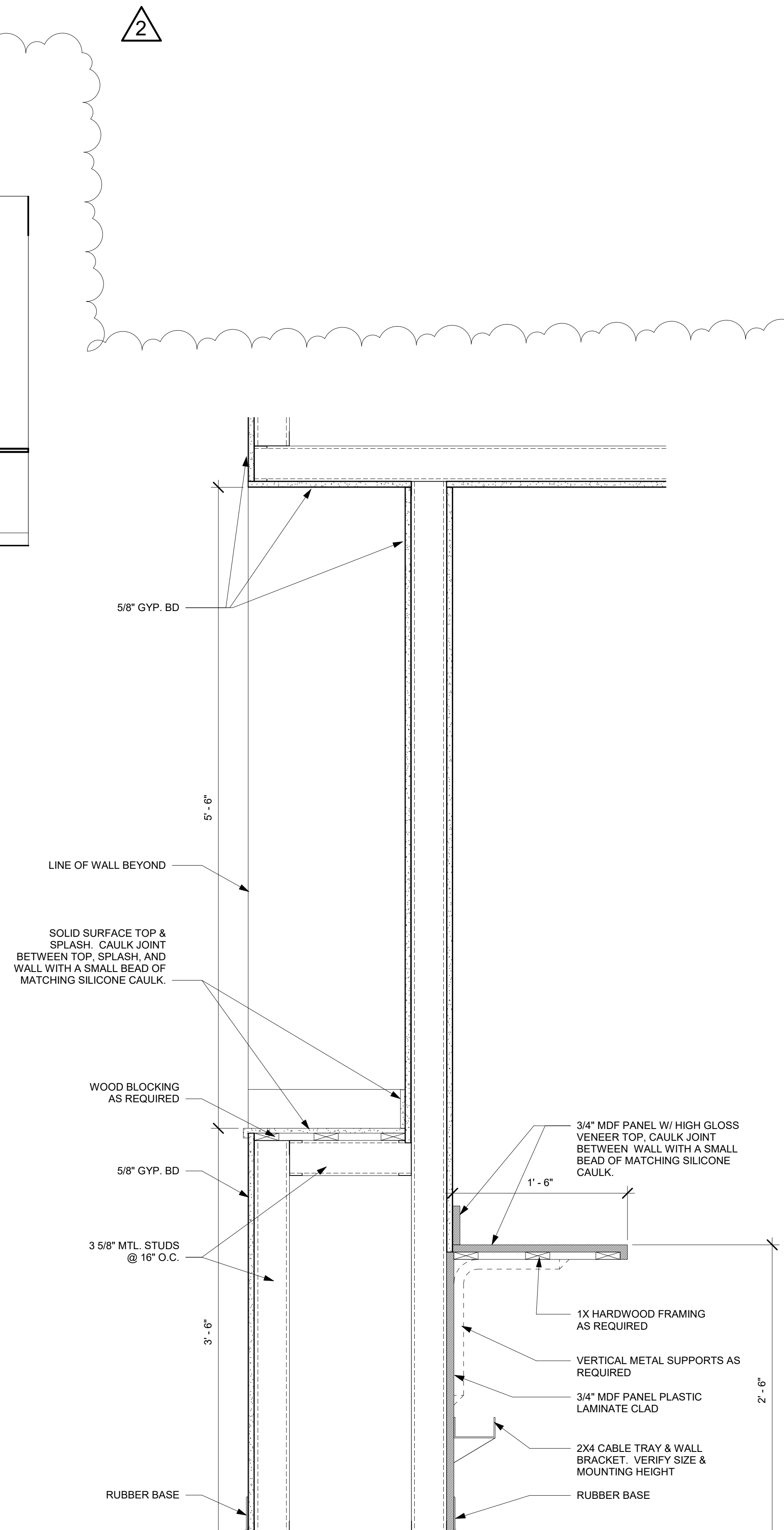
2 RECEPTION MILLWORK
1/2" = 1'-0"



4 RECEPTION DESK REAR
1/2" = 1'-0"

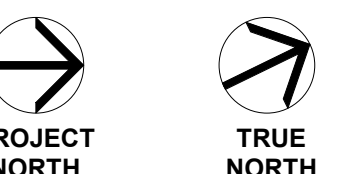


7 RECEPTION DESK SECTION 2
1 1/2" = 1'-0"

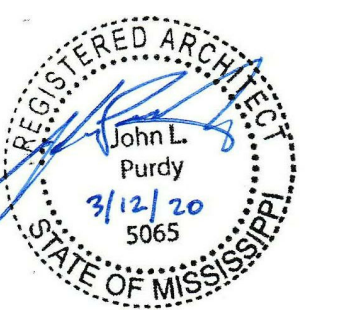


8 RECEPTION DESK COUNTER
1 1/2" = 1'-0"

KEY PLAN



Seal



No.	Description	Date
1	Addendum No. 1	2/28/20
2	Addendum No. 2	3/12/20
3	100% Construction Documents	2/14/20
2	100% Design Development	10/17/19
1	100% Schematic Design	8/7/19

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

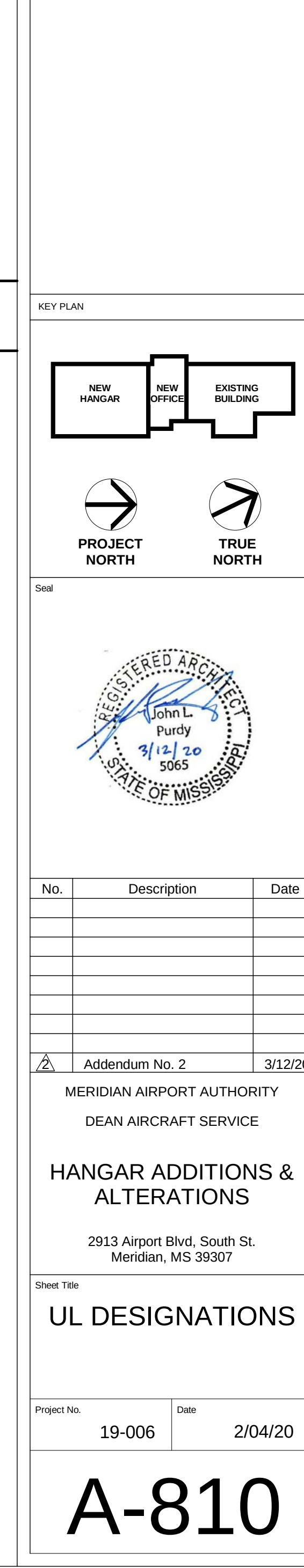
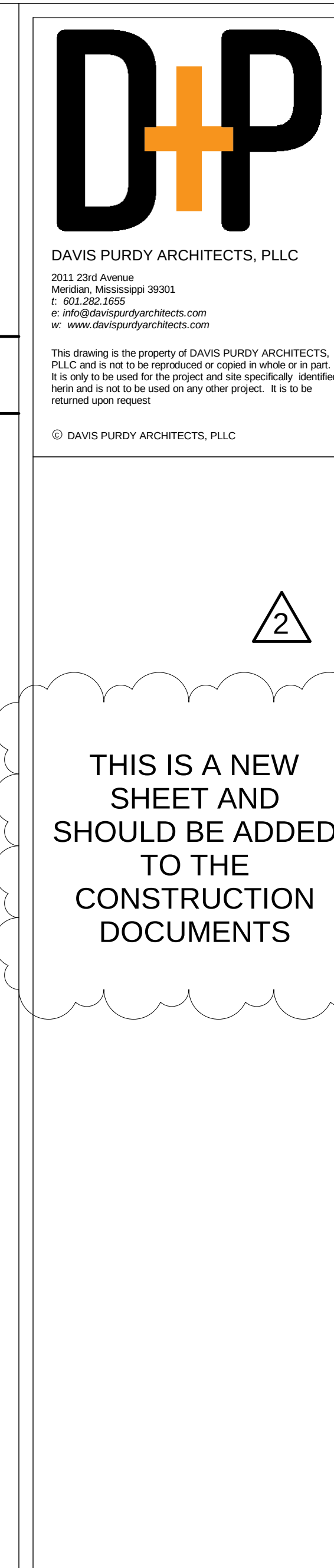
HANGAR ADDITIONS &
ALTERATIONS

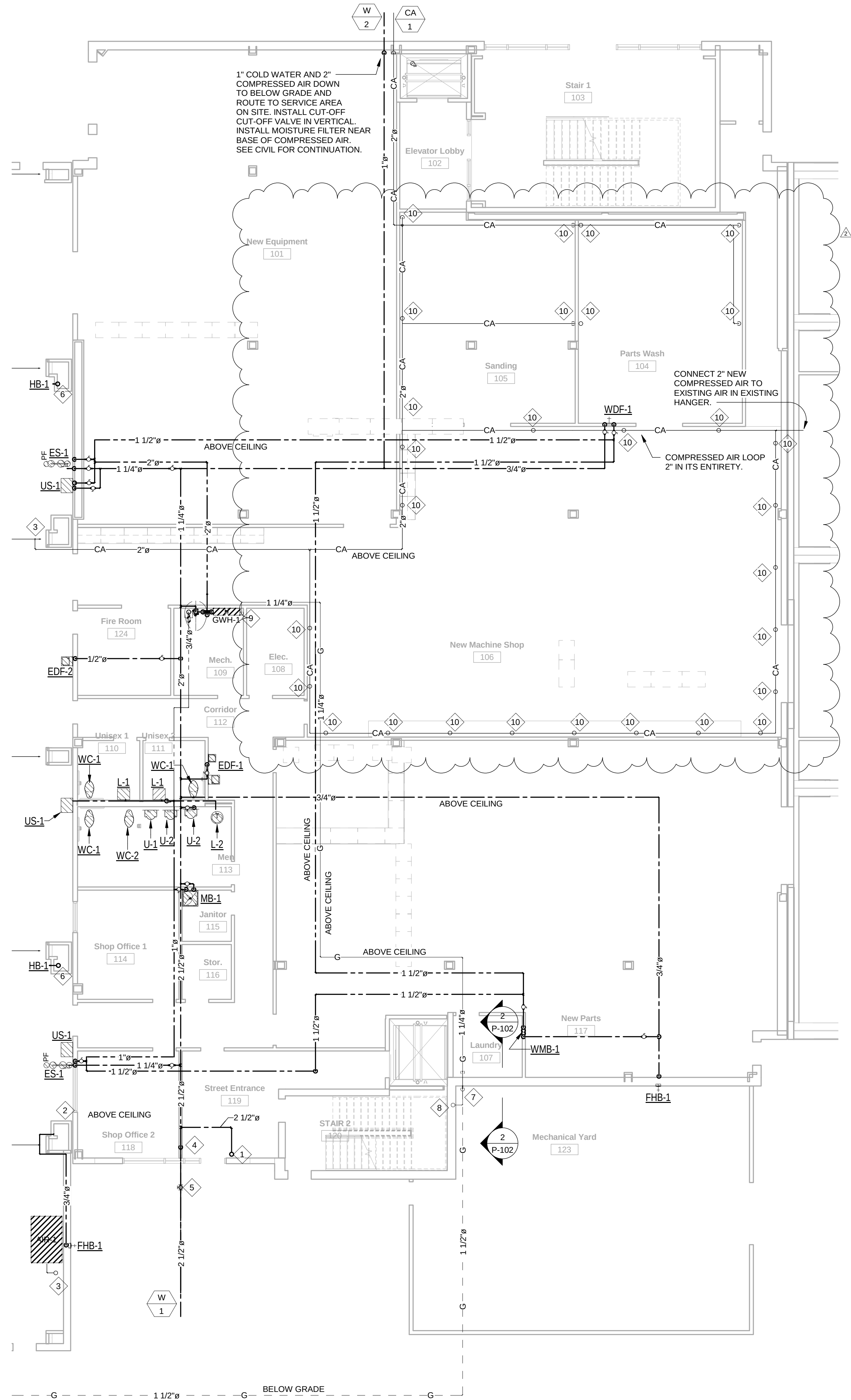
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Sheet Title
MILLWORK

Project No. 19-006 Date 2/04/20

A-622

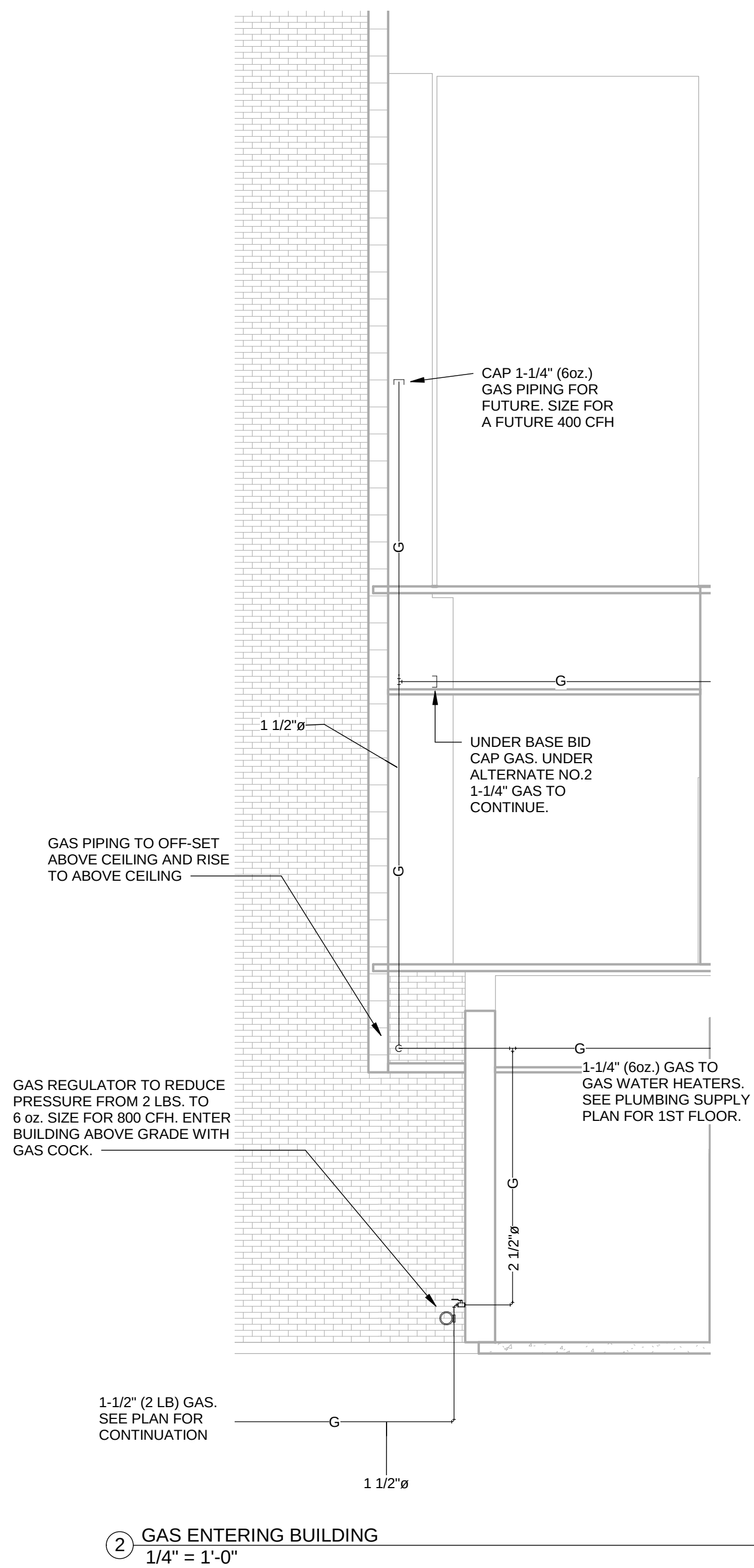




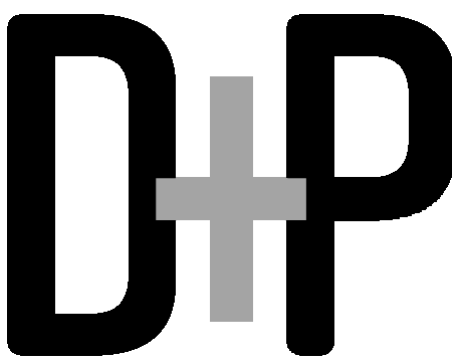
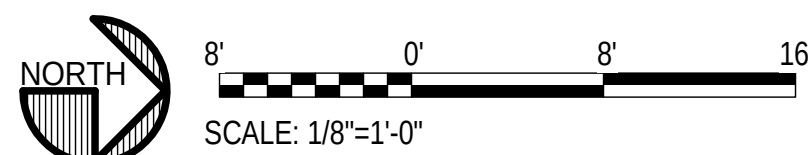
1ST FLOOR - OFFICE - PLUMBING
SUPPLY
1/8" = 1'-0"

PLAN NOTES:

1. COLD WATER UP TO FLOOR ABOVE.
2. 1-1/4" COLD WATER UP TO UPPER LEVEL OF HANGER. SECURE TO STRUCTURE.
3. COMPRESSED AIR MAIN UP TO UPPER LEVEL OF HANGER AND SECURE TO STRUCTURE.
4. COLD WATER MAIN TO RISE IN WALL TO ABOVE CEILING FROM BELOW FLOOR.
5. CUT-OFF VALVE IN HEAVY DUTY BOX WITH HEAVY DUTY COVER. SEE DETAIL.
6. COLD WATER FROM ABOVE. CONTINUE TO HOSE BIBB, HB-1.
7. GAS PIPING TO RISE IN MECH YARD WITH REGULATOR TO REDUCE PRESSURE FROM 2 LBS TO 6 oz. SET AT 800 CFH. ENTER BUILDING ABOVE GRADE WITH GAS COCK.
8. GAS PIPING OFF-SET ABOVE CEILING AND RISE TO SECOND FLOOR.
9. 1-1/2" GAS DOWN TO WATER HEATERS. SEE DETAIL.
10. COMPRESSED AIR PIPING DOWN TO APPROX. 48 INCHES TO 60 INCHES ABOVE FINISH FLOOR WITH VALVE AND QUICK CONNECTION. SEE DETAIL.



2 GAS ENTERING BUILDING
1/4" = 1'-0"



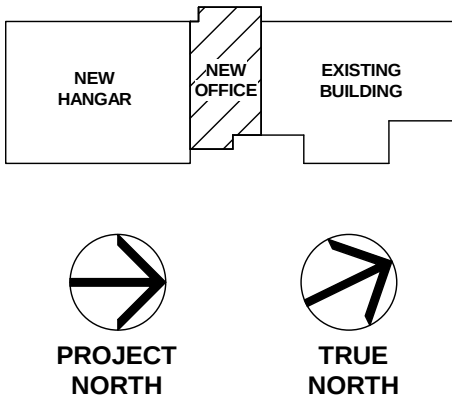
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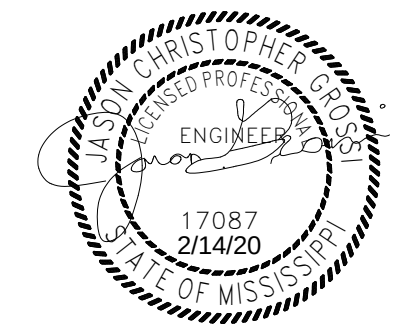
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KEY PLAN



Seal



No.	Description	Date
4	Addendum no. 2	3/12/20
3	100% Construction Documents	2/14/20
2	100% Design Development	10/17/19
1	100% Schematic Design	8/7/19

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE
HANGAR ADDITIONS & ALTERATIONS
2913 Airport Blvd, South St.
Meridian, MS 39307

Sheet Title

1st FLR PLAN - OFFICE - PLBG SUPPLY

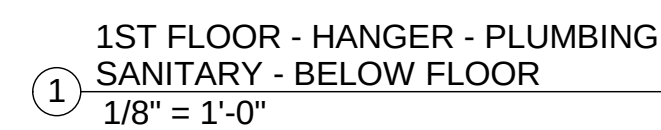
Project No. 19-006 Date 10/17/19

P-102

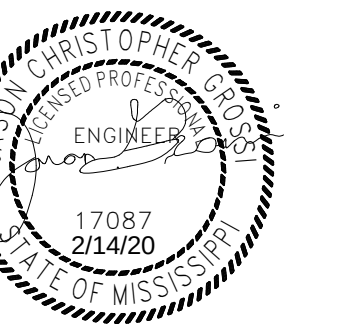


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LAN



Description	Date
Addendum no. 2 	3/12/20
100% Construction Documents	2/14/20
100% Design Development	10/17/19
100% Schematic Design	8/7/19

DEAN AIRCRAFT SERVICE

ANGAR ADDITIONS & ALTERATIONS

13 Airport Blvd, South St.
Meridian, MS 39307

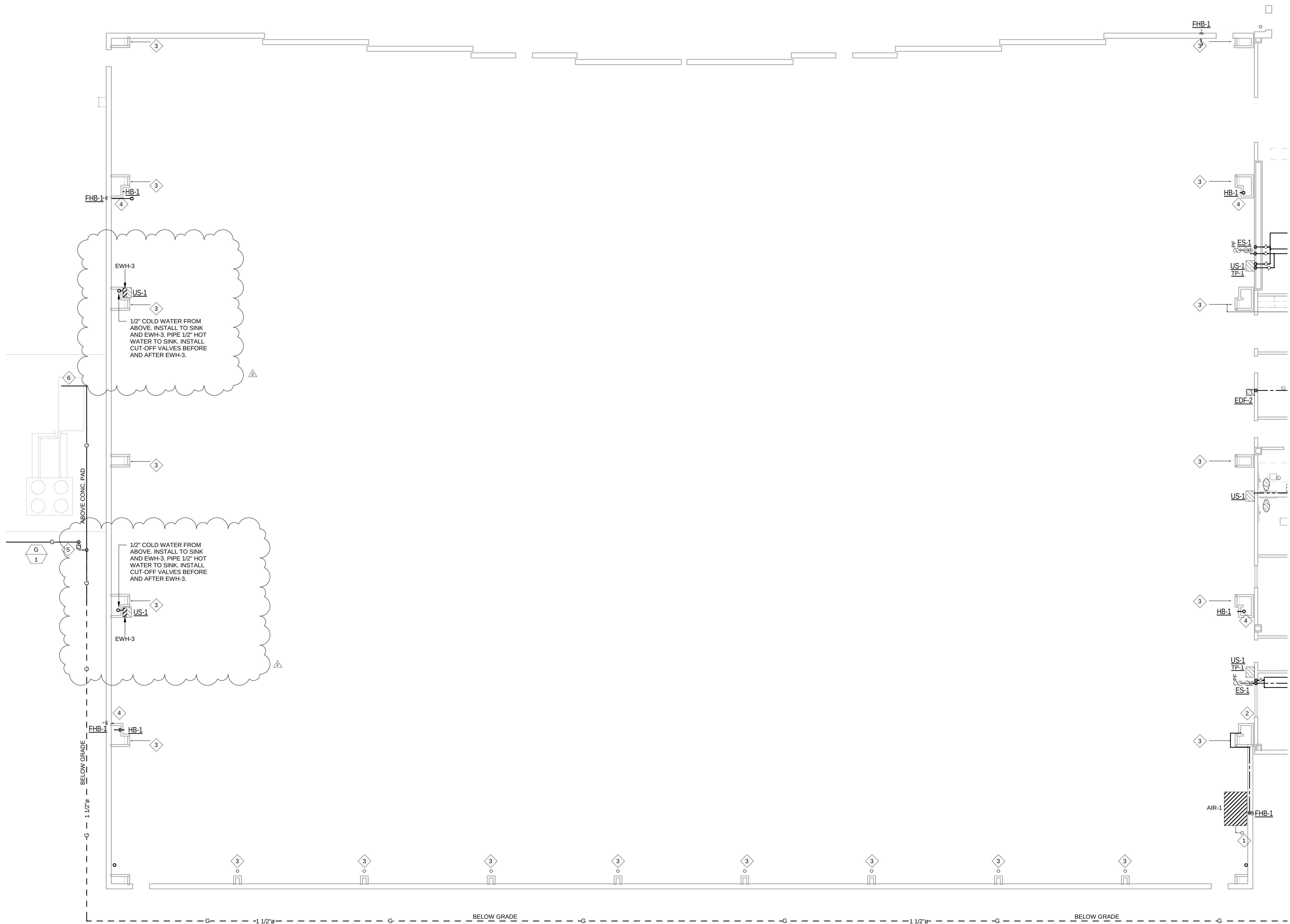
1st FLR PLAN -
HANGER - PLBG
SANITARY

No.	Date
19-006	10/17/19

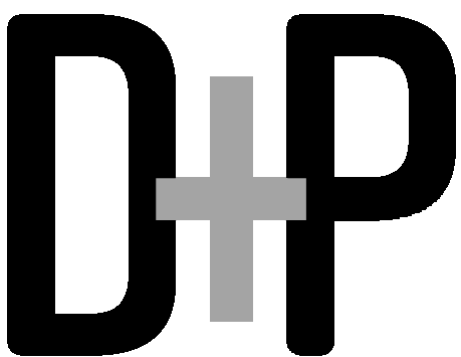
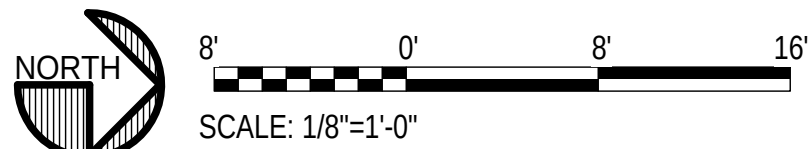
P-103

GENERAL NOTES:
COORDINATE AIR AND WATER DROPS WITH OWNER.

- PLAN NOTES:
- AIR PIPING FROM AIR COMPRESSOR (AIR-1), SECURE PIPING TO STRUCTURE AND RISE HIGH IN HANGER.
 - COLD WATER PIPING TO RISE AND SECURE TO STRUCTURE HIGH IN HANGER.
 - 3/4" AIR WITH QUICK RELEASE CONNECTION (INSTALLED BETWEEN 4 TO 5 FEET ABOVE FINISHED FLOOR). INSTALL BLOW OFF VALVE AT BOTTOM OF RISER. CONTINUE UP TO MAIN HIGH IN HANGER. SECURE PIPING TO STRUCTURAL COLUMN.
 - 3/4" COLD WATER TO HOSE BIBB FROM COLD WATER MAIN HIGH IN HANGER.
 - GAS METER AND REGULATOR BY UTILITY COMPANY AT CONTRACTOR'S EXPENSE. SIZE REGULATOR FOR 2000 CFH (INCLUDES BASE BID, ALT 1, ALT 2 AND FUTURE THIRD FLOOR ESTIMATED LOADS). ROUTE GAS DOWN, BRANCH OFF 1" (2 LB) SERVICE TO AIR TURNOVER UNIT ABOVE GRADE AS SHOWN. CONTINUE GAS PIPING BELOW GRADE WITH 1-1/2" (2 LB) SERVICE AND ROUTE TO MECHANICAL YARD ON EAST SIDE OF BUILDING (P102).
 - GAS TO UNIT WITH REGULATOR TO REDUCE PRESSURE DOWN TO EQUIPMENT MFGR'S. RECOMMENDED OPERERATING PRESSURE. INSTALL WITH GAS COCK, UNION AND DIRT LEG.



1ST FLOOR - HANGER - PLUMBING
SUPPLY
1/8" = 1'-0"

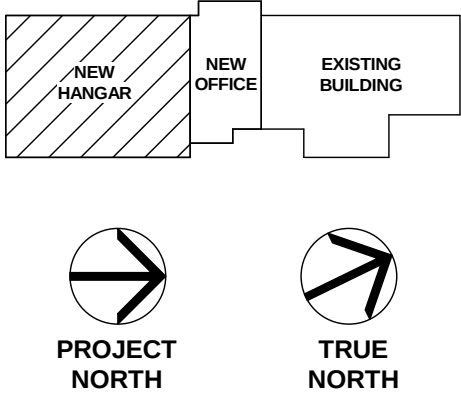


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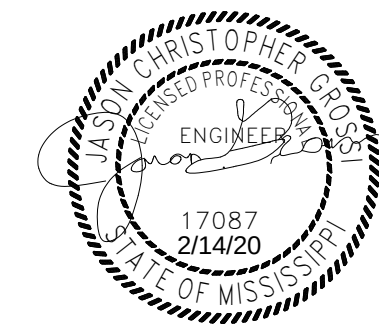
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KEY PLAN



Seal



No.	Description	Date
4	Addendum no. 2	3/12/20
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MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

HANGER ADDITIONS &
ALTERATIONS

2913 Airport Blvd, South St.
Meridian, MS 39307

Sheet Title

1st FLR PLAN -
HANGER - PLBG
SUPPLY

Project No. 19-006 Date 10/17/19

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PLAN NOTES:

1. INSTALL FLOOR DRAIN UNDER BASE BID AND INSTALL GAS TIGHT COVER TO PREVENT SEWER GAS FROM ENTERING BUILDING.
2. UNDER BASE BID, INSTALL VENT PIPING AND ROUTE TO FLOOR ABOVE.
3. 2" WASTE/VENT THROUGH FLOOR AND CAP UNDER BASE BID.
4. VENT PIPING UP TO FLOOR ABOVE.
5. VENT FROM FLOOR BELOW. RISE TO ABOVE CEILING.
6. 4" WASTE THROUGH FLOOR AND CAP UNDER BASE BID.
7. CAP 4" VENT FOR FUTURE UNDER BASE BID.
8. UNDER BASE BID, PIPE CONDENSATE FROM TEMPORARY UNIT.
9. UNDER BASE BID, PIPE CONDENSATE DOWN IN MECH ROOM TO FLOOR DRAIN.

GENERAL NOTES:

INSULATE ALL CONDENSATE PIPING WITH 3/4" ARMAFLEX.

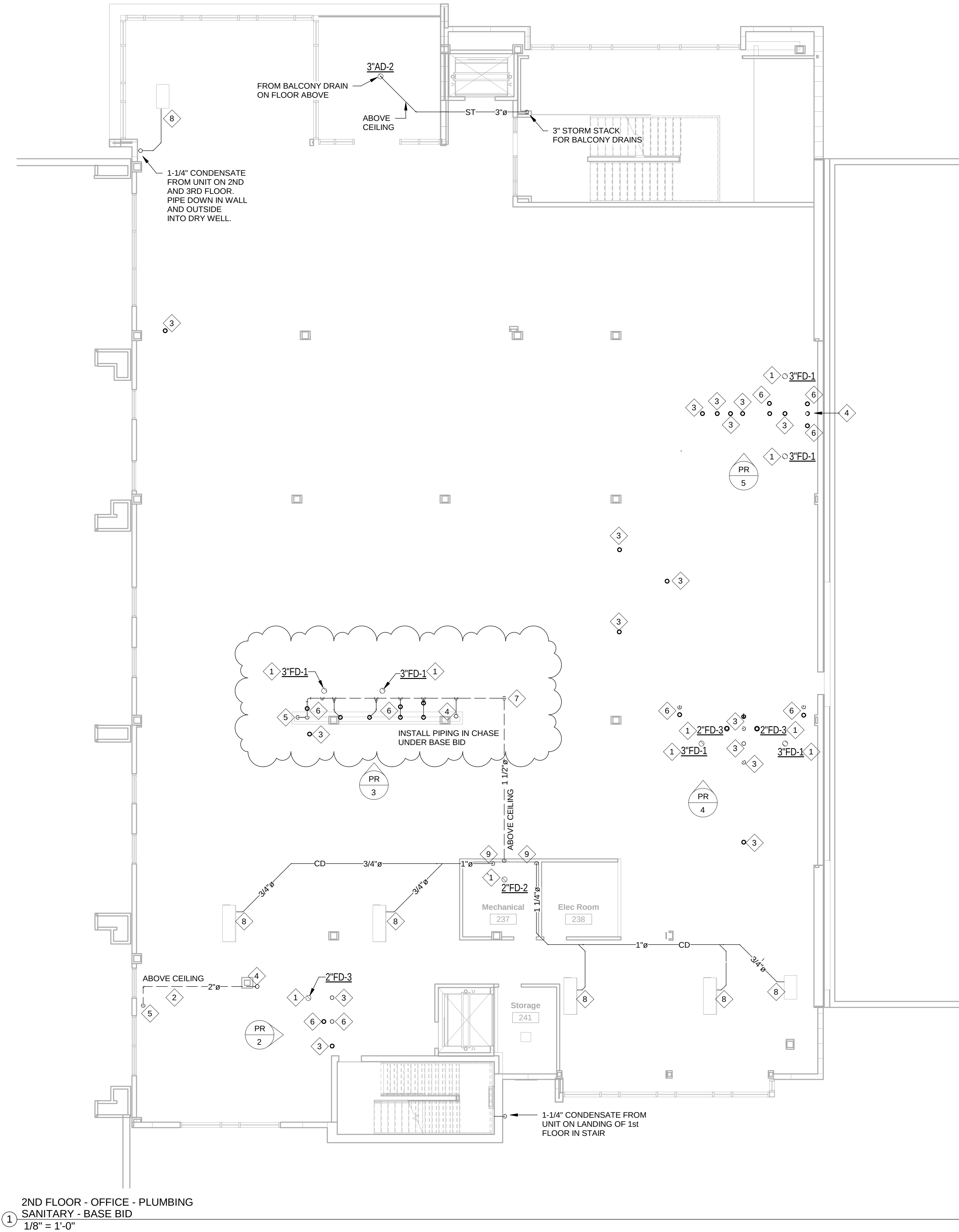
UNDER BASE BID, SECOND FLOOR SHALL BE SHELLED IN FOR FUTURE. ALL FLOOR PENETRATIONS AND FLOOR DRAINS FOR SECOND FLOOR TO BE INSTALLED WITH AIR TIGHT COVER PLATE TO PREVENT SEWER GASES FROM ENTERING SPACE.

UNDER ALTERNATE NO. 1, PORTION OF SECOND FLOOR SHALL BE FINISHED OUT.

UNDER ALTERNATE NO. 2, THE REMAINDER OF THE SECOND FLOOR SHALL BE COMPLETELY FINISHED OUT.

VENT STACKS TO BE INSTALLED IN ENTIRETY.

UNDER BASE BID, ROUTE CONDENSATE DRAINS FROM TEMPORARY UNITS TO NEAREST VENT.



GENERAL NOTES:

INSULATE ALL CONDENSATE PIPING WITH 3/4" ARMAFLEX.

UNDER BASE BID, SECOND FLOOR SHALL BE SHELLED IN FOR FUTURE. ALL FLOOR PENETRATIONS AND FLOOR DRAINS FOR SECOND FLOOR TO BE INSTALLED WITH AIR TIGHT COVER PLATE TO PREVENT SEWER GASES FROM ENTERING SPACE.

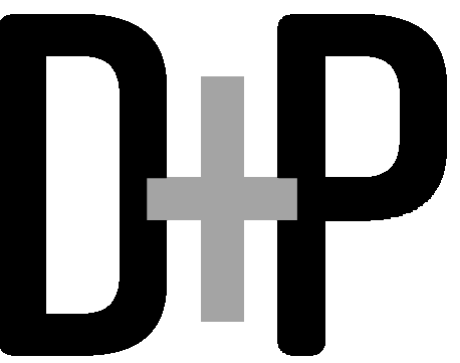
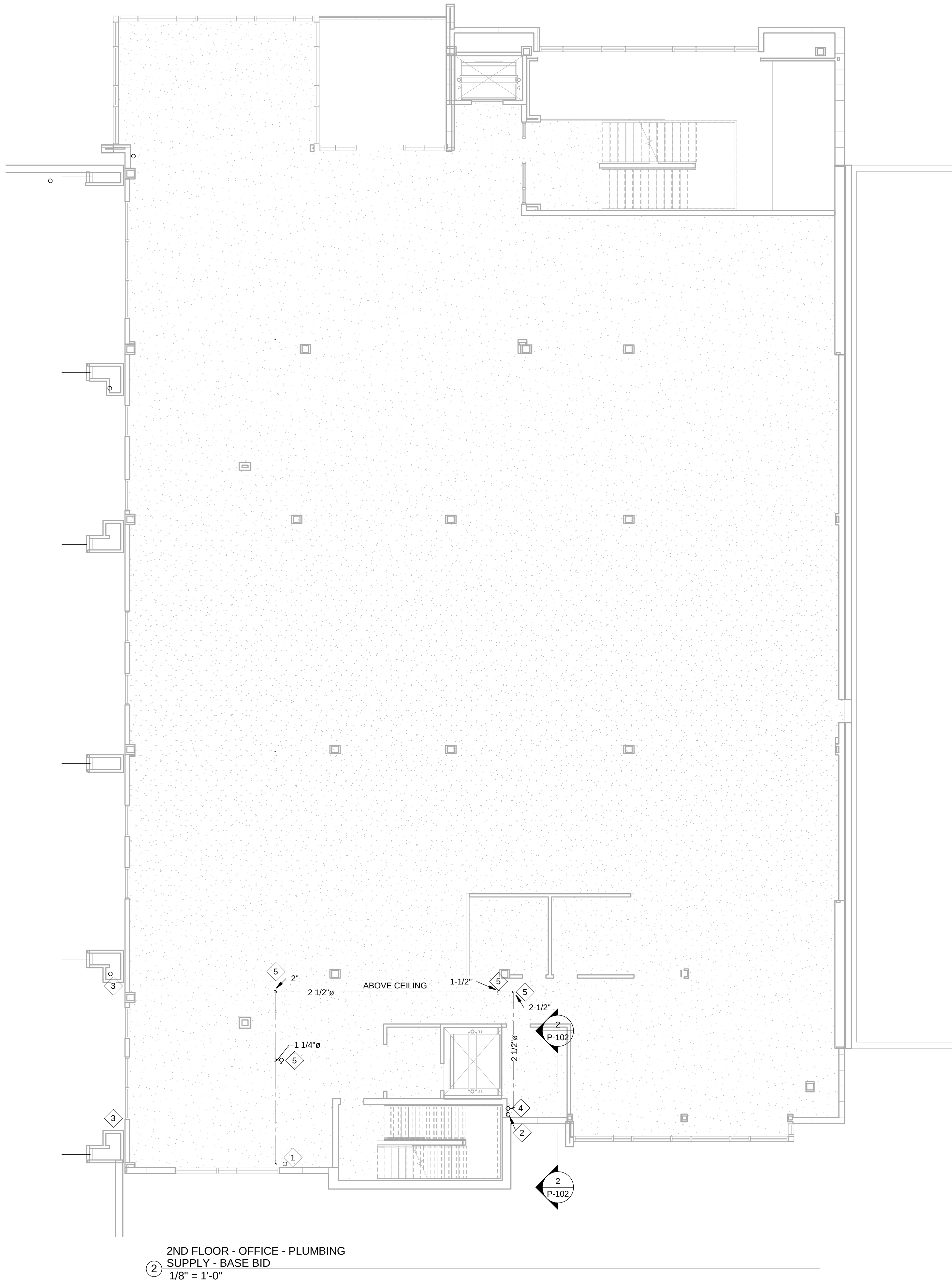
UNDER ALTERNATE NO. 1, PORTION OF SECOND FLOOR SHALL BE FINISHED OUT.

UNDER ALTERNATE NO. 2, THE REMAINDER OF THE SECOND FLOOR SHALL BE COMPLETELY FINISHED OUT.

VENT STACKS TO BE INSTALLED IN ENTIRETY.

PLAN NOTES:

1. UNDER BASE BID, COLD WATER TO RISE FROM FLOOR BELOW. RISE TO ABOVE CEILING OF SECOND FLOOR AND ROUTE TO 3RD FLOOR.
2. UNDER BASE BID, INSTALL GAS RISER FROM 1ST FLOOR UP TO THIRD FLOOR AND CAP SERVICE AT EACH FLOOR ABOVE CEILING.
3. COLD WATER IN HANGER, SECURED TO STURCTURE.
4. COLD WATER TO RISE TO 3RD FLOOR.
5. VALVE AND CAP COLD WATER FOR FUTURE UNDER BASE BID.



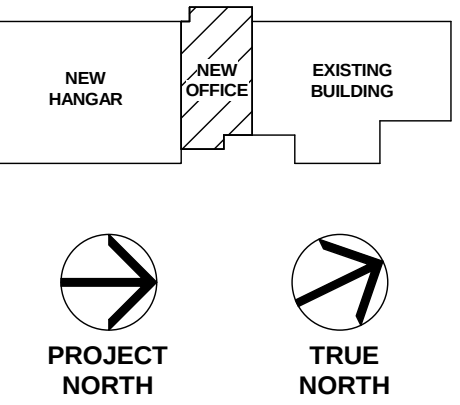
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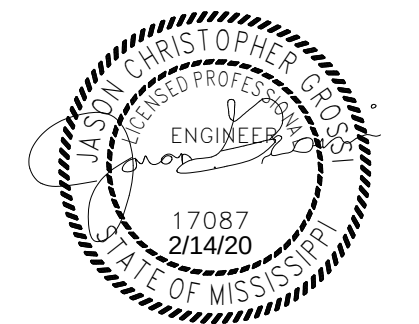
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KEY PLAN:



Seal



No.	Description	Date
4	Addendum no. 2	3/12/20
3	100% Construction Documents	2/14/20
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1	100% Schematic Design	8/7/19

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

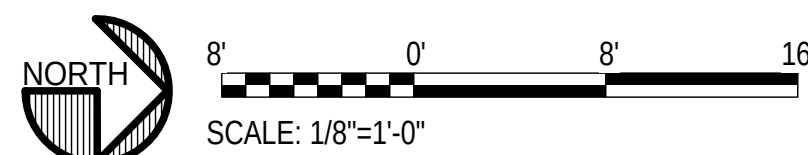
HANGAR ADDITIONS & ALTERATIONS

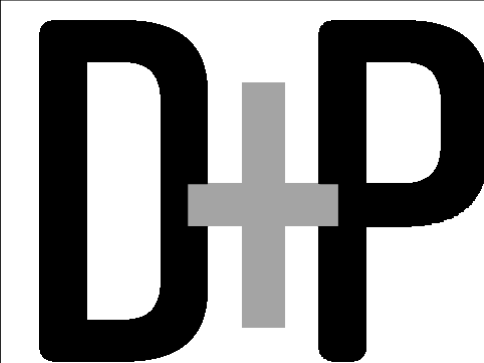
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Meridian, MS 39307

2nd FLR PLAN -
OFFICE - PLUMBING
- BASE BID

Project No.	Date
19-006	10/17/19

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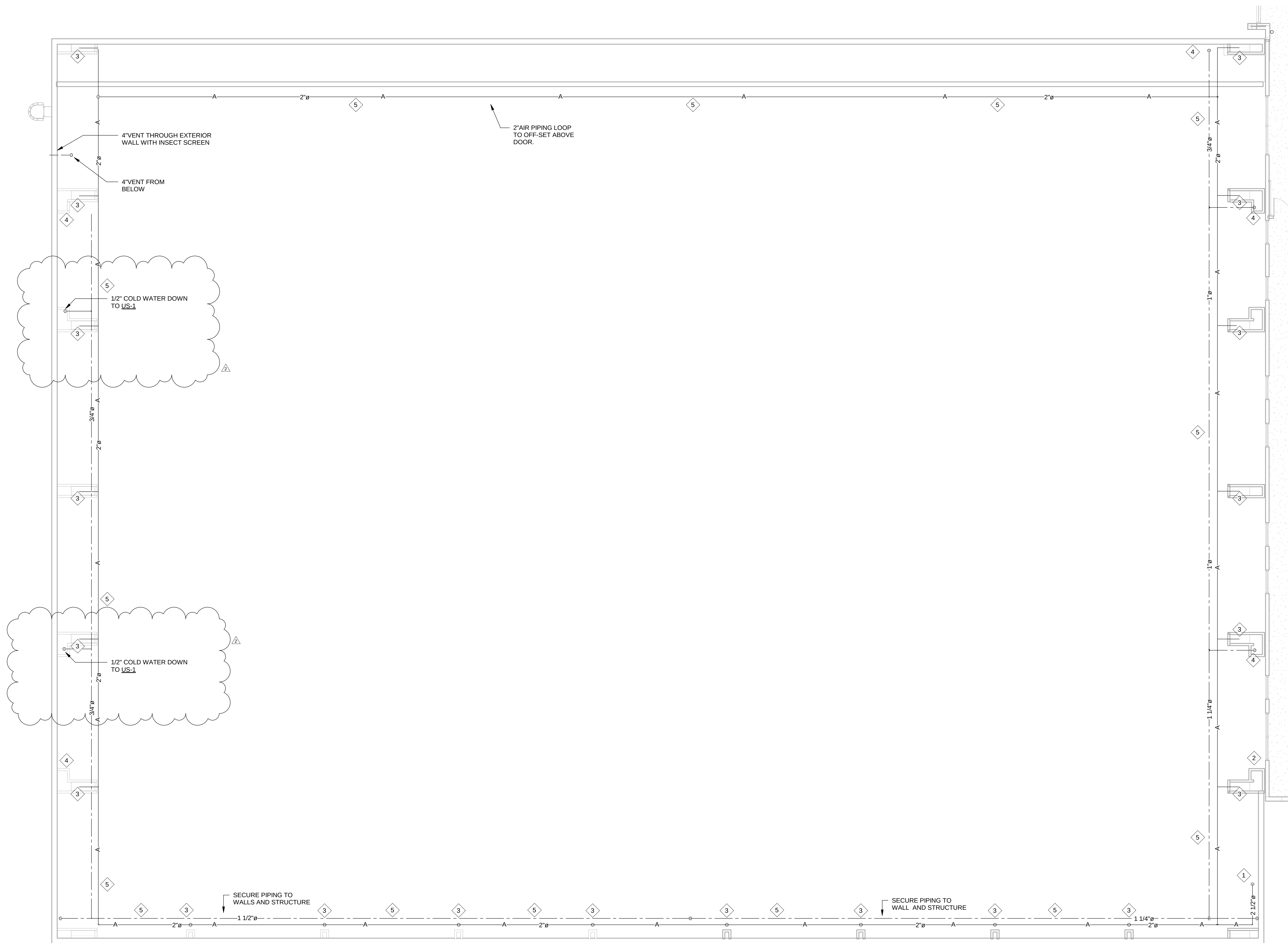
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PLAN NOTES:

1. AIR PIPING FROM AIR COMPRESSOR (AIR-1) BELOW. SECURE PIPING TO WALL AND STRUCTURE IN HANGER AND SECURE PIPING PERIODICALLY TO PREVENT SAGGING.
2. COLD WATER PIPING FROM BELOW. RISE AND SECURE PIPING TO STRUCTURE HIGH IN HANGER AND SECURE PIPING PERIODICALLY TO PREVENT SAGGING.
3. 1/2" AIR DOWN TO QUICK RELEASE CONNECTION (INSTALLED BETWEEN 4 TO 5 FEET ABOVE FINISHED FLOOR. INSTALL BLOW OFF VALVE AT BOTTOM OF RISER. SEE DETAIL.
4. 3/4" COLD WATER DOWN TO HOSE BIBB.
5. INSTALL PIPING HORIZONTALLY SIMILAR TO EXISTING HANGER. SECURE TO WALL.



1 UPPER LEVEL - HANGER - PLUMBING
1/8" = 1'-0"



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

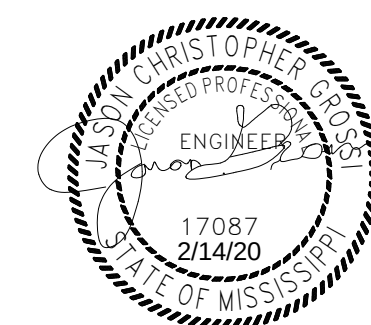


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Resource Group
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Phone: (601) 365-0000
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KEY PLAN



Seal



No.	Description	Date
4	Addendum no. 2	3/12/20
3	100% Construction Documents	2/14/20
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MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

HANGER ADDITIONS & ALTERATIONS

2913 Airport Blvd, South St.
Meridian, MS 39307

Sheet Title

UPPER LEVEL PLAN - HANGER - PLUMBING

Project No. 19-006 Date 10/17/19

P-108

PLUMBING FIXTURE SCHEDULE												
MARK	DESCRIPTION	MAKE	MODEL	SUPPLY FITTING	SUPPLY PIPE(S)	DRAIN	TRAP	ROUGH-IN SIZES				REMARKS
								C.W.	H.W.	WASTE	VENT	
WC-1	WATER CLOSET, FLR MTD. F.V., A.D.A. TRAP PRIMER	KOHLER	K-96057-0	SLOAN G2-8111 TP	---	---	---	1"	--	4"	4"	W/ BENEKE 523 SEAT W/ TRAP PRIMER. MODIFY HEIGHT OF FLUSH VALVE AS REQUIRED FOR HANDRAIL. W/ BOLT CAPS
WC-2	WATER CLOSET, FLR MTD. F.V.	KOHLER	K-96053-0	SLOAN G2-8111	---	---	---	1"	--	4"	4"	W/ BENEKE 523 SEAT W/ BOLT CAPS
U-1	URINAL, WALL HUNG F.V., A.D.A	KOHLER	K-4991-ET	SLOAN G2-8186	---	---	---	3/4"	--	2"	2"	MOUNT AT A.D.A. HEIGHT
U-2	URINAL, WALL HUNG F.V.	KOHLER	K-4991-ET	SLOAN G2-8186	---	---	---	3/4"	--	2"	2"	---
*L-1	WALL HUNG LAVATORY	KOHLER	K-2032	T&S SUPPLY B-2711- VF05	ZURN Z8800LR	ZURN Z8743	ZURN 8700B	1/2"	1/2"	2"	2"	CONCEALED CARRIER. COORDINATE ROUGH-IN WITH DRAIN ASSEMBLY. INSULATE P-TRAP AND SUPPLY PIPES W/ TRUEBRO 102G/105. LESS POP UP DRAIN.
*L-2	COUNTER MOUNT LAVATORY	KOHLER	K-2196-4	T&S SUPPLY B-2711- VF05	ZURN Z8800LR	ZURN Z8743	ZURN 8700B	1/2"	1/2"	2"	2"	COORDINATE ROUGH-IN WITH DRAIN ASSEMBLY. INSULATE P-TRAP AND SUPPLY PIPES W/ TRUEBRO 102G/105. LESS POP UP DRAIN.
*L-3	COUNTER MOUNT LAVATORY	KOHLER	K-2882	DELTA Z3C644-R4	ZURN Z8800LR	ZURN Z8743	ZURN 8700B	1/2"	1/2"	2"	2"	COORDINATE ROUGH-IN WITH DRAIN ASSEMBLY. INSULATE P-TRAP AND SUPPLY PIPES W/ TRUEBRO 102G/105. LESS POP UP DRAIN.
SH-1	ADA SHOWER	BY ARCHITECT	BUILT UP TILE	DELTA T13H333 R10700-UNWS SERIES	---	---	---	1/2"	1/2"	2"	2"	
SH-2	SHOWER	BY ARCHITECT	BUILT UP TILE	DELTA T13291 R10000 SERIES	---	---	---	1/2"	1/2"	2"	2"	
FD-1	FLOOR DRAIN WITH TRAP PRIMER CONNECTION	ZURN	ZN-415S-B-P	---	---	---	---	--	--	3"	2"	WITH TRAP PRIMER. SQUARE DRAIN
FD-2	FLOOR DRAIN RECESSED RIM	ZURN	Z415I	---	---	---	---	--	--	SEE PLAN	SEE PLAN	WITH SURE SEAL TRAP GUARD
FD-3	SQUARE SHOWER FLOOR DRAIN	ZURN	ZN-415S-B	---	---	---	---	--	--	2"	2"	WITH SURE SEAL TRAP GUARD. SQUARE DRAIN
WMB-1	WASHING MACHINE BOX	GUY GRAY	WB200	---	---	---	ZURN 8700B	1/2"	1/2"	2"	2"	
IMB-1	ICE MACHINE BOX	GUY GRAY	88133	---	---	---	---	1/2"	--	--	--	
FHB-1	FREEZEPROOF WALL HYDRANT	WOODFORD	B65	---	---	---	---	3/4"	--	--	--	WITH VACUUM BREAKER
MB-1	MOP BASIN	STERN WILLIAMS	MTB-2424	-	---	---	---	1/2"	1/2"	2"	2"	WITH A-20, T-10-VB, T-35, T-40, & BP
*S-1	SINGLE COMP S/S, SINK	ELKAY	DLR-2222-10	T&S BRASS B-2866-01	ZURN Z8800LR	LK-35	ZURN Z8702B-PC	1/2"	1/2"	2"	2"	
*S-2	S/S KITCHEN SINK	ELKAY	DLR-3122-10	T&S BRASS B-2866-01	ZURN Z8800LR	LK-35	ZURN Z8702B-PC	1/2"	1/2"	2"	2"	1/2" HOT WATER TO ADJACENT DISHWASHER. INSTALL 2" DRAIN FROM DISHWASHER TO SINK TRAP.
US-1	UTILITY SINK	ELKAY	ESSB2520C	LK907BR03LZH	---	---	LK173	1/2"	1/2"	3"	3"	WITH RIM GUARD. WITH TP-1 TRAP PRIMER. WITH S/S WALL GUARD.
EDF-1	BILEVEL ELECTRIC DRINKING FOUNTAIN	ELKAY	LZSTL8WSLK	---	ZURN Z8800LR	---	ZURN Z8702B-PC	1/2"	--	2"	2"	WITH EZH20. NON-FILTERED.
EDF-2	ELECTRIC DRINKING FOUNTAIN	ELKAY	EMABF8WSSK	---	ZURN Z8800LR	---	ZURN Z8702B-PC	1/2"	--	2"	2"	WITH EZH20. NON-FILTERED.
TP-1	TRAP PRIMER	ZURN	Z1022-XL	---	---	---	---	--	--	--	--	PIPE DISCHARGE DOWN TO BELOW FLOOR AND CONNECT TO PRIMER CONNECTION ON FLOOR DRAIN
DST-1	DEEP SEAL P-TRAP	ZURN	Z1000	---	---	---	---	-	-	SEE PLAN	SEE PLAN	FOR USE IN CONDENSATE DRAINS
HB-1	WALL HYDRANT	WOODFORD	24	---	---	---	---	3/4"	--	--	--	INSTALLED IN HANGER
TD-1	TRENCH DRAIN GRATE	NEENAH FOUNDRY	R-4990-DA	---	---	---	---	-	-	SEE PLAN	SEE PLAN	INSTALL WITH 4" CONCRETE ENCASEMENT AND REINFORCING BASED UPON APPLICATION. BOLTED TYPE "A" GRATE (TOTAL OF 78) GRATE AND FRAME TO BE FACTORY PAINTED (STANDARD COLOR PER ARCHITECT)
AD-1	AREA DRAIN	ZURN	Z887-12-HDS	---	---	---	---	-	-	SEE PLAN	SEE PLAN	
AD-2	AREA DRAIN FOR BALCONY	ZURN	ZN461	---	---	---	---	-	-	SEE PLAN	SEE PLAN	INSULATE ALL DRAINAGE FROM BALCONY DRAINS
ES-1	EMERGENCY SHOWER & EYE WASH	HAWS	8320	---	---	---	---	1-1/4"	1-1/4"	2"	2"	WITH SP157A VALVE, THERMOSTATIC MIXING VALVE 9201E, 9001 ALARM, 9102 DUST COVER
WDF-1	WASH DOWN FAUCET	LEONARD	THS-25-VBD-LF-CW	---	---	---	---	3/4"	3/4"	-	-	WITH TMS-25 THERMOSTATIC MIXING VALVE

* MIXING VALVE (MV-3) REQUIRED. INSTALL UNDER LAVATORY/SINK

PUMPS												
	MARK	MAKE AND MODEL	DUTY	TYPE	LOCATION	GPM EACH	PSI	PUMP HEAD	VOLTAGE/ PHASE	MOTOR HP	RPM	EMERGENCY POWER
BASE BID	SP-1	HYDROMATIC SHEF40	SUMP PIT DRAINAGE	SUMP PUMP	ELEVATOR PITS	50	50	12	115/1	4/10	1550	NO
BASE BID	RP-1	TACO 006e3	DOMESTIC HW WATER	RECIRC PUMP	MECH RM	4.5-11	-	2-13	115/1	-	-	NO
ALTERNATE 2	RP-2	TACO 006e3	DOMESTIC HW WATER	RECIRC PUMP	MECH RM	4.5-11	-	2-13	115/1	-	-	NO

WATER HEATER SCHEDULE										
	MARK	MAKE	MODEL	INPUT (BTU)	FLOW (GPM)	TEMP RISE (°F)	VOLTAGE/ PHASE	AMPS	EFFICIENCY	REMARKS
BASE BID	GWH-1	NORITZ	NCC199CDV-NG	199,900	6.5 EA.	60	120V/1PH	4	96%	TOTAL OF 2 WALL MOUNTED HEATERS WITH CONDENSATE NEUTRILIZER, FULLY MODULATING, ISOLATOR VALVES. SYSTEM CONTROLLER. SEE HVAC FOR VENTING
ALTERNATE 2	GWH-2	NORITZ	NCC199CDV-NG	199,900	6.5 EA.	60	120V/1PH	4	96%	TOTAL OF 2 WALL MOUNTED HEATERS WITH CONDENSATE NEUTRILIZER, FULLY MODULATING, ISOLATOR VALVES. SYSTEM CONTROLLER. SEE HVAC FOR VENTING
ALTERNATE 1	EWH-1	RHEEM	RTEX-06	--	1.5	25	220V/1PH	25	--	5.5 K.W. MOUNT UNDER SINK UNDER ALTERNATE 1. OMIT IF ALTERNATE 2 IS ACCEPTED.
ALTERNATE 1	EWH-2	RHEEM	PROE10-1 RH POU	--	--	--	120V/1PH	--	--	10 GALLONS. 2 K.W. MOUNT ABOVE SINK ON SHELF UNDER ALTERNATE 1. OMIT IF ALTERNATE 2 IS ACCEPTED. SEE DETAIL.
BASE BID	EWH-3	RHEEM	RTEX-13	--	3.17	25	220V/1PH	54	--	13 K.W. MOUNT ABOVE SINK UNDER BASE BID. INSTALL WITH (MV-3) MIXING VALVE.

MIXING VALVE SCHEDULE						
	MARK	DESCRIPTION	MAKE	MODEL	MINIMUM FLOW (GPM)	MAXIMUM FLOW (GPM)
BASE BID	MV-1	WATER HEATER MIXING VALVE	POWERS	LFLM490	.5	-
ALTERNATE 2	MV-2	WATER HEATER MIXING VALVE	POWERS	LFLM490	.5	-
BASE BID	MV-3	LAVATORY MIXING VALVE	LEONARD	170-LF	.25	>3
ALTERNATE 1	MV-4	WATER HEATER MIXING VALVE	POWERS	LFMV1	.5	12

EXPANSION TANK						
	MARK	DESCRIPTION	MAKE	MODEL	TANK VOLUME	ACCEPTANCE VOLUME GAL.
BASE BID	ET-1	WATER HEATER EXPANSION TANK	AMTROL	ST12	4.4	.73
ALTERNATE 2	ET-2	WATER HEATER EXPANSION TANK	AMTROL	ST12	4.4	.73
ALTERNATE 1	ET-3	WATER HEATER EXPANSION TANK	AMTROL	ST5	2	.45

SITE UTILITIES CONNECTION SCHEDULE						
TAG	DESCRIPTION	LOCATION	SIZE	INVERT	CAPACITY/PRESSURE	REMARKS
SS 1	SANITARY SEWER	P101	4"	-4'-6"	-	SEE CIVIL FOR CONTINUATION
SS 2	SANITARY SEWER	P103	6"	-5'-10"	-	SEE CIVIL FOR CONTINUATION
W 1	DOMESTIC COLD WATER	P102	2-1/2"	-	40-55 PSI	SEE CIVIL FOR CONTINUATION
W 2	DOMESTIC COLD WATER	P102	1"	-	40-55 PSI	TO SERVICE AREA. SEE CIVIL FOR CONTINUATION.
ST 1	STORM SEWER	P101	2"	-3'-0"±	-	SEE CIVIL FOR CONTINUATION
ST 2	STORM SEWER	P101	3"	-3'-0"±	-	SEE CIVIL FOR CONTINUATION
CA 1	COMPRESSED AIR	P102	2"	-	150 CFM	TO SERVICE AREA WITH PEX TUBING. SEE CIVIL FOR CONTINUATION.
G 1	GAS PIPING	P104	UTILITY CO.	-	VERIFY	UTILITY COMPANY TO INSTALL TO METER

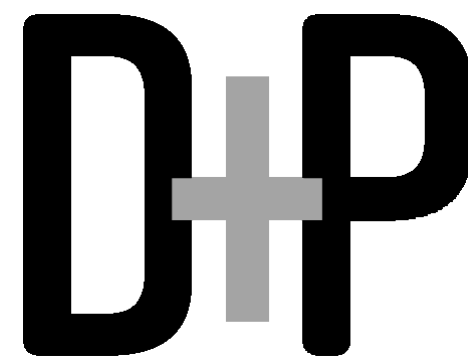
NOTE: INVERT ON SANITARY SEWER IS BASED ON THE FINISHED FLOOR ELEVATION THE AREA IT COVERS.

MISCELLANEOUS PLUMBING POWER, CONTROL AND INTERLOCK WIRING CONNECTIONS					
TAG	DESCRIPTION	POWER WIRING	CONTROL & INTERLOCK WIRING	ELECTRICAL	REMARKS
EDF	ELECTRIC DRINKING FOUNTAIN	DIV 26 ELECTRICAL	-	120/1	

AIR COMPRESSOR SCHEDULE										
	TAG	MANUFACTURER AND MODEL NO.	TYPE	SCFM	PSIG	TANK SIZE (GAL)	ELECTRICAL			REMARKS
BASE BID	AC-1	QUINCY QCS-30 T660-150	ROTARY	103	150	240 120	30	--	208/1	PPFC-200 FLOW CONTROLLER, QMAT02 DRAIN, QPNC-150 AIR DRYER (208V, 1 PHASE), QMF 175 AIR FILTER

VIBRATION ISOLATION/SEISMIC RESTRAINTS				
EQUIPMENT TYPE	BASIS OF DESIGN	SEISMIC DESIGN CATEGORY "SDC"	SEISMIC COMPONENT IMPORTANCE FACTOR	REMARKS
PLUMBING EQUIPMENT	VIBRO ACOUSTICS	B	1.0	1, 2
WATER HEATERS	VIBRO ACOUSTICS	B	1.0	1, 2
PUMPS	VIBRO ACOUSTICS	B	1.0	1, 2
PIPING	VIBRO ACOUSTICS	B	1.0	1, 2
NATURAL GAS PIPING	VIBRO ACOUSTICS	B	1.0	1, 2

NOTES: 1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. 2. SEISMICALLY RATED FOR PROJECT CONDITIONS.



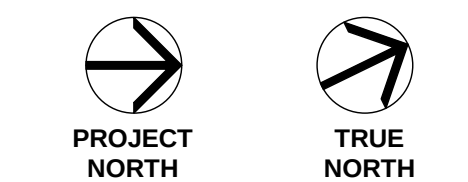
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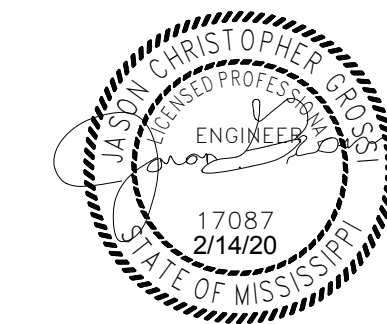
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KEY PLAN



Seal



No.	Description	Date
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3	100% Construction Documents	2/14/20
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1	100% Schematic Design	8/7/19

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Sheet Title

PLUMBING SCHEDULES

Project No.	Date
19-006	10/17/19

P-401



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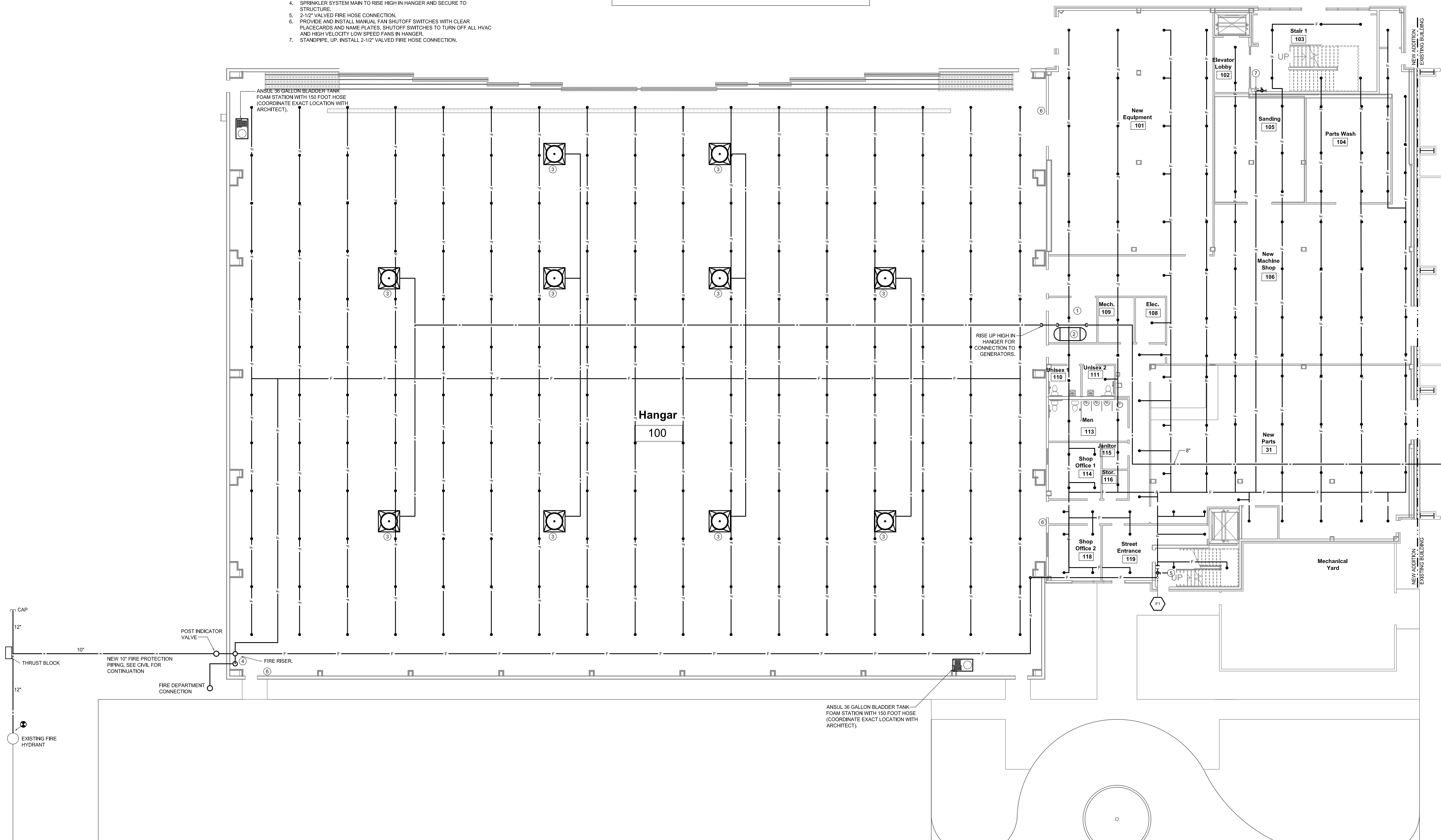
GENERAL NOTES

- SHUTDOWN ALL HVAC SYSTEMS UPON ACTIVATION OF FIRE ALARM SYSTEM.
-

PLAN NOTES

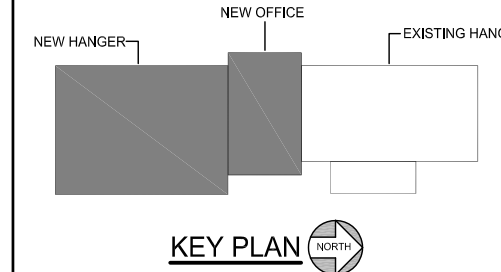
- PROVIDE AND INSTALL ALL ALARMS, SIGNAGE, HANDLINES AND PRESSURE REGULATED DELUGE VALVES AT ALL RISERS INCLUDING GENERATORS AND HAND LINE RISERS AS REQUIRED IN MECHANICAL ROOM.
- ANSUL 187 400 GALLON, PRE-FILLED BLADDER TANK WITH IN-LINE BALANCED PRESSURE PROPORTIONER (70" HIGH, 2200 LBS EMPTY).
- ANSUL JET-X 15A HIGH-EXPANSION FOAM GENERATORS.
- SPIRINKLER SYSTEM MAIN TO RISE HIGH IN HANGER AND SECURE TO STRUCTURE.
- 2-1/2" VALVED FIRE HOSE CONNECTION.
- PROVIDE AND INSTALL MANUAL FAN SHUTOFF SWITCHES WITH CLEAR PLACECARDS AND NAME PLATES. SHUTOFF SWITCHES TO TURN OFF ALL HVAC AND HIGH VELOCITY LOW SPEED FANS IN HANGER.
- STANDPIPE, UP, INSTALL 2-1/2" VALVED FIRE HOSE CONNECTION.

PLANS ARE FOR REFERENCE ONLY. CONTRACTOR TO PROVIDE STAMPED DRAWINGS AT SUBMITTAL PHASE WITH ALL CALCULATIONS. DESIGN TO BE PER LATEST VERSION OF NFPA 13, NFPA 16 AND NFPA 409.

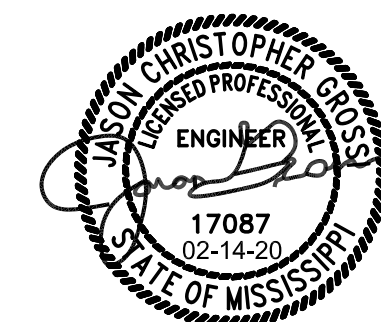


1 1ST FLR PLAN - NEW ADDITION - FIRE PROTECTION "BASE BID"
3/32" = 1'-0"

Key Plan



Seal



No.	Description	Date
4	Addendum no. 2	3/12/20
3	100% Construction Documents	2/14/20
2	100% Design Development	10/17/19
1	100% Schematic Design	8/7/19

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1ST FLOOR PLAN
NEW ADDITION FIRE
PROTECTION "BASE
BID"

Project No. 19-006 Date 02/14/20

FP-100

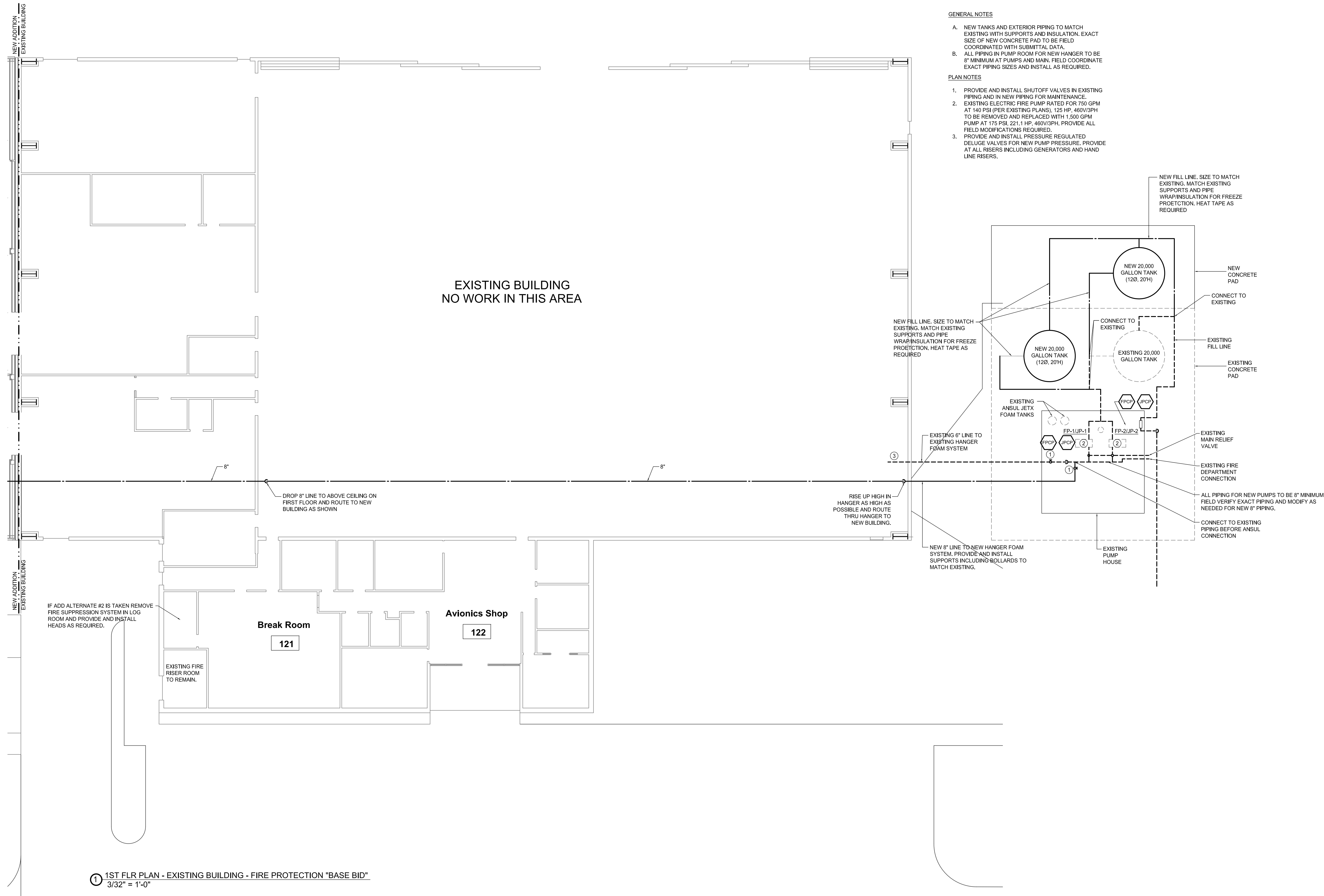


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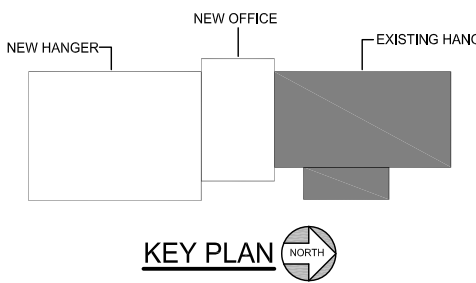
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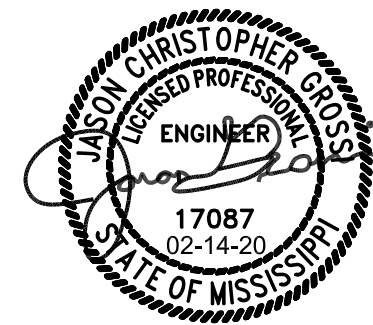


1ST FLR PLAN - EXISTING BUILDING - FIRE PROTECTION "BASE BID"
3/32" = 1'-0"

Key Plan



Seal



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1ST FLOOR PLAN
EXISTING BUILDING
FIRE PROTECTION
"BASE BID"

Project No. 19-006 Date 02/14/20

FP-101

19-077
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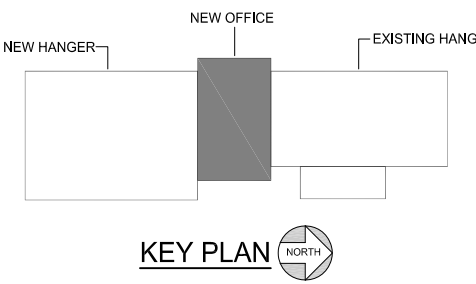


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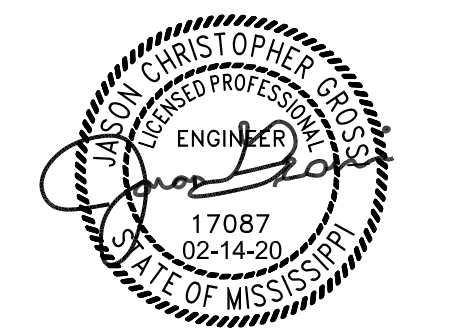
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Key Plan:



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1	100% Schematic Design	8/7/19

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Sheet Title
**2ND FLOOR PLAN
FIRE PROTECTION
"BASE BID" & ALT. 1**

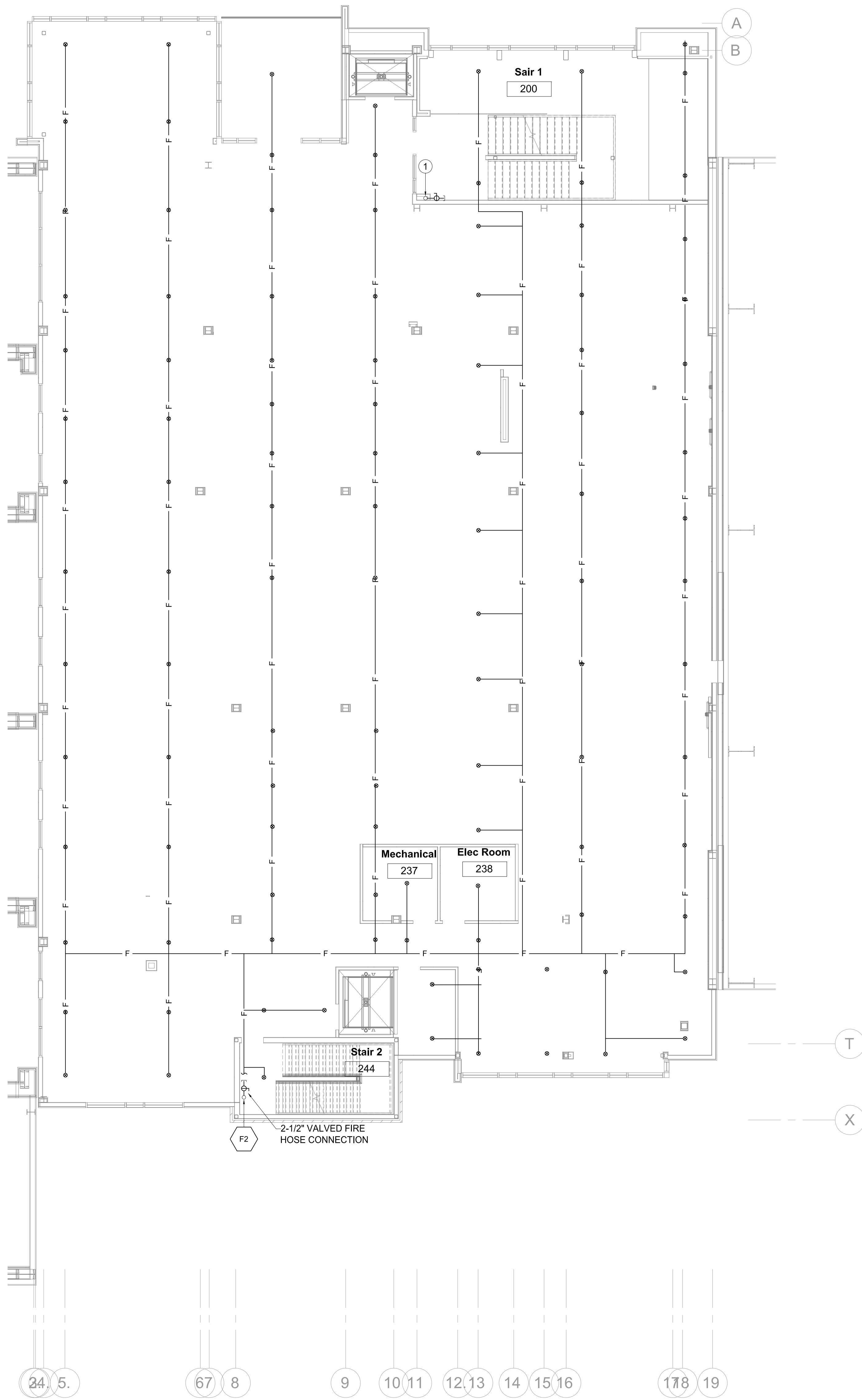
Project No. 19-006 Date 02/14/20

FP-102

PLAN NOTES

- STANDPIPE, UP, INSTALL 2-1/2" VALVED FIRE HOSE CONNECTION.

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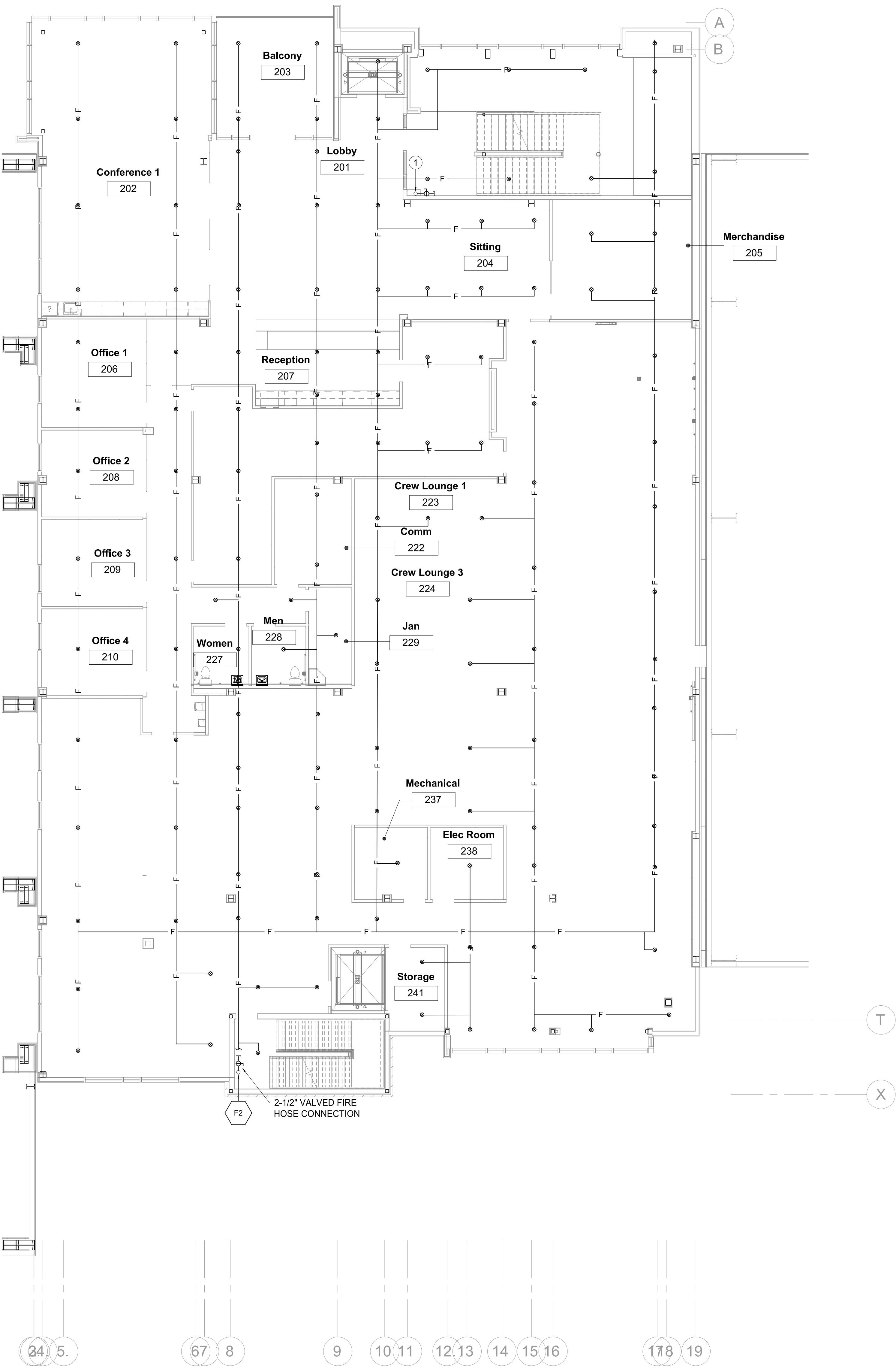


① 2ND FLR OVERALL PLAN - FIRE PROTECTION "BASE BID"
1/8" = 1'-0"

PLAN NOTES

- STANDPIPE, UP, INSTALL 2-1/2" VALVED FIRE HOSE CONNECTION.

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② 2ND FLR OVERALL PLAN - FIRE PROTECTION "ALT. #1"
1/8" = 1'-0"

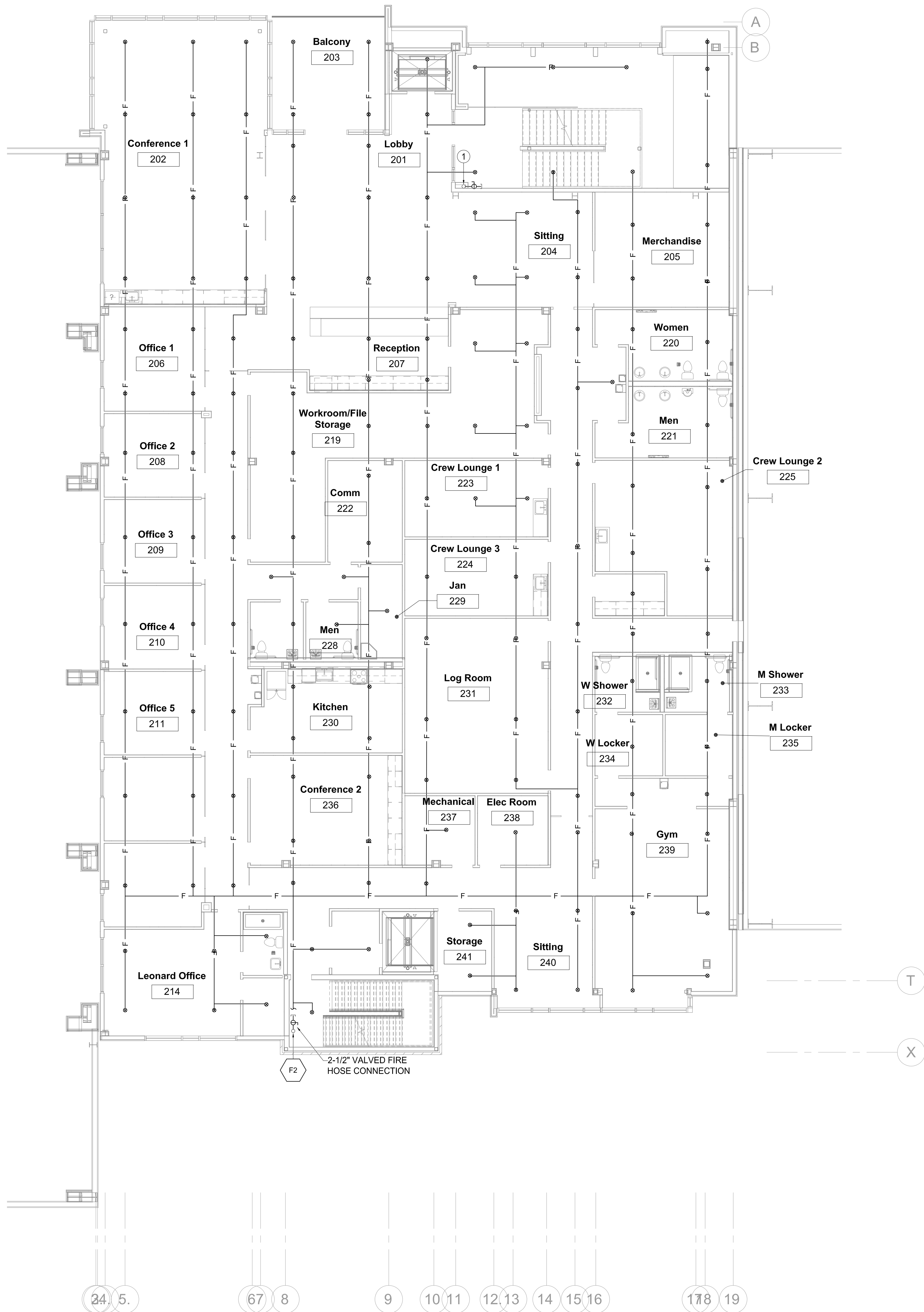


19-077
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PLAN NOTES

1. STANDPIPE, UP. INSTALL 2-1/2" VALVED FIRE HOSE CONNECTION.

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1 2ND FLR OVERALL PLAN - FIRE PROTECTION "ALT. #2"
1/8" = 1'-0"

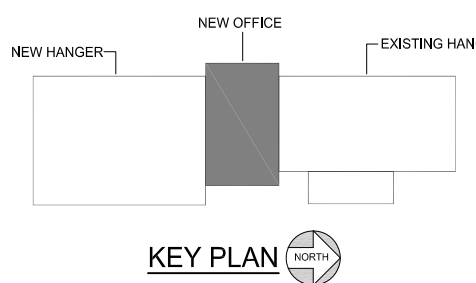


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Sheet Title
2ND FLOOR PLAN
FIRE PROTECTION
ALT. 2

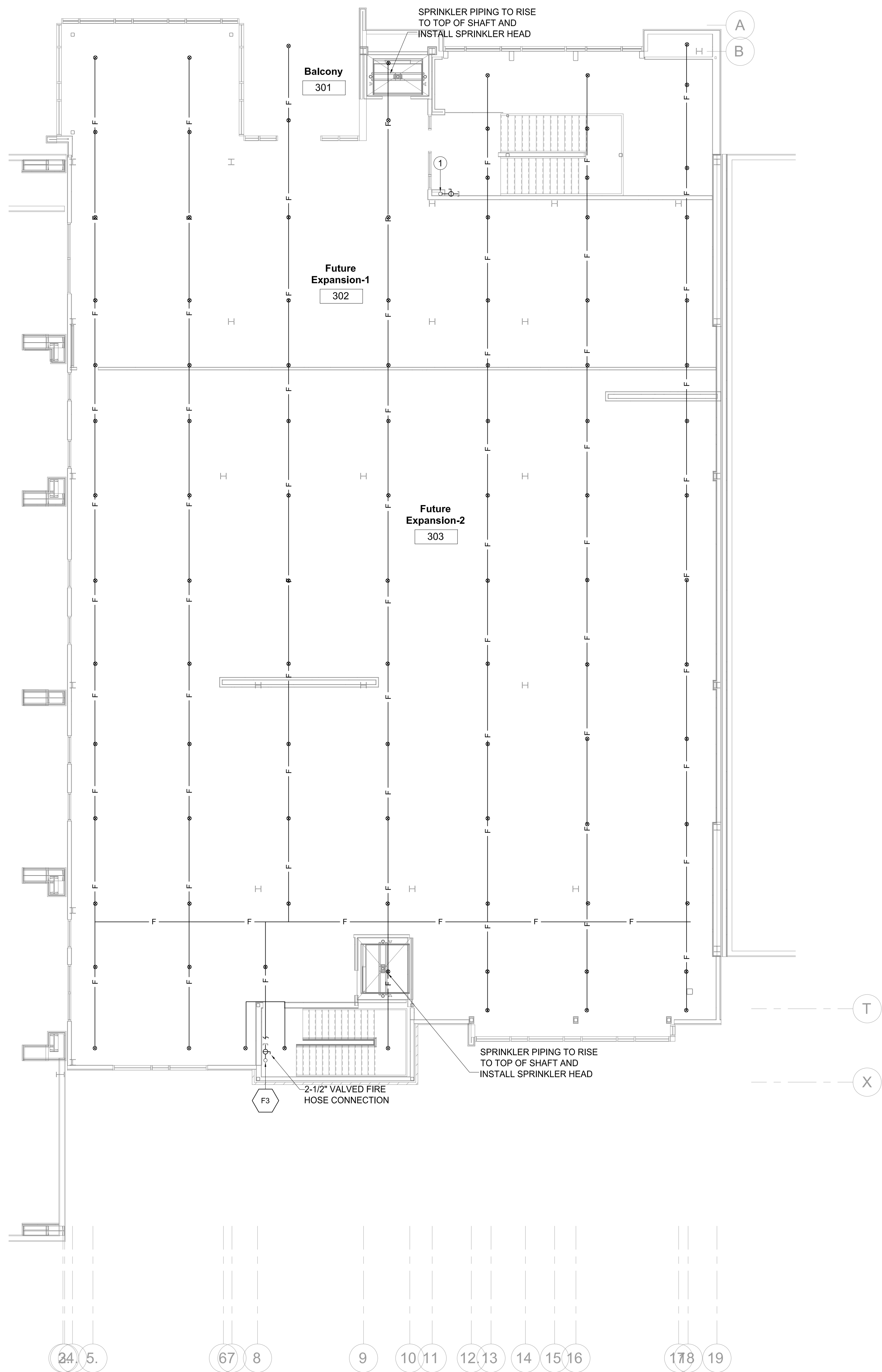
Project No. 19-006 Date 02/14/20

FP-103

PLAN NOTES

- STANDPIPE FROM BELOW, INSTALL 2-1/2" VALVED FIRE HOSE CONNECTION.

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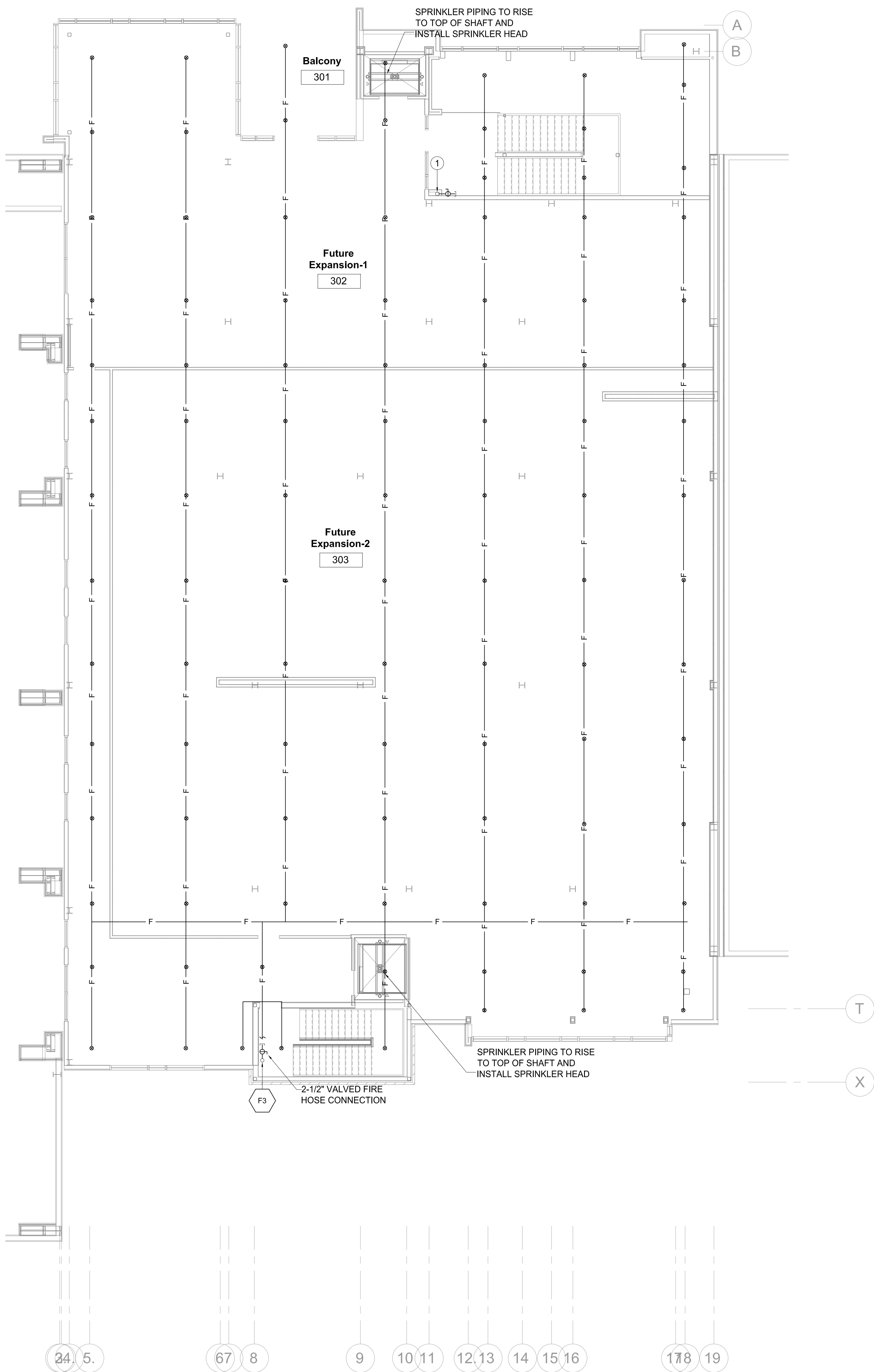


① 3RD FLR PLAN - FIRE PROTECTION "BASE BID"
1/8" = 1'-0"

PLAN NOTES

- STANDPIPE FROM BELOW, INSTALL 2-1/2" VALVED FIRE HOSE CONNECTION.

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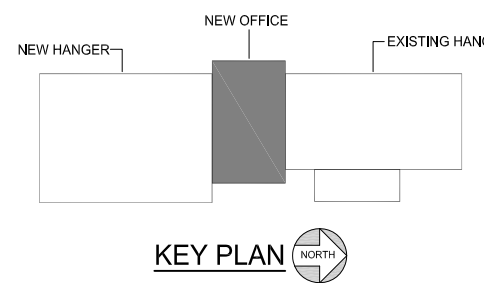


② 3RD FLR PLAN - FIRE PROTECTION "ALT. #3"
1/8" = 1'-0"

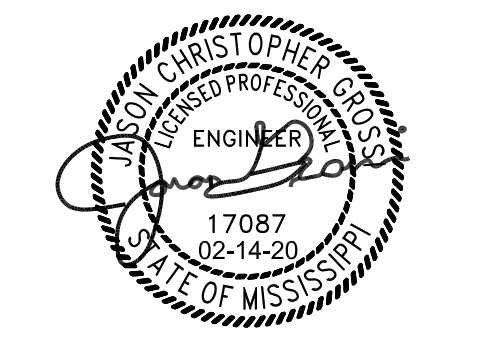


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Key Plan



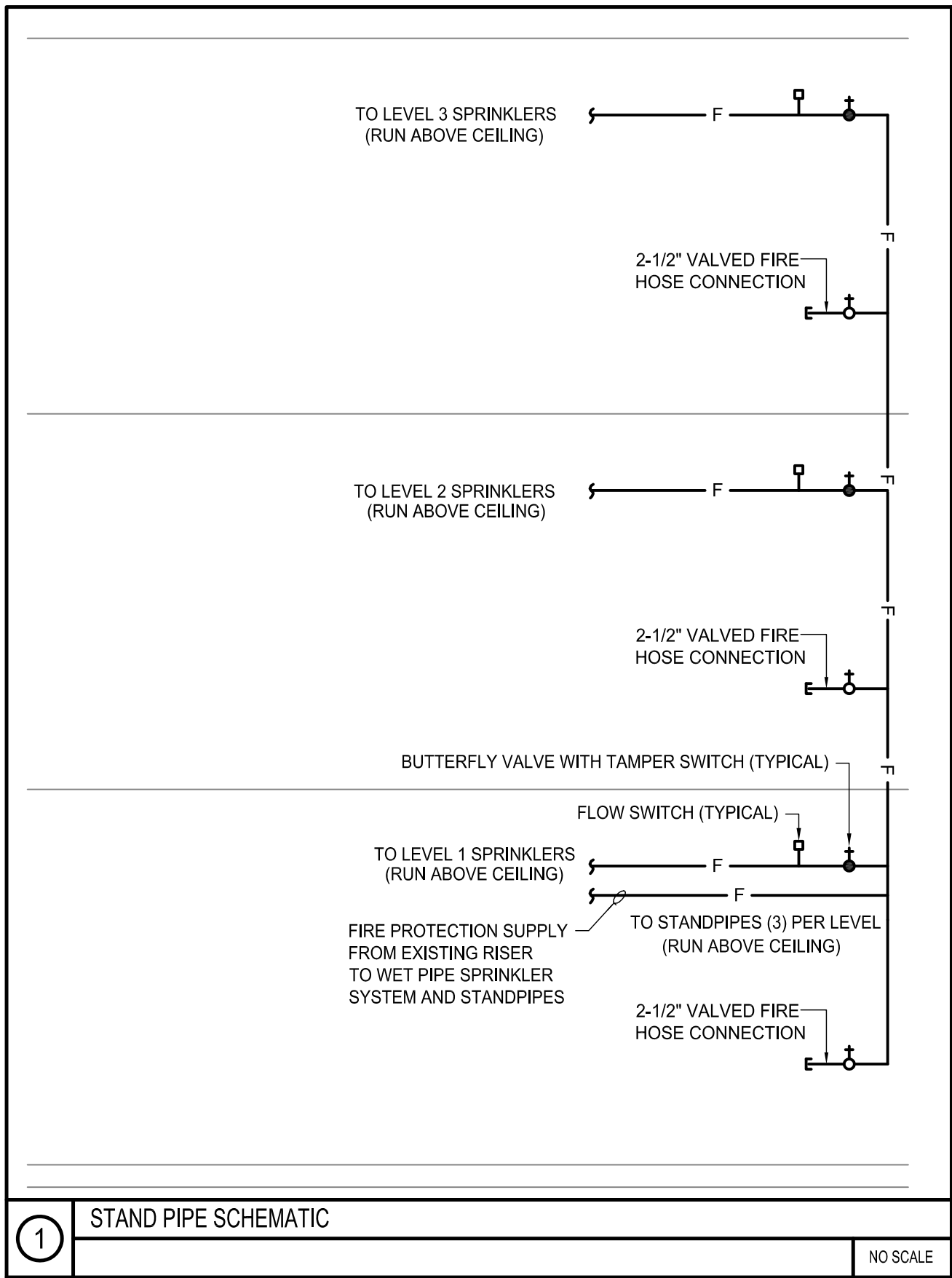
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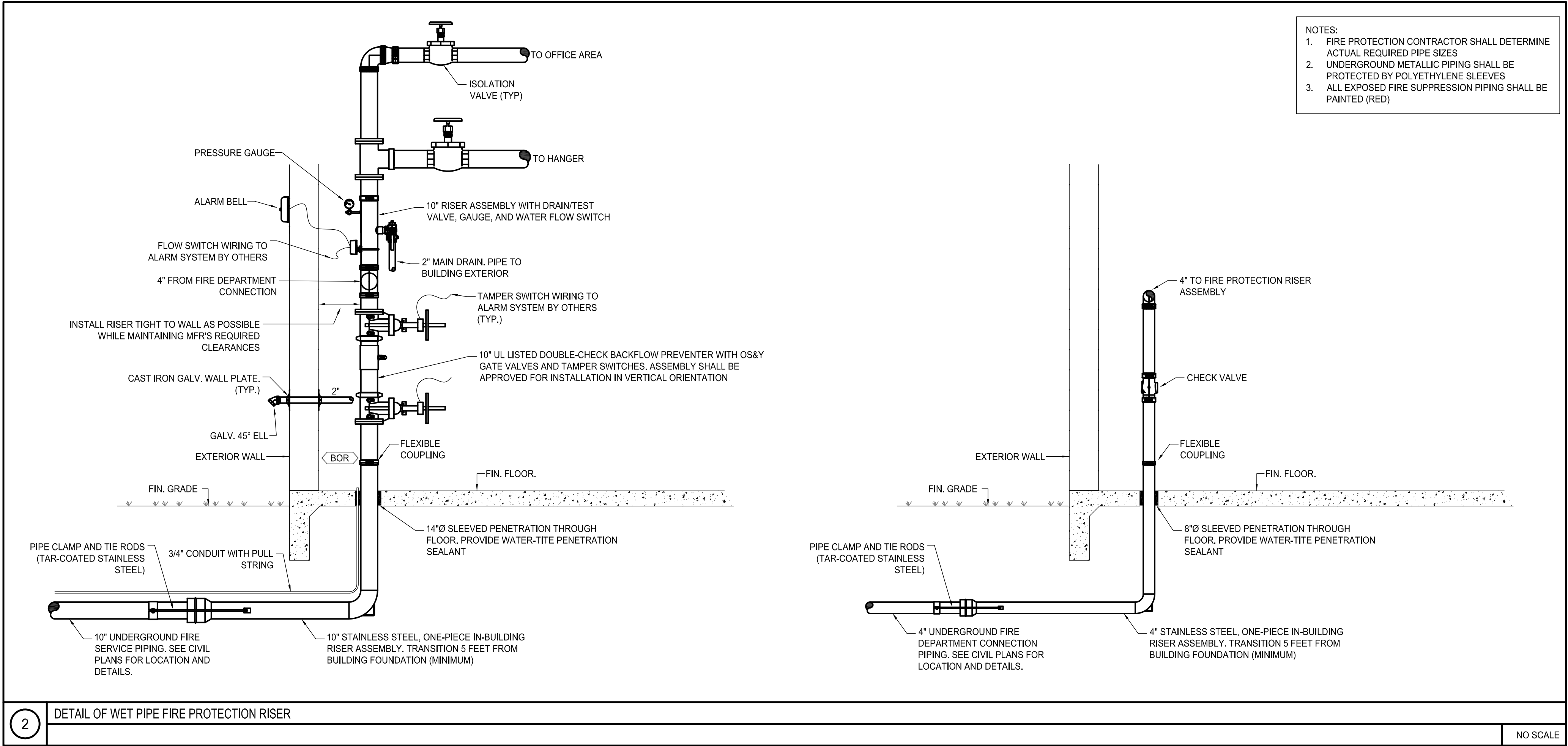
Sheet Title
3RD FLOOR PLAN
FIRE PROTECTION
"BASE BID" & ALT. 3
Project No. 19-006 Date 02/14/20



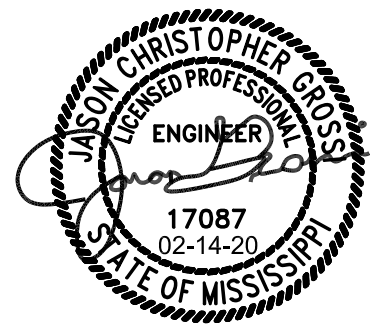
FIRE PUMP											
MARK	MAKE AND MODEL	DUTY	TYPE	LOCATION	GPM EACH	PSI	PUMP HEAD/ FT.	VOLTAGE/ PHASE	MOTOR HP	RPM	EMERGENCY POWER
JP-1	PEERLESS PUMP CR-5-15	FIRE PROTECTION	JOCKEY PUMP	FIRE PUMP HOUSE	15	15	459	460/3Ø	5	3550	NO
JP-2	PEERLESS PUMP CR-5-15	FIRE PROTECTION	JOCKEY PUMP	FIRE PUMP HOUSE	15	15	459	460/3Ø	5	3550	NO
FP-1	PEERLESS PUMP 6AEF12	FIRE PROTECTION	FIRE PUMP	FIRE PUMP HOUSE	1500	175	404	460/3Ø	221.1	3550	NO
FP-2	PEERLESS PUMP 6AEF12	FIRE PROTECTION	FIRE PUMP	FIRE PUMP HOUSE	1500	175	404	460/3Ø	221.1	3550	NO

MISCELLANEOUS FIRE PROTECTION POWER, CONTROL AND INTERLOCK WIRING CONNECTIONS					
TAG	DESCRIPTION	POWER WIRING	CONTROL & INTERLOCK WIRING	ELECTRICAL	REMARKS
				VIO	
F1	ZONE 1 FIRE PROTECTION FLOW SWITCH	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	FLOW SWITCH TO MONITOR SYSTEM FLOW STATUS. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
F2	ZONE 2 FIRE PROTECTION FLOW SWITCH	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	FLOW SWITCH TO MONITOR SYSTEM FLOW STATUS. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
F3	ZONE 3 FIRE PROTECTION FLOW SWITCH	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	FLOW SWITCH TO MONITOR SYSTEM FLOW STATUS. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
FP-CP	FIRE PUMP CONTROL PANEL	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	FIRE PUMP CONTROL PANEL. COORDINATE INSTALLATION LOCATION WITH ARCHITECT.
JPCP	JOCKEY PUMP CONTROL PANEL	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	JOCKEY PUMP CONTROL PANEL. COORDINATE INSTALLATION LOCATION WITH ARCHITECT.

FIRE PROTECTION BACKFLOW PREVENTER					
MARK	DESCRIPTION	MAKE	MODEL	SERVES	REMARKS
FPBFP-1	FIRE PROTECTION BACKFLOW PREVENTER	WATTS	7570SY NRS	FIRE PROTECTION	---



- NOTES:
1. FIRE PROTECTION CONTRACTOR SHALL DETERMINE ACTUAL REQUIRED PIPE SIZES
 2. UNDERGROUND METALLIC PIPING SHALL BE PROTECTED BY POLYETHYLENE SLEEVES
 3. ALL EXPOSED FIRE SUPPRESSION PIPING SHALL BE PAINTED (RED)

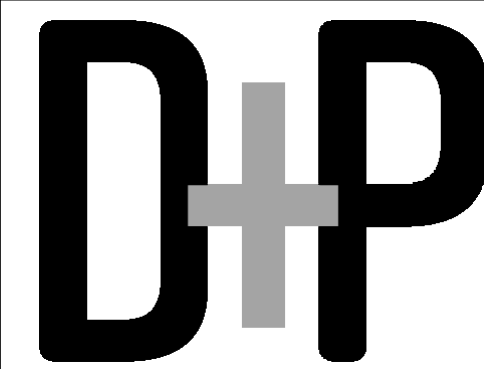


No.	Description	Date
4	Addendum no. 2	3/12/20
3	100% Construction Documents	2/14/20
2	100% Design Development	10/17/19
1	100% Schematic Design	8/7/19

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE
HANGER ADDITIONS & ALTERATIONS
2913 Airport Blvd. South St.
Meridian, MS 39307

Sheet Title
**FIRE PROTECTION
DETAILS &
SCHEDULES**
Project No. 19-006 Date 02/14/20

FP-501

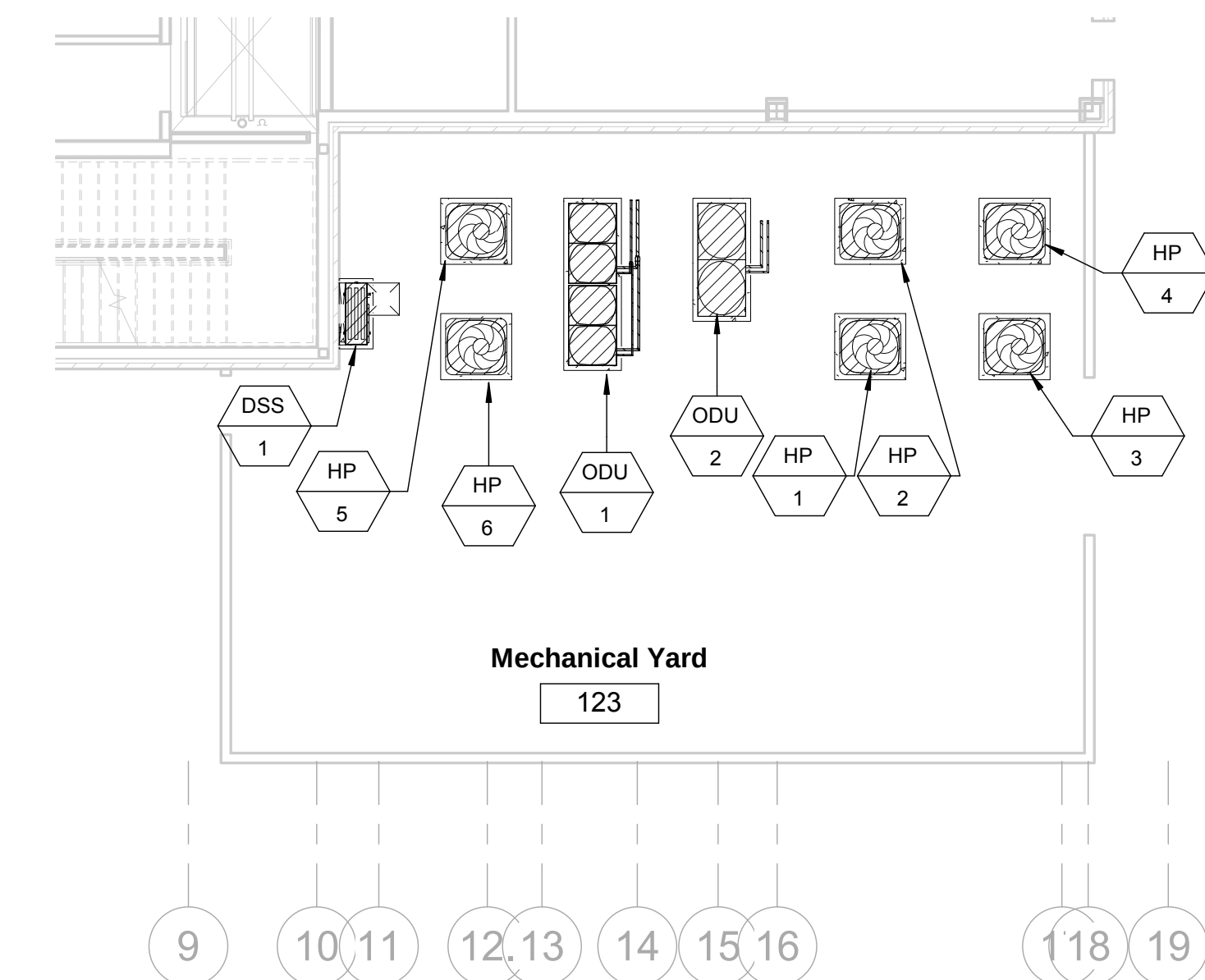


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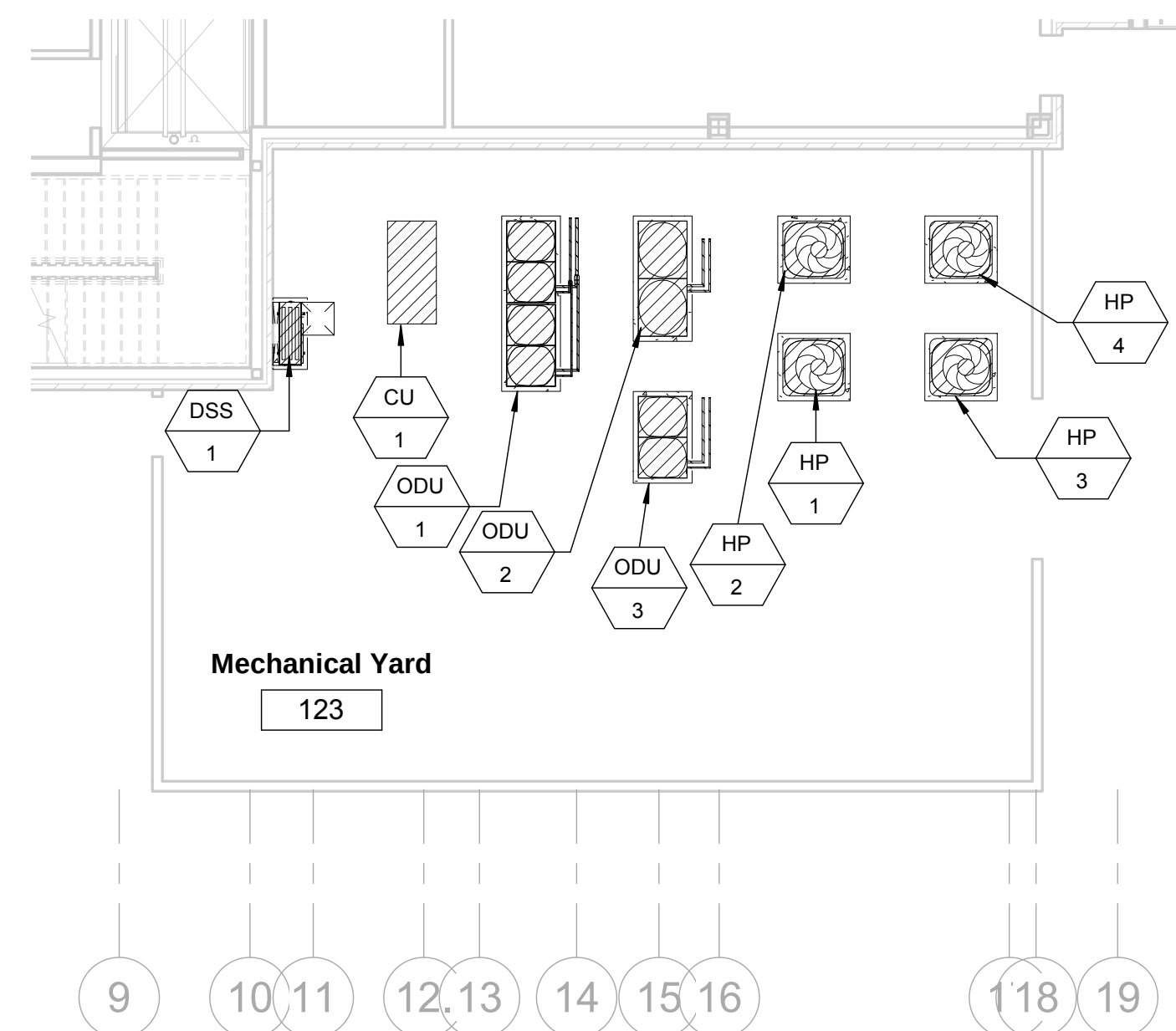
2011 23rd Avenue
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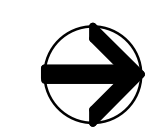
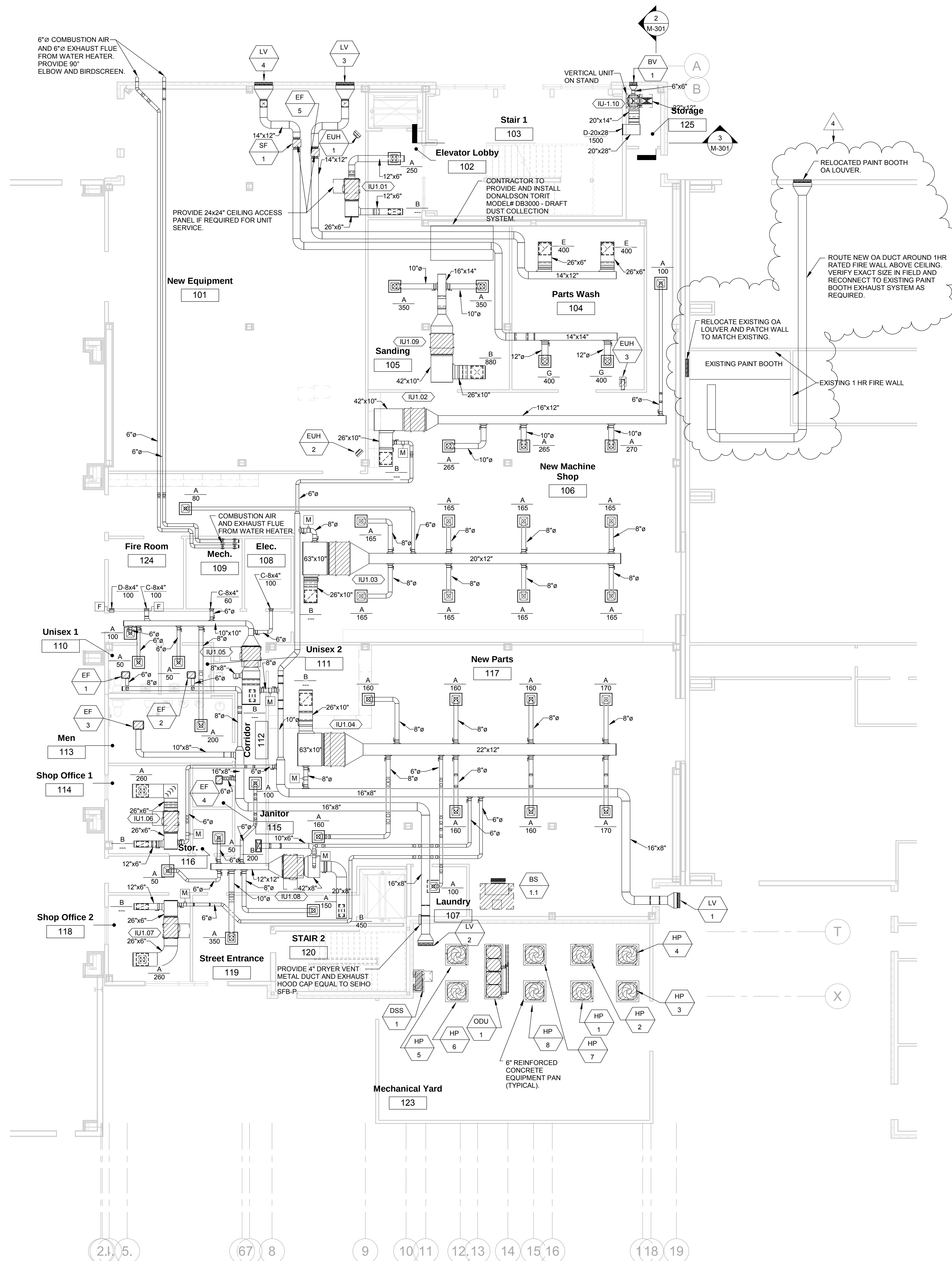
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2 1ST FLR MECHANICAL YARD ADD ALTERNATE #1
1/8" = 1'-0"



3 1ST FLR MECHANICAL YARD ADD ALTERNATE #2
1/8" = 1'-0"



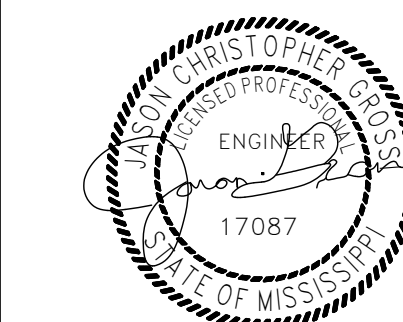
PROJECT NORTH

1 1ST FLR OFFICE - HVAC
1/8" = 1'-0"

KEY PLAN



Seal



No.	Description	Date
4	ADDENDUM #2	3/12/20
3	100% Construction Documents	2/14/20
2	100% Design Development	10/17/19
1	100% Schematic Design	8/7/19

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HANGAR ADDITIONS &
ALTERATIONS

2913 Airport Blvd., South St.
Meridian, MS 39307

Sheet Title

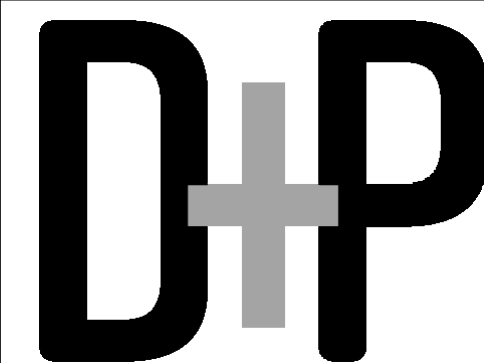
1ST FLOOR OFFICE
- HVAC

Project No.	Date
19-006	02/14/20

M-102



Engineering
Resource Group



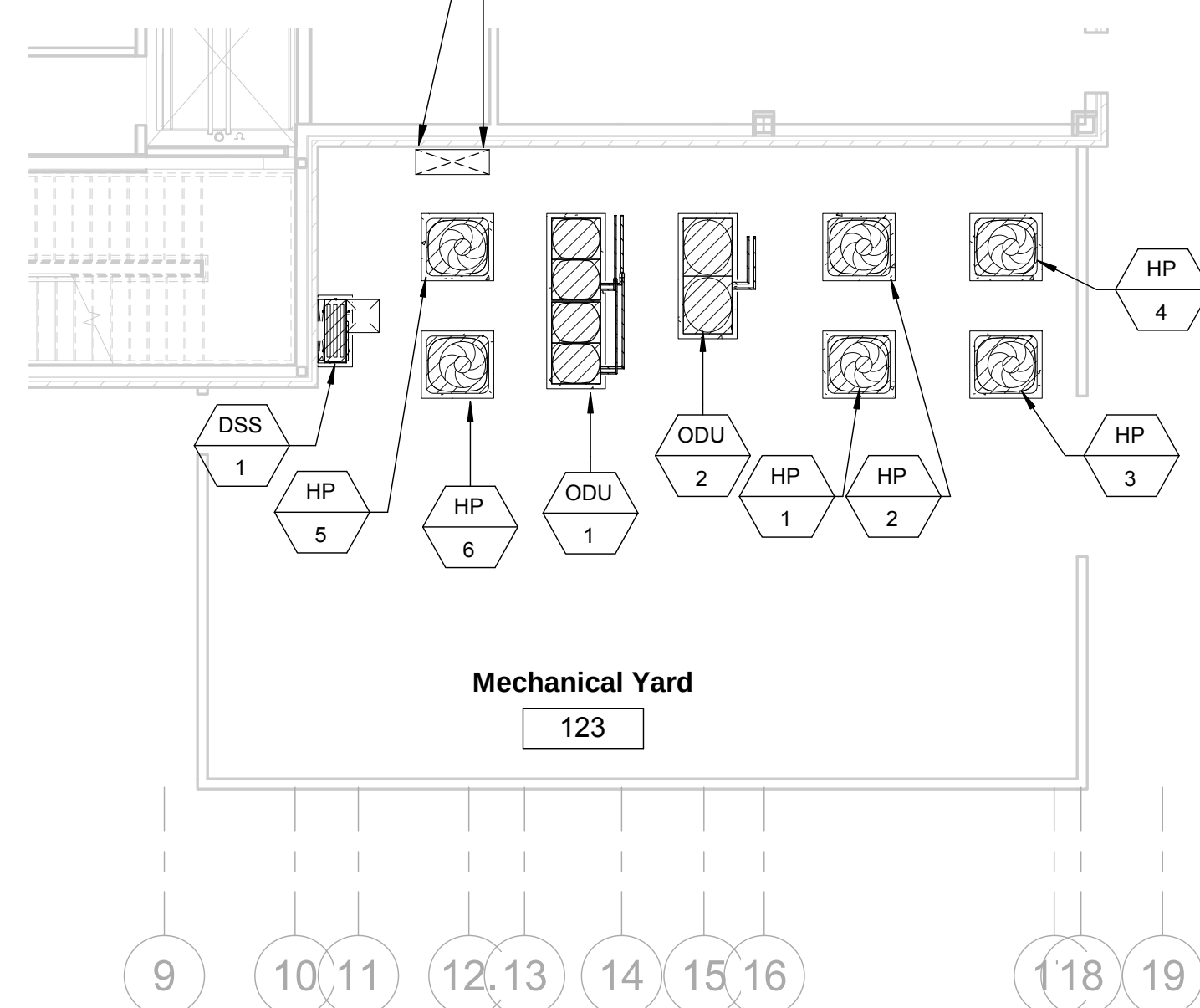
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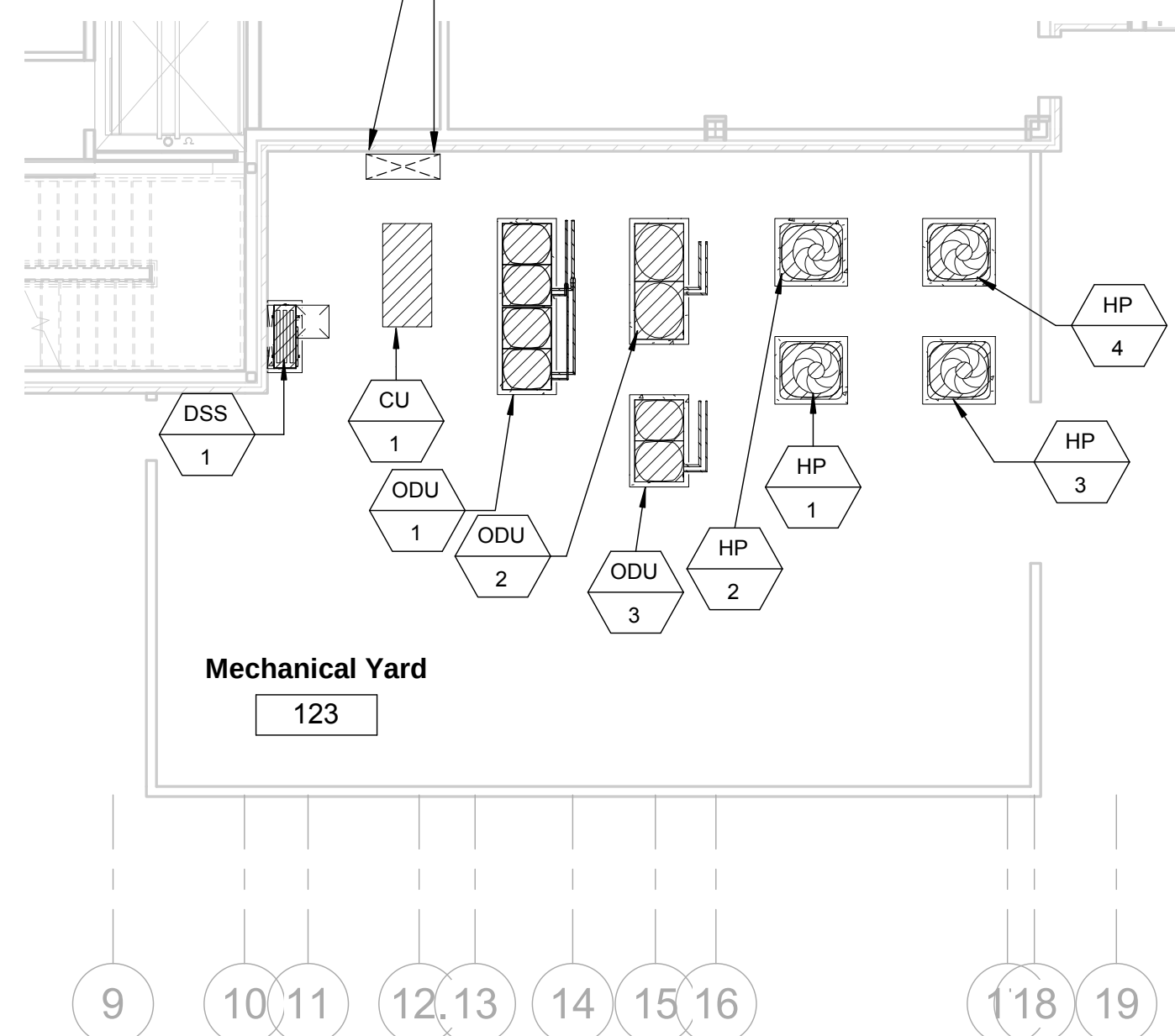
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CONTRACTOR IS TO ROUTE AND SIZE PIPE WITH ALL FITTINGS PER MANUFACTURES RECOMMENDATIONS. PROVIDE SHOP DRAWINGS INDICATING ALL EQUIPMENT, PIPING WITH SIZES AND ACCESSORIES. PROVIDE PIPE SUPPORTS AS REQUIRED. SEE DETAIL.

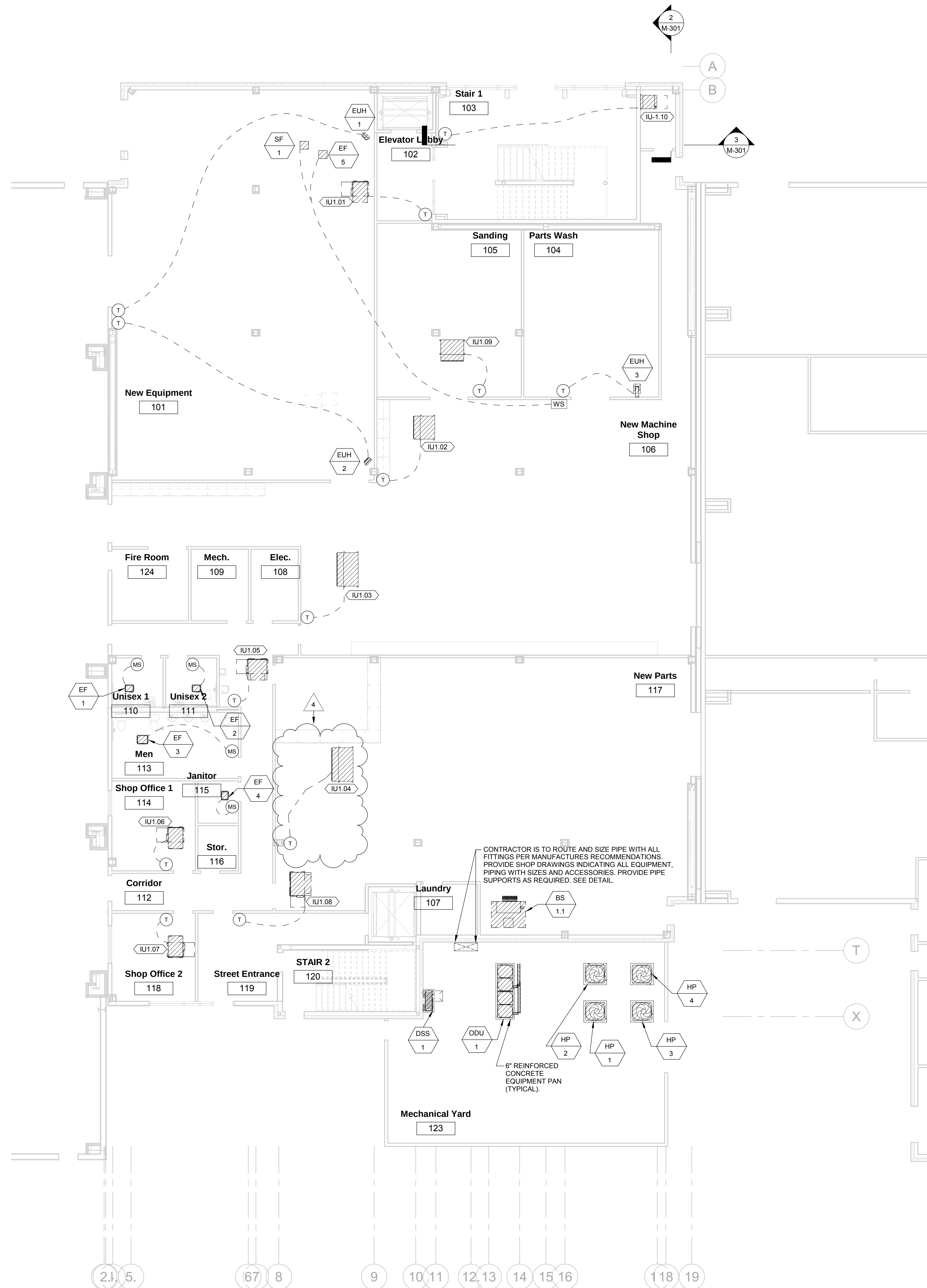


2 1ST FLR MECHANICAL YARD PIPING ADD ALTERNATE #1
1/8" = 1'-0"

CONTRACTOR IS TO ROUTE AND SIZE PIPE WITH ALL FITTINGS PER MANUFACTURES RECOMMENDATIONS. PROVIDE SHOP DRAWINGS INDICATING ALL EQUIPMENT, PIPING WITH SIZES AND ACCESSORIES. PROVIDE PIPE SUPPORTS AS REQUIRED. SEE DETAIL.



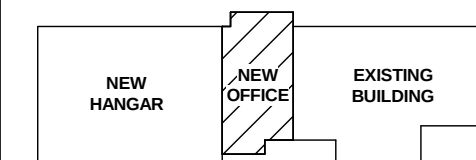
3 1ST FLR MECHANICAL YARD PIPING ADD ALTERNATE #2
1/8" = 1'-0"



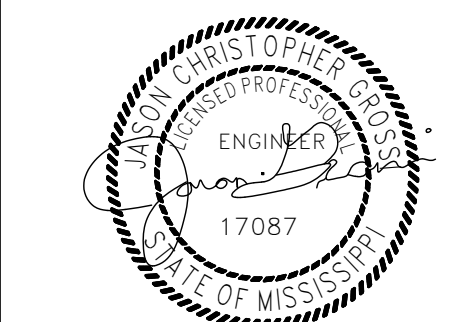
PROJECT NORTH

1 1ST FLR OFFICE - THERMOSTAT LOCATIONS
1/8" = 1'-0"

KEY PLAN



Seal



No.	Description	Date
4	ADDENDUM #2	3/12/20
3	100% Construction Documents	2/14/20
2	100% Design Development	10/17/19
1	100% Schematic Design	8/7/19

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

HANGAR ADDITIONS &
ALTERATIONS

2913 Airport Blvd, South St.
Meridian, MS 39307

Sheet Title

1ST FLOOR OFFICE
- THERMOSTAT

Project No.	Date
19-006	02/14/20

M-201



Engineering
Resource Group
1000 Engineering Resource Drive
Jackson, MS 39208
Phone: (601) 355-0000
Fax: (601) 355-0001

POWER VENTILATOR SCHEDULE

	TAG	MANUFACTURER AND MODEL NO.	TYPE	CFM	ESP	RPM	SOUND (dBASONES)	ELECTRICAL			ON/OFF	INTERLOCK	OP WT (LBS)	REMARKS
								BHP	HP	V/□				
BASE BID	EF 1	COOK GCVF-100	CEILING MOUNTED	75	0.35	883	43/2.0	--	10W	115/1	MOTION DETECTOR	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
BASE BID	EF 2	COOK GCVF-100	CEILING MOUNTED	75	0.35	883	43/2.0	--	10W	115/1	MOTION DETECTOR	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
BASE BID	EF 3	COOK GCVF-180	CEILING MOUNTED	250	0.35	1579	59/7.0	--	86W	115/1	MOTION DETECTOR	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
BASE BID	EF 4	COOK GCVF-100	CEILING MOUNTED	50	0.25	692	38/1.3	--	5W	115/1	WALL SWITCH	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, GEMINI ISOLATOR KIT
BASE BID	EF 5	COOK 120SQN17DEC	CENTRIFUGAL INLINE	800	0.5	1223	50/5.3	--	0.5	115/1	WALL SWITCH	SF-1	100	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT (RC-75)
BASE BID	EF 6	COOK GCVF-100	CEILING MOUNTED	75	0.35	883	43/2.0	--	10W	115/1	MOTION DETECTOR	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
BASE BID	EF 7	COOK GCVF-100	CEILING MOUNTED	75	0.35	883	43/2.0	--	10W	115/1	MOTION DETECTOR	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
BASE BID	EF 8	COOK GCVF-100	CEILING MOUNTED	50	0.25	692	38/1.3	--	5W	115/1	WALL SWITCH	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
BASE BID	EF 9	COOK GCVF-180	CEILING MOUNTED	150	0.35	1110	48/3.5	-	28W	115/1	MOTION DETECTOR	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
BASE BID	EF 10	COOK GCVF-180	CEILING MOUNTED	150	0.35	1110	48/3.5	-	28W	115/1	MOTION DETECTOR	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
BASE BID	EF 11	COOK GNVF-180	CENTRIFUGAL INLINE	140	0.35	1070	47/3.0	---	24W	115/1	MOTION DETECTOR	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
BASE BID	EF 12	COOK GNVF-180	CENTRIFUGAL INLINE	140	0.35	1070	47/3.0	---	24W	115/1	MOTION DETECTOR	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
ALTERNATE 2	EF 13	COOK GCVF-100	CEILING MOUNTED	75	0.35	883	43/2.0	--	10W	115/1	MOTION DETECTOR	NONE	30	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, GEMINI ISOLATOR KIT, FACTORY WALL MOUNTED OCCUPANCY SENSOR
BASE BID	EF 14	COOK 100SQN17DH(VF)	CENTRIFUGAL INLINE CABINET FAN	300	0.5	1138	3.9	--	1/8	115/1	PRESSURE CONTROLLER	NONE	100	PREWIRED DISCONNECT, PRE EC VARI-FLOW MOTOR, EXTERNAL SIGNAL SPEED CONTROL, VFPC 1" PRESS CONTROLLER, BACKDRAFT DAMPER, SC-35 ISOLATORS
BASE BID	EF 15	COOK 100SQN17DH(VF)	CENTRIFUGAL INLINE CABINET FAN	300	0.5	1138	3.9	--	1/8	115/1	PRESSURE CONTROLLER	NONE	100	PREWIRED DISCONNECT, PRE EC VARI-FLOW MOTOR, EXTERNAL SIGNAL SPEED CONTROL, VFPC 1" PRESS CONTROLLER, BACKDRAFT DAMPER, SC-35 ISOLATORS
BASE BID	SF 1	COOK 120SQN17DEC	CENTRIFUGAL INLINE	800	0.5	1223	53/6.5	--	0.5	115/1	WALL SWITCH	EF-1	100	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT (RC-75), INSULATED HOUSING, FILTER BOX WITH MERV 8 FILTER
BASE BID	SF 2	COOK 90SQN17DEC	CENTRIFUGAL INLINE	400	0.5	1720	57/7.9	--	1/6	115/1	TIME CLOCK	NONE	100	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT (RC-75), FILTER BOX WITH MERV 8 FILTER, DIGITAL TIME CLOCK PROVIDED AND INSTALLED BY DIVISION 15 CONTRACTOR (COORDINATE ON/OFF SCHEDULE WITH PROFESSIONAL/END USER) - REMOVE SF-2 IF ALT #2 IS TAKEN
ALTERNATE 1	SF 2	COOK 90SQN17DEC	CENTRIFUGAL INLINE	480	0.5	1704	58/8.3	--	1/6	115/1	TIME CLOCK	NONE	100	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT (RC-75), FILTER BOX WITH MERV 8 FILTER, DIGITAL TIME CLOCK PROVIDED AND INSTALLED BY DIVISION 15 CONTRACTOR (COORDINATE ON/OFF SCHEDULE WITH PROFESSIONAL/END USER) - REMOVE SF-2 IF ALT #2 IS TAKEN
BASE BID	SF 3	COOK 90SQN17DEC	CENTRIFUGAL INLINE	400	0.5	1720	57/7.9	--	1/6	115/1	TIME CLOCK	NONE	100	PREWIRED DISCONNECT, ECM MOTOR WITH FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, ISOLATOR KIT (RC-75), FILTER BOX WITH MERV 8 FILTER, DIGITAL TIME CLOCK PROVIDED AND INSTALLED BY DIVISION 15 CONTRACTOR (COORDINATE ON/OFF SCHEDULE WITH PROFESSIONAL/END USER)

WALL LOUVER SCHEDULE

	TAG	MANUFACTURER & MODEL NO.	FUNCTION	CFM	MIN NET FREE AREA (SQFT)	OVERALL SIZE (L X H)	DEPTH	MAX PD (N.W.G.)	REMARKS
BASE BID	LV 1	RUSKIN EMES20DD	OUTSIDE AIR	500	0.83	30x12	6	0.06	FLUOROPOLYMER FINISH IN COLOR SELECTED BY ARCHITECT, ALUMINUM BIRDSCREEN
	LV 2	RUSKIN EMES20DD	EXHAUST AIR	500	0.83	30x12	6	0.06	FLUOROPOLYMER FINISH IN COLOR SELECTED BY ARCHITECT, ALUMINUM BIRDSCREEN
	LV 3	RUSKIN EMES20DD	EXHAUST AIR	800	1.82	36x18	6	0.03	FLUOROPOLYMER FINISH IN COLOR SELECTED BY ARCHITECT, ALUMINUM BIRDSCREEN
	LV 4	RUSKIN EMES20DD	OUTSIDE AIR	800	1.82	36x18	6	0.03	FLUOROPOLYMER FINISH IN COLOR SELECTED BY ARCHITECT, ALUMINUM BIRDSCREEN
	LV 5	RUSKIN EMES20DD	OUTSIDE AIR	980	1.82	36x18	6	0.05	FLUOROPOLYMER FINISH IN COLOR SELECTED BY ARCHITECT, ALUMINUM BIRDSCREEN
	LV 6	RUSKIN EMES20DD	EXHAUST AIR	780	1.82	36x18	6	0.03	FLUOROPOLYMER FINISH IN COLOR SELECTED BY ARCHITECT, ALUMINUM BIRDSCREEN
	LV 7	RUSKIN EMES20DD	OUTSIDE AIR	980	1.82	36x18	6	0.05	FLUOROPOLYMER FINISH IN COLOR SELECTED BY ARCHITECT, ALUMINUM BIRDSCREEN
	LV 8	RUSKIN EMES20DD	EXHAUST AIR	780	1.82	36x18	6	0.03	FLUOROPOLYMER FINISH IN COLOR SELECTED BY ARCHITECT, ALUMINUM BIRDSCREEN

HIGH VOLUME LOW SPEED FAN SCHEDULE

	TAG	MANUFACTURER AND MODEL NO.	CAPACITY CFM	DIAMETER, FT	NO. OF BLADES	MAX POWER WATTS	VOLT/PH	MOUNTING HEIGHT, FT	ON/OFF	SOUND POWER, dBA	INTERLOCK	WEIGHT, LBS	REMARKS
BASE BID	HVLS 1	BIG ASS FAN BASIC 6	-	24	6	15AMP	208/3	34'-0"	TOUCHPAD CONTROLLER	60	NONE	250	DIRECT DRIVE, FIELD VERIFY DROP NEEDED TO ACHIEVE LISTED MOUNTING HEIGHT, FAN TO BE CAPABLE OF BEING REVERSED FROM CONTROL PANEL.
	HVLS 2	BIG ASS FAN BASIC 6	-	24	6	15AMP	208/3	34'-0"	TOUCHPAD CONTROLLER	60	NONE	250	DIRECT DRIVE, FIELD VERIFY DROP NEEDED TO ACHIEVE LISTED MOUNTING HEIGHT, FAN TO BE CAPABLE OF BEING REVERSED FROM CONTROL PANEL.

MISCELLANEOUS HVAC POWER, CONTROL AND INTERLOCK WIRING CONNECTIONS

TAG	DESCRIPTION	POWER WIRING	CONTROL & INTERLOCK WIRING	ELECTRICAL V/□	REMARKS
BAS	BUILDING AUTOMATION SYSTEM BUILDING CONTROLLER	DIV 23 BAS	DIV 23 BAS	120/1	DIVISION 26 ELECTRICAL SHALL PROVIDE NETWORK IT LAN DROP NEAR BUILDING CONTROLLER
M	MOTORIZED DAMPER	DIV 26 ELECTRICAL	DIV 23 BAS	120/1	TAMPERPROOF SUPERVISORY SWITCHES TO MONITOR VALVE STATUS. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.

AIR TURNOVER UNIT - AHU

	TAG	BASIS OF DESIGN	TYPE	FAN			DX COOLING					GAS HEAT				ELECTRICAL DATA			OP WT (LBS.)	REMARKS	
				TOTAL - CFM	O.A. - CFM	EXT. S.P. - INS. WATER	MOTOR BHP	EDB EWB	LDB LWB	CAPACITY, MBH TOTAL	SENS	FPI ROWS	EDB EWB	LDB LWB	CAPACITY (MBH) INPUT	OUTPUT	V/□	MCA			MOP
BASE BID		JOHNSON - MARCRAFT AR55DA-10-MG-DX53-F	OUTDOOR	18,400	4600	0.25	2 @ 5 EA	80.0 67.0	55.8 55.1	636.1	485.6	12 4	57.0 ---	90.0 ---	800.0	640.0	208/3	34	45	10,000	MODULATING GAS CONTROL WITH FM APPROVED GAS TRAIN, EXTEND FLUE PIPING 3" ABOVE UNIT HEIGHT, TWO HIGH TEMPERATURE LIMITS, SINGLE POINT POWER CONNECTION WITH NON-FUSED DISCONNECT, FIRE PROTECTION INTERLOCKS, VARIABLE FREQUENCY DRIVES ON FANS, DRY ENAMEL FINISH, HORIZONTAL AND VERTICAL DISCHARGE LOUVER PANEL AND RETURN AIR GRILLE (FIELD INSTALLED), THERMOSTAT, OUTSIDE AIR RAIN HOOD WITH BIRD SCREEN, MERV-8 FILTERS, RETURN AIR BALANCING DAMPER, MAGNEHELIC GAUGE WITH INDICATOR, FACTORY START-UP.

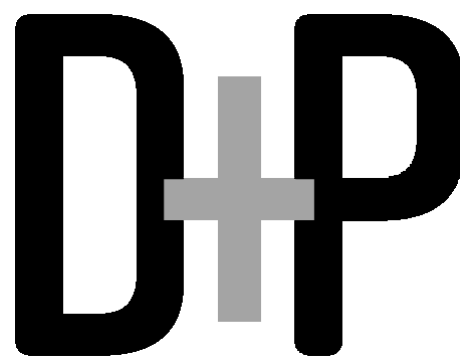
AIR TURNOVER UNIT - CONDENSING UNIT

	TAG	BASIS OF DESIGN	SERVES	AMBIENT AIR TEMP.	CAPACITY MBH	SUCTION TEMP	COMPRESSOR MOTOR		CONDENSER FAN MOTOR		MINIMUM CIRCUIT AMPACITY	MOCP, AMPS	APPROXIMATE OPERATING WEIGHT, LBS	REMARKS
							QTY	RLA	QTY	FLA				
BASE BID	CJ 2	DAIKIN RCS062D	ATO 1	95	659.5	46	4	56.7 EA	6	4.2 EA	269	300	2800	PROVIDE WITH UNIT MOUNTED AND WIRED DISCONNECT SWITCH. FACTORY INSTALLED AND WIRED GFI, PHASE FAILURE AND GROUND FAULT PROTECTION, MINIMUM SCCR RATING OF 10 KAIC, EACH REFRIGERANT CIRCUIT TO INCLUDE REFRIGERANT SERVICE VALVES , SOLENOID VALVES, SIGHT GLASSES, THERMAL EXPANSION VALVES AND REPLACEABLE CORE FILTER DRYERS. PROVIDE WITH FACTORY STARTUP, 1 YEAR ENTIRE UNIT AND 5 YEAR COMPRESSOR PARTS ONLY WARRANTY.

DUCTLESS SPLIT SYSTEM HEAT PUMP AND AIR CONDITIONING UNIT SCHEDULE

	TAG	BASIS OF DESIGN	INDOOR UNIT												TAG	OUTDOOR UNIT								AMBIENT TEMPERATURE - COOLING		REMARKS	
			MODEL	TOTAL COOLING CAP. BTUH	HEATING CAPACITY-BTUH (47'DB/43'WB OAT)	EER	COP	AIR DELIVERY			FAN MOTORS VOLTAGE - PH	AUXILIARY HEAT AMP	MIN. CIRCUIT CAPACITY, AMPS	MOCP, AMPS		INDOOR UNIT OPERATING WEIGHT, LBS.	COMPRESSOR(S)		CONDENSER FANS		MCA, AMPS	MOCP, AMPS	OUTDOOR UNIT OPERATING WEIGHT, LBS.	°Fdb	°Fwb		
								LOW	MED.	HIGH							NO.	V - PH	NO.	V - PH							
BASE BID	DSS 1	TRANE-MITSUBISHI	PKA-A24KA6	24,000	26,000	10.6	3.27	635	705	775	208 - 1	--	0.36	--	46	DSS 1	TRANE-MITSUBISHI PUZ-A24NH46	1	208 - 1	1	208 - 1	--	30	165	95	75	

ER Engineering Resources Co.



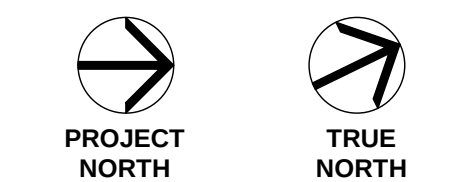
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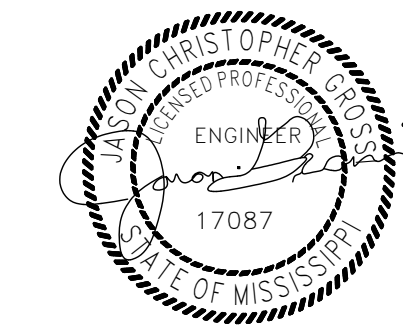
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KEY PLAN



Seal



No.	Description	Date
4	ADDENDUM #2	3/12/20
3	100% Construction Documents	2/14/20
2	100% Design Development	10/17/19
1	100% Schematic Design	8/7/19

MERIDIAN AIRPORT AUTHORITY
DEAN AIRCRAFT SERVICE

HANGAR ADDITIONS & ALTERATIONS

2913 Airport Blvd., South St.
Meridian, MS 39307

Sheet Title

MECHANICAL
SCHEDULES

Project No. 19-006 Date 02/14/20

M-603

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