ADDENDUM # 1

DATE: May 23, 2025

TO: Potential Respondents

FROM: Elaine Robbins – Construction Contract Coordinator II

SUBJECT: RFCSP752-25-1010ER
UNT Discovery Park D170 Research Lab Buildout

Attached please find Addendum #1 issued by TreanorHL that answers many of the questions that were asked and include:

Drawings (Reissued Sheets with Modifications)
Project Manual/Specifications (New Specification Sections)
Project Manual/Specifications (Deleted Specification Sections)
Project Manual/Specifications (Reissued Specification Sections w/Modifications)

ADDENDUM NO. 1

PROJECT: UNT Discovery Park D170 Fit-Out
HE0569.2402.00

DATE: 05/22/2025

DISTRIBUTION: UNT

For corrections or clarifications, contact: [redacted]

This Addendum becomes part of the Contract Documents and shall be acknowledged by each bidder on the proposal form. All parties of the original specifications and drawings shall remain in force except as noted below:

ITEM	DETAIL
	BIDDER QUESTIONS
1.1	Q: G005, Spec 10.1423 - Typical Room Signage detail on G005 references Sheet A611A for signage details and schedule. Sheet A611A is not included in the IFC Drawing Set. Please provide information on signage details and schedule if the scope should be included by CM. A: **Room signage will be Owner provided and installed**
1.2	Q: Electrical - The panel schedules on sheet E701 indicate to include #10AWG wire on a 20-Amp circuit for multiple circuits with panelboard "LVP-YA12-D". Code minimum is #12AWG wire for a 20-Amp circuit. Please confirm that #12AWG is to be included for the 20-Amp circuits shown on the panel schedule for this panelboard. A: **Circuits 2,4,6,10,12,14 on LVP-YA12-D should be 30-Amp. #12AWG can be used for all 20A circuits provided voltage drop has been taken into account. Refer to Specification section 26 05 19.**
1.3	Q: Electrical - The panel schedules on sheet E701 indicate to include #10AWG wire on a 20-Amp circuit for multiple circuits with panelboard "LVP-YA12-D". Code minimum is #12AWG wire for a 20-Amp circuit. Please confirm that #12AWG is to be included for the 20-Amp circuits shown on the panel schedule for this panelboard. A: **See sheet E201 room D170A for location of panel HVP-YA12-M.**
1.4	Q: Electrical - Panel HVP-YA12-M (480/277V) indicates circuits 25,27,29 for AHU-07 is a 60-Amp breaker with #8AWG wire. Please confirm which is correct, breaker or wire size, as #8AWG wire typically only allows for 50-Amps. A: **Breaker has been updated to match the full load amp (FLA) of the equipment.**
1.5	Q: Electrical - Panel HVP-YA12-M (480/277V) indicates circuits 31,33,35 and 37,39,41 for LEF-1 and LEF-2 are 50-Amp breakers with #10AWG wire. Please confirm which is correct, breaker or wire size, as #10AWG wire typically only allows for 30-Amps. A: **NEC allows the breaker to be sized at 2.5 times the motor FLA and the conductor to 1.25 times the motor FLA**
1.6	Q: Electrical - Mechanical room #D160 shows a quantity of (2) Type-LM light fixtures. The reflected ceiling plan on A151 indicates only (1) light fixture is to be installed in this room. Please indicate which is correct. A: **Electrical is correct. Architectural RCP is updated to reflect two fixtures in this room.**

ITEM	DETAIL
1.7	Q: Electrical- No Technology drawings are included in the bidding docs. Please confirm the quantity of card access controlled doors align with the layouts shown on sheet A101 and A102 A: **There are no Telecom drawings. Rough-in locations are indicated on E201 and E202. Refer to keyed notes on electrical drawings for additional information. Refer to details C1, C2, and D1 on A501 for rough-in information. All cabling and devices are by owner.**
1.8	Q: Electrical - No Technology drawings are included in the bidding docs. Please confirm the quantity of tele/data outlet rough-in's are only included as shown on sheet A805 A: **There are no Telecom drawings. Rough-in locations are indicated on E201 and E202. Refer to keyed notes on electrical drawings for additional information. Refer to details C1, C2, and D1 on A501 for rough-in information. All cabling and devices are by owner.**
1.9	Q: Electrical - No Technology drawings are included in the bidding docs. Please confirm the quantity of wireless access point rough-in's are only included as shown on sheet A151 and A152 A**: There are no Telecom drawings. Rough-in locations are indicated on E201 and E202. Refer to keyed notes on electrical drawings for additional information. Refer to details C1, C2, and D1 on A501 for rough-in information. All cabling and devices are by owner.**
1.10	Q: Electrical - The quantity of receptacles shown to be provided in the electrical power plans for the linear ceiling service panels differs from what is shown to be provided on the linear ceiling service panel details on sheet A805 for each run. Please clarify what is to be provided for each run of the linear ceiling service panels. A: **Location and quantity of linear service panel receptacles is revised and issued in this addendum.**
1.11	Q: Architectural - Sheet A101 references a wall type of A6-1 and F6 however, there does not appear to be any details to reflect what these wall types are in the drawings or the specs. Please advise. A: **Refer to A005 for all partition type designations and details. Refer to schedule and the associated details.**
1.12	Q: Architectural - Please describe the locations and materials of construction of temporary partitions, if required. A: **Refer to specification 01 5000 for information regarding construction materials of temporary partitions. Location to be determined by the contractor and coordinated with UNT during construction.**
1.13	Q: Plumbing, P-301, P-304 - The Lab Air (LA) tie-in point and routing to the linear service panels is not shown on P-301 or P-304 (Alternate). Please advise. A: **Overhead piping for lab air routed to linear service panels is in the base bid scope. Plumbing drawings have been updated in this addendum.**
1.14	Q: Plumbing, A805, P-305 - Sheet A-805 shows two (2) LA connections per section in the linear service panels. Sheet P-305 shows one (1) connection per section. Please advise which is correct. A: **Overhead piping for lab air routed to linear service panels is in the base bid scope. Plumbing drawings have been updated in this addendum.**
1.15	Q: Plumbing, P-305 - Sheet P-305 has RO Equipment Schedules. Is the plumbing contractor responsible for purchasing and setting the RO equipment in Alternate 4? If yes, please show the location of the equipment and the RO piping routing and connection points. A: **Yes, RO equipment is expected to be purchased and installed by the plumbing contractor in room D271 as part of Alternate 4. Sheet has been updated annotating equipment shown and providing RO piping routing and connection points.**

ITEM	DETAIL
1.16	Q: A811A - Chemical Fume Hood EX-D173.1 is not listed in the fume hood schedule. Please provide information. A: **Sheet has been updated and issued in this addendum. Chemical Fume Hood EX-D173.1 is a floor-mounted 5'-0" wide fume hood located in the Wet Support room as part of Alternate 1.**
1.17	Q: A811, A811A, A812, A812A - Are the cylinder restraints (CRS and CRD) furnished and installed by Owner? A: **All cylinder restraints are CFCI. Refer to specification section 12 3553 subsection 2.13.B.**
1.18	Q: A102, A812 - Please indicate the wall type between fume hoods D270.2/D270.3 and the exterior wall. This is the wall that the CRS are attached to. A: **Walls indicated are F3--drawings are updated in this addendum.**
1.19	Q: A812A - The TB60 tables on A812A - which Alternate should they be included with? A: **TB60 tables are part of Alternate 3.**
1.20	Q: A812A, A802 - Alternate #2 - LS-1A sinks. The plan view of the LS-1A sinks appear to show a base cabinet next to the LS-1A sink cabinet. There are no interior elevations of the Alternates to confirm. Please advise. A: **Drawings are updated to elevate this sink/casework run**.
1.21	Q: A812A - Alternate #2 - Fume Hoods. Should the base cabinets of Alternate fume hoods D270.1 and D270.4 match the base cabinets of the base bid fume hoods D270.2 and D270.3? A: **Drawings are updated to elevate this sink/casework run.**
1.22	Q: Glazing - Section 08 4113.3.1.A.2 Color and Gloss - states to "Match STEM Building". Can we get that color type or code? A: **Section 08 4113 is amended in this addendum. Provide clear anodized finish as indicated on sheet A700.**
1.23	Q: Signage - I cannot seem to find the additional info on the signage. It says it's on page A611A, but that page is not there. Can you please advise? A: **Room signage will be Owner provided and installed. Note on G005 has been revised.**
1.24	Q: General - Is there a preferred or required vendor list? A: **Items listed are basis-of-design products and manufacturers. Provide items complying with requirements within the contract documents.**
1.25	Q: HVAC – Who are controls by and who's responsible for them? A: **The contractor is responsible. Refer to section 23 0923.**
1.26	Q: HVAC – Who is TAB by and who's responsible for them? A: **The owner is responsible for engaging TAB contractor. Refer to section 23 0593 paragraph 1.02.B.**
1.27	Q: Lab Equipment – Who is responsible to furnish & install lab equipment/fume hoods? A: **The contractor is responsible for furnishing and installing fume hoods. Section 11 5313 LABORATORY FUME HOODS is provided in this addendum. Specification section 11 5000 LABORATORY EQUIPMENT is updated and reissued in this addendum; refer to equipment schedule on A811, A811A, A812, and A812A for furnishing and installation responsibility.**
1.28	Q: Please provide existing fire alarm panel information and specification. A: **Refer to specification 28 3100 for fire alarm specification.**
1.29	Q: MD-101& M-301; It is not clear from the plans whether the existing FCU to be demolished and re-used is a two pipe or four pipe FCU; will we demolish two or four pipes? A: **Existing FCU is chilled water only.**

ITEM	DETAIL
1.30	Q: MD-101& M-301; There is no size on the duct to the FCU being replaced. A: **GSS concluded 36"x24" return duct and 22"x14" supply duct upon initial inspection. Field verify and replace with existing sizes.**
1.31	Q: MD-101& M-301; There is no size on the piping to the FCU being relocated for insulation specification purposes; what size is it? A: **Please field verify and replace with existing sizes. Chilled water only FCU.**
1.32	Q: MD-101& M-301; Due to insulation specification differences we need to know whether the piping to the FCU being relocated is chilled or heating water. A: **Chilled water.**
1.33	Q: MD-102 & M-302; Will we need to line freeze the pipes at the FCU to be demolished, or are there valves close up stream? A: **The pipes will need to be demolished past the valves so line freeze will be required.**
1.34	Q: MD-102 & M-302; Will we need to line freeze each side of the four pipes over the corridor so that valves and caps can be installed for demolition to proceed? A: **Add line item to freeze pipes, field verify there aren't isolation valves nearby. GSS was not able to locate isolations valves nearby when doing an initial site inspection.**
1.35	Q: There is no specification for above ground Sanitary Waste & Vent Piping. A: **Above ground waste and vent piping specifications are included in our sanitary waste and vent piping specifications. The section includes both above ground and below ground piping.**
1.36	Q: 08 8000.3.08 - need some clarification on the "Hydroponic Enclosure Glazing. There is 1/4" (.25") glass and 3/8" (.375") glass with either a .040" or a .060" laminate interlayer. Please verify intent. A: **Specification Section 08 8000 GLAZING has been amended in this addendum.**
1.37	Q: Specifications – will a roofing specification be issued? A: **The current roofing system is a gravel ballasted BUR system. UNT is current undergoing a separate project to rehab this roof system. It is anticipated that this work will be completed prior to this project commencement.** **The reroof system is as follows:** • **Removal of gravel and debris.** • **Leveling Coat – Fluid applied Polyurethane Coating (256 mils) – Tremco – Alphagrade** • **Base Coat - Fluid applied Polyurethane Coating (32 mils) – Tremco – Alphagrade Base Coat** • **Top Coat - Fluid applied Polyurethane Coating (32 mils) – Tremco – Alphagrade Top Coat** **Any roof modifications or flashing installation for work in this project must comply with Tremco requirement of the system**
1.38	Q: GeoTech Report – Please share UES, Geotech report W2434611-rev dated 02.19.25 referenced in Codes & Referenced Reports Sheet S1.01 A: **Geotechnical report has been issued in this addendum.**

ITEM	DETAIL
1.39	Q: Steel Stairs – The drawings and Spec 05 5100 list Upside Innovations as the Manufacturer. Should the stair system be considered a sole sourced spec, or will traditionally designed and erected stair systems by other manufacturers be accepted? A: **The manufacturer indicated is the Basis-of-Design. Subject to compliance with the performance criteria alternate manufacturers are acceptable. A freestanding traditionally constructed system will also be considered.**
1.40	Q: Structural S3.01 & Mechanical M-903 – For the concrete equipment pads, details 2,3,4 on S3.01 depict three different typical pads. Detail 1/M-903 depicts a 6" thick equipment pad for the fan coil unit. Which detail should we follow for the floor-mounted fan coil unit FCU-D01 equipment pad? A: **Structural Detail 2/S3.01 will apply**
1.41	Q: Life Safety & Fire Protection – G101 – Sheet G101 indicates to "Provide wall washing sprinklers on each side of glazed opening" for levels 1 and 2. The Fire Protection drawings do not include additional details on this scope. Please provide additional detail on what is to be provided and installed for this application. A: **Provide wall wash type fire sprinklers complying with IBC and NFPA 101, each side of glazed opening in 1-hr rated wall. Space sprinkler heads minimum 6'-0" and maximum 8'-0" apart and 4" to 12" away from the glazing surface.**
1.42	Q: Specifications-Drywall – 1. Spec section 09 22 16 subsection 2.02 Framing Systems calls for studs and tracks to have a minimum thickness of .0329 inches (33mil). Does this have to be followed? We can still meet deflection criteria of L/360 and limiting heights with a 20ga equivalent (18 mil). A: **Provide studs per specification requirements**
1.43	Q: Specifications – Drywall – 2. On sheet A101 (Floor Plan note "L" under general notes calls to repair all existing ceiling that was damaged from partitions that had been demolished. What is the existing ceiling tile that we need to match? A: **General Note "L" does not apply**
1.44	Q: Specifications-Drywall – 3. On the RCP sheets (A151 & A152 under general note "D" it calls for all ceilings to be APC-1 (Rockfon Sonar #16290) at 10'-0" unless noted otherwise. However, on the interior finish schedule sheet (A700) the only ceiling tile tag is CL-1 (Armstrong Clean Room VL #868). Was the intent for the Armstrong ceiling tile to go in rooms D170 (Dry Research) & D270 (Wet Lab) and use the Rockfon Sonar tile every where else? A: **Specification Section 09 5113 has been reissued in this addendum.**
1.45	Q: Specifications – Drywall – 4. The ceiling grid for the Armstrong Clean room cal for "CO-Extruded" but does not state if the grid itself needs to be aluminum or steel. Please confirm which type grid to price. A: **Specification Section 09 5113 has been reissued in this addendum.**
1.46	Q: Please provide specification section 102600 Wall and Door Protection. It is listed in the table of contents but not included in the project manual. A: **TOC is updated in this addendum to remove reference to 10 2600. Basis of Design product information for wall protection is listed in the drawings.**
1.47	Q: Please provide the remainder of spec section 055100 Prefabricated modular stairs systems, currently stops at 2.07 Handrails and guards with no description. A: **Section 05 5100 has been reissued in this addendum**

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1.48	Q: Section 1.05 Mock Ups is missing from specification section 079513.13. Please advise if a mock up is required for this spec section and provide relevant information. A: **No Mock-up is neccessary**
1.49	Q: Please advise if a concrete curb is required at the new sidewalk as shown in detail 4/C5.00 and provide dimensions for the curb. A: **Detail does not apply**
1.50	Q: Is there an irrigation system in the existing landscaping areas adjacent to the project area shown on sheet C1.00? A: **No active irrigation system is adjacent to the project.**
1.51	Q: Please provide a spec section for LVT-1 and LVT-2. A: **Spec Section 09 6519 is updated in this addendum**
1.52	Q: Spec section 096519-2.02-E indicates RF-1 size to be 40"x40". Interior Finish Legend on sheet A700 indicates RF-1 size to be 24"x24". Please clarify. A: **Spec Section 09 6519 is updated in this addendum**
1.53	Q: Spec section 096513-2.01-H indicates RB-1 color to be 699 Battleship. Interior Finish Legend on sheet A700 indicates RB-1 color to be 29 Moon Rock WG. Please clarify. A: **Spec Section 09 6513 is updated in this addendum**
1.54	Q: Spec section 033500-2.02-A-1 indicates to see section " " for information on the penetrating concrete sealer. No section is listed. Please provide. A: **Refer to Finish Legend A700 for sealer information**
1.55	Q: Spec section 095113-2.03 and 2.04 indicates product information on acoustical panels APC-1 and seamless acoustic panel GCP-2, neither of which are listed on the Interior Finish Legend on sheet A700. Please revise to include product information for acoustical panel ceiling CL-1. A: **Spec Section 09 5113 is updated in this addendum**
1.56	Q: Please provide spec sections 220548 Vibration Isolation For Plumbing Piping and Equipment and 226653 Laboratory Chemical Waste and Vent Piping. They are listed in the table of contents but not included in the project manual. A: **Sections are not applicable to this project. The Table of Contents is updated in this addendum**
1.57	Q: Please provide spec section 104416 "Fire Extinguishers" referenced in spec section 104413-1.02-B-1. A: **Fire Extinguishers are provided by Owner**
1.58	Q: Per Life Safety Plan G101, door D200 is to be installed in an existing 1-hr fire rated partition. This door is not indicated to be fire rated in the door schedule on sheet A601. Please advise if the door is required to be fire rated. A: **Door D200 is not required to be rated**
1.59	Q: Building Pad Preparation Note B indicates to remove existing subgrade for a distance of 3' beyond the building line. The new foundation for the exterior stair is shown to be installed directly adjacent to an existing concrete pad on sheet C2.00. Please advise if the existing concrete pad is required to be demolished within the 3'-0" boundary to accommodate the subgrade preparation requirements indicated in the note. If so, please provide details for reinstallation of the existing concrete pad after subgrade modifications are performed. A: **Pad preparation does not need to extend into the adjacent existing concrete pad area to avoid demolition of the existing concrete pad.**

ITEM	DETAIL
1.60	Q: Sheet C1.00 indicates existing landscape/grassy areas adjacent to the project area. This landscaping is going to be disturbed to accommodate the new earthwork in that area. Please advise the extent of landscaping repairs that will be required at these areas after these modifications are made and provide details. A: **All disturbed areas to be reseeded and watered to promote regrowth of vegetation to its original state. This applies to all areas disturbed by construction activity.**
1.61	Q: Please clarify if spray applied fireproofing is required as stated in Structural Steel Note D on sheet S1.02. If so, please provide a specification section for this work. A: **Spray-applied Fireproofing is not required**
1.62	Q: The north and east X6-1 walls shown north of column line 64.2 and east of door D274 creates a mechanical shaft that is to sit on top of IDF room D170C. There is no structural deck above the IDF D170C to support these partitions. Please clarify how this shaft is to be constructed and provide a cross-section detail showing how the X6-1 partition is to be supported above the IDF. A: **Structural framing is updated in this addendum to support shaft wall**
1.63	Q: Detail C1/A301 references slab edge detail A4/A501 to show the continuation of gypsum board from level 1 to 2 beyond the slab edge of the new level 2 composite metal deck. However, the composite metal deck does not extend the full length of that partition. Sheet S2-02 shows the slab edge to terminate within 2' of the north and south walls which creates a chase type condition. Please provide a framing detail/partition type to be applied at the top 2' and bottom 2' of the north and south walls. Reference the screen shots below for locations. A: **At the locations described the framing will extend from first level to the underside of the roof deck and is braced by the adjacent structure.**
1.64	Q: Spec section 055100-2.02-B-1-d indicates metal surfaces of the prefabricated modular stair system to be painted. The manufacturer has confirmed that the product specified is an entirely aluminum product and comes pre-finished. Please confirm the prefabricated modular stair is not required to be painted. A: **Stair system is pre-finished. Section 05 5100 has been reissued with clarifications**
1.65	Q: Please provide the dimensions for the narrow lite in door type N. A: **Dimensions are added to lite opening in this addendum**
1.66	Q: The Door and Frame Schedule on sheet A601 indicates solid core wood door finishes to be PT-2. Spec section 081416-2.04 indicates solid core wood doors to be wood veneer faced with transparent finish. Please clarify the solid core wood door finish requirements. A: **Wood doors are to be provided with a transparent finish. Specification Section 08 1416 has been amended in this addendum.**
1.67	Q: The Interior Finish Legend on sheet A700 indicates glass type LGL-1 to have clear silicone vertical joint sealants. Detail A4/A601 indicates black silicone joint sealants at the laminated glazing. Please clarify. A: **Sealant is clear silicone. Laminated glass has been removed from the project**
1.68	Q: Please confirm finish plan note P18 on sheet A710 should reference B2/A501 in lieu of B5/A501. A: **Confirmed**
1.69	Q: Please provide keyed note legend on sheet A711 A: **A711 is reissued with Keynotes in this addendum**
1.70	Q: Interior elevations B3 & C4/A851 indicate a cased opening at Wet Support D173. The door schedule on sheet A601 does not provide details for a frame for this opening. Please advise if a door

ITEM	DETAIL
	frame is required at this cased opening or provide framing detail. A: **This is a gypsum cased opening**
1.71	Q: Spec section 012100-3.3A indicates a "Lump Sum Unit Cost Quantity Contingency Testing and Inspecting Allowance" to be included in the proposal but is missing the dollar or quantity amount of the allowance. Please revise the spec section to include the required information regarding this allowance. A: **This section is removed in this addendum**
1.72	Q: Spec section 095113-1.08-A-1 indicates to provide mockups of typical ceiling areas as shown on Drawings. Extent of ceiling mockup requirements is not indicated on the reflected ceiling plans. Please clarify mockup requirements. A: **No ceiling mock-up is required. Section 09 5113 is updated in this addendum**
1.73	Q: Spec section 078413-1.02-A indicates penetration firestopping is part of an allowance. Please provide information on this allowance and advise if Contractor is to carry. A: **Contractor is to carry this work. Section 07 8413 is updated in this addendum**
1.74	Q: Spec section 033000-1.05-A indicates concrete flatwork technicians, finishers, and supervisors are required to be ACI-Certified. Resumes of concrete finishing supervisors can be provided if the Contractor is selected for award, however, these certifications are not common and will greatly limit the number of concrete subcontractors able to perform this work. Please confirm these certifications are required. A: **ACI Certification is not required.**
1.75	Q: Please advise if there is space that will be available for contractors to office out of, and if there are existing restrooms contractors can use. A: **Space will be available for contractors to office out of, but port-a-potties will be required for restrooms.**
1.76	Q: Please provide details of where contractors will be able to park in proximity to the space being renovated. A: **Yes, parking will be allowed in the closest parking lot to the construction site.**
1.77	Q: Please confirm the Owner will remove existing materials/boxes being stored within the project space prior to construction. A: **Material in the space will be removed by the Owner prior to construction**
1.78	Q: The alternates section of the proposal form on page 15 of the RFP (Page 2 of Document 004100 Proposal Form) has sections for quantities and unit prices associated with each Alternate. Please clarify how the alternates should be quantified for unit prices. A: **Provide a price for each unit added.**
	DRAWINGS (REISSUED SHEETS WITH MODIFICATIONS)
1.79	Sheet G005 – ACCESSIBILITY AND SIGNAGE STANDARDS Note on A1/G005 revised to clarify room signage is by Owner. Sheet G101 – CODE AND LIFE SAFETY PLANS Note about existing fire rated walls removed. Sheet S2.01 – FOUNDATION PLAN Column gridline 64.5 renamed to 64.2 to match Architectural.

ITEM	DETAIL
	Sheet S2.02 – FRAMING PLAN Column gridline 64.5 renamed to 64.2 to match Architectural. W10x12 beam added to support the level 2 shaft wall partition. Sheet S2.03 – ROOF FRAMING PLAN Column gridline 64.5 renamed to 64.2 to match Architectural. Sheet A101 – FLOOR PLAN – LEVEL 1 General note "L" has been removed. Sheet A102 – FLOOR PLAN – LEVEL 1 Wall type, dimension by fume hoods clarified. General note "L" has been removed. Sheet A151 – REFLECTED CEILING PLAN – LEVEL 1 Light fixtures in room D160 updated to match Electrical. Outlet locations updated in linear ceiling service panels. Sheet A152 – REFLECTED CEILING PLAN – LEVEL 1 Outlet locations updated in linear ceiling service panels. Ceiling supply diffuser locations updated. Sheet A501 – INTERIOR DETAILS Detail C1/A501 updated to clarify card reader rough-in at doors. Sheet A601 – DOOR SCHEDULE, GLAZING TYPES, AND DETAILS Glazing notes updated to reflect clear tempered glazing as opposed to laminated glass. Door finishes updated on all SCW interior doors. Door lite light in type "N" door has been dimensioned. Sheet A700 – INTERIOR FINISH SCHEDULES AND DETAILS Acoustical Panel Ceiling product basis-of-design has been revised. LGL-1 revised to be GL-1, reflecting clear tempered glazing as opposed to laminated glass. TS-1 revised to VPUL 50 ACGB. WD-1 wood veneer added as door finish on interior SCW doors. Sheet A710 – FINISH PLAN – LEVEL 1 Note P18 revised to reference the correct detail. Corner guards added to gyp framed wall opening. Sheet A711 – FINISH PLAN – LEVEL 2 Keynote legend added to sheet. Sheet A805 – LINEAR SERVICE PANEL DETAILS Linear service panel outlet locations and quantities adjusted.

ITEM	DETAIL
	Sheet A811A – LAB EQUIPMENT PLAN AND SCHEDULE – LEVEL 1 (ALTERNATES) Chemical fume hood schedule updated to show floor-mounted fume hood in room D173. Bench outlet locations updated to reflect linear service panel outlet location changes. Sheet A812 – LAB EQUIPMENT PLAN AND SCHEDULE – LEVEL 2 (BASE BID) Wall type by fume hoods updated. Sheet A812A – LAB EQUIPMENT PLAN AND SCHEDULE – LEVEL 2 (ALTERNATES) Bench outlet locations updated to reflect linear service panel outlet location changes. Elevation tags for A1/A852 and A3/A852 updated. Dashed line indicating scope items part of Alternate 3 clarified to incorporate TB60 lab tables. Sheet A851 – INTERIOR ELEVATIONS – LEVEL 1 A4/A851 updated to reflect lab bench services, matching services provided in the linear ceiling service panels. Wall opening in B3 and C4 revised to be a gypsum wall board framed opening. Sheet A852 – INTERIOR ELEVATIONS – LEVEL 2 A1/A852 and A3/A852 updated to show the Alternate build-out items (Alternate 2 and 3), including fume hoods EX-D270.1 and EX-D270.4. A5/A851 updated to reflect lab bench services, matching services provided in the linear ceiling service panels. Sheet M-102 - MECHANICAL OVERALL RENOVATION PLAN -LEVEL 2 Ceiling supply diffuser locations updated. Sheet M302 - ENLARGED MECHANICAL RENOVATION PLAN -LEVEL 2 BASE BID Ceiling supply diffuser locations updated. Sheet M303A - ENLARGED MECHANICAL ALTERNATES Ceiling supply diffuser locations updated. Sheet P-101 - LEVEL 1 OVERALL PLUMBING PLAN -BASE BID Lab air connections shown in base bid scope at the linear ceiling service panels. Sheet P-102 - LEVEL 2 OVERALL PLUMBING PLAN -BASE BID Lab air connections shown in base bid scope at the linear ceiling service panels. Sheet P-301 - FIRST LEVEL PLUMBING PLAN -BASE BID Lab air connections shown in base bid scope at the linear ceiling service panels. Sheet P-302 - SECOND LEVEL PLUMBING PLAN -BASE BID Lab air connections shown in base bid scope at the linear ceiling service panels. Sheet P-304 - FIRST LEVEL PLUMBING PLAN -ALTERNATE Lab air connections shown in base bid scope at the linear ceiling service panels.

ITEM	DETAIL
	Sheet P-305 - SECOND LEVEL PLUMBING PLAN -ALTERNATE Lab air connections shown in base bid scope at the linear ceiling service panels. RO piping noted as serving autoclave system only. Sheet E201 - LEVEL 01 POWER PLAN Linear ceiling service panel outlet locations revised. Sheet E202 - LEVEL 02 POWER PLAN Linear ceiling service panel outlet locations revised. Sheet E701 - ELECTRICAL PANELBOARD SCHEDULES Circuits 43, 44 clarified on panel LVP-YA12-B. Circuits 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 clarified on panel LVP-YA12-D. Circuits 25, 27, 29 clarified on panel HVP-YA12-M.
	PROJECT MANUAL/SPECIFICATIONS (NEW SPECIFICATION SECTIONS)
1.80	Section 11 5313 – LABORATORY FUME HOODS Add attached Section 11 5313 – LABORATORY FUME HOODS to the Project Manual.
	PROJECT MANUAL/SPECIFICATIONS (DELETED SPECIFICATION SECTIONS)
1.81	Section 01 2100 – ALLOWANCES Delete Section 01 2100 – ALLOWANCES in its entirety Section 10 1423 – PANEL SIGNAGE Delete Section 10 1423 – PANEL SIGNAGE in its entirety.
	PROJECT MANUAL/SPECIFICATIONS (REISSUED SPECIFICATION SECTIONS W/ MODIFICATIONS)
1.82	Project Manual – TABLE OF CONTENTS Delete Section 01 2100 – ALLOWANCES Delete Section 10 1423 – PANEL SIGNAGE Delete Section 21 1300 – FIRE PROTECTION SYSTEMS Delete Section 22 0548 – VIBRATION ISOLATION FOR PLUMBING PIPING AND EQUIPMENT Delete Section 22 6653 – LABORATORY CHEMICAL WASTE AND VENT PIPING Section 00 3132 – GEOTECHNICAL DATA Replace Section 00 3132 – GEOTECHNICAL DATA with attached section. Section reissued with Full Geotechnical Report Section 05 5100 – PREFABRICATED MODULAR STAIR SYSTEM Replace Section 05 5100 – PREFABRICATED MODULAR STAIR SYSTEM with attached section. Section 07 8413 – PENETRATION FIRESTOPPING Refer to Paragraph 1.02 ALLOWANCES, delete this paragraph in its entirety. Refer to Paragraph 1.03 UNIT PRICES, delete this paragraph in its entirety.

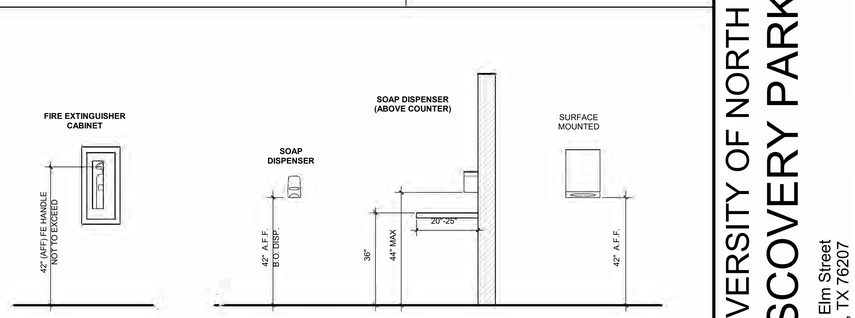
ITEM	DETAIL
	Penetration Firestopping is to be included in the bid. Section 07 9513.13 – INTERIOR EXPANSION JOINT COVER ASSEMBLIES Refer to Paragraph 1.05 MOCKUPS, delete this paragraph in its entirety. No mockup is required. Section 08 1416 – FLUSH WOOD DOORS Refer to Paragraph 2.04 SOLID-CORE FIVE-PLY FLUSH WOOD VENEER-FACED DOORS FOR TRANSPARENT FINISH, replace paragraph "4" with the following: 4. Faces: Single-ply wood veneer not less than 1/50 inch thick. a. Species: Cherry b. Cut: Plain sliced (Flat Sliced) c. Match between Veneer Leaves: Slip match. d. Assembly of Veneer Leaves on Door Faces: Balance match. e. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions. f. Room Match: Provide door faces of compatible color and grain within each separate room or area of building. g. Stain Color and Finish: To be selected from full line to match wood doors in the facility. Section 08 4113 – ALUMINUM FRAMED STOREFRONTS Refer to Paragraph 3.10 ALUMINUM FINISHES, replace paragraph with the following: 3.10 ALUMINUM FINISHES A. Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker. Section 08 8000 - GLAZING Refer to Paragraph 3.08 LAMINATED GLASS SCHEDULE. Delete this Paragraph in its entirety. Section 09 5113 – ACOUSTICAL PANEL CEILINGS Replace Section 09 5113 – ACOUSTICAL PANEL CEILINGS with attached section. Section 09 6513 – RESILIENT BASE AND ACCESSORIES Refer to paragraph 2.01 THERMO-PLASTIC RUBBER BASE RB-1. Replace sub-paragraph "H" with the following: H. Color: 29 Moonrock Section 09 6519 – RESILIENT TILE FLOORING Replace Section 09 6519 – RESILIENT TILE FLOORING with attached section. Section 11 5000 – LABORATORY EQUIPMENT Replace Section 11 5000 – LABORATORY EQUIPMENT with attached section.

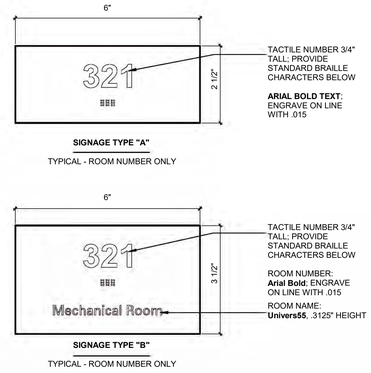
END OF ADDENDUM

GENERAL NOTES

A. DO NOT SCALE DRAWINGS.

B. ALL DIMENSIONS INDICATED ON THIS SHEET ARE TO FINISH FACE OF WALLS, FLOORS, AND CEILINGS.





SUBSTRATE: ROWMARK (AVAILABLE AT JOHNSON PLASTICS)

COLOR: SATIN GREY / WHITE, 1/16" THICK (PN 122-32)

TACTILE APPLIQUE COLOR: WHITE 1/32" THICK (PN 311201A)

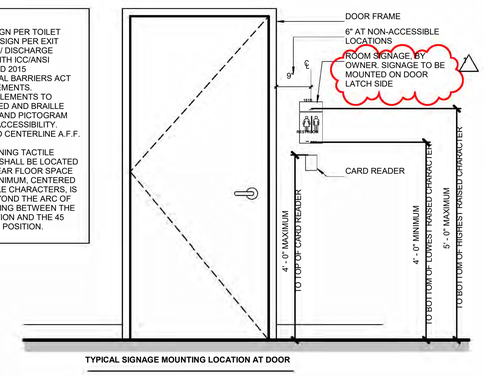
UNT STANDARD SIGNAGE A3

6" = 1'-0"

NOTE:

PROVIDE (1) SIGN PER TOILET ROOM AND (1) SIGN PER EXIT PASSAGEWAY / DISCHARGE COMPLYING WITH ICC/ANSI A117.1-2009 AND 2015 ARCHITECTURAL BARRIERS ACT (ABA) REQUIREMENTS. WAYFINDING ELEMENTS TO CONTAIN RAISED AND BRAILLE CHARACTERS AND PICTOGRAM SYMBOLS OF ACCESSIBILITY. MOUNT 5'-0" TO CENTERLINE A.F.F.

SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18" X 18" MINIMUM, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND THE 45 DEGREE OPEN POSITION.



TYPICAL SIGNAGE MOUNTING LOCATION AT DOOR

TYPICAL ROOM SIGNAGE, CARD READER A1

3/4" = 1'-0"

REGISTERED ARCHITECT
JOHN JASON
STATE OF TEXAS
04/01/2025

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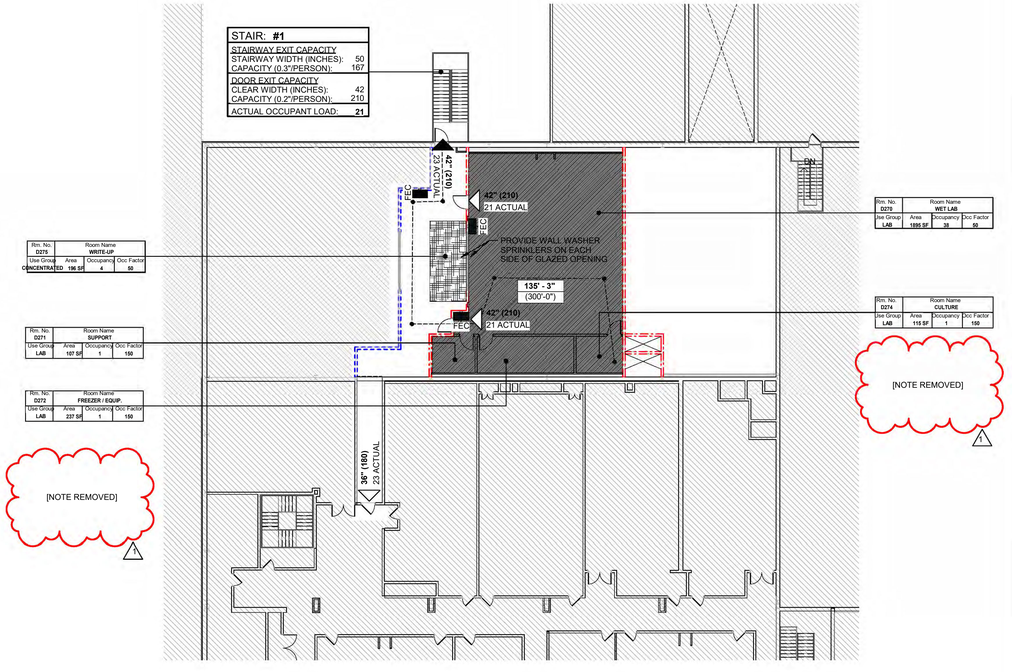
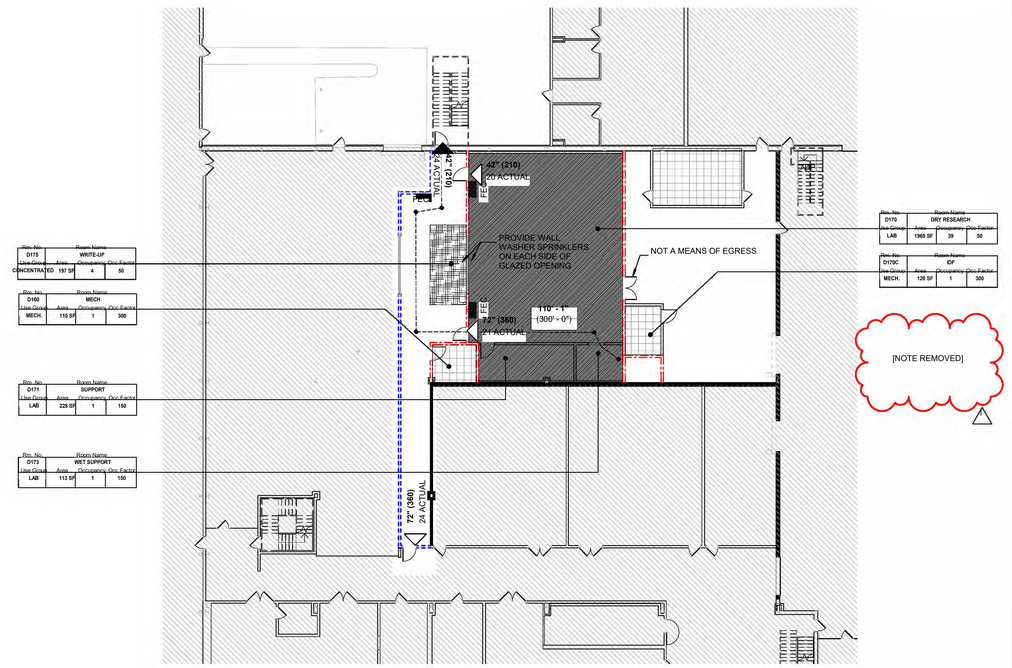
G005

ACCESSIBILITY AND SIGNAGE STANDARDS

Treanor NO: HE0569.2402.00



LIFE SAFETY PLAN - LEVEL 2 B1
1/16" = 1'-0"



LIFE SAFETY PLAN - LEVEL 1 A1
1/16" = 1'-0"

PROJECT CODE SUMMARY

PROJECT NAME
Discovery Park D170 Lab Fit-Out

ADDRESS
3940 N Elm Street
Denton, TX 76207

OWNER
University of North Texas

PROJECT DESCRIPTION

Design and Construction Administration Services for the partial remodel Discovery Park D170. Scope includes renovation of an existing high-bay laboratory into 2 levels of research laboratories. Services include Architectural Design, Laboratory Planning, Structural Engineering, Civil Engineering, Rough-in for Technology Systems (IT / Data), Mechanical, Electrical, Plumbing and Fire Protection Engineering, and Cost Consulting. Landscape Architecture, FFE Design and Procurement, and Telecom Design are excluded and will be completed by UNT.

SQUARE FOOTAGE IN SCOPE

Level 1	3,864 sf
Level 2	3,692 sf
Total	**7,556 sf**

GOVERNING CODES & STANDARDS

The following codes and standards have been adopted by UNT. This list is not all-inclusive.

- NFPA 1 Fire Code (2020)
- NFPA 101 Life Safety Code (2020)
- NFPA 70 National Electrical Code (2020)
- NFPA 72 National Fire Alarm Signaling Code (2020)
- 2021 International Building Code (IBC)
- 2021 International Mechanical Code (IMC)
- 2021 International Plumbing Code (IPC)
- 2021 International Fire Code (IFC)
- 2012 Texas Accessibility Standard (TAS)
- 2018 International Energy Conservation Code
- ASHRAE 90.1 (2013)

CONSTRUCTION TYPE

Type II-B Construction

FIRE RESISTANCE RATINGS - BUILDING ELEMENTS

Primary Structural Frame	1-hr
Exterior Bearing Walls	1-hr
Interior Bearing Walls	1-hr
Nonbearing Walls & Partitions	0-hr
Mechanical Shafts	1-hr
Floor Construction	1-hr
Roof Construction	1-hr

ALLOWABLE BUILDING HEIGHTS & AREAS

Business: 55'-0", 4 stories, 76,000 SF

ACTUAL BUILDING HEIGHTS & AREAS

Height: 36'-6", 2 stories

REQUIRED OCCUPANCY SEPARATIONS

1-hr Separation - Lab Areas
1-hr Separation - Mechanical

FIRE PROTECTION SYSTEM

AUTOMATIC SPRINKLER SYSTEM
The building shall be equipped throughout with a Fully-Automatic Fire Sprinkler System in accordance with NFPA 13 and Section 903.3.1.1.

FIRE EXTINGUISHERS
Provided throughout per NFPA 10. Maximum travel distance to the nearest fire extinguisher location = 75'-0".

MEANS OF EGRESS

NUMBER OF REQUIRED EXITS:

MINIMUM NUMBER OF EXITS PER STORY

1 - 500	2
501 - 1,000	3
> 1,000	4

NUMBER OF PROVIDED EXITS:

LEVEL	*OCCUPANTS*	*EXITS PROVIDED*
1	48	2
2	45	2

TOTAL CALCULATED OCCUPANT LOAD
93

REMOTE LOCATIONS OF EXITS:
Where two exits or exit access doorways are required from any portion of the exit access, the exit doors or exit access doorways shall be placed a distance apart equal to or not less than *one-half* of the length of the maximum overall diagonal dimension of the building or area to be served, measured in a straight line between exit doors or exit access doorways. Interlocking or scissor stairs shall be counted as one exit stairway. (1015.2)

EXCEPTIONS:
1. Where interior exit stairways are interconnected by a 1-hour fire resistance-rated corridor conforming to the requirements of [Section 1018], the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1, the separation distance of the exit doors or exit access doorways shall not be less than *one-third* of the length of the maximum overall diagonal dimension of the area served.

COMMON PATH OF TRAVEL:
100-ft (B Occupancy), 75-ft (A Occupancy)

TOTAL TRAVEL DISTANCE:
300-ft (B Occupancy), 250-ft (A Occupancy)

NFPA 45 STANDARD ON FIRE PROTECTION FOR LABORATORIES

NFPA 45 6.1.1
All laboratory units shall be provided with fire protection appropriate to the fire hazard, as follows:
1. Portable Fire Extinguishers (Section 6.4)
2. Fire Alarm Systems (Section 6.5)
3. Evacuation & Emergency Plans (6.6.3)

NFPA 45 6.4.1
Portable fire extinguishers shall be installed, located, and maintained in accordance with NFPA 10, *Standard for Portable Fire Extinguishers*.

NFPA 45 6.4.2
For purposes of sizing and placement of fire extinguishers for Class B fires (see NFPA 10, Table 6.3.1.1), Class A laboratory units shall be rated as "Extra-High Hazard." Class B, Class C, & Class D laboratory units shall be rated as "Ordinary (Moderate) Hazard."

LABORATORY UNIT FIRE HAZARD CLASSIFICATION
Laboratory units shall be classified as Class A (High Fire Hazard), Class B (Moderate Fire Hazard), Class C (Low Fire Hazard), or Class D (Minimal Fire Hazard), according to the quantities of flammable and combustible liquids specified in Table 9.1.1(A) and Table 9.1.1(B).
(NFPA 45 Section 4.2.1.1)

PORTABLE FIRE EXTINGUISHERS:
For both Use Groups A & B, portable fire extinguishers are required to be located so that the maximum travel distance to an extinguisher is 75-feet. (NFPA 101, Table 6.2.1.1 and Table 6.3.1.1)

LIFE SAFETY LEGEND

USE DESIGNATION COLOR LEGEND

- BUSINESS AREA
- CONCENTRATED BUSINESS
- ASSEMBLY - UNCONCENTRATED TABLES & CHAIRS
- ACCESSORY STORAGE / MECHANICAL
- OTHER (PLACEHOLDER FOR ADDITIONAL USES)
- OTHER (PLACEHOLDER FOR ADDITIONAL USES)
- OTHER (PLACEHOLDER FOR ADDITIONAL USES)

FIRE RATING DESIGNATIONS

- 0 HR FRR "SMOKE PARTITION"
- 1 HR FRR "FIRE BARRIER"
- 1 HR FRR "SMOKE BARRIER"
- 2 HR FRR "FIRE BARRIER"
- 2 HR FRR "FIRE WALL"
- 2 HR FRR "SMOKE BARRIER"
- 3 HR FRR "FIRE BARRIER"
- 3 HR FRR "FIRE WALL"

EGRESS COMPONENT CAPACITY

ACTUAL EXIT WIDTH (CAPACITY) ACTUAL OCCUPANT LOAD — EXTERIOR EXIT/ EXIT INFORMATION

ACTUAL EXIT WIDTH (CAPACITY) ACTUAL OCCUPANT LOAD — INTERIOR EXIT/ EXIT INFORMATION

USE DESIGNATION / OCCUPANT LOAD TAG

Use Designation: ASSEMBLY (W/O FIXED) | Occupancy: B | Area (SF): 5,000 | Occupant Lf. Factor: 334 | Occupants: 15

- USE DESIGNATION
- OCCUPANT LOAD FACTOR
- CALCULATED OCCUPANT LOAD
- AREA PER USE (TOTAL)
- BUILDING OCCUPANCY CLASSIFICATION

FEC — FIRE EXTINGUISHER & CABINET

FE — FIRE EXTINGUISHER & WALL MOUNTING BRACKET

KNOX BOX - FIRE DEPARTMENT KEEPS KEYS

FEC

EXIT ACCESS TRAVEL DISTANCE

COMMON PATH OF TRAVEL DECISION POINT

42' - 6" (300' - 0") — TOTAL TRAVEL DISTANCE ALLOWABLE DISTANCE

25' - 0" (75' - 0") — COMMON PATH DISTANCE MAX. COMMON PATH

REGISTERED ARCHITECT JASON HEATH 31950 STATE OF TEXAS
04/01/2025

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G101

CODE AND LIFE SAFETY PLANS

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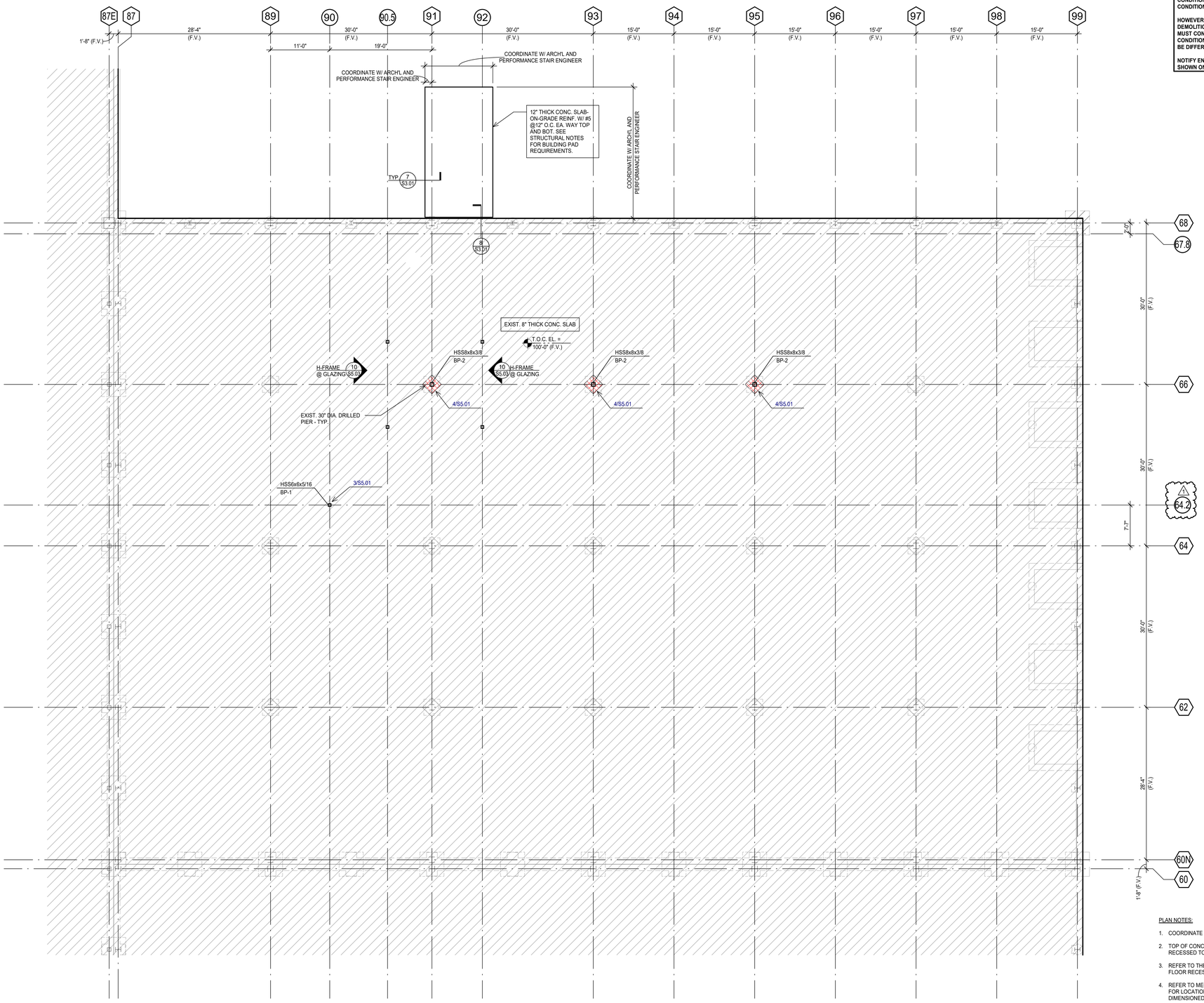


north

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

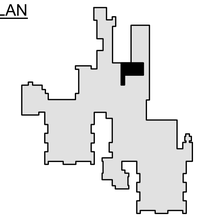
PLAN NOTES:

1. COORDINATE STAIR SLAB ELEVATION WITH CIVIL.
2. TOP OF CONCRETE ELEVATION (T.O.C. EL.) = FINISH FLOOR. UNLESS RECESSED TO RECEIVE FLOORING MATERIALS.
3. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF FLOOR RECESSES, DROPS AND SLOPES NOT DIMENSIONED ON PLAN.
4. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR LOCATION AND DIMENSIONS OF FLOOR PENETRATIONS NOT DIMENSIONED ON PLAN. CONTRACTOR TO COORDINATE.
5. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO EXCAVATION.

SHEET INDEX:

STRUCTURAL NOTES	-S1.02, S1.02
TYPICAL DETAILS	-S3.01, S5.01, S5.02

KEY PLAN



JQI HAS ATTEMPTED BY VISUAL OBSERVATION AND STUDY OF ORIGINAL CONSTRUCTION DOCUMENTS TO DETERMINE EXISTING DIMENSIONS, THE CONDITION OF VARIOUS STRUCTURAL ELEMENTS AND EXISTING CONDITIONS.

HOWEVER, AS SOME CONDITIONS CANNOT BE DETERMINED UNTIL AFTER DEMOLITION OF THE EXISTING BUILDING FINISHES, THE CONTRACTOR MUST CONSIDER AND ALLOW FOR THE FACT THAT DIMENSIONS, THE CONDITION OF STRUCTURAL ELEMENTS, AND DETAIL CONDITIONS MAY BE DIFFERENT FROM THOSE SHOWN ON THESE DRAWINGS.

NOTIFY ENGINEER WHERE CONDITIONS ARE DIFFERENT FROM THOSE SHOWN ON THESE DRAWINGS.

5/21/25
DOUGLAS J. ROTHERMEL 99821 LICENSED PROFESSIONAL ENGINEER

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JQI Project #: 3240166

shaping the built environment

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S2.01

FOUNDATION PLAN

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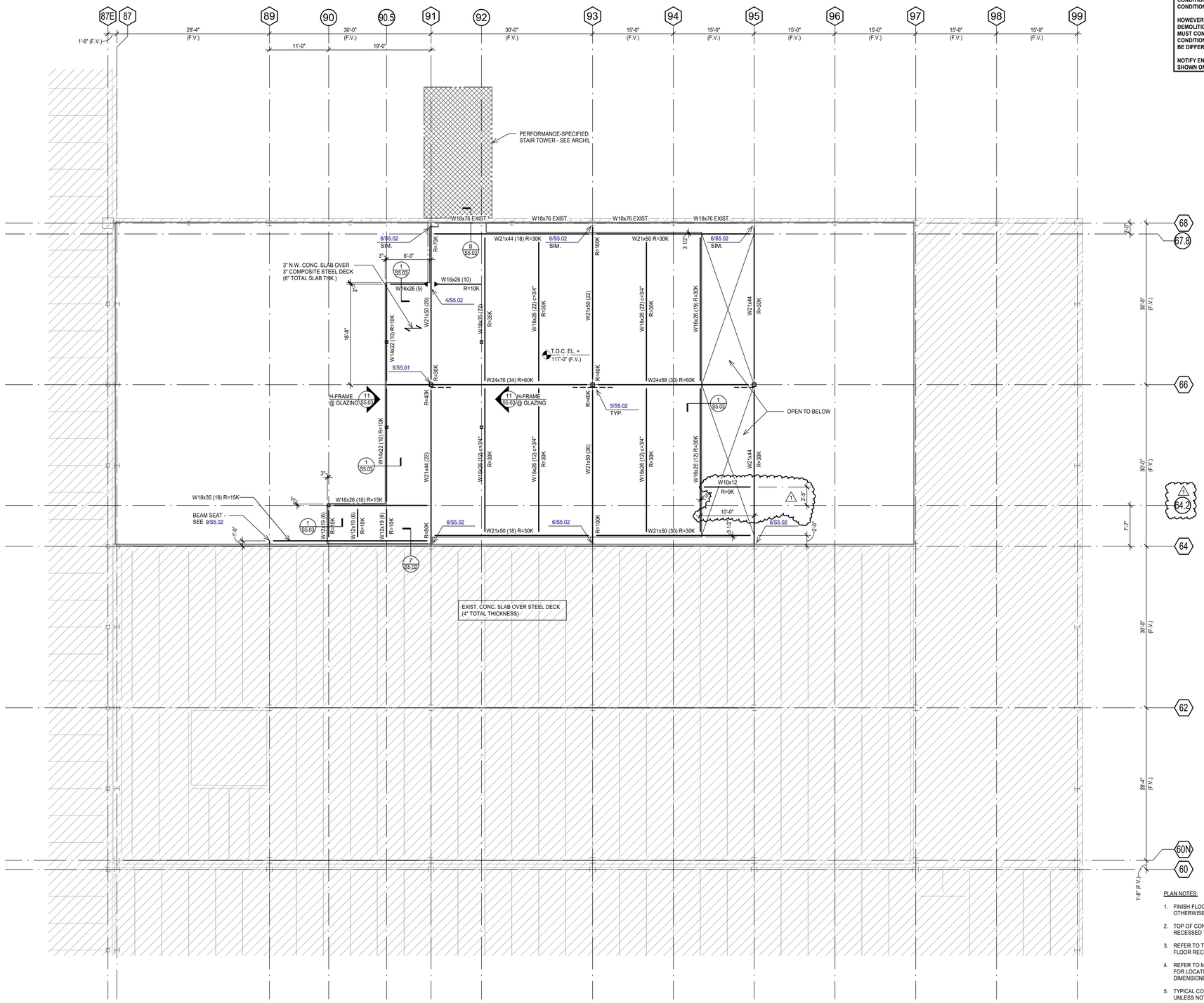

north

1 FRAMING PLAN

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

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NOTIFY ENGINEER WHERE CONDITIONS ARE DIFFERENT FROM THOSE SHOWN ON THESE DRAWINGS.

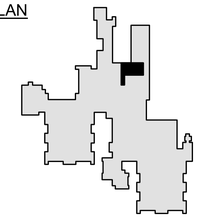
PLAN NOTES:

1. FINISH FLOOR ELEVATION = 117'-0" F.V., MATCH EXIST., UNLESS NOTED OTHERWISE.
2. TOP OF CONCRETE ELEVATION (T.O.C. EL.) = FINISH FLOOR. UNLESS RECESSED TO RECEIVE FLOORING MATERIALS.
3. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF FLOOR RECESSES, DROPS AND SLOPES NOT DIMENSIONED ON PLAN.
4. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR LOCATION AND DIMENSIONS OF FLOOR PENETRATIONS NOT DIMENSIONED ON PLAN. CONTRACTOR TO COORDINATE.
5. TYPICAL COMPOSITE CONCRETE SLAB THICKNESS IS 6" (OVERALL), UNLESS NOTED OTHERWISE. SEE STRUCTURAL NOTES.
6. STEEL BEAMS ARE CENTERED ON AND EQUALLY SPACED BETWEEN COLUMN CENTERLINES, UNLESS NOTED OTHERWISE.

SHEET INDEX:

STRUCTURAL NOTES	-S1.01, S1.02
TYPICAL DETAILS	-S3.01, S5.01, S5.02

KEY PLAN



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JQ Project #: 3240166

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S2.02

FRAMING PLAN

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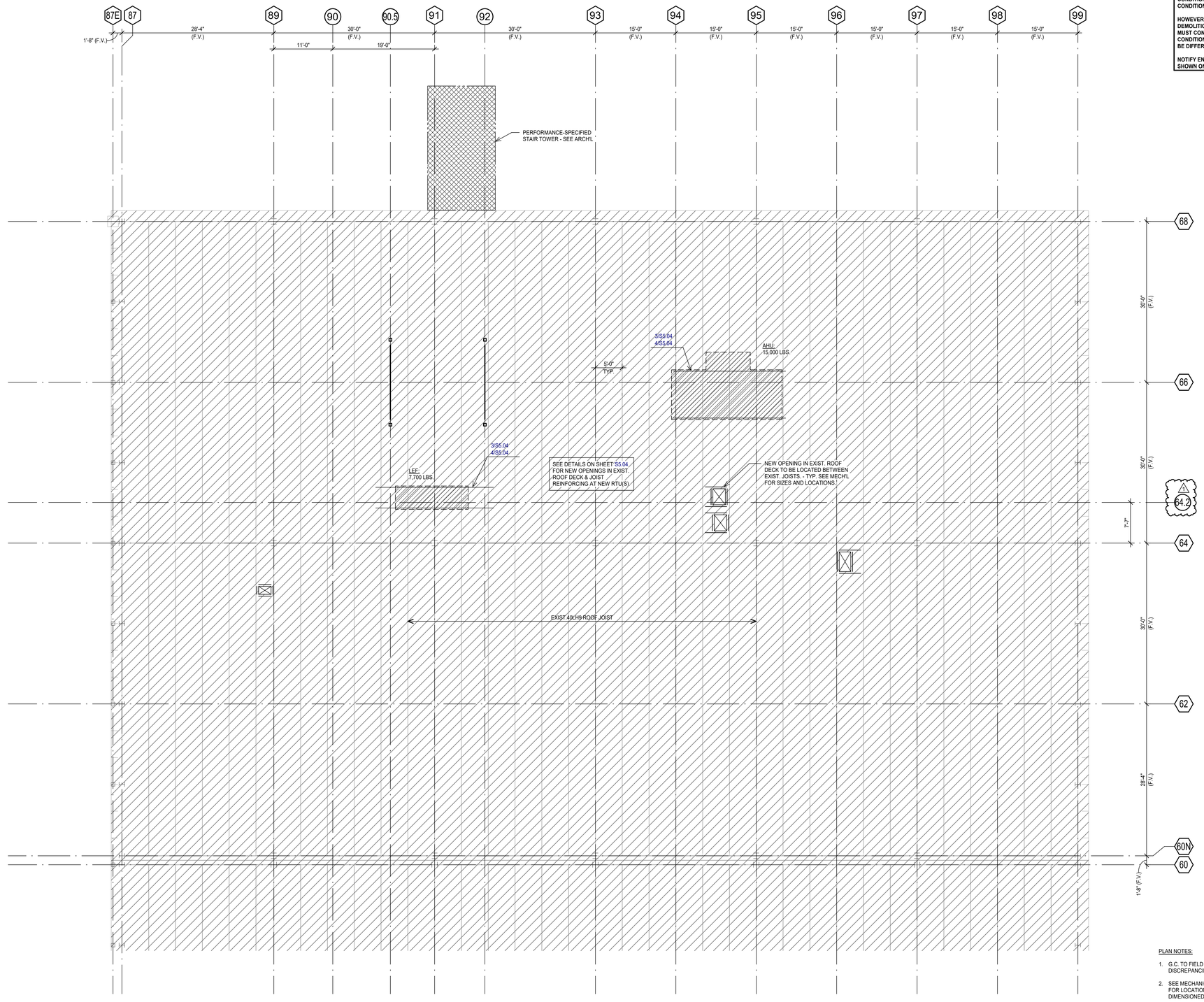


north

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

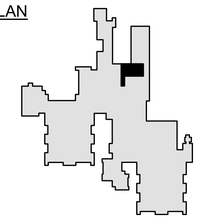
PLAN NOTES:

1. G.C. TO FIELD VERIFY EXISTING FRAMING AND REPORT ANY DISCREPANCIES TO A/E PRIOR TO ANY STEEL FABRICATION.
2. SEE MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR LOCATION AND DIMENSIONS OF ROOF PENETRATIONS NOT DIMENSIONED ON PLAN. CONTRACTOR TO COORDINATE.

SHEET INDEX:

STRUCTURAL NOTES	-S1.01, S1.02
TYPICAL DETAILS	-S3.01, S5.01, S5.02

KEY PLAN



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NOTIFY ENGINEER WHERE CONDITIONS ARE DIFFERENT FROM THOSE SHOWN ON THESE DRAWINGS.

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S2.03

ROOF FRAMING PLAN

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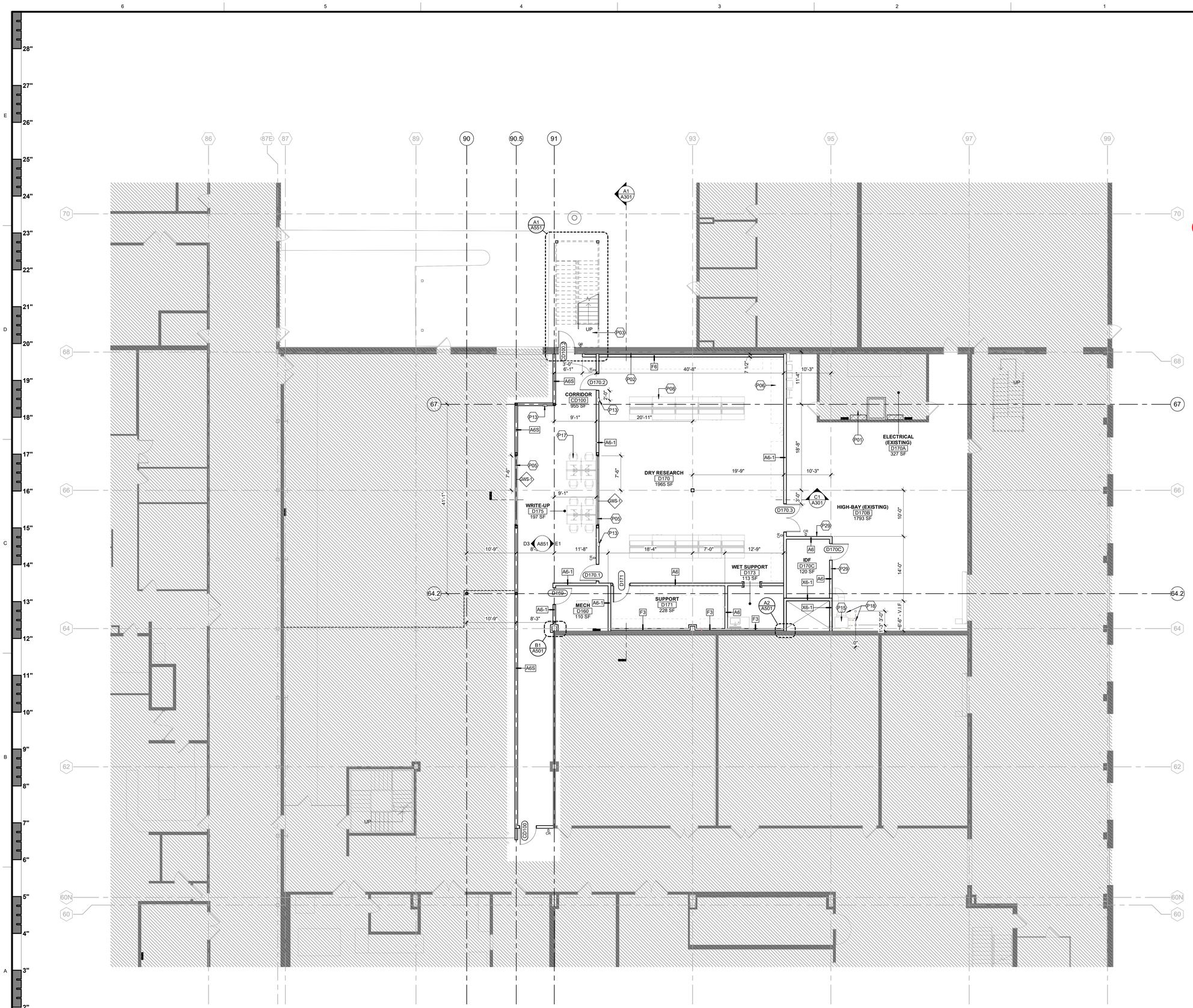


FLOOR PLAN GENERAL NOTES

A. ALL DIMENSIONS ARE TO GRID LINE, FACE OF EXISTING WALLS, OR FACE OF STRUCTURE, UNLESS OTHERWISE NOTED.

B. ALL FLOOR PLAN DIMENSIONS TO MASONRY ARE NOMINAL DIMENSIONS, UNLESS NOTED AS ACTUAL.

C. ALL ANGLES SHOWN ON THE FLOOR PLANS ARE 90 DEGREES UNLESS OTHERWISE NOTED.

D. ALL SPOT ELEVATIONS SHOWN ON THE FLOOR PLANS OUTSIDE THE BUILDING RELATE TO USGS ELEVATIONS. ALL SPOT ELEVATIONS INSIDE THE BUILDING REFER TO BUILDING REFERENCE ELEVATIONS. NOTIFY ARCHITECT IMMEDIATELY SHOULD CONDITIONS BE FOUND CONTRADICTORY TO THESE DRAWINGS.

E. FURNISHINGS (SHOWN HALFTONE) ARE SHOWN FOR GENERAL COORDINATION, REFER TO 'I' SERIES FOR COMPLETE SCOPE OF WORK.

F. LAB EQUIPMENT AND FURNITURE SHOWN HALFTONE FOR REFERENCE ONLY. REFER TO LAB EQUIPMENT DRAWINGS (A800 SERIES) FOR ADDITIONAL INFORMATION.

G. IN ROOMS WITH FLOOR DRAINS, SLOPE CONCRETE SURFACE WITHIN 18" RADIUS AT 1/4" PER FOOT TOWARD FLOOR DRAIN, UNLESS OTHERWISE INDICATED.

H. DO NOT SCALE DRAWINGS.

I. COORDINATE ALL FLOOR CORE DRILLING WITH EXISTING STRUCTURE.

J. PATCH AND LEVEL FLOOR SUBSTRATES TO RECEIVE NEW WORK AS SCHEDULED.

K. PATCH AND REPAIR CEILING AS REQUIRED FOR NEW LAYOUT.

L. PATCH WALLS AT REMOVED RECEPTACLE OPENINGS SO AS TO RECEIVE SUBSEQUENT WORK.

M. PATCH EXISTING FIRE RATED WALLS, FLOORS, CEILINGS, ETC. SO AS TO MAINTAIN THE FIRE-RATING. ADD FIRE-SMOKE DAMPERS WHERE NEW DUCTS CROSS. ADD FIRE STOP AT ALL PENETRATIONS.

N. PATCH EXISTING CONSTRUCTION SCHEDULED TO REMAIN. REPAIRED SURFACES TO BE FLUSH WITH ADJACENT FINISH SURFACES. PATCH, SAND, AND TEXTURE EXISTING SURFACES TO SAME QUALITY AS NEW CONSTRUCTION PRIOR TO INSTALLING NEW FINISHES. REFER TO THE FINISH MANUFACTURER'S GUIDELINES FOR INSTALLATION.

FLOOR PLAN NOTES

P01 EXISTING ELECTRICAL ROOM AND EXISTING EQUIPMENT TO REMAIN. REFER TO MECHANICAL FOR REROUTING OF DUCTWORK AND EQUIPMENT OUTSIDE OF ELECTRICAL ROOM.

P02 EXISTING MECHANICAL PIPING AND ELECTRICAL EQUIPMENT TO REMAIN BEYOND FURRING WALL. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.

P03 PREFABRICATED MODULAR STAIR SYSTEM (DELEGATED DESIGN BY OTHERS). BASIS OF DESIGN 'UPSIDE INNOVATIONS APEX SYSTEM.'

P05 INTERIOR GLAZED ALUMINUM STOREFRONT AS SCHEDULED; REFER TO A601 FOR ADDITIONAL INFORMATION.

P06 DASHED AREA INDICATES CLEAR FLOOR AREA FOR OFOI EQUIPMENT, TYPICAL.

P08 LABORATORY EQUIPMENT, TYPICAL. REFER TO LAB EQUIPMENT SHEETS (A800 SERIES) FOR ADDITIONAL INFORMATION.

P13 FULLY-RECESSED FIRE EXTINGUISHER CABINET (FEC).

P15 WALL-MOUNTED MECHANICAL EQUIPMENT. REFER TO MECHANICAL.

P17 FURNITURE (OFOI), NOT IN CONTRACT.

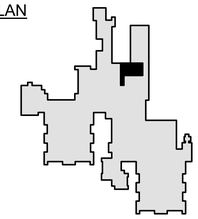
P18 BOLLARD; REFER TO B2/A501

P29 TERMINATE IDF ROOM WALLS AT HARD LID CEILING. WALL CONSTRUCTION IDENTICAL TO TYPE 'A6.' PARTITIONS DO NOT EXTEND TO STRUCTURE ABOVE.

FLOOR PLAN LEGEND

- NOT IN SCOPE
- EXISTING WALL TO REMAIN. PROTECT IN PLACE
- NEW DOOR AND FRAME ASSEMBLY
- GWS-1 — GLAZING TYPE TAG, REFER TO SHEET A601
- CR — ROUGH-IN LOCATION FOR CARD READER; REFER TO C1/A501

KEY PLAN



FLOOR PLAN - LEVEL 1 A1

1/8" = 1'-0"

0 4' 8' 16'

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1 1

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A101

FLOOR PLAN - LEVEL 1

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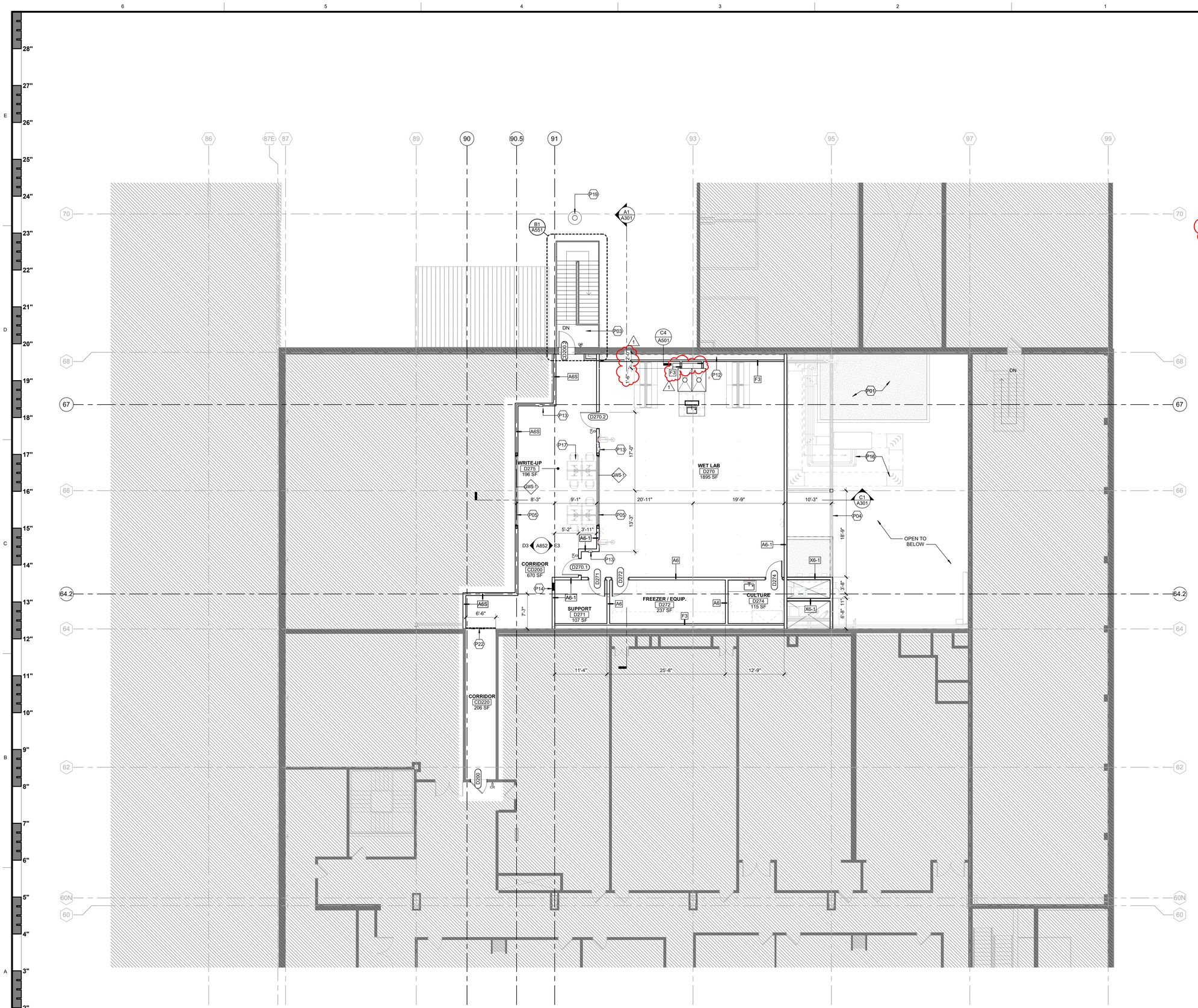


FLOOR PLAN GENERAL NOTES

A. ALL DIMENSIONS ARE TO GRID LINE, FACE OF EXISTING WALLS, OR FACE OF STRUCTURE, UNLESS OTHERWISE NOTED.

B. ALL FLOOR PLAN DIMENSIONS TO MASONRY ARE NOMINAL DIMENSIONS, UNLESS NOTED AS ACTUAL.

C. ALL ANGLES SHOWN ON THE FLOOR PLANS ARE 90 DEGREES UNLESS OTHERWISE NOTED.

D. ALL SPOT ELEVATIONS SHOWN ON THE FLOOR PLANS OUTSIDE THE BUILDING RELATE TO USGS ELEVATIONS. ALL SPOT ELEVATIONS INSIDE THE BUILDING REFER TO BUILDING REFERENCE ELEVATIONS. NOTIFY ARCHITECT IMMEDIATELY SHOULD CONDITIONS BE FOUND CONTRADICTORY TO THESE DRAWINGS.

E. FURNISHINGS (SHOWN HALFTONE) ARE SHOWN FOR GENERAL COORDINATION, REFER TO 'I' SERIES FOR COMPLETE SCOPE OF WORK.

F. LAB EQUIPMENT AND FURNITURE SHOWN HALFTONE FOR REFERENCE ONLY. REFER TO LAB EQUIPMENT DRAWINGS (A800 SERIES) FOR ADDITIONAL INFORMATION.

G. IN ROOMS WITH FLOOR DRAINS, SLOPE CONCRETE SURFACE WITHIN 18" RADIUS AT 1/4" PER FOOT TOWARD FLOOR DRAIN, UNLESS OTHERWISE INDICATED.

H. DO NOT SCALE DRAWINGS.

I. COORDINATE ALL FLOOR CORE DRILLING WITH EXISTING STRUCTURE.

J. PATCH AND LEVEL FLOOR SUBSTRATES TO RECEIVE NEW WORK AS SCHEDULED.

K. PATCH AND REPAIR CEILING AS REQUIRED FOR NEW LAYOUT.

L. PATCH WALLS AT REMOVED RECEPTACLE OPENINGS SO AS TO RECEIVE SUBSEQUENT WORK.

M. PATCH EXISTING FIRE-RATED WALLS, FLOORS, CEILINGS, ETC. SO AS TO MAINTAIN THE FIRE-RATING. ADD FIRE-SMOKE DAMPERS WHERE NEW DUCTS CROSS. ADD FIRE STOP AT ALL PENETRATIONS.

N. PATCH EXISTING CONSTRUCTION SCHEDULED TO REMAIN. REPAIRED SURFACES TO BE FLUSH WITH ADJACENT FINISH SURFACES. PATCH, SAND, AND TEXTURE EXISTING SURFACES TO SAME QUALITY AS NEW CONSTRUCTION PRIOR TO INSTALLING NEW FINISHES. REFER TO THE FINISH MANUFACTURER'S GUIDELINES FOR INSTALLATION.

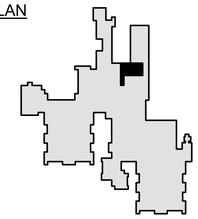
FLOOR PLAN NOTES

P01	EXISTING ELECTRICAL ROOM AND EXISTING EQUIPMENT TO REMAIN. REFER TO MECHANICAL FOR REROUTING OF DUCTWORK AND EQUIPMENT OUTSIDE OF ELECTRICAL ROOM.
P03	PREFABRICATED MODULAR STAIR SYSTEM (DELEGATED DESIGN BY OTHERS). BASIS OF DESIGN 'UPSIDE INNOVATIONS APEX SYSTEM."
P04	STRUCTURAL FRAMING; REFER TO STRUCTURAL
P05	INTERIOR GLAZED ALUMINUM STOREFRONT AS SCHEDULED; REFER TO A601 FOR ADDITIONAL INFORMATION
P12	MODIFY MECHANICAL PIPE ROUTING AS NECESSARY IN THIS LOCATION. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.
P13	FULLY-RECESSED FIRE EXTINGUISHER CABINET (FEC)
P14	WALL-MOUNTED ELECTRICAL PANEL. REFER TO ELECTRICAL FOR ADDITIONAL INFORMATION.
P16	DUCTWORK AND MECHANICAL PIPING; REFER TO MECHANICAL
P17	FURNITURE (OFOI). NOT IN CONTRACT.
P19	NEW POLE-MOUNTED LIGHT FIXTURE; REFER TO ELECTRICAL
P22	2" EXPANSION JOINT. INSTALL FLOOR AND WALL EXPANSION JOINT COVERS AS SPECIFIED AND DETAILED ON SHEET A501.

FLOOR PLAN LEGEND

- NOT IN SCOPE
- EXISTING WALL TO REMAIN. PROTECT IN PLACE
- NEW DOOR AND FRAME ASSEMBLY
- GWS-1 — GLAZING TYPE TAG, REFER TO SHEET A601
- CR — ROUGH-IN LOCATION FOR CARD READER; REFER TO C1/A501

KEY PLAN



FLOOR PLAN - LEVEL 2 A1
1/8" = 1'-0"
0 4' 8' 16'

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FLOOR PLAN - LEVEL 2

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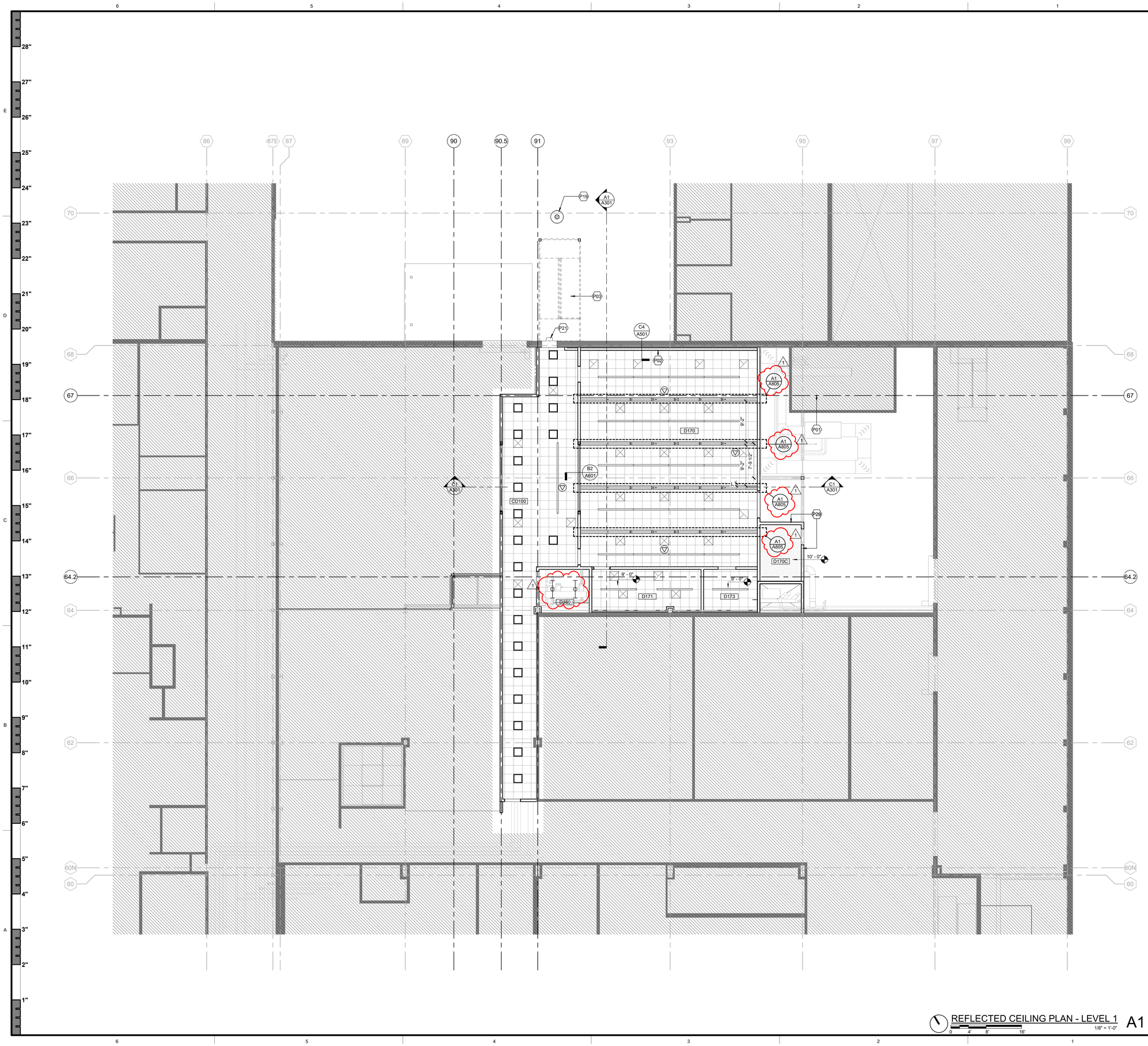


RCP GENERAL NOTES

A. REFER TO FIRE PROTECTION DRAWINGS FOR LOCATIONS OF FIRE SPRINKLER HEADS. CENTER FIRE SPRINKLER HEADS BOTH DIRECTIONS IN CEILING TILES.

B. SUBMIT LAYOUT OF ALL GYPSUM BOARD CEILING CONTROL JOINTS FOR REVIEW.

C. REFER TO INTERIOR FINISH LEGEND FOR BASIS OF DESIGN INTERIOR FINISHES.

D. ALL CEILINGS SHALL BE APC-1 AT 10' - 0" A.F.F. UNLESS NOTED OTHERWISE.

E. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR MOUNTING LOCATIONS OF ITEMS WHERE NO CEILING IS REQUIRED OR INDICATED.

F. LIGHTS, DIFFUSERS, EXIT SIGNS, SMOKE DETECTORS, AND FIRE ALARM SPEAKER / STROBES SHALL BE CENTERED IN THE CEILING TILES IN WHICH THEY OCCUR, UNLESS NOTED OTHERWISE.

G. CENTER ALL CEILING GRIDS IN EACH ROOM OR SPACE UNLESS OTHERWISE INDICATED WITH A GRID ORIGIN OR DIMENSION.

RCP NOTES

P01 EXISTING ELECTRICAL ROOM AND EXISTING EQUIPMENT TO REMAIN. REFER TO MECHANICAL FOR REROUTING OF DUCTWORK AND EQUIPMENT OUTSIDE OF ELECTRICAL ROOM.

P02 EXISTING MECHANICAL PIPING AND ELECTRICAL EQUIPMENT TO REMAIN BEYOND FURRING WALL. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.

P03 PREFABRICATED MODULAR STAIR SYSTEM (DELEGATED DESIGN BY OTHERS). BASIS OF DESIGN 'UPSIDE INNOVATIONS APEX SYSTEM."

P19 NEW POLE-MOUNTED LIGHT FIXTURE; REFER TO ELECTRICAL

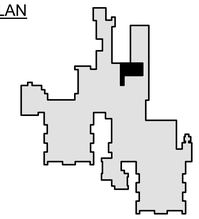
P21 NEW WALL PACK LIGHT FIXTURE; REFER TO ELECTRICAL

P29 TERMINATE IDF ROOM WALLS AT HARD LID CEILING. WALL CONSTRUCTION IDENTICAL TO TYPE 'A6.' PARTITIONS DO NOT EXTEND TO STRUCTURE ABOVE.

RCP LEGEND

- ACOUSTICAL PANEL CEILINGS (APC-1)
- LINEAR METAL SERVICE PANEL; REFER TO SERVICE PANEL DETAILS
- GYPSUM CEILING ON METAL STUDS
- RECESSED CAN LIGHT (6")
- RECESSED TROFFER LIGHT (2' x 2')
- LINEAR DIRECT/INDIRECT PENDANT LIGHT (8' TYPICAL) - 1' SUSPENSION FROM CEILING U.N.O.
- INDUSTRIAL STRIP LIGHT
- DIFFUSER-SUPPLY REFER TO MECHANICAL DRAWINGS
- DIFFUSER-RETURN REFER TO MECHANICAL DRAWINGS
- STRIP DIFFUSER-SUPPLY REFER TO MECHANICAL DRAWINGS
- CEILING ACCESS PANEL
- CEILING MOUNTED WIRELESS ACCESS POINT (WAP) - DEVICE BY OWNER. INSTALL J-HOOKS FOR CABLING; REFER TO A501.

KEY PLAN



REFLECTED CEILING PLAN - LEVEL 1 A1
1/8" = 1'-0"
0 4' 8' 16'

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A151

REFLECTED CEILING PLAN - LEVEL 1

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RCP GENERAL NOTES

A. REFER TO FIRE PROTECTION DRAWINGS FOR LOCATIONS OF FIRE SPRINKLER HEADS. CENTER FIRE SPRINKLER HEADS BOTH DIRECTIONS IN CEILING TILES.

B. SUBMIT LAYOUT OF ALL GYPSUM BOARD CEILING CONTROL JOINTS FOR REVIEW.

C. REFER TO INTERIOR FINISH LEGEND FOR BASIS OF DESIGN INTERIOR FINISHES.

D. ALL CEILINGS SHALL BE APC-1 AT 10' - 0" A.F.F. UNLESS NOTED OTHERWISE.

E. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR MOUNTING LOCATIONS OF ITEMS WHERE NO CEILING IS REQUIRED OR INDICATED.

F. LIGHTS, DIFFUSERS, EXIT SIGNS, SMOKE DETECTORS, AND FIRE ALARM SPEAKER / STROBES SHALL BE CENTERED IN THE CEILING TILES IN WHICH THEY OCCUR, UNLESS NOTED OTHERWISE.

G. CENTER ALL CEILING GRIDS IN EACH ROOM OR SPACE UNLESS OTHERWISE INDICATED WITH A GRID ORIGIN OR DIMENSION.

RCP PLAN NOTES

P09 LINEAR SERVICE PANEL, TYPICAL. REFER TO DETAILS FOR SERVICES LOCATION, AND REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

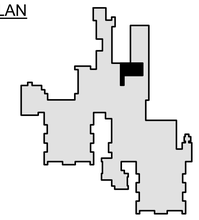
P19 NEW POLE-MOUNTED LIGHT FIXTURE; REFER TO ELECTRICAL

P21 NEW WALL PACK LIGHT FIXTURE; REFER TO ELECTRICAL

RCP PLAN LEGEND

- ACOUSTICAL PANEL CEILINGS (APC-1)
- LINEAR METAL SERVICE PANEL; REFER TO SERVICE PANEL DETAILS
- GYPSUM CEILING ON METAL STUDS
- RECESSED CAN LIGHT (6")
- RECESSED TROFFER LIGHT (2' x 2')
- LINEAR DIRECT/INDIRECT PENDANT LIGHT (8' TYPICAL) - 1' SUSPENSION FROM CEILING U.N.O.
- INDUSTRIAL STRIP LIGHT
- DIFFUSER-SUPPLY REFER TO MECHANICAL DRAWINGS
- DIFFUSER-RETURN REFER TO MECHANICAL DRAWINGS
- STRIP DIFFUSER-SUPPLY REFER TO MECHANICAL DRAWINGS
- CEILING ACCESS PANEL
- CEILING MOUNTED WIRELESS ACCESS POINT (WAP) - DEVICE BY OWNER. INSTALL J-HOOKS FOR CABLING; REFER TO A501.

KEY PLAN



REFLECTED CEILING PLAN - LEVEL 2 A1
1/8" = 1'-0"
0 4' 8' 16'

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REFLECTED CEILING PLAN - LEVEL 2

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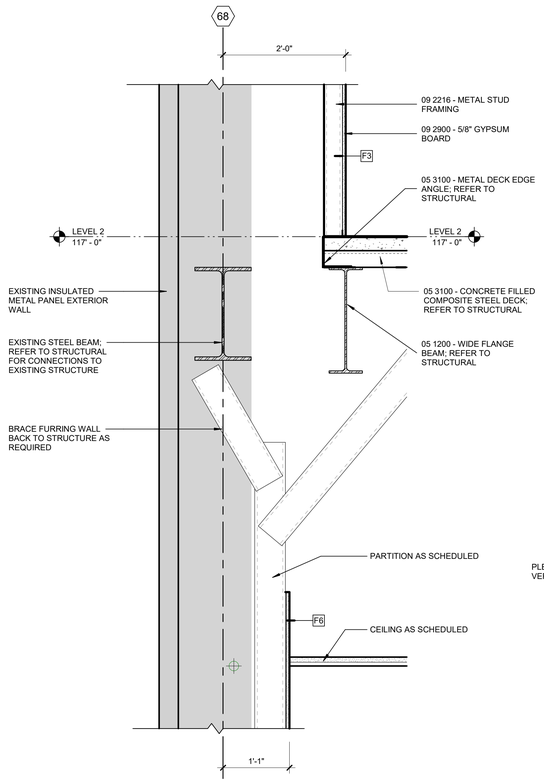
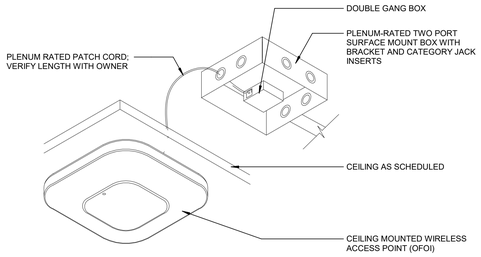


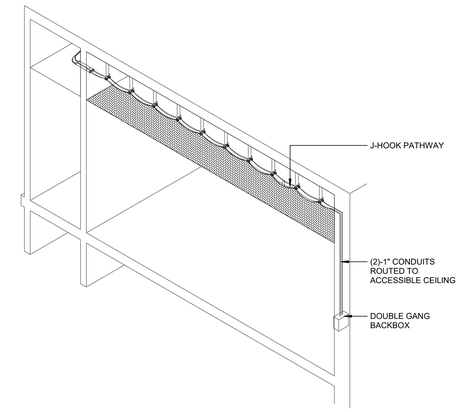
SECTION - FURRING AT EXTERIOR WALL C4
1" = 1'-0"



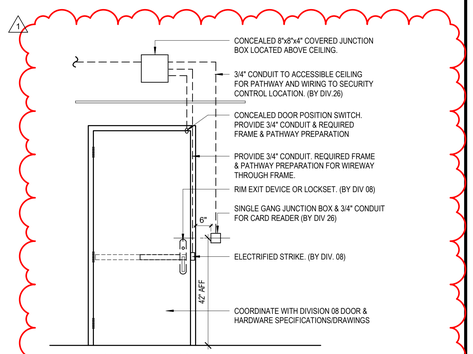
WIRELESS ACCESS POINT (WAP) ROUGH-IN C2
N.T.S.

NOTES:

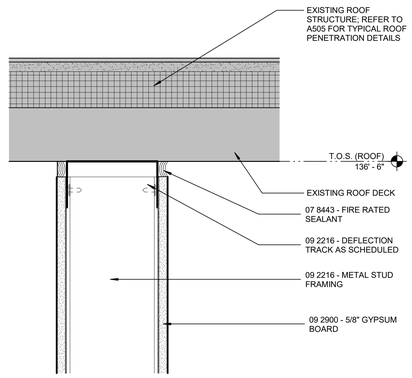
1. A MINIMUM OF ONE CONTINUOUS RUN OF CONDUIT SHALL BE PLACED FROM I/O ACCESSIBLE CEILING SPACE
2. ALL CONDUIT SHALL BE A MINIMUM 1" DIA., HAVE PROTECTIVE BUSHING, AND PULL STRINGS.
3. NO CABLE SHALL BE PLACED IN CONDIT THAT DOES NOT HAVE PROTECTIVE INSULATING BUSHING PRESENT.
4. THIS DETAIL IS INTENDED TO ILLUSTRATE CABLE ROUTING FOR CABLE CONTRACTOR AND AS A GENERAL GUIDE FOR ELECTRICAL CONTRACTOR.
5. CONTRACTOR SHALL REPORT ANY DEVIATIONS FROM THIS OR ANY STANDARD TO THE GENERAL CONTRACTOR FOR REFIT BY RESPONSIBLE CONTRACTOR.



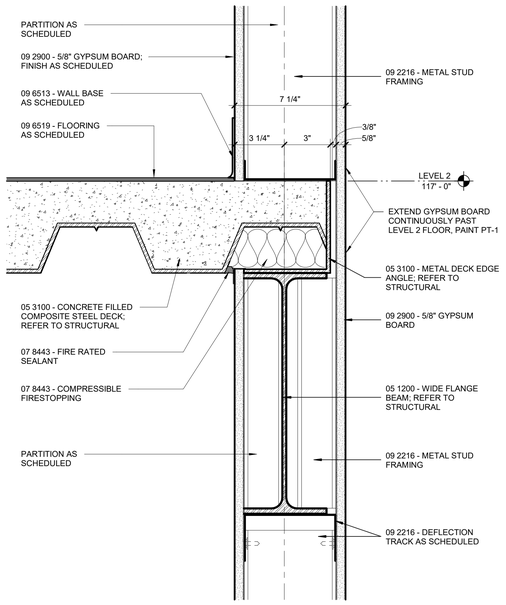
J-HOOK PATHWAY (DROP CEILING) D1
N.T.S.



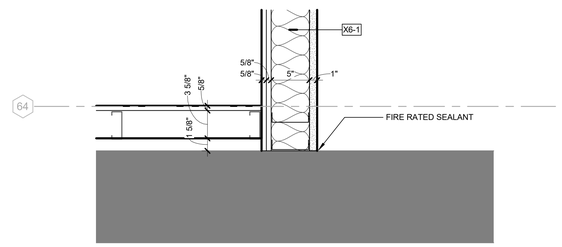
DOOR HARDWARE LOCATIONS C1
1/2" = 1'-0"



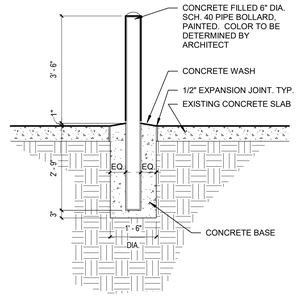
RATED WALL AT ROOF, TYP. A6
3" = 1'-0"



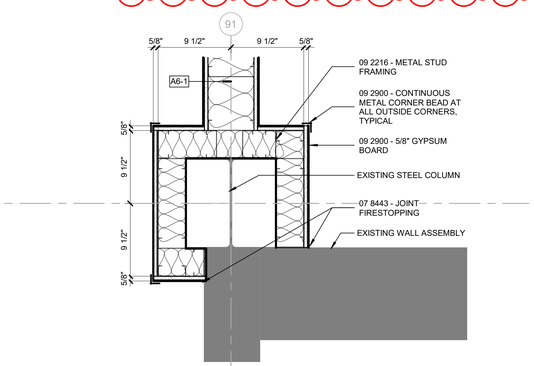
SECTION DETAIL - SLAB EDGE AT LEVEL 2 HIGH-BAY A4
3" = 1'-0"



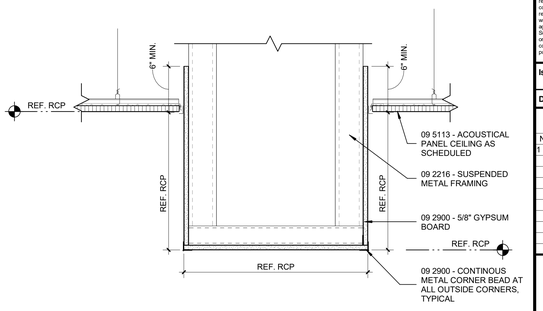
PLAN DETAIL - SHAFT WALL AT EXISTING A2
1 1/2" = 1'-0"



UTILITY BOLLARD B2
1/2" = 1'-0"



PLAN DETAIL - RATED WALL AT EXISTING COLUMN B1
1 1/2" = 1'-0"



APC TO GYP SOFFIT TRANSITION A1
1 1/2" = 1'-0"

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INTERIOR DETAILS

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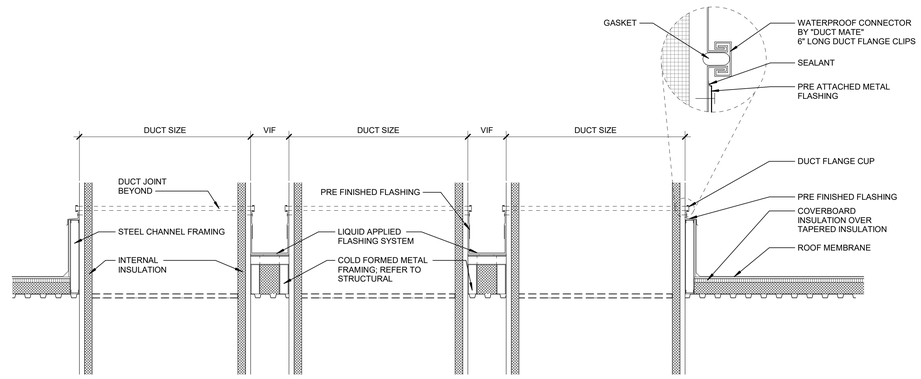
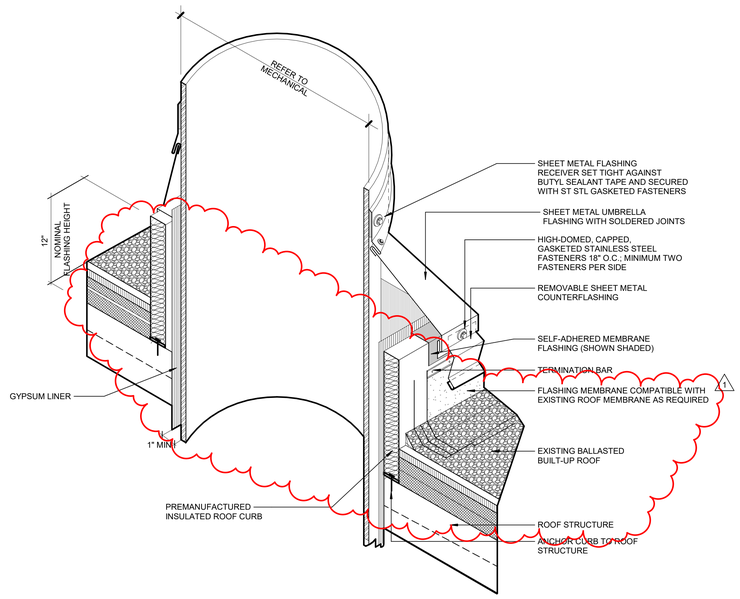
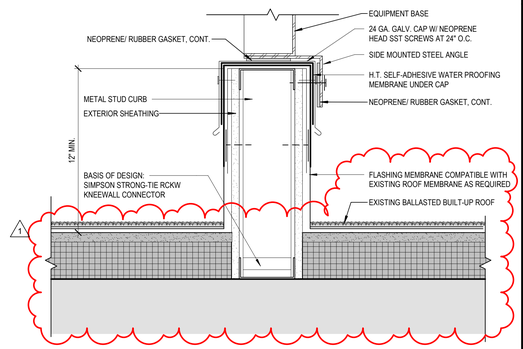
DUCT PENETRATIONS AT ROOF - ELEVATION B4
1/2" = 1'-0"



DUCT PENETRATIONS AT ROOF - SECTION B1
1/2" = 1'-0"



ISOLATED VENT STACK ROOF PENETRATION A3
3" = 1'-0"



TYP. EQUIP. ROOF CURB DETAIL A1
3" = 1'-0"

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TYPICAL ROOF DETAILS

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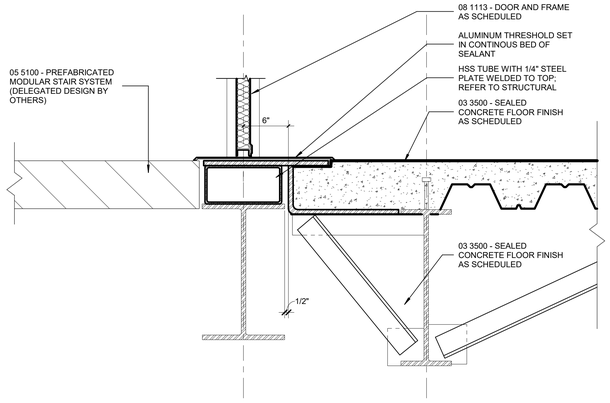
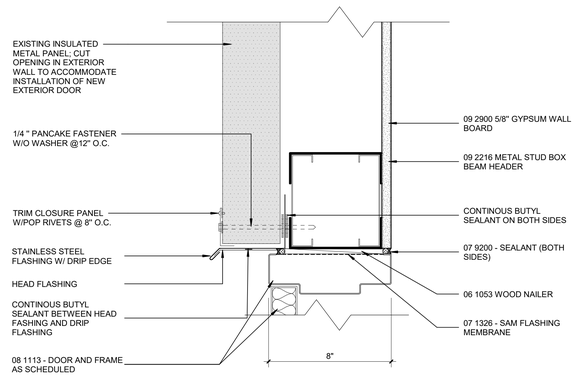


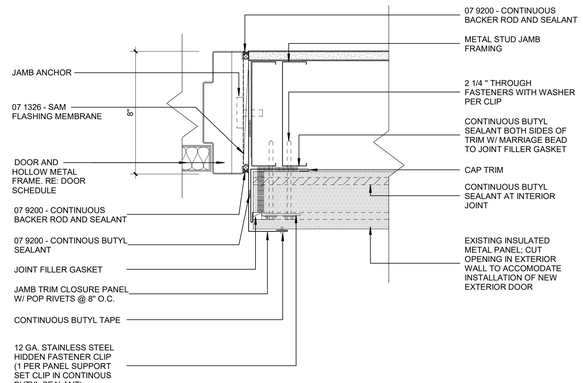
SILL DETAIL - EXTERIOR DOOR (AT STAIR LANDING) C5

1 1/2" = 1'-0"



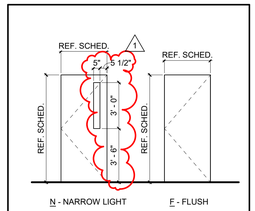
HEAD DETAIL - EXTERIOR DOOR B5

3" = 1'-0"



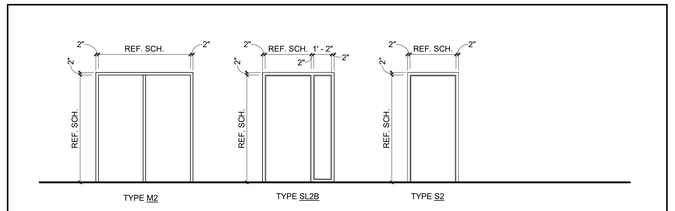
JAMB DETAIL - EXTERIOR DOOR A5

3" = 1'-0"



DOOR TYPES

1/4" = 1'-0"



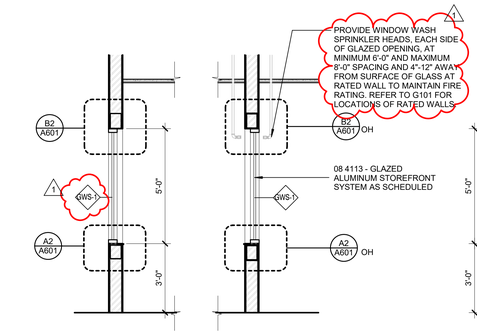
FRAME TYPES

1/4" = 1'-0"

DOOR AND FRAME SCHEDULE

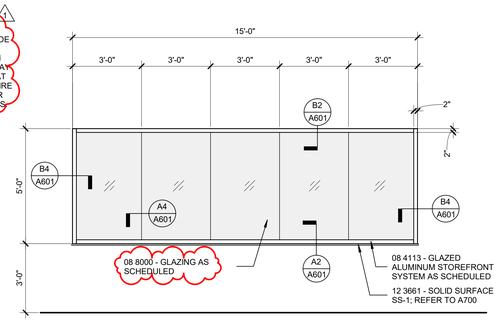
DOOR NO.	DIMENSIONS		DOOR			FRAME				DETAIL			FIRE RATING	HARDWARE SET
	WIDTH	HEIGHT	TYPE	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	GLASS TYPE	JAMB	HEAD	SILL		
CD100	3' - 6"	8' - 0"	F	HM	PT-2	S2	HM	PT-2	-	A5/A601	B5/A601	-	-	C701CTW
CD100.2	3' - 6"	8' - 0"	F	HM	PT-2	S2	HM	PT-2	-	A5/A601	B5/A601	C5/A601	-	C715TW
D160	3' - 6"	8' - 0"	F	SCW	WD-1	S2	HM	PT-2	-	A1/A601	B1/A601	-	-	201TW
D170.1	3' - 6"	8' - 0"	F	SCW	WD-1	S2	HM	PT-2	-	A1/A601	B1/A601	-	45-MIN	C201TW
D170.2	3' - 6"	8' - 0"	F	SCW	WD-1	S2	HM	PT-2	-	A1/A601	B1/A601	-	45-MIN	C207TW
D170.3	6' - 0"	8' - 0"	N	SCW	WD-1	S2	HM	PT-2	-	A1/A601	B1/A601	-	45-MIN	200CT
D170C	3' - 6"	8' - 0"	F	HM	WD-1	S2	HM	PT-2	-	A1/A601	B1/A601	-	-	201TW
D171	3' - 6"	8' - 0"	N	SCW	WD-1	S2	HM	PT-2	GL-1	A1/A601	B1/A601	-	-	501TW
CD200.2	3' - 6"	8' - 0"	F	HM	WD-1	S2	HM	PT-2	-	A1/A601	B1/A601	-	-	C205TW
D200	3' - 6"	8' - 0"	F	SCW	WD-1	S2	HM	PT-2	-	A1/A601	B1/A601	-	-	C701CTW
D270.1	3' - 6"	8' - 0"	F	SCW	WD-1	S2	HM	PT-2	-	A1/A601	B1/A601	-	45-MIN	C201TW
D270.2	3' - 6"	8' - 0"	F	SCW	WD-1	S2	HM	PT-2	-	A1/A601	B1/A601	-	45-MIN	C207TW
D271	3' - 6"	8' - 0"	N	SCW	WD-1	S2	HM	PT-2	GL-1	A1/A601	B1/A601	-	-	501TW
D272	3' - 6"	8' - 0"	N	SCW	WD-1	S2	HM	PT-2	GL-1	A1/A601	B1/A601	-	-	501TW
D274	3' - 6"	8' - 0"	N	SCW	WD-1	S2	HM	PT-2	GL-1	A1/A601	B1/A601	-	-	501TW

1



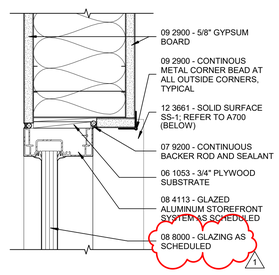
WALL SECTION AT CORRIDOR GLAZING, TYP. C2

3/8" = 1'-0"



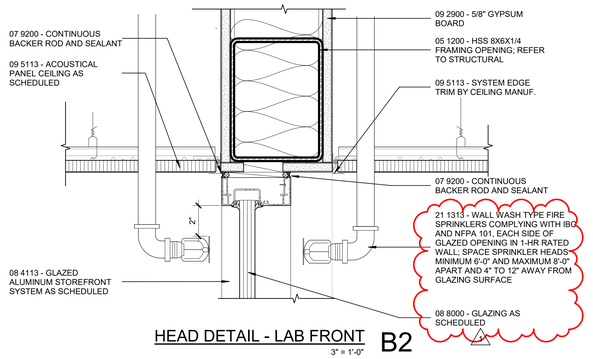
GLAZING AT LAB FRONTS AND CORRIDOR (GWS-1) GWS-1

3/8" = 1'-0"



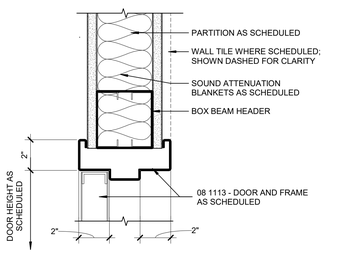
JAMB DETAIL - LAB FRONT B4

3" = 1'-0"



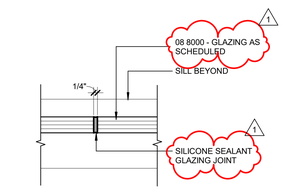
HEAD DETAIL - LAB FRONT B2

3" = 1'-0"



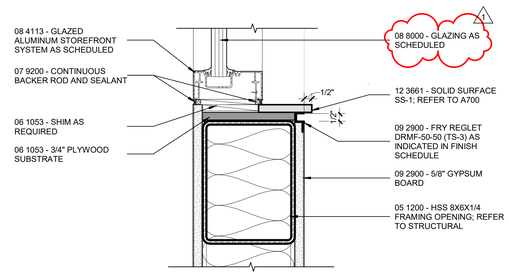
INTERIOR HM FRAME HEAD B1

3" = 1'-0"



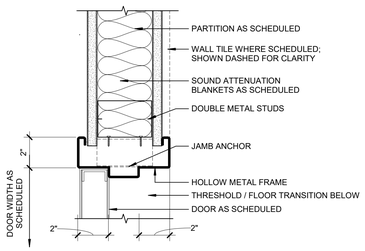
PLAN DETAIL - BUTT GLAZING A4

3" = 1'-0"



SILL DETAIL - LAB FRONT A2

3" = 1'-0"



INTERIOR HM FRAME JAMB A1

3" = 1'-0"

DOOR SCHEDULE NOTES:

1. REFER THIS SHEET (A601) FOR DOOR HEAD, JAMB, AND SILL DETAILS.
2. ALL DOORS IN SMOKE RESISTANT PARTITIONS TO HAVE POSITIVE LATCHING.
3. FIRE-RATING GLAZING IN DOORS SHALL MEET THE FIRE RATING REQUIREMENT OF THE DOORS TO WHICH THEY ARE INSTALLED.
4. GLAZING IN DOORS AND CORRIDOR/LAB FRONT GLAZING SHALL BE CLEAR TEMPERED FLOAT GLASS (GL-1) UNLESS NOTED OTHERWISE. REFER TO A700. 1
5. ALL DOORS TO HAVE BOXED HEADERS UNLESS STEEL CHANNELS ARE INDICATED IN THE REMARKS COLUMN OF THE DOOR SCHEDULE OR UNLESS OTHERWISE INDICATED BY HEAD DETAIL.

JASON HUNT 6397 REGISTERED ARCHITECT STATE OF TEXAS
04/01/2025

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UNIVERSITY OF NORTH TEXAS DISCOVERY PARK D170 LAB FIT-OUT

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UNT UNIVERSITY OF NORTH TEXAS

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NO	DESCRIPTION	DATE
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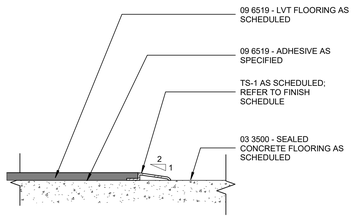
A601

DOOR SCHEDULE, GLAZING TYPES, AND DETAILS

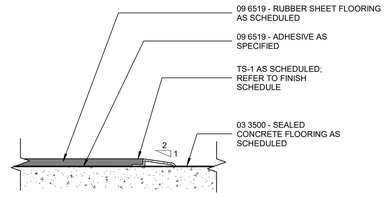
Treanor NO. HE0569.2402.00

INTERIOR FINISH LEGEND

TAG	MATERIAL	BASIS OF DESIGN	PRODUCT NAME/ NO.	COLOR NAME/NO.	FINISH	SIZE	INSTALLATION	REMARKS	REP CONTACT
CEILINGS									
ACPC-1	ACOUSTIC PANEL CEILING	ARMSTRONG	OPTIMA HEALTH ZONE, 3114PB	WHITE	-	24" x 24" TILE	-	-	CARSON NEWBY / EMAIL: CNEWBY@ARMSTRONGCEILINGS.COM / PHONE: 972.841.
LSP-1	LINEAR SERVICE PANEL	KEWAUNEE SCIENTIFIC	FINISH TO MATCH STEEL LAB CASEWORK	CC61 LIGHT NEUTRAL	FLAT	-	-	-	CHRIS ETHERIDGE / EMAIL: CETHERIDGE@HALLMARKCASEWORK.COM / PHONE: 512.297.7834
FLOORING									
LVT-1	LVT FLOORING - COLOR 1	MOHAWK	HOT AND HEAVY COLLECTION - LINEATE	868 GROOVE	-	9" X 59", 5mm THICK, 20mil WEAR LAYER	-	-	REFER TO FINISH PLANS FOR PATTERN
LVT-2	LVT FLOORING - COLOR 2	MOHAWK	HOT AND HEAVY COLLECTION - LINEATE	948 FIGURED	-	9" X 59", 5mm THICK, 20mil WEAR LAYER	-	-	REFER TO FINISH PLANS FOR PATTERN
RB-1	RESILIENT BASE	JOHNSONITE TARKETT	DURACOVE RUBBER (TP)	29 MOON ROCK WG	-	4" H WITH TOE	DIRECT ADHESIVE	-	-
RF-1	RUBBER FLOORING	NORA BY INTERFACE	ENVIRONCARE	7033 TAIL GAITING	-	24" x 24" x 2mm (TILE)	DIRECT ADHESIVE	-	ANNMARIE DESHOTEL / EMAIL: ANNMARIE.DESHOTEL@INTERFACE.COM / PHONE: 504.218.6654
SC-1	SEALED CONCRETE	SCOFIELD	CURESEAL-W SEALED CONCRETE	-	-	-	-	USE ON HOUSEKEEPING PADS AND AS INDICATED IN DRAWINGS	-
GLAZING									
GL-1	GLASS	TEMPERED SAFETY GLAZING	-	CLEAR, WITH CLEAR SILICONE VERTICAL JOINTS	-	AS INDICATED ON DRAWINGS	-	LAB FRONTS, CORRIDOR GLAZING	JOSH HEMBY / EMAIL: JHEMBY@PGP-USA.COM
GWS-1	ALUMINUM STOREFRONT SYSTEM	KAWNEER	TRIFAB VERSAGLAZE 451	CLEAR ANODIZED ALUMINUM	-	2" SIGHTLINE x 4.5" DEPTH	-	LAB FRONTS, CORRIDOR GLAZING	JOSH HEMBY / EMAIL: JHEMBY@PGP-USA.COM
LAB CASEWORK									
EP-1	EPOXY RESIN WORKSURFACES	DURCON	CLASSICTOP	DARK KHAKI	-	1" THICK	-	TYP. INSIDE CORNER, AS NOTED ON DRAWINGS	JAMIE BORGER / EMAIL: JAMIE.BORGER@WILSONART.COM / PHONE: 971.266.4729
MTL-1	PAINTED STEEL LAB CASEWORK	KEWAUNEE SCIENTIFIC	-	CC61 LIGHT NEUTRAL	-	AS INDICATED ON DRAWINGS	-	-	-
PAINT									
PT-1	WALL PAINT (FIELD)	SHERWIN WILLIAMS	SUPER PAINT	SW 7010 WHITE DUCK	EGGSHELL	-	-	FIELD PAINT COLOR	JACKIE BOOTH / EMAIL: JACKIE.N.BOOTH@SHERWIN.COM / PHONE: 713.292.7098
PT-2	WALL PAINT (ACCENT/ DOORS & FRAMES)	SHERWIN WILLIAMS	SUPER PAINT	SW 7020 BLACK FOX	SEMIGLOSS	-	-	HM DOORS & FRAMES	JACKIE BOOTH / EMAIL: JACKIE.N.BOOTH@SHERWIN.COM / PHONE: 713.292.7098
PT-3	WALL PAINT (FIELD)	SHERWIN WILLIAMS	SUPER PAINT	SW 6741 DERBYSHIRE	EGGSHELL	-	-	ACCENT PAINT	JACKIE BOOTH / EMAIL: JACKIE.N.BOOTH@SHERWIN.COM / PHONE: 713.292.7098
PT-4	COLUMN PAINT	SHERWIN WILLIAMS	SUPER PAINT	SW 6258 TRICORN BLACK	SEMIGLOSS	-	-	PROVIDE SURFACE PREPARATION AND PRIMER PER MANUFACTURER'S RECOMMENDATION FOR PAINTING STEEL COLUMN	JACKIE BOOTH / EMAIL: JACKIE.N.BOOTH@SHERWIN.COM / PHONE: 713.292.7098
SOLID SURFACE									
SS-1	SOLID SURFACE GLAZING SILL MATERIAL	WILSONART	-	9208CS WHITE STONE	-	AS INDICATED ON DRAWINGS	MITERED AND EASED EDGES; AS INDICATED ON DRAWINGS	SILL CONDITION AT LAB FRONTS, CORRIDOR GLAZING	JAMIE BORGER / EMAIL: JAMIE.BORGER@WILSONART.COM / PHONE: 971.266.4729
TRANSITION STRIP									
EJ-1	2" FLOOR EXPANSION JOINT COVER	INPRO	787NS SERIES RECESSED EXPANSION JOINT COVER	STAINLESS STEEL	BRUSHED	-	-	2" JOINT COVER AT LEVEL 2 CORRIDOR AS INDICATED ON PLAN	-
EJ-2	2" WALL EXPANSION JOINT COVER	INPRO	114 SERIES DRYWALL WALL EXPANSION JOINT COVER	OFF WHITE	-	-	-	2" JOINT COVER AT LEVEL 2 CORRIDOR AS INDICATED ON PLAN	-
TS-1	FLOOR TRANSITION	SCHLUTER	VINPRO-U	STAINLESS STEEL	BRUSHED	VPUL 50 ACGB AS REQUIRED	-	TYP. LVT/RF-1 TO SEALED CONCRETE TRANSITION	-
TS-2	DRYWALL J-MOLDING	FRY REGLET	JDM-625	ALUMINUM	CLEAR ANODIZED		-	TYP. INSIDE CORNER AND DRYWALL TERMINATION	-
TS-3	DRYWALL F-REVEAL	FRY REGLET	DRMF-50-50	ALUMINUM	CLEAR ANODIZED	1/2" REVEAL DEPTH x 1/2" REVEAL WIDTH	-	REVEAL AT SOLID SURFACE SILL; REFER TO A601 FOR ADDITIONAL INFORMATION	-
TS-4	DRYWALL CONTROL JOINT	FRY REGLET	DRM-50-50 2-PC	ALUMINUM	CLEAR ANODIZED	1/2" REVEAL DEPTH x 1/2" REVEAL WIDTH	-	REFER TO A4/A005 AND INTERIOR ELEVATIONS	-
WALL PROTECTION									
CG-1	CORNER GUARD	INPRO	SURFACE-APPLIED 2" WING CORNER GUARDS	STAINLESS STEEL	TYPE 430, 16-GA.	MOUNT 4' STANDARD HEIGHT CORNER GUARDS 6" ABOVE FINISH FLOOR	DIRECT ADHESIVE	AT ALL OUTSIDE CORNERS, TYPICAL	
WOOD									
WD-1	WOOD VENEER	PLAIN SLICED CHERRY, SLIP MATCHED	-	STAIN AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE	SATIN SHEEN	-	SOLID CORE WOOD DOORS AS SCHEDULED	PROVIDE DOOR FACES OF COMPATIBLE COLOR AND GRAIN WITHIN EACH SEPARATE ROOM	



SEALED CONCRETE TO LVT A2
12" = 1'-0"



SEALED CONCRETE TO RF-1 A1
12" = 1'-0"

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04/01/2025

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3940 N Elm Street
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UNT UNIVERSITY OF NORTH TEXAS

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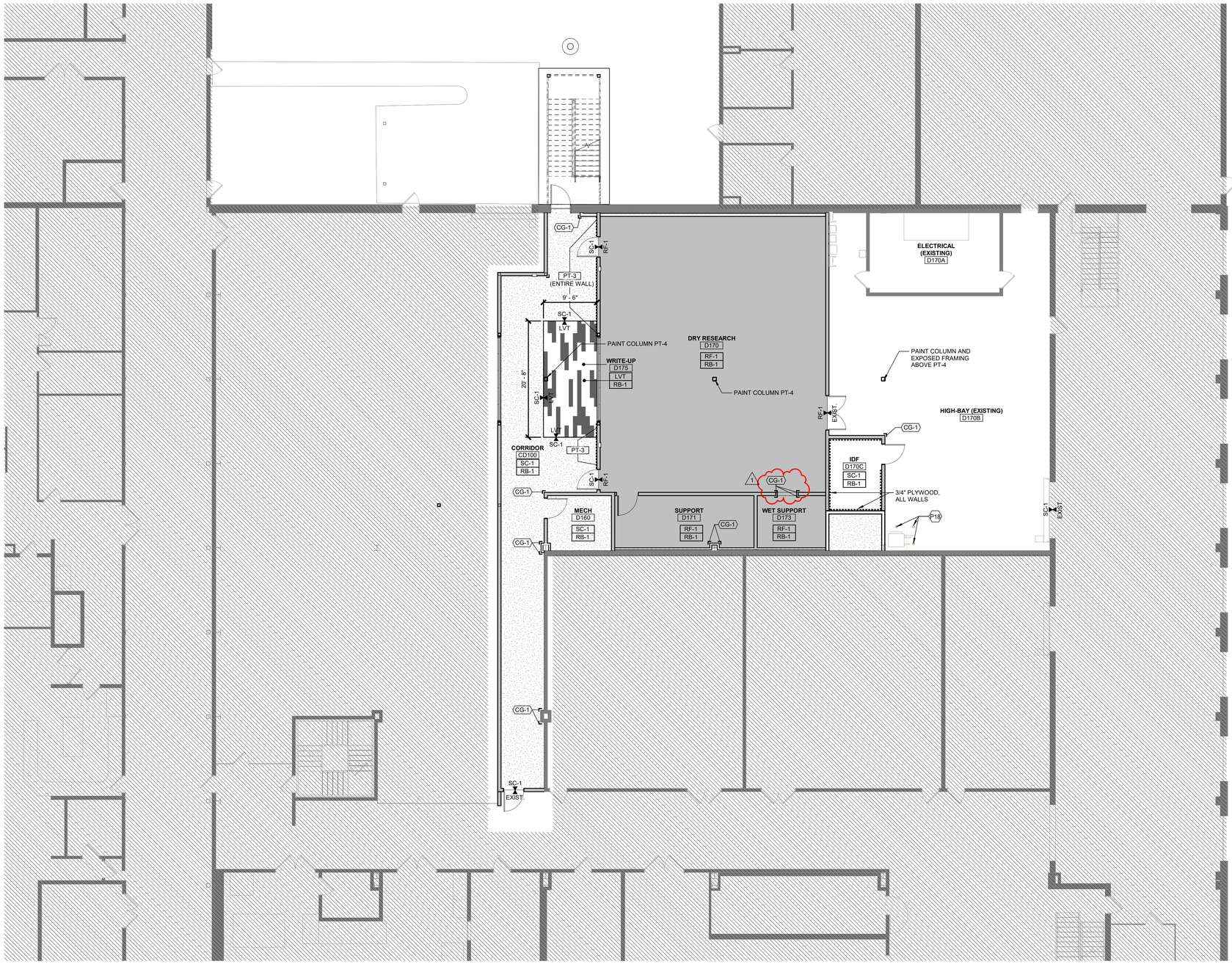
1	ADDENDUM 1	05/21/25

A700

INTERIOR FINISH SCHEDULES AND DETAILS

Treanor NO. HE0569.2402.00



FLOOR FINISH PLAN NOTES-GENERAL

A. REFER TO SHEET A700 FOR INTERIOR FINISH BASIS OF DESIGN LEGEND AND TRANSITION DETAILS.

B. PROVIDE FLOOR FINISH TRANSITIONS AT CENTER OF DOOR. PROVIDE THRESHOLDS WHERE FLOOR CHANGES OCCUR. REFER TO FLOOR TRANSITION DETAILS ON SHEET A700.

C. CONFIRM ORIENTATION OF DIRECTIONAL MATERIAL WITH ARCHITECT PRIOR TO ORDERING AND INSTALLATION.

D. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.

E. FINISH FLOORING CONTINUES UNDER COUNTERTOPS, KNEE SPACES, TOE KICKS, VANITIES, PLUMBING FIXTURES, REMOVABLE MILLWORK, FURNITURE, AND EQUIPMENT, ETC. U.N.O.

F. PROVIDE CONTROL JOINTS IN FLOOR TILE AND WALL TILE PER TCNA STANDARDS.SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW.

G. HATCH PATTERN(S) ARE FOR MATERIAL GRAPHIC REPRESENTATION ONLY AND ARE NOT INDICATIVE OF PATTERN, SIZE, ORIENTATION OR INSTALLATION METHOD OF ANY FINISH PRODUCT, U.N.O.

H. REF. PROJECT SPECIFICATIONS AND MANUFACTURER INSTALLATION SPECIFICATIONS FOR FLOOR FINISH SUBSTRATE PREP AND INSTALLATION REQUIREMENTS.

I. ALL WALLS TO BE PAINTED PT-1 U.N.O.

J. ALL DOOR FRAMES AND TRIM TO BE PAINTED PT-2 U.N.O.

K. REFER TO FLOOR PLANS AND PARTITION TYPES FOR MATERIAL SUBSTRATES.

L. REFER TO REFLECTED CEILING PLANS FOR CEILING MATERIAL INFORMATION AND FINISHES.

M. TYPICAL WALL BASE IS RB-1 U.N.O.

FINISH PLAN NOTES

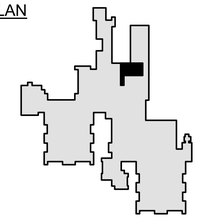
P18 BOLLARD; REFER TO B2/A501

FLOOR FINISH LEGEND

- **SC-1** SEALED CONCRETE
- **RF-1** RUBBER FLOORING
- **LVT (LVT-1, LVT-2)** LUXURY VINYL TILE — LVT-1, LVT-2
- NOT IN SCOPE
- **CORNER GUARD CG-1, TYP.**
- **SPECIALTY EQUIPMENT FINISH TAG**
- **FLOOR & WALL BASE TAG** — FLOOR FINISH / WALL BASE
- **OPEN AREA FLOOR TRANSITION TAG** — FLOOR FINISH / TRANSITION / FLOOR FINISH

FLOOR TRANSITIONS IDENTIFIED ONLY WHERE FLOOR MATERIAL CHANGES OCCUR WITHIN A ROOM OR SPACE - REFERENCE ROOM FINISH TAGS FOR FINISH CHANGES BETWEEN ROOMS.

KEY PLAN



FINISH PLAN - LEVEL 1 A1

1/8" = 1'-0"

0 4' 8' 16'

REGISTERED ARCHITECT JASON STATE OF TEXAS
04/01/2025

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A710

FINISH PLAN - LEVEL 1

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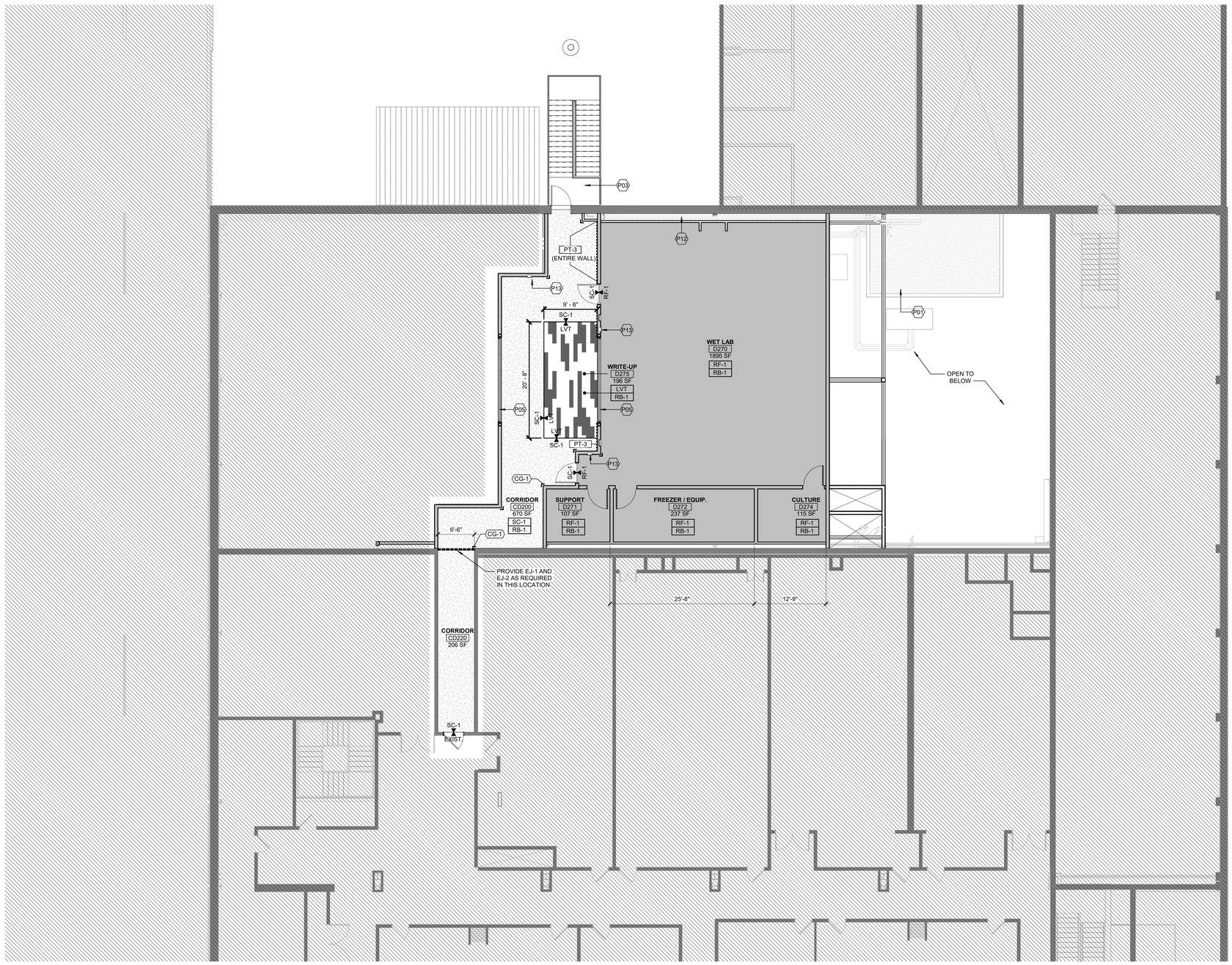

FLOOR FINISH PLAN NOTES- GENERAL

A. REFER TO SHEET A700 FOR INTERIOR FINISH BASIS OF DESIGN LEGEND AND TRANSITION DETAILS.

B. PROVIDE FLOOR FINISH TRANSITIONS AT CENTER OF DOOR. PROVIDE THRESHOLDS WHERE FLOOR CHANGES OCCUR. REFER TO FLOOR TRANSITION DETAILS ON SHEET A700.

C. CONFIRM ORIENTATION OF DIRECTIONAL MATERIAL WITH ARCHITECT PRIOR TO ORDERING AND INSTALLATION.

D. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.

E. FINISH FLOORING CONTINUES UNDER COUNTERTOPS, KNEE SPACES, TOE KICKS, VANITIES, PLUMBING FIXTURES, REMOVABLE MILLWORK, FURNITURE, AND EQUIPMENT, ETC. U.N.O.

F. PROVIDE CONTROL JOINTS IN FLOOR TILE AND WALL TILE PER TCNA STANDARDS.SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW.

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H. REF. PROJECT SPECIFICATIONS AND MANUFACTURER INSTALLATION SPECIFICATIONS FOR FLOOR FINISH SUBSTRATE PREP AND INSTALLATION REQUIREMENTS.

I. ALL WALLS TO BE PAINTED PT-1 U.N.O.

J. ALL DOOR FRAMES AND TRIM TO BE PAINTED PT-2 U.N.O.

K. REFER TO FLOOR PLANS AND PARTITION TYPES FOR MATERIAL SUBSTRATES.

L. REFER TO REFLECTED CEILING PLANS FOR CEILING MATERIAL INFORMATION AND FINISHES.

M. TYPICAL WALL BASE IS RB-1 U.N.O.

1 FINISH PLAN NOTES

P01 EXISTING ELECTRICAL ROOM AND EXISTING EQUIPMENT TO REMAIN. REFER TO MECHANICAL FOR REROUTING OF DUCTWORK AND EQUIPMENT OUTSIDE OF ELECTRICAL ROOM.

P03 PREFABRICATED MODULAR STAIR SYSTEM (DELEGATED DESIGN BY OTHERS). BASIS OF DESIGN "UPSIDE INNOVATIONS APEX SYSTEM."

P05 INTERIOR GLAZED ALUMINUM STOREFRONT AS SCHEDULED; REFER TO A601 FOR ADDITIONAL INFORMATION

P12 MODIFY MECHANICAL PIPE ROUTING AS NECESSARY IN THIS LOCATION. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.

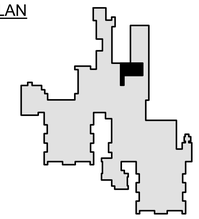
P13 FULLY-RECESSED FIRE EXTINGUISHER CABINET (FEC)

FLOOR FINISH LEGEND

- **SC-1** SEALED CONCRETE
- **RF-1** RUBBER FLOORING
- **LVT (LVT-1, LVT-2)** LUXURY VINYL TILE — LVT-1, LVT-2
- NOT IN SCOPE
- **CORNER GUARD CG-1, TYP.**
- **SPECIALTY EQUIPMENT FINISH TAG**
- **FLOOR & WALL BASE TAG** XX FLOOR FINISH / XX WALL BASE
- **OPEN AREA FLOOR TRANSITION TAG** TAG FLOOR FINISH / TAG TRANSITION / TAG FLOOR FINISH

FLOOR TRANSITIONS IDENTIFIED ONLY WHERE FLOOR MATERIAL CHANGES OCCUR WITHIN A ROOM OR SPACE - REFERENCE ROOM FINISH TAGS FOR FINISH CHANGES BETWEEN ROOMS.

KEY PLAN



FINISH PLAN - LEVEL 2 A1

1/8" = 1'-0"

0 4' 8' 16'

REGISTERED ARCHITECT JASON HARRIS STATE OF TEXAS
04/01/2025

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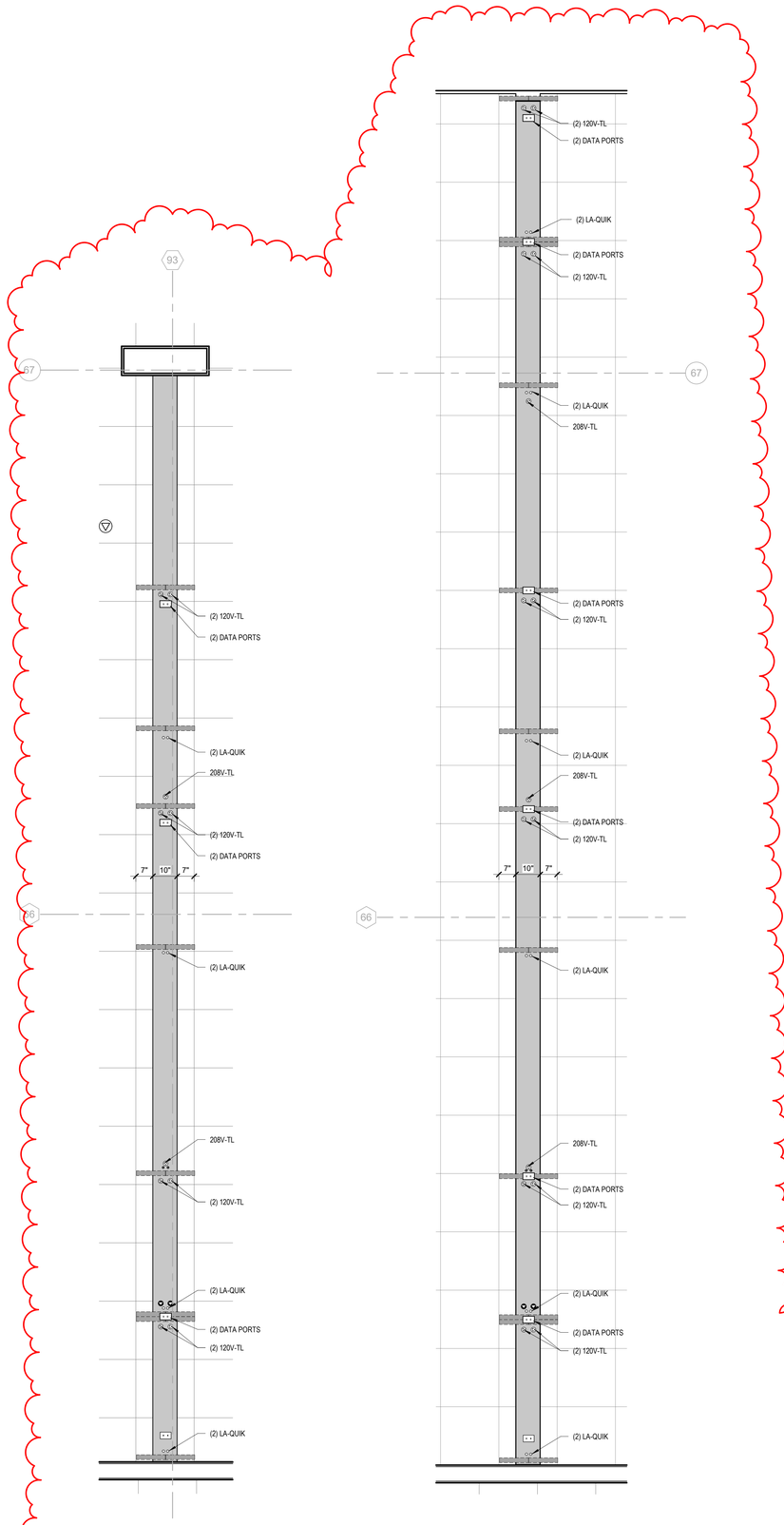
FINISH PLAN - LEVEL 2

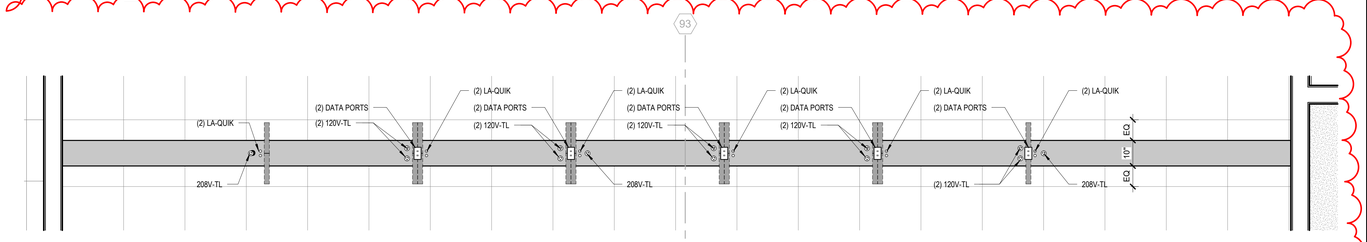
Treanor NO. HE0569.2402.00



LINEAR SERVICE PANEL 03 A6
1/2" = 1'-0"

LINEAR SERVICE PANEL 02 A5
1/2" = 1'-0"

SECTION - LINEAR SERVICE PANEL, TYPICAL B1
3" = 1'-0"



LINEAR SERVICE PANEL 01 A1
1/2" = 1'-0"

REGISTERED ARCHITECT
JASON
STATE OF TEXAS
04/01/2025

TREANOR
2554 Elm Street, Suite 200
Dallas, TX 75226
Phone: 214.810.1016
www.treanor.design

UNIVERSITY OF NORTH TEXAS
DISCOVERY PARK D170 LAB FIT-OUT

3940 N Elm Street
Denton, TX 76207

UNT UNIVERSITY OF NORTH TEXAS

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REVISIONS

NO	DESCRIPTION	DATE
1	ADDENDUM 1	05/21/25

A805

LINEAR SERVICE PANEL DETAILS

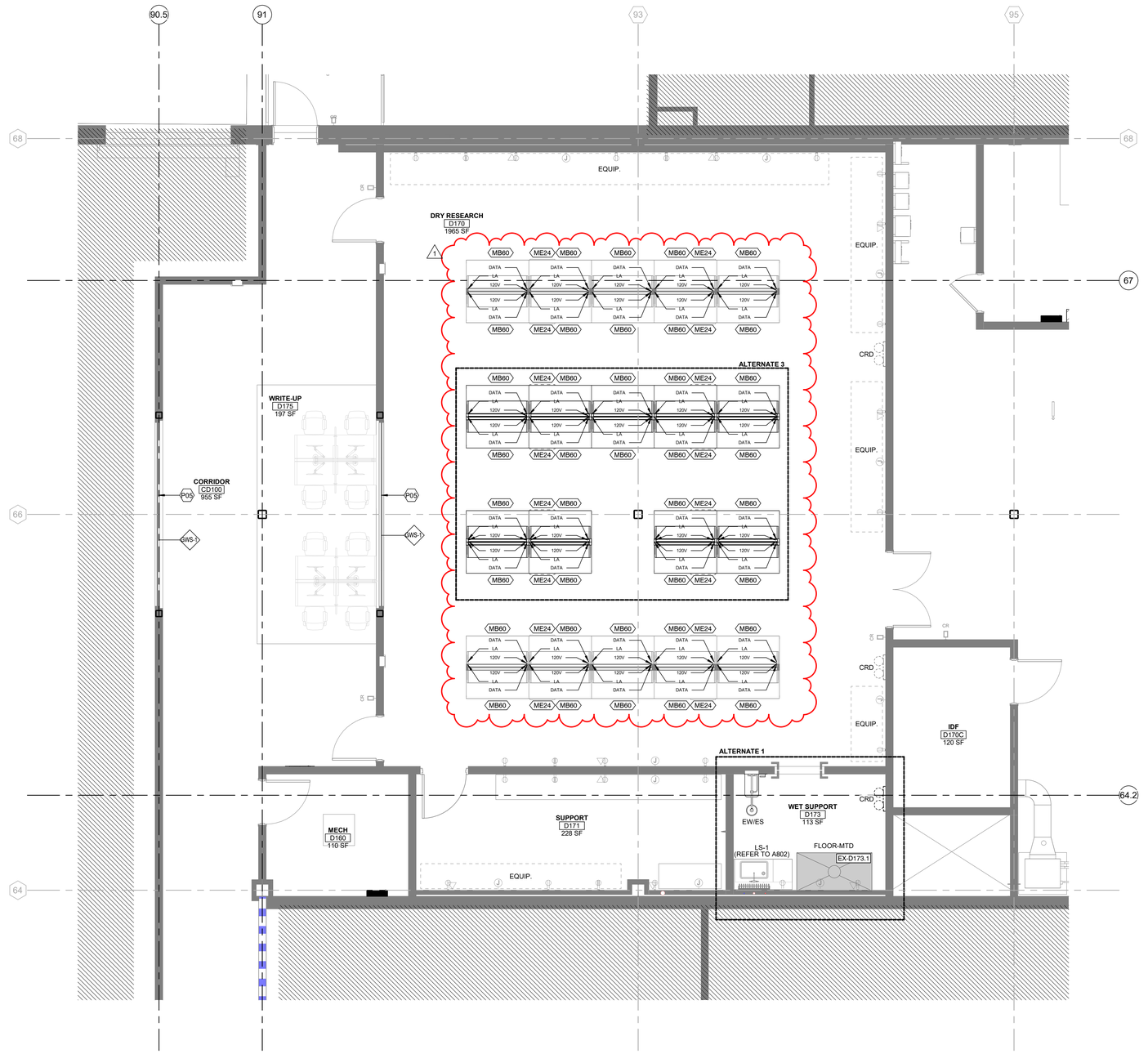
Treanor NO. HE0569.2402.00

CHEMICAL FUME HOOD SCHEDULE - ALTERNATES

MARK	ROOM NO.	ROOM NAME	FUME HOOD LENGTH	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	CEILING ENCLOSURE	PLUMBING LA	PLUMBING LV	PLUMBING CS	PLUMBING W	COMMENTS
EX-D173.1	D173	WET SUPPORT	5'-0"	MOTT MANUFACTURING	PRO SERIES FLOOR MOUNTED	Yes	Yes				FLOOR MOUNTED HOOD

RESEARCH LABORATORY EQUIPMENT

MARK	ROOM NO.	ROOM NAME	DESCRIPTION	MANUFACTURER	MODEL	SOURCE	FURNISH	INSTALL	DIMENSION DEPTH (D)	DIMENSION WIDTH (W)	DIMENSION HEIGHT (H)	PLUMBING CW	PLUMBING HW	PLUMBING LW	PLUMBING LW TYPE	PLUMBING FD	PLUMBING FS	PLUMBING LA	PLUMBING LV	PLUMBING SG	ELECTRICAL VOLTS (V)	ELECTRICAL AMPS (A)	ELECTRICAL PHASE (PH)	ELECTRICAL DED. CIRC.	ELECTRICAL STANDBY	ELECTRICAL NEMA PLUG	OTHER STEAM	OTHER PCW	EXHAUST	COMMENTS



LABORATORY EQUIPMENT NOTES

1. REFER TO A801 FOR MOUNTING HEIGHT, TYPICAL DIMENSIONS, AND TYPICAL LOCATIONS OF LAB CASEWORK, SERVICES, AND EQUIPMENT.
2. REFER TO A802 FOR LAB SINK TYPES AND TYPICAL CEILING OVERHEAD SERVICE PANEL CONFIGURATION. COORDINATE WITH MEP FOR CONNECTIONS.
3. ALL LABORATORY CASEWORK TO BE STEEL U.N.O.; CASEWORK TO BE LOCKABLE.
4. ALL ADJUSTABLE SHELVING TO BE STEEL U.N.O.
5. ALL COUNTERTOPS, BACKSPLASHES AND SIDESPLASHES TO BE 4" HIGH EPOXY RESIN UNLESS OTHERWISE NOTED. PROVIDE BACK AND SIDE SPLASH AT WALL AND ADJOINING CASEWORK.
6. ALL FIXED CASEWORK TO HAVE 4" RESILIENT BASE AT TOE KICK.
7. TYPICAL FIXED AND MOVABLE BENCH COUNTERTOP HEIGHT 36" A.F.F. UNLESS INDICATED AS ACCESSIBLE HEIGHT. TYPICAL COUNTERTOP DEPTH 30".
8. PROVIDE MIN 16 GA. STRAP BLOCKING WITH ADDITIONAL BLOCKING AS REQUIRED TO ACCOMMODATE ATTACHMENT FOR ALL WALL MOUNTED CASEWORK. COORDINATE BLOCKING PLACEMENT WITH ANCHORING.
9. FINISHED PANELS SHALL BE PROVIDED AT EXPOSED ENDS AND BACKS OF CASEWORK AND FUME HOODS. PROVIDE FILLER PANELS WHERE REQUIRED FOR CLOSING BETWEEN BASE CABINETS AND WALLS. USE SAME MATERIAL AND FINISH AS CABINETS FOR FILLER PANELS.
10. TALL CASEWORK SHALL BE SECURED TO WALL TO PREVENT TIPPING.
11. CENTER DRYING RACKS WITH DRIP-THROUGH ABOUT CENTERLINE OF SINKS.
12. ALL DRYING RACKS TO BE STAINLESS STEEL U.N.O.
13. WALL MOUNTED OPEN SHELVING UNITS ABOVE COUNTERTOP: LOWER SHELF TO HAVE 3/4" RETAINING LIP. UPPER SHELVES DO NOT HAVE 3/4" RETAINING LIP. REFER TO A801.
14. SHELVES AT MOVABLE BENCHES AND WORKSTATIONS ARE NOT FOR STORAGE OF CHEMICALS OR HAZARDOUS MATERIAL.
15. PROVIDE REMOVABLE FINISHED BACK PANEL AT KNEE SPACES TYPICAL.
16. MOVABLE BENCHES AND TABLES HAVE GLIDES, U.N.O.
17. DASHED AREAS NOTED "EQUIP." ARE DESIGNATED O.F.O.I. EQUIPMENT AREAS.
18. ELECTRICAL DEVICES SHALL BE PROVIDED UNDER DIVISION 26. DEVICES SHOWN ON THE LABORATORY DRAWINGS ARE FOR REFERENCE ONLY.
19. DEVICES SHOWN AT FUME HOODS SHALL BE PROVIDED BY THE EQUIPMENT MANUFACTURER.
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21. ALL PENETRATIONS THROUGH COUNTERTOP SHALL BE SEALED WITH SEALANT. ALL PENETRATIONS IN LABORATORY FLOORS, WALLS AND CEILING SHALL BE FULLY SEALED. REFER TO A802.
22. BACKS OF COUNTERTOPS, SIDE SPLASHES AND BACK SPLASHES SHALL BE SEALED TO THE WALL WITH SEALANT. REFER TO A802.
23. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
24. SAFETY SHOWERS AND EYEWASH UNITS (INCLUDING COMBINATION RECESSED UNITS) SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 12.
25. LABORATORY SERVICE FITTINGS SHALL BE FURNISHED UNDER DIVISION 12 AND INSTALLED UNDER DIVISION 22. SERVICES SHOWN ON THE LABORATORY DRAWINGS ARE FOR LOCATION ONLY.
26. CORROSIVE STORAGE CABINETS LOCATED UNDER FUME HOODS SHALL BE VENTED. VENT PIPING TO EXTEND 4" ABOVE FUME HOOD WORK SURFACE, BEHIND BAFFLE. VACUUM CABINET UNDER FUME HOOD OR ADJACENT TO SHALL BE VENTED INTO THE FUME HOOD.
27. INSTALLATION OF FUME HOOD BASE CABINETS MUST BE INSPECTED BY EHS FOR FINAL APPROVAL
28. CONTRACTOR TO MAKE FINAL UTILITY CONNECTIONS TO EQUIPMENT.

WIDTH / TYPE I.D. / HEIGHT OPTIONS

BA36A — CASEWORK TAG; REFER TO SA8.00 FOR ADDITIONAL INFORMATION

LS-1 (REFER TO A802) — LAB SINK TYPE, TYP.; REFER TO A802 FOR ADDITIONAL INFORMATION

EX-000 — EXHAUST EQUIPMENT TAG; REFER TO EXHAUST EQUIPMENT SCHEDULE

CENTRIFUGAL FUME HOOD

BIOLOGICAL SAFETY CABINET WITH ADJUSTABLE STAND

THREE JOINT, CEILING-MOUNTED SNORKEL EXHAUST; REFER TO EXHAUST EQUIPMENT SCHEDULE

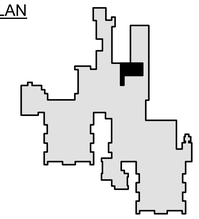
LAB AIR / VACUUM CONNECTION

CRS / CRD — CYLINDER RESTRAINT (SINGLE / DOUBLE)

CYLINDER RESTRAINT RACK

RECESSED COMBINATION EYEWASH / EMERGENCY SHOWER

KEY PLAN



LAB EQUIPMENT PLAN - LEVEL 1 (ALTERNATES)

1/4" = 1'-0"

A1

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04/01/2025

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A811A

LAB EQUIPMENT PLAN AND SCHEDULE - LEVEL 1 (ALTERNATES)

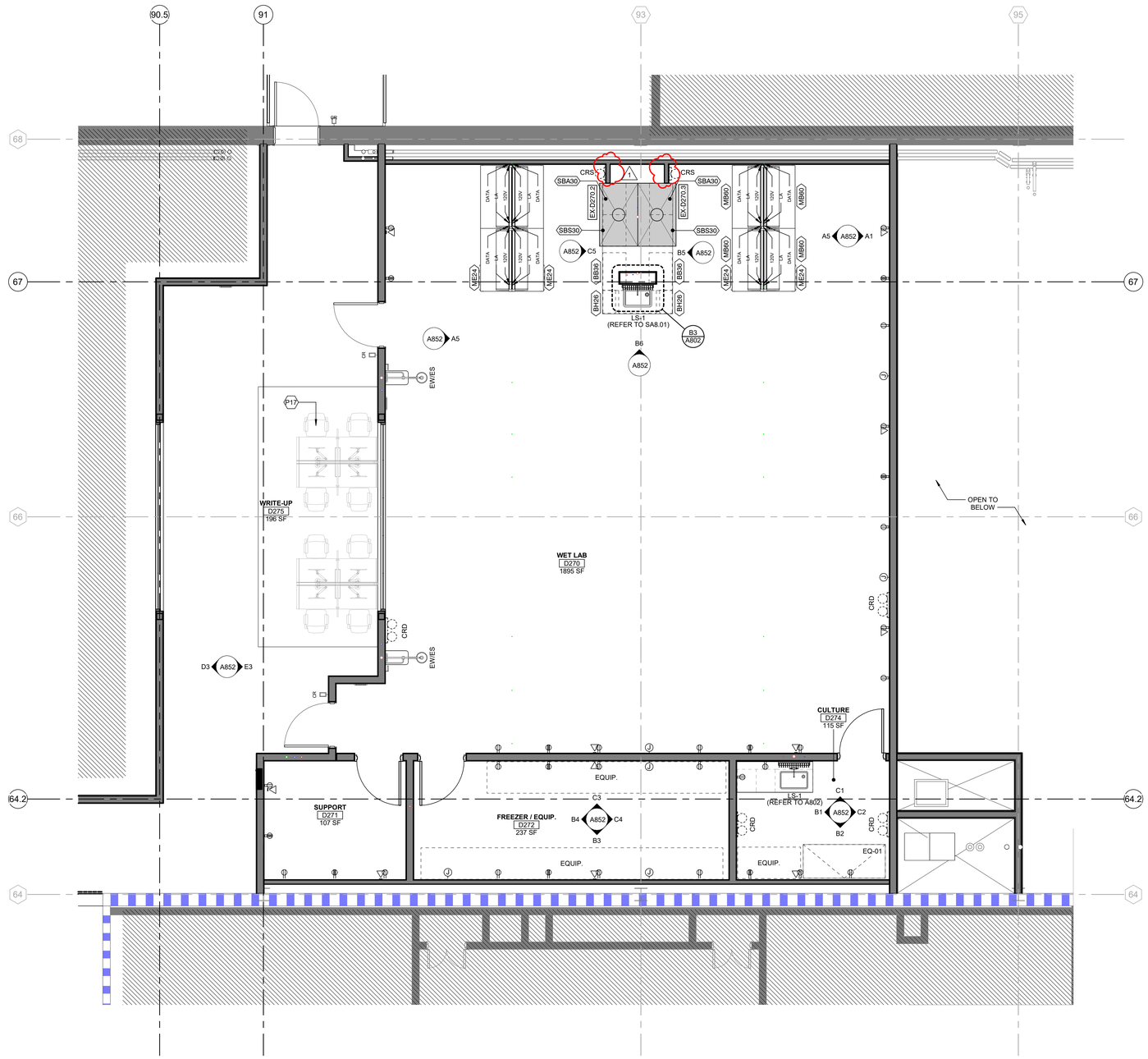
Treanor NO. HE0569.2402.00

CHEMICAL FUME HOOD SCHEDULE

MARK	ROOM NO.	ROOM NAME	FUME HOOD LENGTH	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	CEILING ENCLOSURE	PLUMBING LA	PLUMBING LV	PLUMBING CS	PLUMBING W	COMMENTS
EX-D270.2	D270	WET LAB	5'-0"	MOTT MANUFACTURING	RFV2	Yes	Yes		Yes	Yes	
EX-D270.3	D270	WET LAB	5'-0"	MOTT MANUFACTURING	RFV2	Yes	Yes		Yes	Yes	

RESEARCH LABORATORY EQUIPMENT

MARK	ROOM NO.	ROOM NAME	DESCRIPTION	MANUFACTURER	MODEL	SOURCE	FURNISH	INSTALL	DIMENSION DEPTH (D)	DIMENSION WIDTH (W)	DIMENSION HEIGHT (H)	PLUMBING CW	PLUMBING HW	PLUMBING LW	PLUMBING LW TYPE	PLUMBING FD	PLUMBING FS	PLUMBING LA	PLUMBING LV	PLUMBING SG	ELECTRICAL VOLTS (V)	ELECTRICAL AMPS (A)	ELECTRICAL PHASE (PH)	ELECTRICAL DED. CIRC.	ELECTRICAL STANDBY	ELECTRICAL NEMA PLUG	OTHER STEAM	OTHER PCW	EXHAUST	COMMENTS
EQ-01	D274	CULTURE	6' BSC - CLASS II A2 (RECIRC)	LABCONCO	PURIFIER LOGIC*	NEW	OWNER	OWNER																						



LAB EQUIPMENT PLAN - LEVEL 2 (BASE BID) A1

1/4" = 1'-0"

0 2' 4' 8'

LABORATORY EQUIPMENT NOTES

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WIDTH / TYPE I.D. — HEIGHT OPTIONS
BA36A — CASEWORK TAG; REFER TO SA8.00 FOR ADDITIONAL INFORMATION

LS-1 (REFER TO A802) — LAB SINK TYPE, TYP.; REFER TO A802 FOR ADDITIONAL INFORMATION

EX-000 — EXHAUST EQUIPMENT TAG; REFER TO EXHAUST EQUIPMENT SCHEDULE

CENTRIFUGAL FUME HOOD

BIOLOGICAL SAFETY CABINET WITH ADJUSTABLE STAND

THREE JOINT, CEILING-MOUNTED SNORKEL EXHAUST; REFER TO EXHAUST EQUIPMENT SCHEDULE

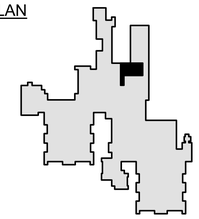
LAB AIR / VACUUM CONNECTION

CYLINDER RESTRAINT (SINGLE / DOUBLE)
CRS CRD

CYLINDER RESTRAINT RACK

RECESSED COMBINATION EYEWASH / EMERGENCY SHOWER

KEY PLAN



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REVISIONS

NO	DESCRIPTION	DATE
1	ADDENDUM 1	05/21/25

A812

LAB EQUIPMENT PLAN AND SCHEDULE - LEVEL 2 (BASE BID)

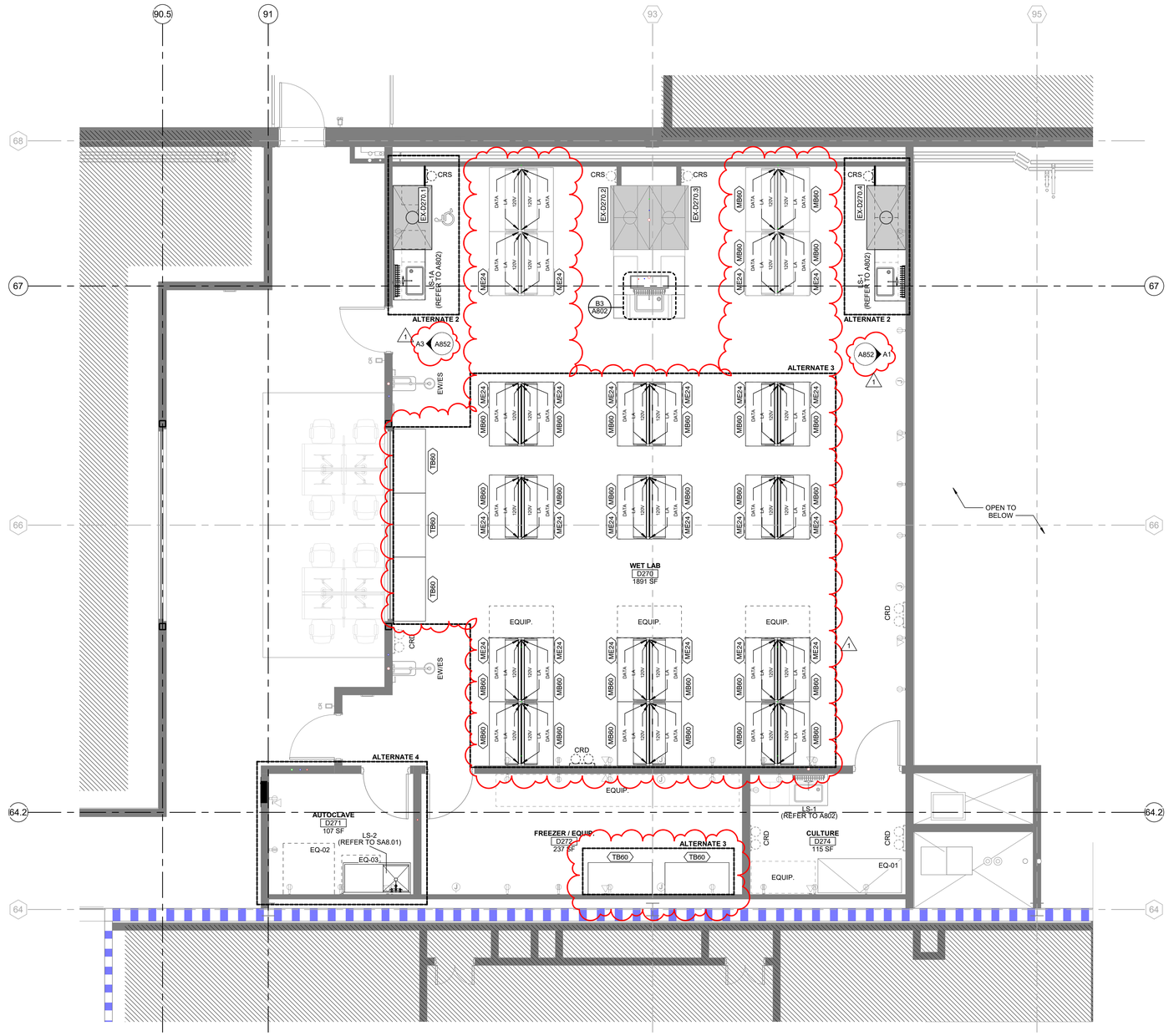
Treanor NO. HE0569.2402.00

CHEMICAL FUME HOOD SCHEDULE - ALTERNATES

MARK	ROOM NO.	ROOM NAME	FUME HOOD LENGTH	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	CEILING ENCLOSURE	PLUMBING LA	PLUMBING LV	PLUMBING CS	PLUMBING W	COMMENTS
EX-D270.1	D270	WET LAB	5'-0"	MOTT MANUFACTURING	RFV2	Yes	Yes		Yes	Yes	ACCESSIBLE
EX-D270.2	D270	WET LAB	5'-0"	MOTT MANUFACTURING	RFV2	Yes	Yes		Yes	Yes	
EX-D270.3	D270	WET LAB	5'-0"	MOTT MANUFACTURING	RFV2	Yes	Yes		Yes	Yes	
EX-D270.4	D270	WET LAB	5'-0"	MOTT MANUFACTURING	RFV2	Yes	Yes		Yes	Yes	

RESEARCH LABORATORY EQUIPMENT

MARK	ROOM NO.	ROOM NAME	DESCRIPTION	MANUFACTURER	MODEL	SOURCE	FURNISH	INSTALL	DIMENSION DEPTH (D)	DIMENSION WIDTH (W)	DIMENSION HEIGHT (H)	PLUMBING CW	PLUMBING HW	PLUMBING LW	PLUMBING LW TYPE	PLUMBING FD	PLUMBING FS	PLUMBING LA	PLUMBING LV	PLUMBING SG	ELECTRICAL VOLTS (V)	ELECTRICAL AMPS (A)	ELECTRICAL PHASE (PH)	ELECTRICAL DED. CIRC.	ELECTRICAL STANDBY	ELECTRICAL NEMA PLUG	OTHER STEAM	OTHER PCW	EXHAUST	COMMENTS
EQ-01	D274	CULTURE	6' BSC - CLASS II A2 (RECIRC)	LABCONCO	PURIFIER LOGIC+	NEW	OWNER	OWNER																						
EQ-02	D271	AUTOCLAVE	SMALL STERILIZER	STERIS AMSCO	LS 250	NEW	CONTRACTOR	CONTRACTOR																			No	No		
EQ-03	D271	AUTOCLAVE	GLASSWARE WASHER	STERIS AMSCO	RELIANCE 100	NEW	CONTRACTOR	CONTRACTOR																			No	No		



LAB EQUIPMENT PLAN - LEVEL 2 (ALTERNATES) A1

1/4" = 1'-0"

0 2' 4' 8'

LABORATORY EQUIPMENT NOTES

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WIDTH / TYPE I.D. / HEIGHT OPTIONS — BA36A — CASEWORK TAG; REFER TO SA8.00 FOR ADDITIONAL INFORMATION

LS-1 (REFER TO A802) — LAB SINK TYPE, TYP.; REFER TO A802 FOR ADDITIONAL INFORMATION

EX-000 — EXHAUST EQUIPMENT TAG; REFER TO EXHAUST EQUIPMENT SCHEDULE

CENTRIFUGAL FUME HOOD

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CRS CRD — CYLINDER RESTRAINT (SINGLE / DOUBLE)

CYLINDER RESTRAINT RACK

RECESSED COMBINATION EYEWASH / EMERGENCY SHOWER

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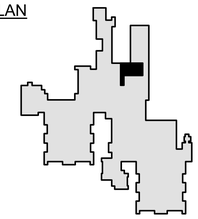

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NO	DESCRIPTION	DATE
1	ADDENDUM 1	05/21/25

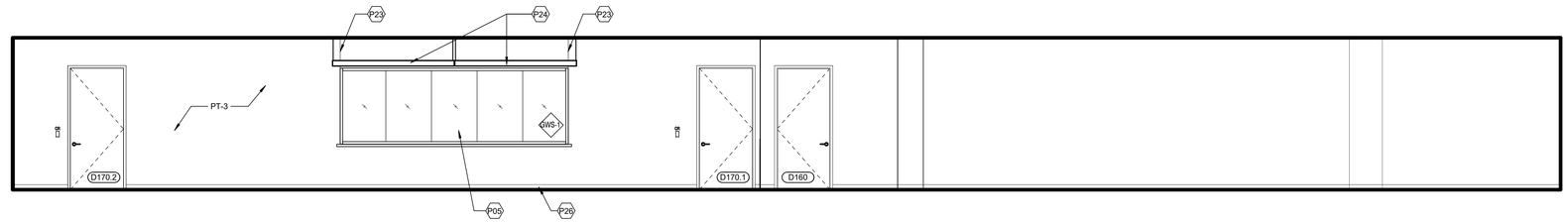
A812A

LAB EQUIPMENT PLAN AND SCHEDULE - LEVEL 2 (ALTERNATES)

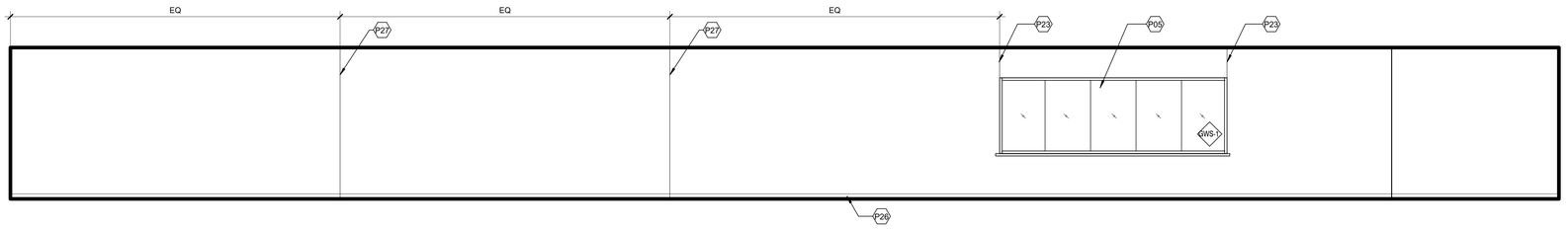
Treanor NO. HE0569.2402.00

KEYNOTES

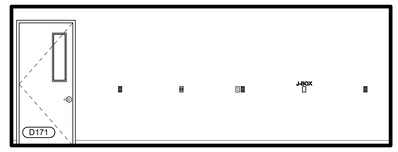
P05	INTERIOR GLAZED ALUMINUM STOREFRONT AS SCHEDULED; REFER TO A601 FOR ADDITIONAL INFORMATION
P13	FULLY-RECESSED FIRE EXTINGUISHER CABINET (FEC)
P23	PROVIDE DRYWALL CONTROL JOINTS AT CORRIDOR SIDE OF GLAZED OPENING
P24	LINEAR PENDANT LIGHT FIXTURE; CENTER ON GLAZED OPENING.
P26	RUBBER BASE RB-1, TYPICAL. REFER TO A700 FOR ADDITIONAL INFORMATION.
P27	CENTER (2) DRYWALL CONTROL JOINTS BETWEEN GLAZED OPENING AND END OF LEVEL 1 CORRIDOR



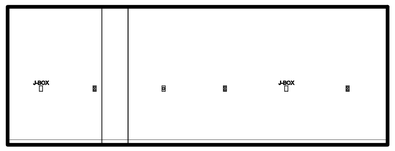
LEVEL 1 CORRIDOR INTERIOR ELEVATION - EAST E1
1/4" = 1'-0"



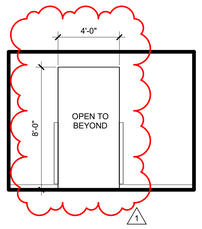
LEVEL 1 CORRIDOR INTERIOR ELEVATION - WEST D3
1/4" = 1'-0"



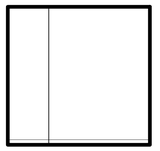
SUPPORT - NORTH D1
1/4" = 1'-0"



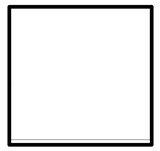
SUPPORT - SOUTH C5
1/4" = 1'-0"



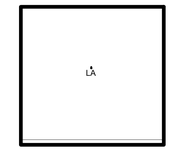
WET SUPPORT - NORTH C4
1/4" = 1'-0"



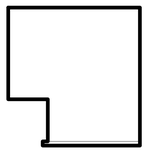
WET SUPPORT - EAST C3
1/4" = 1'-0"



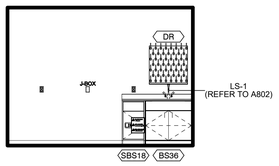
SUPPORT - WEST C2
1/4" = 1'-0"



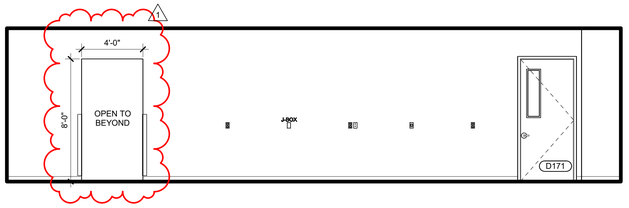
SUPPORT - EAST C1
1/4" = 1'-0"



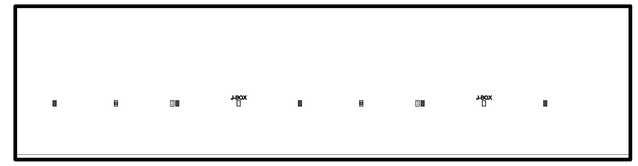
WET SUPPORT - WEST D6
1/4" = 1'-0"



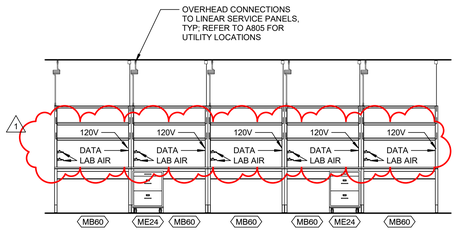
WET SUPPORT - SOUTH D5
1/4" = 1'-0"



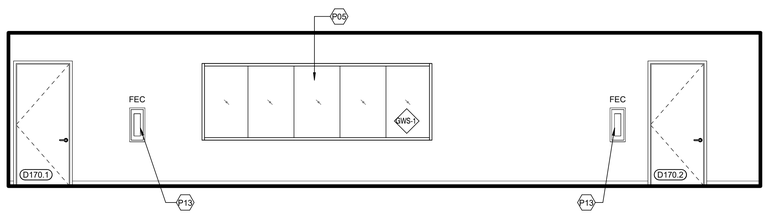
DRY RESEARCH D170 - SOUTH B3
1/4" = 1'-0"



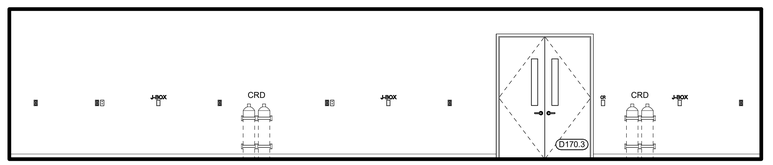
DRY RESEARCH D170 - NORTH B1
1/4" = 1'-0"



TYP. LAB BENCH CONFIGURATION - LEVEL 1 A4
1/4" = 1'-0"



DRY RESEARCH D170 - WEST A3
1/4" = 1'-0"



DRY RESEARCH D170 - EAST A1
1/4" = 1'-0"

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UNIVERSITY OF NORTH TEXAS
DISCOVERY PARK D170 LAB FIT-OUT

3940 N Elm Street
Denton, TX 76207

UNT UNIVERSITY OF NORTH TEXAS

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REVISIONS

NO	DESCRIPTION	DATE
1	ADDENDUM 1	05/21/25

A851

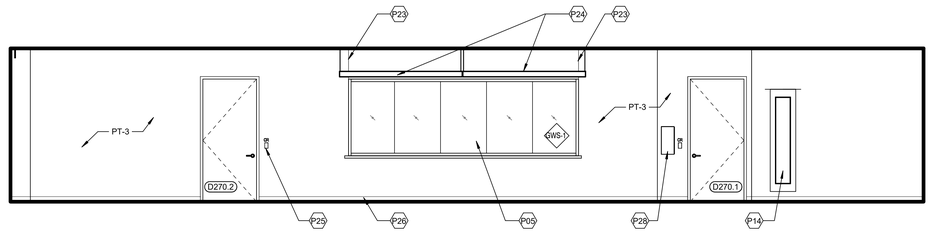
INTERIOR ELEVATIONS - LEVEL 1

Treanor NO. HE0569.2402.00

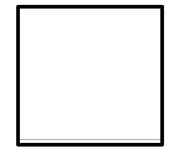
Autodesk Docs://HE0569.2402.00 - UNT DP D170 FitOut/HE0569.2402.00_UNT DP D170 Fit-Out_R24_Arch.rvt
5/22/2025 7:42:48 PM

KEYNOTES

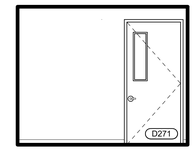
P05	INTERIOR GLAZED ALUMINUM STOREFRONT AS SCHEDULED; REFER TO A601 FOR ADDITIONAL INFORMATION
P14	WALL-MOUNTED ELECTRICAL PANEL. REFER TO ELECTRICAL FOR ADDITIONAL INFORMATION.
P22	2" EXPANSION JOINT. INSTALL FLOOR AND WALL EXPANSION JOINT COVERS AS SPECIFIED AND DETAILED ON SHEET A501.
P23	PROVIDE DRYWALL CONTROL JOINTS AT CORRIDOR SIDE OF GLAZED OPENING
P24	LINEAR PENDANT LIGHT FIXTURE; CENTER ON GLAZED OPENING.
P25	ROUGH-IN LOCATION FOR CARD READER, TYP. REFER TO C1/A501.
P26	RUBBER BASE RB-1, TYPICAL. REFER TO A700 FOR ADDITIONAL INFORMATION.
P28	ELECTRICAL DISCONNECT; REFER TO ELECTRICAL



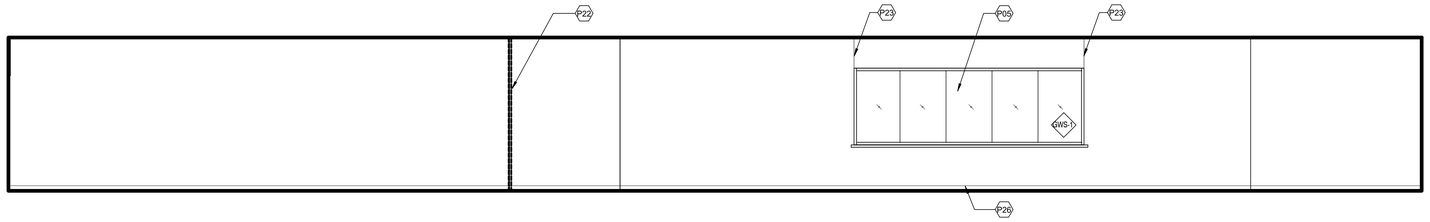
LEVEL 2 CORRIDOR INTERIOR ELEVATION - EAST E3
1/4" = 1'-0"



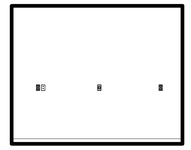
D271 - EAST E2
1/4" = 1'-0"



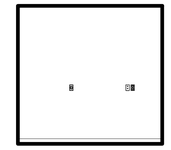
D271 - NORTH E1
1/4" = 1'-0"



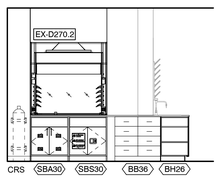
LEVEL 2 CORRIDOR INTERIOR ELEVATION - WEST D3
1/4" = 1'-0"



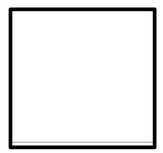
D171 - SOUTH D2
1/4" = 1'-0"



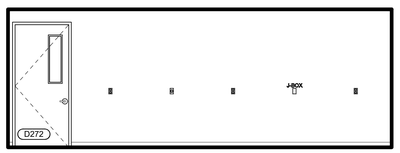
D271 - WEST D1
1/4" = 1'-0"



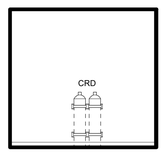
ELEVATION - LEVEL 2 FUME HOOD (EAST) C5
1/4" = 1'-0"



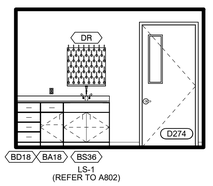
FREEZER - EAST C4
1/4" = 1'-0"



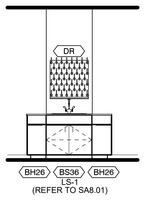
FREEZER - NORTH C3
1/4" = 1'-0"



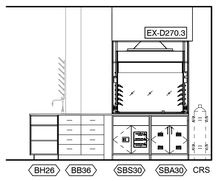
CULTURE - EAST C2
1/4" = 1'-0"



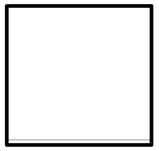
CULTURE - NORTH C1
1/4" = 1'-0"



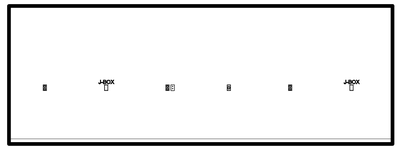
D270 - PENINSULA SINK B6
1/4" = 1'-0"



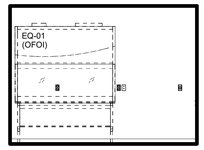
ELEVATION - LEVEL 2 FUME HOOD (WEST) B5
1/4" = 1'-0"



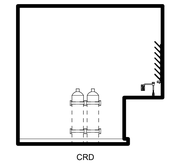
FREEZER - WEST B4
1/4" = 1'-0"



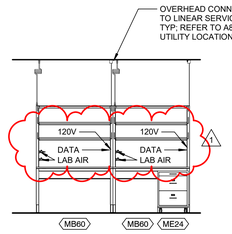
FREEZER - SOUTH B3
1/4" = 1'-0"



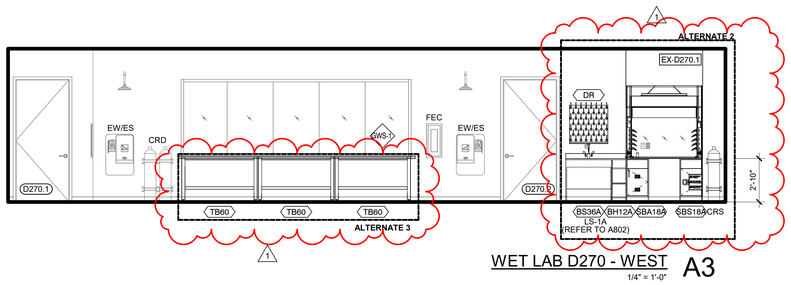
CULTURE - SOUTH B2
1/4" = 1'-0"



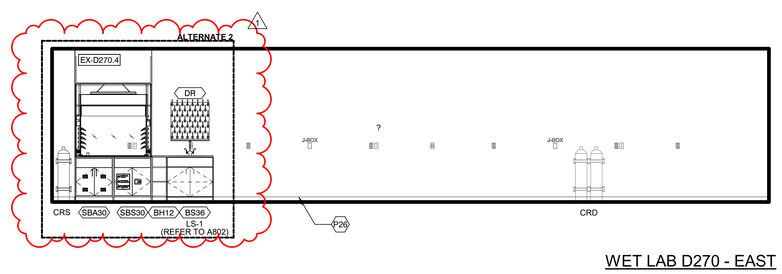
CULTURE - WEST B1
1/4" = 1'-0"



TYP. LAB BENCH CONFIGURATION - LEVEL 2 A5
1/4" = 1'-0"



WET LAB D270 - WEST A3
1/4" = 1'-0"



WET LAB D270 - EAST A1
1/4" = 1'-0"

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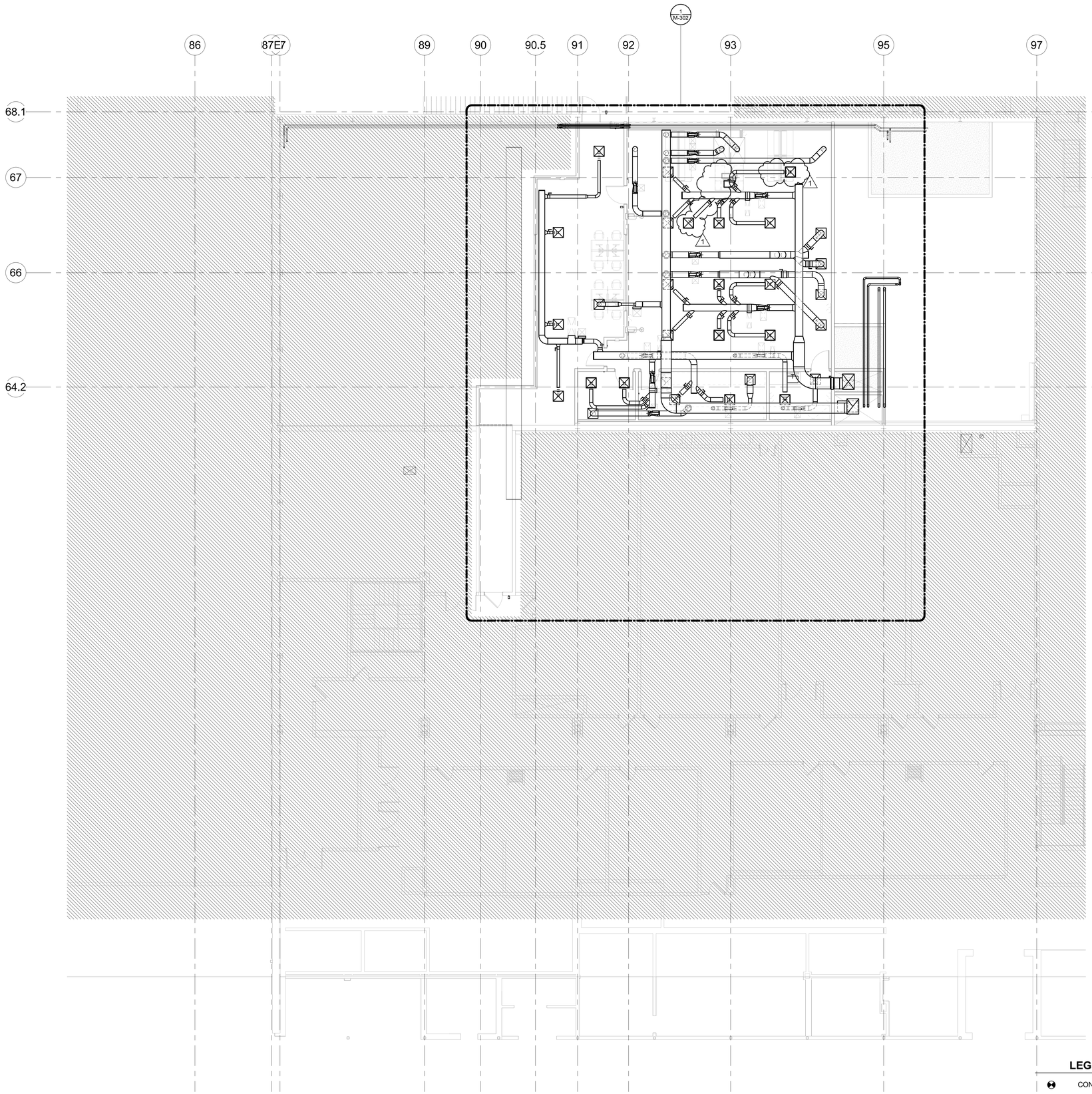
REVISIONS

NO	DESCRIPTION	DATE
1	ADDENDUM 1	05/21/25

A852

INTERIOR ELEVATIONS - LEVEL 2

Treanor NO. HE0569.2402.00



GENERAL NOTES

A. CONTRACTOR SHALL PROVIDE CLEARANCE IN FRONT AND AT SIDES OF TERMINAL BOX UNIT CONTROL PANEL AND J-BOX AS REQUIRED BY N.E.C. (36 INCHES).
B. PROVIDE DUCTWORK TRANSITIONS AS REQUIRED AT TERMINAL BOX INLET AND DISCHARGE CONNECTIONS.
C. PROVIDE TURNING VANES IN ALL RECTANGULAR DUCT ELBOWS.
D. PROVIDE ACCESS DOORS IN DUCTWORK AT FIRE DAMPERS AND FIRE/SMOKE DAMPERS. IDENTIFY ACCESS DOORS IN ACCORDANCE WITH SPECIFICATIONS.
E. INSULATE EXTERIOR OF ALL SUPPLY AIR DUCTWORK AND THE TOP OF ALL SUPPLY AIR DIFFUSERS.
F. PIPING AND DUCTWORK ARE NOT PERMITTED IN ELECTRICAL ROOMS, ELEVATOR MACHINE ROOMS, AND COMMUNICATION ROOMS.
G. PROVIDE YOUNG REGULATORS FOR ALL DAMPERS LOCATED ABOVE HARD OR INACCESSIBLE CEILINGS. YOUNG REGULATORS SHALL BE PROVIDED WITH SOLID SHAFT CONNECTION; CABLE CONNECTION TO REGULATOR WILL NOT BE ACCEPTED.
H. INSULATE ALL HOT WATER PIPING.
I. INSULATE HOT WATER COIL CASING AT EACH TERMINAL UNIT.
J. COORDINATE PIPING WITH CABLE TRAY INSTALLATION IN ALL SPACES. PIPING SHALL NOT INTERFERE WITH ACCESS TO CABLE TRAY.
K. PROVIDE REDUCERS IN PIPING AT COIL CONNECTIONS AS REQUIRED. TYPICAL AT ALL TERMINAL UNITS.
L. RUN OUTS TO TERMINAL UNITS ARE 3/4" UNLESS OTHERWISE NOTED.
M. PROVIDE STRAINERS INDICATED PER THE SPECIFICATIONS, DRAWINGS, DETAILS AND MANUFACTURER INSTALLATION RECOMMENDATIONS UPSTREAM OF ALL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, CONTROL VALVES.
N. EXISTING HVAC DRAWINGS ARE BASED ON AS-BUILT DOCUMENTS AND SITE INVESTIGATION. INSTALLATION MAY NOT BE EXACTLY AS SHOWN. CONTRACTOR TO FIELD VERIFY EXISTING HVAC EQUIPMENT AS REQUIRED TO ACCOMPLISH THE WORK SHOWN. THE CONTRACTOR SHALL NOTIFY THE DESIGN TEAM IF THE ACTUAL EXISTING INSTALLATION IS FOUND TO SIGNIFICANTLY DIFFER FROM DRAWINGS, SUCH THAT THE INTENT OF THE DESIGN CANNOT BE MET.
O. CONTRACTOR SHALL COORDINATE WORK TO MINIMIZE IMPACT ON THE EXISTING BUILDING AND SPACE. COORDINATE ALL OUTAGES AND EQUIPMENT INGRESS/EGRESS WITH OWNER A MINIMUM OF 2 WEEKS PRIOR TO STARTING WORK.
P. EXISTING TO REMAIN HVAC SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL REPAIR EXISTING ITEMS DAMAGED DURING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO, HVAC EQUIPMENT, DUCTWORK, AND INSULATION. IF EXISTING TO REMAIN HVAC IS FOUND TO HAVE EXISTING DAMAGE BEFORE OR DURING PROJECT DEMOLITION, THE CONTRACTOR SHALL DOCUMENT THE INSTANCE AND NOTIFY THE OWNER.

LEGEND

- CONNECT TO EXISTING
- EXISTING
- RENOVATION

True NORTH / Plan NORTH

1/8" = 1'-0" (0', 8', 16')

1 MECHANICAL OVERALL RENOVATION PLAN - LEVEL 2

1/8" = 1'-0"

Tx. Registration # F-20213

INTI L. GONZALEZ 115679 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

05/20/2025

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1	ADDENDUM 1	05/21/2025

M-102

MECHANICAL OVERALL RENOVATION PLAN - LEVEL 2

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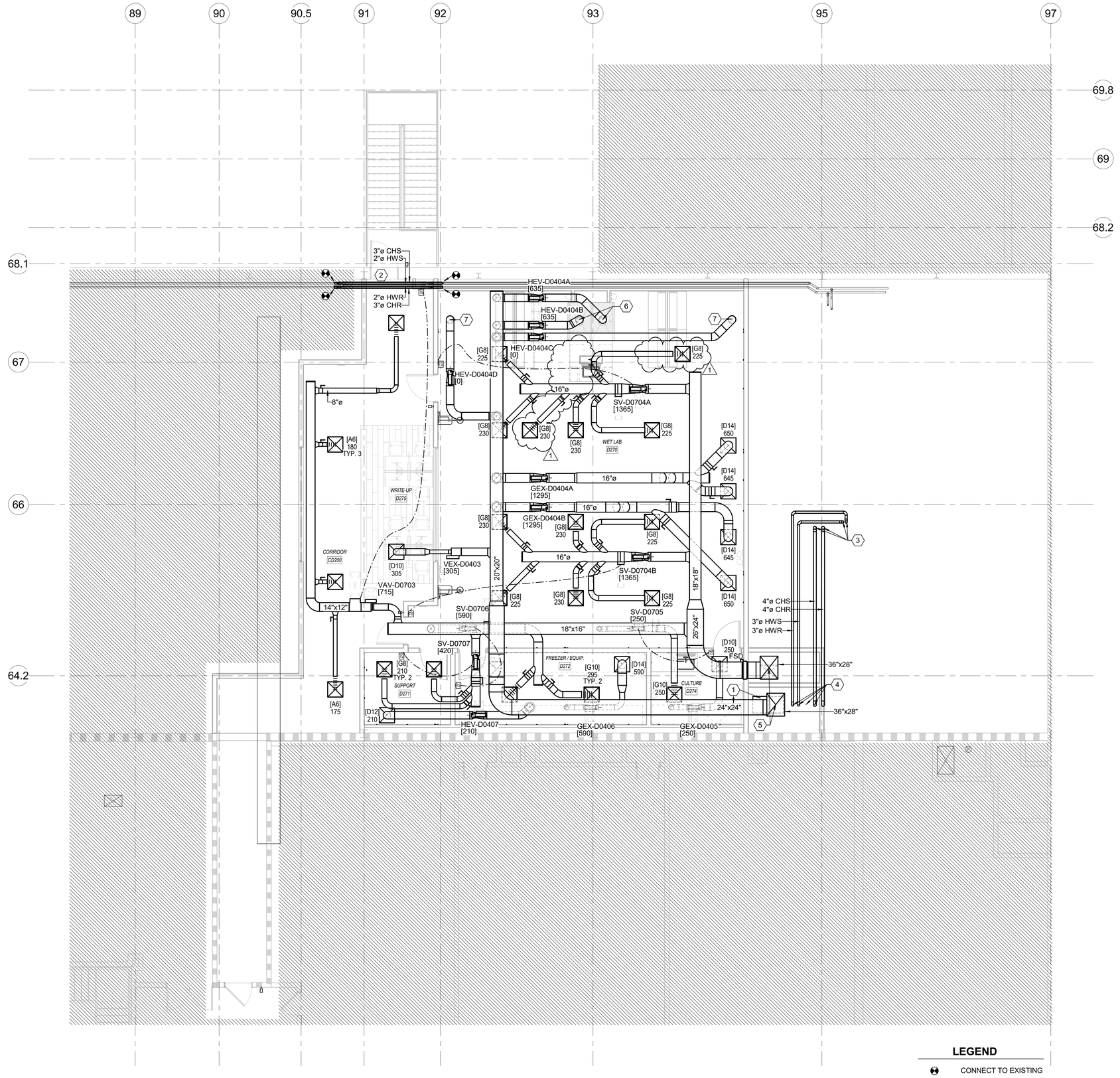

1 ENLARGED MECHANICAL RENOVATION PLAN - LEVEL 2 BASE BID

3/16" = 1'-0"

LEGEND

- CONNECT TO EXISTING
- EXISTING
- RENOVATION

GENERAL NOTES

A. CONTRACTOR SHALL PROVIDE CLEARANCE IN FRONT AND AT SIDES OF TERMINAL BOX UNIT CONTROL PANEL AND J-BOX AS REQUIRED BY N.E.C. (36 INCHES).
B. PROVIDE DUCTWORK TRANSITIONS AS REQUIRED AT TERMINAL BOX INLET AND DISCHARGE CONNECTIONS.
C. PROVIDE TURNING VANES IN ALL RECTANGULAR DUCT ELBOWS.
D. PROVIDE ACCESS DOORS IN DUCTWORK AT FIRE DAMPERS AND FIRE/SMOKE DAMPERS. IDENTIFY ACCESS DOORS IN ACCORDANCE WITH SPECIFICATIONS.
E. INSULATE EXTERIOR OF ALL SUPPLY AIR DUCTWORK AND THE TOP OF ALL SUPPLY AIR DIFFUSERS.
F. PIPING AND DUCTWORK ARE NOT PERMITTED IN ELECTRICAL ROOMS, ELEVATOR MACHINE ROOMS, AND COMMUNICATION ROOMS.
G. PROVIDE YOUNG REGULATORS FOR ALL DAMPERS LOCATED ABOVE HARD OR INACCESSIBLE CEILINGS. YOUNG REGULATORS SHALL BE PROVIDED WITH SOLID SHAFT CONNECTION; CABLE CONNECTION TO REGULATOR WILL NOT BE ACCEPTED.
H. INSULATE ALL HOT WATER PIPING.
I. INSULATE HOT WATER COIL CASING AT EACH TERMINAL UNIT.
J. COORDINATE PIPING WITH CABLE TRAY INSTALLATION IN ALL SPACES. PIPING SHALL NOT INTERFERE WITH ACCESS TO CABLE TRAY.
K. PROVIDE REDUCERS IN PIPING AT COIL CONNECTIONS AS REQUIRED. TYPICAL AT ALL TERMINAL UNITS.
L. RUN OUTS TO TERMINAL UNITS ARE 3/4" UNLESS OTHERWISE NOTED.
M. PROVIDE STRAINERS INDICATED PER THE SPECIFICATIONS, DRAWINGS, DETAILS AND MANUFACTURER INSTALLATION RECOMMENDATIONS UPSTREAM OF ALL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, CONTROL VALVES.
N. EXISTING HVAC DRAWINGS ARE BASED ON AS-BUILT DOCUMENTS AND SITE INVESTIGATION. INSTALLATION MAY NOT BE EXACTLY AS SHOWN. CONTRACTOR TO FIELD VERIFY EXISTING HVAC EQUIPMENT AS REQUIRED TO ACCOMPLISH THE WORK SHOWN. THE CONTRACTOR SHALL NOTIFY THE DESIGN TEAM IF THE ACTUAL EXISTING INSTALLATION IS FOUND TO SIGNIFICANTLY DIFFER FROM DRAWINGS, SUCH THAT THE INTENT OF THE DESIGN CANNOT BE MET.
O. CONTRACTOR SHALL COORDINATE WORK TO MINIMIZE IMPACT ON THE EXISTING BUILDING AND SPACE. COORDINATE ALL OUTAGES AND EQUIPMENT INGRESS/EGRESS WITH OWNER A MINIMUM OF 2 WEEKS PRIOR TO STARTING WORK.
P. EXISTING TO REMAIN HVAC SHALL BE PROTECTED DURING CONSTRUCTION. CONTRACTOR SHALL REPAIR EXISTING ITEMS DAMAGED DURING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO, HVAC EQUIPMENT, DUCTWORK, AND INSULATION. IF EXISTING TO REMAIN HVAC IS FOUND TO HAVE EXISTING DAMAGE BEFORE OR DURING PROJECT DEMOLITION, THE CONTRACTOR SHALL DOCUMENT THE INSTANCE AND NOTIFY THE OWNER.

KEYED NOTES - M-302

1 WRAP EXHAUST DUCTWORK WITH 2-HR FIRE RATED INSULATION FOR A LENGTH OF 10 FT ON BOTH SIDES OF THE SHAFT WALL PENETRATION.
2 ROUTE PIPING ABOVE NEW DOORWAY. MATCH EXISTING PIPE SIZES.
3 PIPING UP THRU ROOF INTO AHU VESTIBULE. RE: M-103 FOR CONTINUATION.
4 PIPING DOWN IN SHAFT. RE: M-301 FOR CONTINUATION.
5 DUCT UP THRU ROOF AND DOWN IN SHAFT. RE: M-103 AND M-301 FOR CONTINUATION.
6 CONNECT TO FUME HOOD WITH DUCT COLLAR.
7 CAP AND SEAL EXHAUST DUCT ABOVE CEILING FOR FUTURE CONNECTION.

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M-302

ENLARGED MECHANICAL RENOVATION PLAN - LEVEL 2 BASE BID

Treanor NO. HE0569.2402.00

SCHEDULE - LAB-TRAC AIR TERMINAL BOX (ELECTRIC HEAT) - ALTERNATE 1

MARK	LEVEL	CONTROL TYPE	LAB SERVED	SERVED BY AHU/FAN	PRIMARY AIR		ROOM OFFSET CFM	VALVE SIZE	MAX S.P. IN. W.G.	POWER			ELECTRIC HEAT COIL					STEPS	REMARKS
					MAX CFM	MIN CFM				VOLTS	PH	HZ	MAX CFM	MIN CFM	EAT °F	LAT °F	KW		
SV-D0703	LEVEL 1	VAV	WET SUPPORT D173	AHU-D07	785	300	0	12	0.4	480	3	60	785	475	53	80	6.74	SCR	
HEV-D0403	LEVEL 1	VAV	WET SUPPORT D173	LEF-D04	785	300	0	12	0.4	277	1	60							NOTE 1

SCHEDULE - LAB-TRAC AIR TERMINAL BOX (ELECTRIC HEAT) - ALTERNATE 2

MARK	LEVEL	CONTROL TYPE	LAB SERVED	SERVED BY AHU/FAN	PRIMARY AIR		ROOM OFFSET CFM	VALVE SIZE	MAX S.P. IN. W.G.	POWER			ELECTRIC HEAT COIL						REMARKS
					MAX CFM	MIN CFM				VOLTS	PH	HZ	CFM	EAT °F	LAT °F	KW		STEPS	
GEX-D0404A	LEVEL 2	VAV	WET LAB D270	LEF-D04	1095	200	260	14	0.4	277	1	60							NOTE 1
GEX-D0404B	LEVEL 2	VAV	WET LAB D270	LEF-D04	1095	200	260	14	0.4	277	1	60							NOTE 1
HEV-D0404C	LEVEL 2	VAV	WET LAB D270	LEF-D04	635	200	260	12	0.4	277	1	60							NOTE 1
HEV-D0404D	LEVEL 2	VAV	WET LAB D270	LEF-D04	635	200	260	12	0.4	277	1	60							NOTE 1

SCHEDULE - LAB-TRAC AIR TERMINAL BOX (ELECTRIC HEAT) - ALTERNATE 4

MARK	LEVEL	CONTROL TYPE	LAB SERVED	SERVED BY AHU/FAN	PRIMARY AIR		ROOM OFFSET CFM	VALVE SIZE	MAX S.P. IN. W.G.	POWER			ELECTRIC HEAT COIL					STEPS	REMARKS
					MAX CFM	MIN CFM				VOLTS	PH	HZ	MAX CFM	MIN CFM	EAT °F	LAT °F	KW		
SV-D0707	LEVEL 2	VAV	SUPPORT D271	AHU-D07	860	135	0	12	0.4	277	1	60	135	135	53	80	1.16		
HEV-D0407	LEVEL 2	VAV	SUPPORT D271	LEF-D04	860	135	0	12	0.4	277	1	60							NOTE 1

LAB-TRAC AIR TERMINAL BOX GENERAL NOTES - (APPLIES TO ALL UNITS)

A. ABOVE SELECTIONS BASED ON PHOENIX LOW PRESSURE VALVES. VALVES IN ALTERNATE SCHEDULES ABOVE ARE ONLY SHOWN FOR BALANCING PURPOSES. ALL VALVES AND COILS ARE ALREADY INCLUDED AND SCHEDULED ON THE BASE BID DOCUMENTS.
B. LAB OFFSET TO BE MAINTAINED AT ALL TIMES.
C. POSITIVE (+) OFFSET INDICATES FLOW ENTERING LAB/AREA. REFER TO AIR BALANCE DIAGRAM FOR ADDITIONAL INFORMATION.
D. ELECTRIC COIL DATA BASED ON SCR CONTROL AND 53 DEG. F ENTERING AIR TEMPERATURE. CONTRACTOR SHALL PROVIDE DUCT MOUNTED COIL TO MEET PERFORMANCE REQUIREMENTS INDICATED.
E. LAB EXHAUST VALVES (HEV) SHALL BE STAINLESS STEEL WITH FLANGE CONNECTIONS.
F. LAB SUPPLY (SV) AND GENERAL EXHAUST (GEX) VALVES SHALL BE ALUMINUM WITH SLIP-ON CONNECTIONS (UNLESS NOTED OTHERWISE).
G. CONTROL TYPES:
   CV - CONSTANT VOLUME
   VAV -VARIABLE VOLUME
   TP - TWO POSITION
H. MAX. SP. IS THE MAXIMUM ALLOWABLE STATIC PRESSURE LOSS THOUGH THE VALVE AND COIL AT SCHEDULED MAXIMUM CFM.
I. DIVISION 26 WILL PROVIDE 120/1PH POWER AT EACH PHOENIX LAB ROOM CONTROL (LRC) PANEL. LRC SHALL BE LOCATED ON SV TERMINAL UNIT. PROVIDE TRANSFORMER AS REQUIRED FOR CONTROLS POWER.
J. DIVISION 26 WILL PROVIDE 120/1PH POWER TO SV TERMINAL CONTROL PANEL FOR ROOMS WITHOUT HOODS. ROUTE CONTROLS POWER FROM SV TERMINAL TO SPACE GEX TERMINAL. PROVIDE CONTROL POWER TRANSFORMER AS REQUIRED.
K. DIVISION 26 WILL PROVIDE 277/1PH OR 480/3PH POWER TO SV TERMINAL REHEAT COIL CONTROL PANEL AS SCHEDULED. PROVIDE CONTROL POWER TRANSFORMER AS REQUIRED.

LAB-TRAC AIR TERMINAL BOX SCHEDULE NOTES

1. TERMINAL BOX HAS NO HEATING COIL.

SCHEDULE - DIFFUSER & GRILLE - ALTERNATE 4

MARK	CFM RANGE	NECK SIZE	SUPPLY	RETURN	EXHAUST	TYPE	PATTERN	BASIS OF DESIGN	SCHEDULE NOTES
A10	336-450	10"	X			24" X 24" PLAQUE	4-WAY	PRICE ASPD FULL FACE ALUMINUM CONSTRUCTION	

DIFFUSER & GRILLE SCHEDULE NOTES

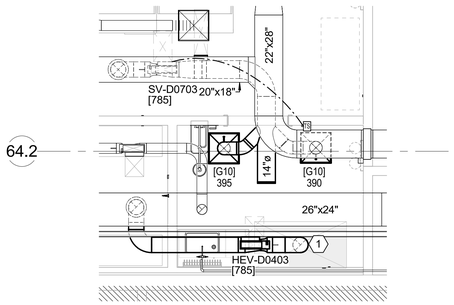
A. PROVIDE LIGHT SHIELDS FOR ALL RETURN AIR SLOTS AND BLANK-OFFS FOR ALL SLOTS NOT DESIGNATED AS SUPPLY OR RETURN.
B. MAX NC-30 FOR ALL AIR DEVICES. NC SHALL BE CALCULATED AS PER AHRI 885-2008 ASSUMING LAY-IN ACOUSTICAL TILE.
C. PROVIDE INTEGRAL OBD FOR SIDEWALL DIFFUSERS AND GRILLES.
D. ALL DIFFUSERS IN GYP. BOARD CEILINGS TO HAVE FLOATABLE EDGE TRIM.

SCHEDULE - CANOPY HOOD - ALTERNATE 4

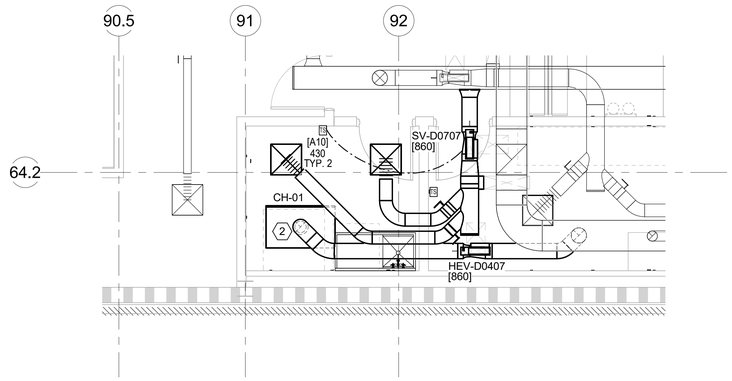
MARK	LENGTH IN	WIDTH IN	HEIGHT IN	EXHAUST FLOW	EXT. S.P. (IN W.G.)	BASIS OF DESIGN
CH-01	60	36	24	860	0.15	GREENHECK GD2-60-S

CANOPY HOOD GENERAL NOTES - (APPLIES TO ALL UNITS)

A. PROVIDE SINGLE BAFFLE CANOPY HOOD OF TYPE 430SS CONSTRUCTION.
B. PROVIDE 12" FACTORY MOUNTED COLLAR, GUTTER AND DRAIN CONNECTION.



1 LEVEL 1 ENLARGED - ALTERNATE 1
1/4" = 1'-0"



2 LEVEL 2 ENLARGED - ALTERNATE 4
1/4" = 1'-0"

3 LEVEL 2 ENLARGED - ALTERNATE 2
1/4" = 1'-0"

LEGEND
BASE BID
ALTERNATE

True NORTH Plan NORTH

1/4" = 1'-0" (0' 4' 8')

GENERAL NOTES

A. CONTRACTOR SHALL PROVIDE CLEARANCE IN FRONT AND AT SIDES OF TERMINAL BOX UNIT CONTROL PANEL AND J-BOX AS REQUIRED BY N.E.C. (36 INCHES).
B. PROVIDE DUCTWORK TRANSITIONS AS REQUIRED AT TERMINAL BOX INLET AND DISCHARGE CONNECTIONS.
C. PROVIDE TURNING VANES IN ALL RECTANGULAR DUCT ELBOWS.
D. PROVIDE ACCESS DOORS IN DUCTWORK AT FIRE DAMPERS AND FIRE/SMOKE DAMPERS. IDENTIFY ACCESS DOORS IN ACCORDANCE WITH SPECIFICATIONS.
E. INSULATE EXTERIOR OF ALL SUPPLY AIR DUCTWORK AND THE TOP OF ALL SUPPLY AIR DIFFUSERS.
F. PIPING AND DUCTWORK ARE NOT PERMITTED IN ELECTRICAL ROOMS, ELEVATOR MACHINE ROOMS, AND COMMUNICATION ROOMS.
G. PROVIDE YOUNG REGULATORS FOR ALL DAMPERS LOCATED ABOVE HARD OR INACCESSIBLE CEILINGS. YOUNG REGULATORS SHALL BE PROVIDED WITH SOLID SHAFT CONNECTION; CABLE CONNECTION TO REGULATOR WILL NOT BE ACCEPTED.
H. INSULATE ALL HOT WATER PIPING.
I. INSULATE HOT WATER COIL CASING AT EACH TERMINAL UNIT.
J. COORDINATE PIPING WITH CABLE TRAY INSTALLATION IN ALL SPACES. PIPING SHALL NOT INTERFERE WITH ACCESS TO CABLE TRAY.
K. PROVIDE REDUCERS IN PIPING AT COIL CONNECTIONS AS REQUIRED. TYPICAL AT ALL TERMINAL UNITS.
L. RUN OUTS TO TERMINAL UNITS ARE 3/4" UNLESS OTHERWISE NOTED.
M. PROVIDE STRAINERS INDICATED PER THE SPECIFICATIONS, DRAWINGS, DETAILS AND MANUFACTURER INSTALLATION RECOMMENDATIONS UPSTREAM OF ALL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, CONTROL VALVES.
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KEYED NOTES - M-303A

1 CONNECT TO FUME HOOD WITH DUCT COLLAR.
2 CONNECT TO CANOPY HOOD. BALANCE TO 860 CFM. ROUTE 1/2" DRAIN LINE FROM CANOPY TO FLOOR DRAIN.

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M-303A

ENLARGED MECHANICAL ALTERNATES

Treanor NO. HE0569.2402.00

LEGEND

EXISTING WORK

NEW WORK

GENERAL NOTES

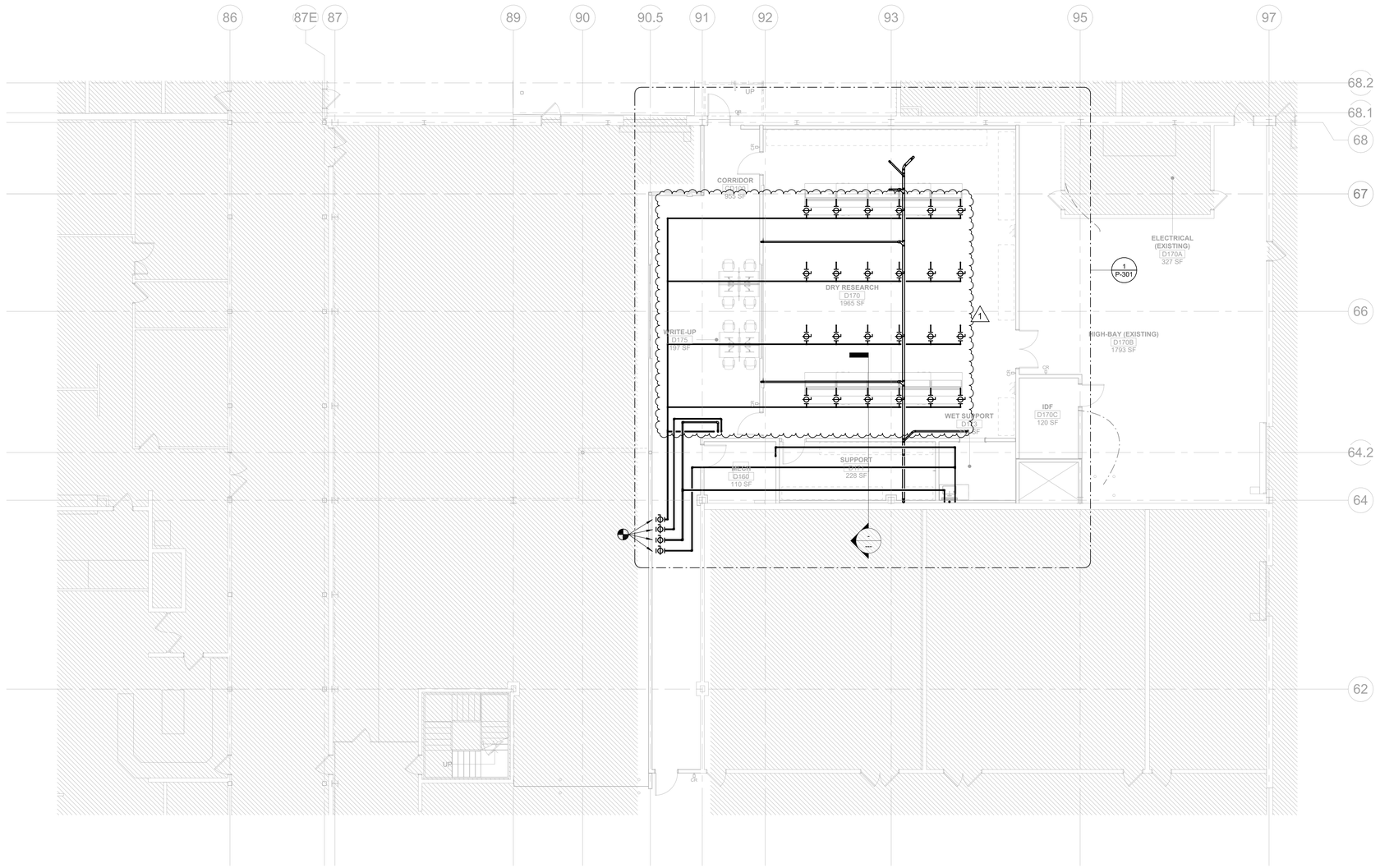
A. REFER TO SHEET TITLED "P-001" FOR LEGEND, NOTES, AND DETAILS THAT APPLY TO THIS SHEET.

B. ITEMS SHOWN IN BOLD INDICATE RENOVATION SCOPE OF WORK. ITEMS SHOWN LIGHT ARE EXISTING TO REMAIN.

C. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.

D. COORDINATE DOWNTIME WITH OWNER PRIOR TO WORK.

KEYED NOTES - P-101



1 LEVEL 1 OVERALL PLUMBING PLAN
1/8" = 1'-0"

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P-101

LEVEL 1 OVERALL PLUMBING PLAN - BASE BID

Treanor NO. HE0569.2402.00

LEGEND

EXISTING WORK

NEW WORK

GENERAL NOTES

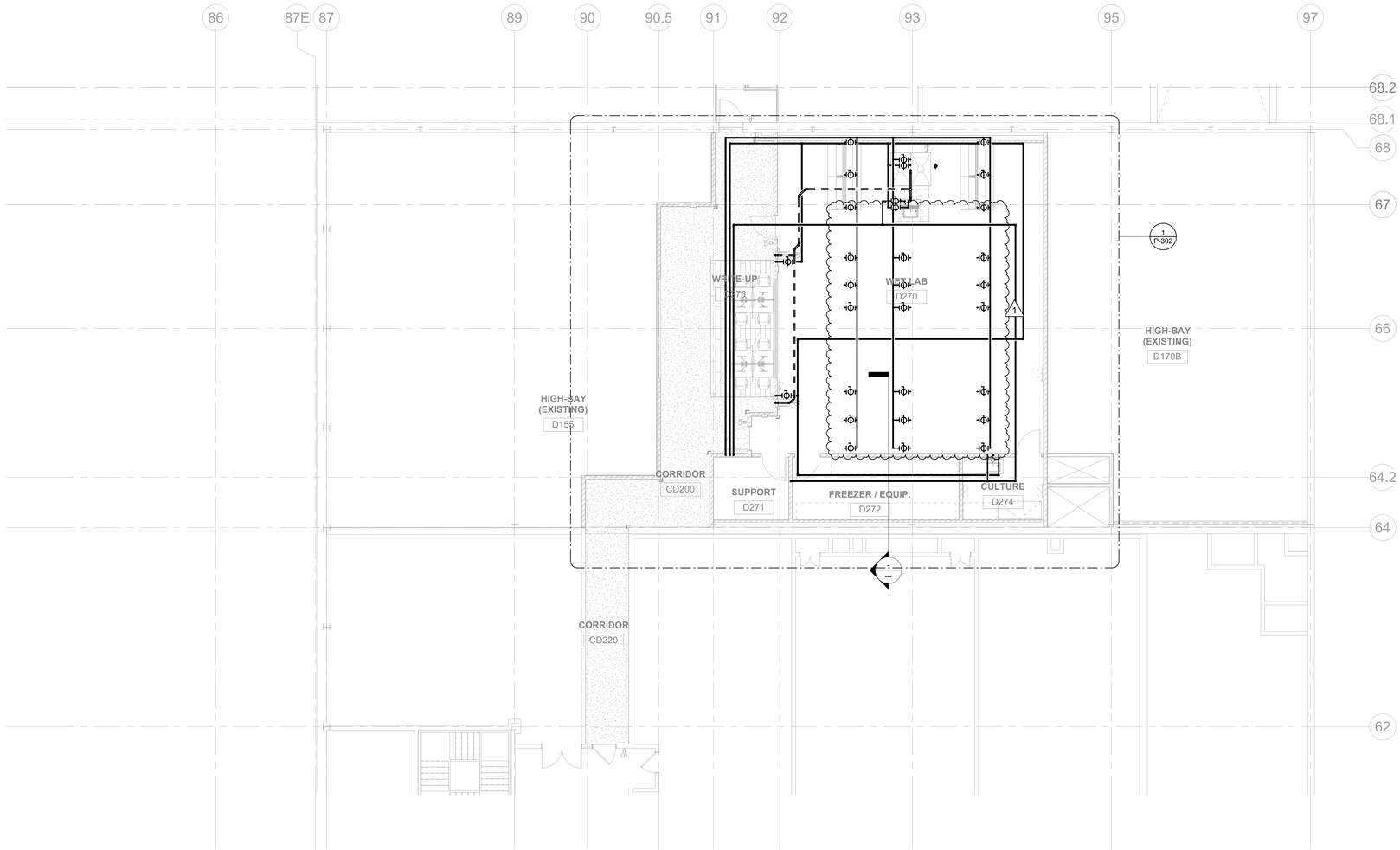
A. REFER TO SHEET TITLED "P-001" FOR LEGEND, NOTES, AND DETAILS THAT APPLY TO THIS SHEET.

B. ITEMS SHOWN IN BOLD INDICATE RENOVATION SCOPE OF WORK. ITEMS SHOWN LIGHT ARE EXISTING TO REMAIN.

C. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.

D. COORDINATE DOWNTIME WITH OWNER PRIOR TO WORK.

KEYED NOTES - P-102



1 LEVEL 2 OVERALL PLUMBING PLAN - BASE BID
1/8" = 1'-0"

Tx. Registration # F-2113

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P-102

LEVEL 2 OVERALL PLUMBING PLAN - BASE BID

Treanor NO. HE0569.2402.00

KEYED NOTES - P-301

1 UP TO FCO.

2 2" SANITARY UP TO FIXTURE FROM FLOOR ABOVE

3 ROUGH-IN AND CONNECT 1/2" DCW AND DHW DOWN TO LAB SINK. 2" SAN DOWN WITH 2" VENT. PROVIDE UNDERCOUNTER DILUTION TRAP, SIMILAR TO ZURN Z9A PHIX.

4 CONNECT NEW 3" SAN TO EXISTING 3" SANITARY IN-WALL. IF THE EXISTING PIPING DOES NOT EXTEND UP INTO WALL, CONNECT TO BELOW SLAB 3" SANITARY WASTE MAIN IN THIS APPROXIMATE AREA. FIELD VERIFY EXACT LOCATION OF EXISTING PIPING PRIOR TO WORK. PATCH AND REPAIR EXISTING CONSTRUCTION TO MATCH EXISTING CONDITIONS.

5 CONNECT NEW 1 1/4" DCW AND DHW, AND 1 1/2" LA TO EXISTING LINES APPROXIMATELY IN THIS LOCATION. FIELD VERIFY EXISTING LOCATION OF UTILITIES PRIOR TO WORK. FOR THE DHW POINT OF CONNECTION, THE INTENT IS TO EXTEND THE EXISTING LOOP TO THE NEW LAB AS SHOWN ON THESE PLANS.

1/6 1/2" LAB AIR DOWN TO QUICK DISCONNECT IN CEILING PANEL. REFER TO ARCHITECT DETAIL, SHEET A805

LEGEND

EXISTING WORK

NEW WORK

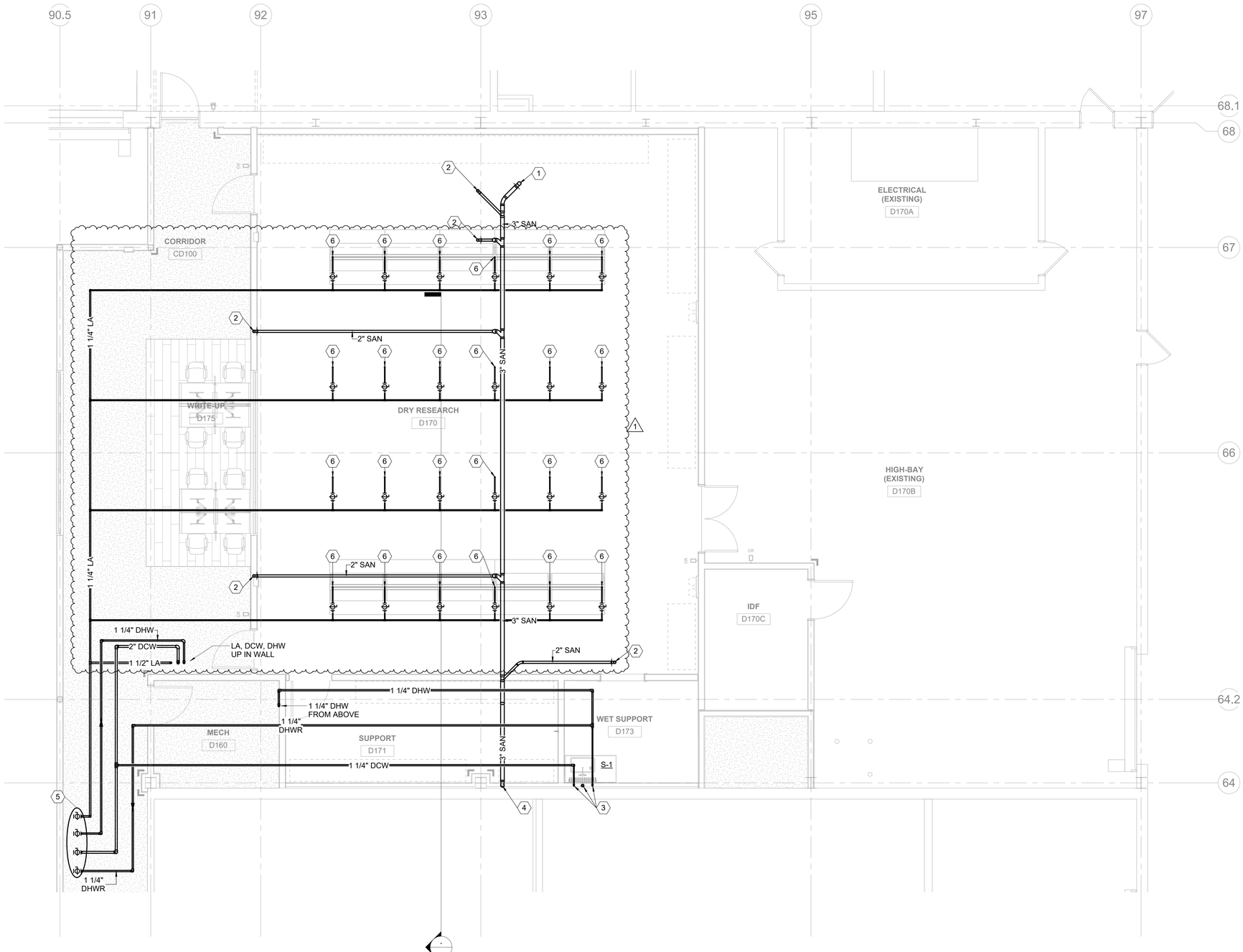
GENERAL NOTES

A. REFER TO SHEET TITLED "P-001" FOR LEGEND, NOTES, AND DETAILS THAT APPLY TO THIS SHEET.

B. ITEMS SHOWN IN BOLD INDICATE RENOVATION SCOPE OF WORK. ITEMS SHOWN LIGHT ARE EXISTING TO REMAIN.

C. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.

D. COORDINATE DOWNTIME WITH OWNER PRIOR TO WORK.



1 LEVEL 1 PLUMBING PLAN - BASE BID
1/4" = 1'-0"

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P-301

FIRST LEVEL PLUMBING PLAN - BASE BID

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KEYED NOTES - P-302

1. 1 1/4" DCW DOWN TO EMERGENCY SHOWER. 2" SAN DOWN WITH 2" SV UP.
2. ROUGH-IN AND CONNECT 1/2" DCW AND DHW DOWN TO LAB SINK. 2" SAN DOWN WITH 2" VENT. PROVIDE UNDERCOUNTER DILUTION TRAP, SIMILAR TO ZURN Z9A PHIX.
3. 1/2" DCW, 1/2" LA, DOWN TO FUME HOOD. 2" LW DOWN WITH 2" LV UP.
4. ROUGH-IN AND CONNECT 1/2" DCW AND DHW DOWN TO LAB SINKS. 2" SAN DOWN WITH 2" SV UP.
5. 1/2" LA DOWN TO WORK BENCH.
6. 2" VTR
9. 1/2" LAB AIR DOWN TO QUICK DISCONNECT IN CEILING PANEL. REFER TO ARCHITECT DETAIL, SHEET A805.

LEGEND

EXISTING WORK

NEW WORK

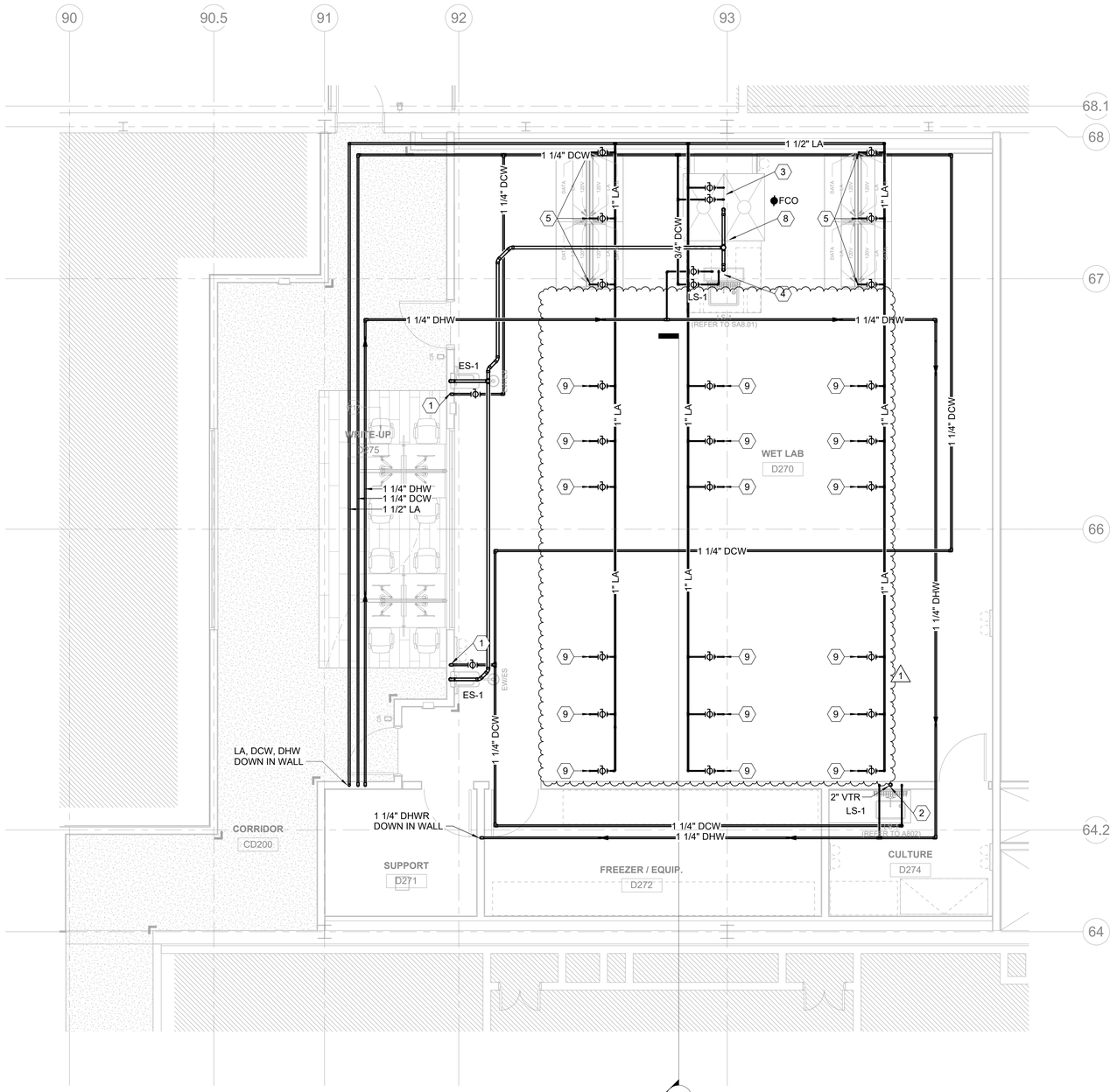
GENERAL NOTES

A. REFER TO SHEET TITLED "P-001" FOR LEGEND, NOTES, AND DETAILS THAT APPLY TO THIS SHEET.

B. ITEMS SHOWN IN BOLD INDICATE RENOVATION SCOPE OF WORK. ITEMS SHOWN LIGHT ARE EXISTING TO REMAIN.

C. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.

D. COORDINATE DOWNTIME WITH OWNER PRIOR TO WORK.



1 LEVEL 2 PLUMBING PLAN - BASE BID
1/4" = 1'-0"

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P-302

SECOND LEVEL PLUMBING PLAN - BASE BID

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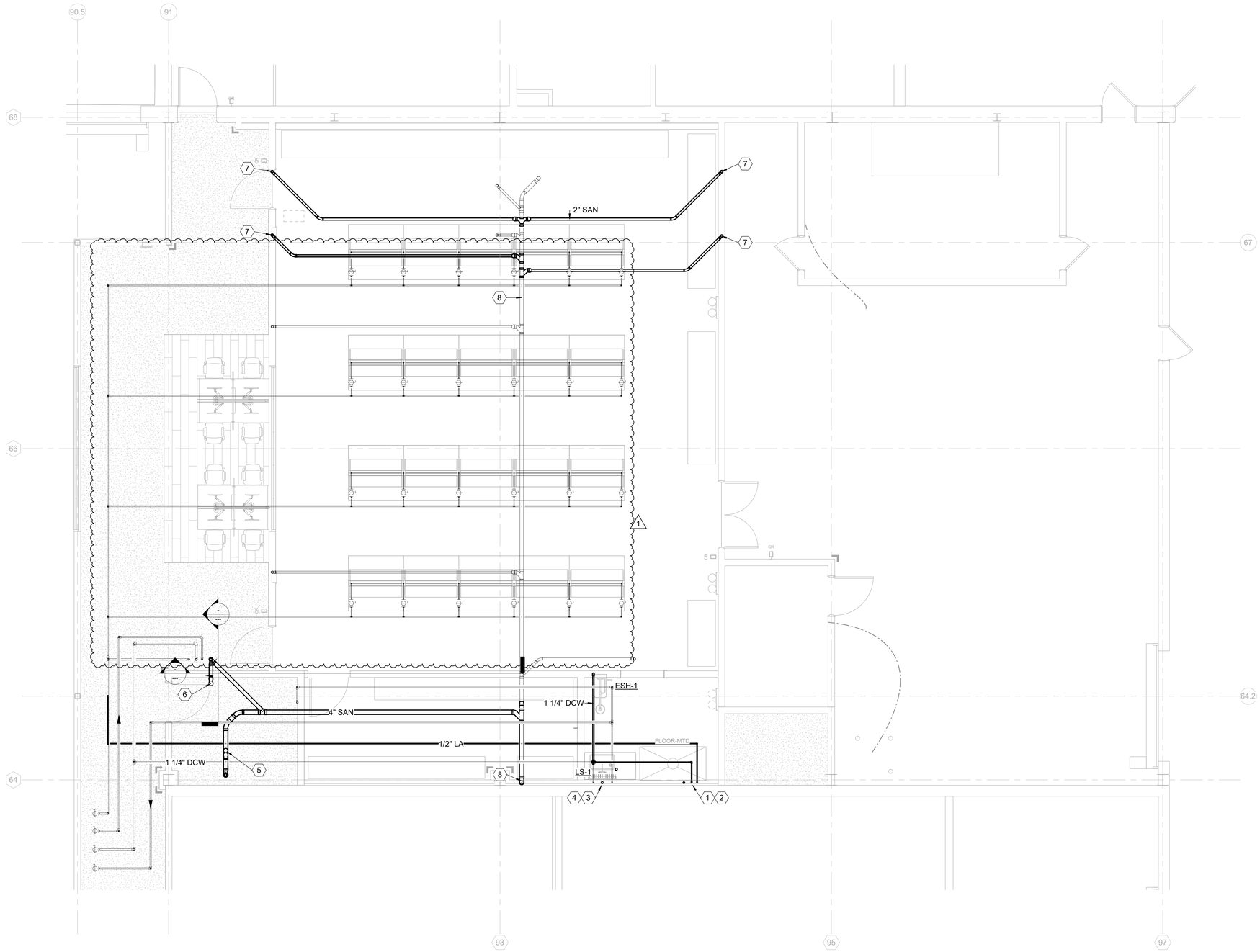

1 LEVEL 1 PLUMBING PLAN - ALTERNATE
1/4" = 1'-0"

LEGEND

EXISTING WORK

ALTERNATE WORK

GENERAL NOTES

A. REFER TO SHEET TITLED "P-001" FOR LEGEND, NOTES, AND DETAILS THAT APPLY TO THIS SHEET.

B. ITEMS SHOWN IN BOLD INDICATE ALTERNATE SCOPE OF WORK. ITEMS SHOWN LIGHT ARE BASE BID TO REMAIN.

C. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.

D. COORDINATE DOWNTIME WITH OWNER PRIOR TO WORK.

KEYED NOTES - P-304

1 1/2" DCW AND LA DOWN TO FUME HOOD. 2" SAN DOWN WITH 2" VENT.
2 CONNECT SAN VENT IN WITH OTHER FUME HOODS ON SECOND FLOOR.
3 ROUGH-IN AND CONNECT 1/2" DCW AND DHW DOWN TO LAB SINK. 2" SAN DOWN WITH 2" VENT. PROVIDE UNDERCOUNTER DILUTION TRAP, SIMILAR TO ZURN Z9A PHIX.
4 CONNECT SINK VENT IN WITH OTHER SINK FIXTURE ON SECOND FLOOR.
5 4" LW UP.
6 3" LW UP.
7 2" LW UP.
8 PIPING SHOWN LIGHT IS PROVIDED IN THE BASE BID SCOPE OF WORK.

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1	ADDENDUM 1	05/21/2025

P-304

FIRST LEVEL PLUMBING PLAN - ALTERNATE

Treanor NO. HE0569.2402.00

RO CARBON FILTER SCHEDULE (CF-1)

MODEL NUMBER	VALVE	MINERAL TANK SIZE	MEDIA CUBIC FT.	GRAVEL (LBS)	SERVICE FLOW (GPM)	DROP (PSI)	BACK WASH (GPM)	DIMENSIONS (INCHES)			SHIPPING WEIGHT (LBS)
								HEIGHT	LENGTH	WIDTH	
WSAC-1.5	W100TC	10 X 54	1.5	10	6	<15	5.3	62	16	11	105

RO TANK SCHEDULE (RO-2)

MODEL NUMBER	TOTAL TANK VOLUME		HEIGHT		FLOOR TO CL		DIAMETER		CL TO FITTING END		CONNECTION	TOTAL WEIGHT		TOTAL DRAWDOWN 20/40		30/50		40/60	
	GAL	LITERS	IN	CM	IN	CM	IN	CM	IN	CM		LBS	KILOS	GAL	LITERS	GAL	LITERS	GAL	LITERS
FL 28	82	310.4	64.7	163.3	2.25	5.7	21.4	54.4	11.9	30.2	1 1/4" NTP	69.5	31.5	33.0	120.7	27.9	102.0	24.1	88.4

RO SYSTEM SCHEDULE (RO-1)

MODEL NUMBER	OUTPUT GPD	PRODUCT FLOW (GPM/GPH)	REJECT FLOW (GPM)	RECOVERY RATE	MEMBRANE QUANTITY	MEMBRANE SIZE	PUMP HP	INLET CONNECTION	PRODUCT CONNECTION	REJECT CONNECTION
WSRO-1.6K	1600	1.1/66.0	1.1	50%	1	4" X 40"	3/4	3/4"	1/2"	1/2"

KEYED NOTES - P-305

1. 4" SAN DOWN, 2" SV UP.
2. 3" SAN DOWN, 2" SV UP.
3. ROUGH-IN AND CONNECT 1/2" DCW AND DHW DOWN TO LAB SINK. 2" SAN DOWN WITH 2" VENT. PROVIDE UNDERCOUNTER DILUTION TRAP, SIMILAR TO ZURN Z9A PHIX.
4. 1/2" DCW, 1/2" LA, DOWN TO FUME HOOD. 2" SAN DOWN WITH 2" SV UP.
5. PIPING SHOWN LIGHT IS PROVIDED IN THE BASE BID SCOPE OF WORK.
6. 3/4" DOMESTIC COLD WATER DOWN IN WALL TO SERVE RO SYSTEM IN AUTOCLAVE ROOM, REFER TO RO SYSTEM MANUFACTURER SPECIFICATIONS FOR DETAILS

LEGEND

EXISTING WORK

ALTERNATE WORK

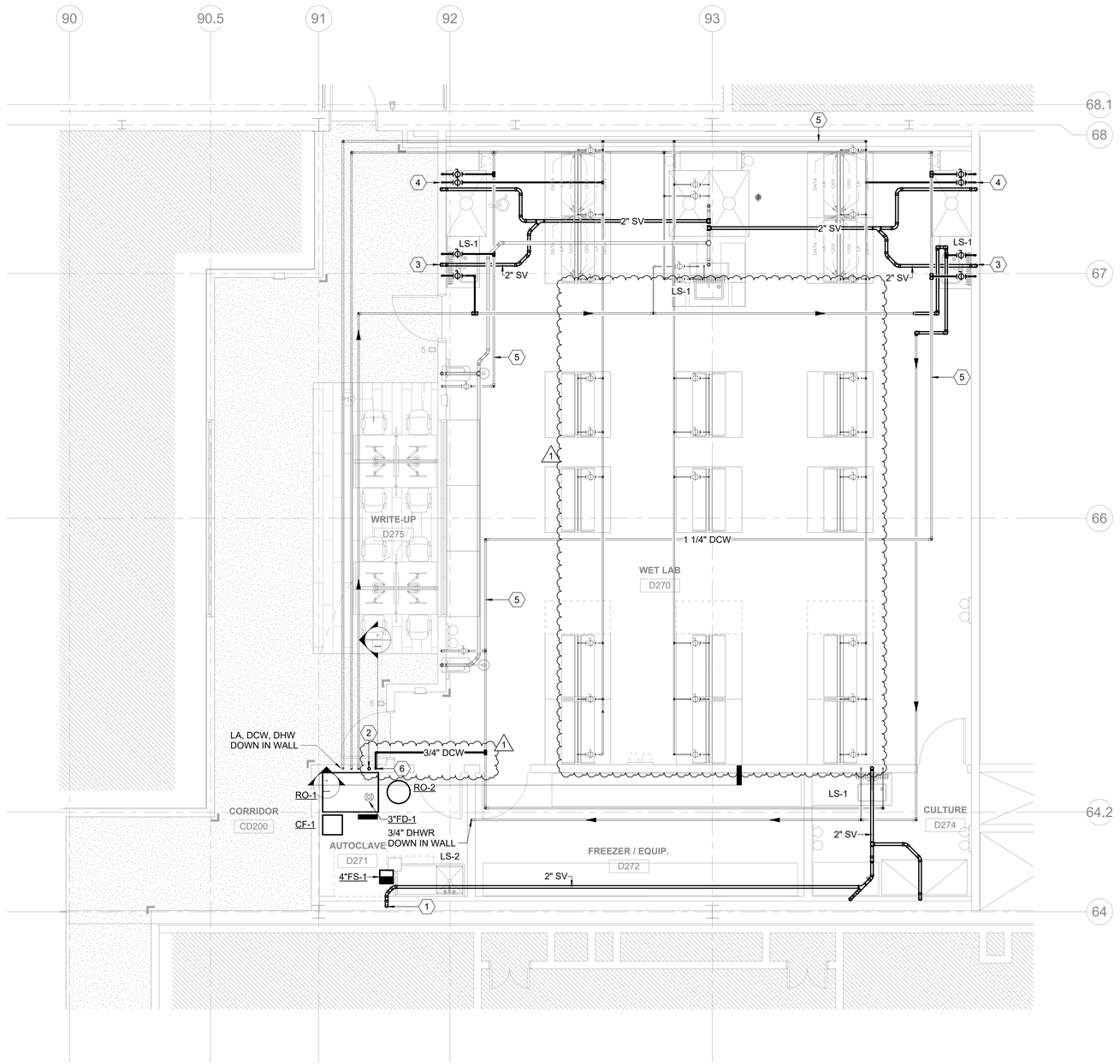
GENERAL NOTES

A. REFER TO SHEET TITLED "P-001" FOR LEGEND, NOTES, AND DETAILS THAT APPLY TO THIS SHEET.

B. ITEMS SHOWN IN BOLD INDICATE ALTERNATE SCOPE OF WORK. ITEMS SHOWN LIGHT ARE BASE BID TO REMAIN.

C. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.

D. COORDINATE DOWNTIME WITH OWNER PRIOR TO WORK.



1 LEVEL 2 PLUMBING PLAN - ALTERNATE
1/4" = 1'-0"

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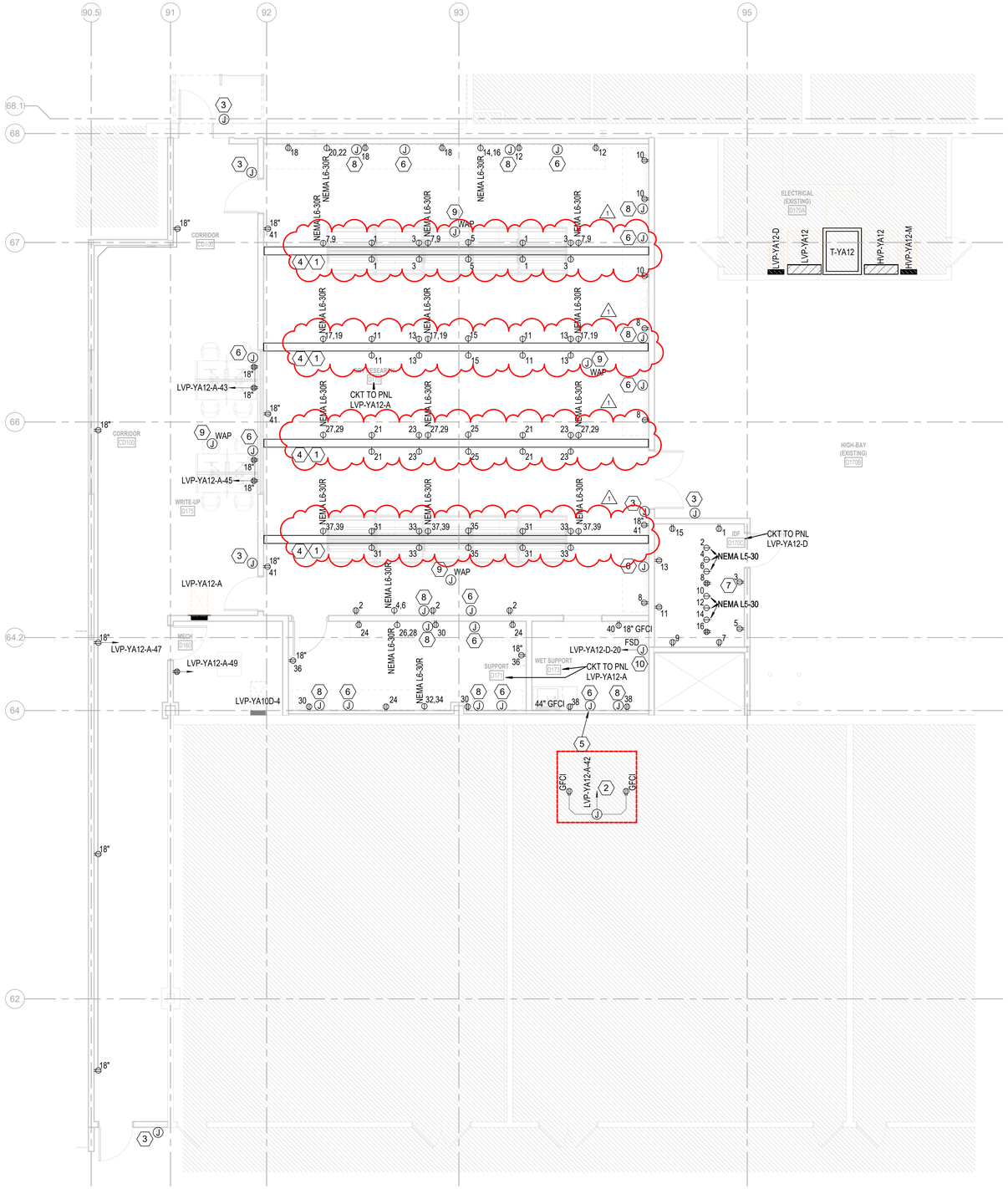
1	ADDENDUM 1	05/21/2025

P-305

SECOND LEVEL PLUMBING PLAN - ALTERNATE

Treanor NO. HE0569.2402.00



1 LEVEL 1 - POWER PLAN
3/16" = 1'-0"

GENERAL NOTES - E201

A REFER TO TELECOM DRAWINGS FOR LOCATION OF TELECOM, SECURITY, A/V OUTLETS, ADDITIONAL POWER AND OTHER COMMUNICATIONS SYSTEMS DEVICES. COORDINATE WITH COMMUNICATION SUPPLIER FOR LOCATIONS AND REQUIREMENTS.

B FINAL DIMENSIONS OF FLOOR BOX AND POKE-THROUGH LOCATIONS BY ARCHITECT. COORDINATE WITH STRUCTURAL PRIOR TO PENETRATION OF STRUCTURAL SLAB.

C ALL RECEPTACLES ARE MOUNTED 44" UON. VERIFY HEIGHT AND ALIGMENT OF DEVICES WITH ARCHITECTURAL DRAWINGS. COORDINATE OUTLET/RECEPTACLE LOCATIONS WITH MILL WORK, CASEWORK, ETC.

D LOCATE ALL LOCAL DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT ADJACENT TO, BUT SEPARATE FROM, EQUIPMENT SERVED. PROVIDE SECURELY-ANCHORED METAL FRAMING PER SECTION 260529.

E UPDATE PANELBOARD SCHEDULES UPON COMPLETION OF PROJECT TO REFLECT FINAL CIRCUIT NUMBERS AND DESCRIPTIONS.

KEYED NOTES - E201

1 LAB CEILING SERVICE PANEL. PROVIDE RECEPTACLES AS SHOWN. ALL RECEPTACLES SHALL BE TWIST LOCK; NEMA L5-20 UNLESS OTHERWISE NOTED.

2 PROVIDE JUNCTION BOX ABOVE CEILING FOR SINGLE POINT POWER CONNECTION TO FUME HOOD. COORDINATE LOCATION AND CONNECTION WITH EQUIPMENT. PROVIDE GFCI RECEPTICALS.

3 BACK BOX FOR CARD READER. PROVIDE 3/4" CONDUITS FROM THE READER BOX, HINGE, STRIKE AND DOOR POSITION SWITCH BACK TO AN 8"X8" BOX LOCATED ON THE SECURE SIDE OF THE DOOR. PROVIDE A 1" CONDUIT FROM THE 8"X8" BOX TO AN ACCESSIBLE LOCATION IN THE ADJACENT HALLWAY. COORDINATE LOCATIONS WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. PROVIDE PULL STRING IN EMPTY RACEWAYS.

4 COORDINATE BACKBOX FOR TELECOMMUNICATION DEVICE IN THE CEILING SERVICE PANEL. COORDINATE LOCATIONS WITH THE OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.

5 PROVIDE UNDER ALTERNATE BID #1. SEE ARCHITECTURAL DRAWINGS FOR FURTHER ALTERNATE SCOPE OF WORK.

6 PROVIDE EMPTY JUNCTION BOX FOR FUTURE USE AS A RECEPTACLE MOUNTED AT 44". PROVIDE CONDUIT ROUTED FROM JUNCTION BOX TO AN ACCESSIBLE SPACE IN THE CEILING.

7 POWER TO THE ACCESS CONTROL PANEL. COORDINATE FINAL LOCATION AND CONNECTION TO THE EQUIPMENT.

8 BACKBOX FOR TELECOMMUNICATION DEVICE. PROVIDE 1 1/4" CONDUIT TO AN ACCESSIBLE SPACE ABOVE THE CEILING. COORDINATE LOCATIONS WITH THE OWNERS REPRESENTATIVE PRIOR TO INSTALLATION. PROVIDE PULL STRING IN EMPTY RACEWAYS.

9 PROVIDE BACKBOX FOR THE WAP. COORDINATE FINAL LOCATION WITH UNT ITS.

10 BACKBOX FOR FIRE SMOKE DAMPER. COORDINATE FINAL LOCATION.

True NORTH Plan NORTH

3/16"=1'-0" 0' 6' 12'

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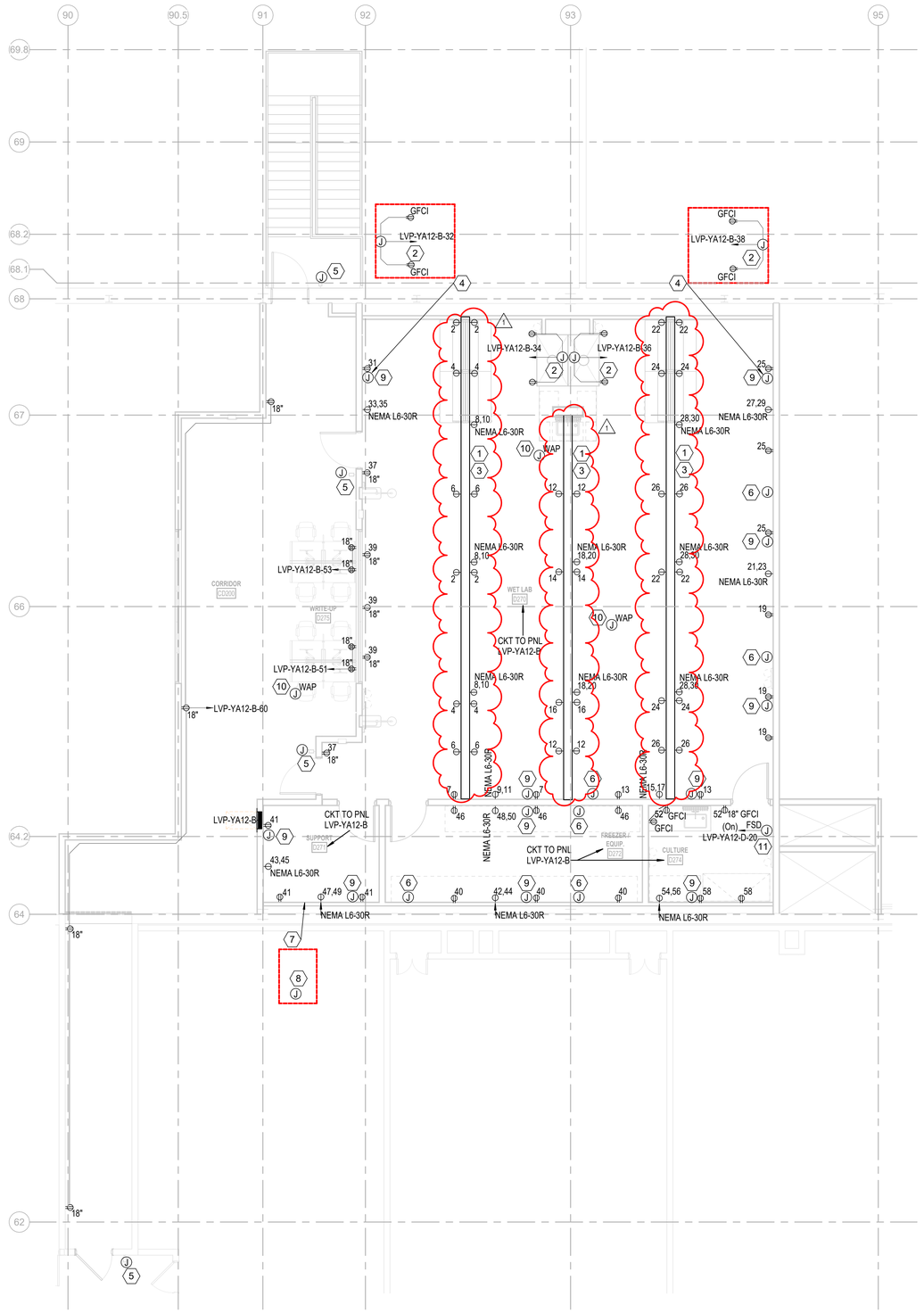
REVISIONS

NO	DESCRIPTION	DATE
1	Addendum 1	5/21/2025

E201

LEVEL 01 POWER PLAN

Treanor NO. XX#####.##



1 LEVEL 2 POWER PLAN
3/16" = 1'-0"

GENERAL NOTES - E202

A REFER TO TELECOM DRAWINGS FOR LOCATION OF TELECOM, SECURITY, A/V OUTLETS, ADDITIONAL POWER AND OTHER COMMUNICATIONS SYSTEMS DEVICES. COORDINATE WITH COMMUNICATION SUPPLIER FOR LOCATIONS AND REQUIREMENTS.

B FINAL DIMENSIONS OF FLOOR BOX AND POKE-THROUGH LOCATIONS BY ARCHITECT. COORDINATE WITH STRUCTURAL PRIOR TO PENETRATION OF STRUCTURAL SLAB.

C ALL RECEPTACLES ARE MOUNTED 44" UON. VERIFY HEIGHT AND ALIGMENT OF DEVICES WITH ARCHITECTURAL DRAWINGS. COORDINATE OUTLET/RECEPTACLE LOCATIONS WITH MILL WORK, CASEWORK, ETC.

D LOCATE ALL LOCAL DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT ADJACENT TO, BUT SEPARATE FROM, EQUIPMENT SERVED. PROVIDE SECURELY-ANCHORED METAL FRAMING PER SECTION 260529.

E UPDATE PANELBOARD SCHEDULES UPON COMPLETION OF PROJECT TO REFLECT FINAL CIRCUIT NUMBERS AND DESCRIPTIONS.

KEYED NOTES - E202

1 LAB CEILING SERVICE PANEL. PROVIDE RECEPTACLES AS SHOWN. ALL RECEPTACLES SHALL BE TWIST LOCK; NEMA L5-20 UON.

2 PROVIDE JUNCTION BOX ABOVE CEILING FOR SINGLE POINT POWER CONNECTION TO FUME HOOD. COORDINATE LOCATION AND CONNECTION WITH EQUIPMENT. PROVIDE GFCI RECEPTICALS.

3 COORDINATE BACKBOX FOR TELECOMMUNICATION DEVICE IN THE CEILING SERVICE PANEL. COORDINATE LOCATIONS WITH THE OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.

4 PROVIDE UNDER ALTERNATE BID #2. SEE ARCHITECTURAL DRAWINGS FOR FURTHER ALTERNATE SCOPE OF WORK.

5 BACK BOX FOR CARD READER. PROVIDE 3/4" CONDUITS FROM THE READER BOX, HINGE, STRIKE AND DOOR POSITION SWITCH BACK TO AN 8"X8" BOX LOCATED ON THE SECURE SIDE OF THE DOOR. PROVIDE A 1" CONDUIT FROM THE 8"X8" BOX TO AN ACCESSIBLE LOCATION IN THE ADJACENT HALLWAY. COORDINATE LOCATIONS WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. PROVIDE PULL STRING IN EMPTY RACEWAYS.

6 PROVIDE EMPTY JUNCTION BOX FOR FUTURE USE AS A RECEPTACLE MOUNTED AT 44". PROVIDE CONDUIT ROUTED FROM JUNCTION BOX TO AN ACCESABLE SPACE IN THE CEILING.

7 PROVIDE UNDER ALTERNATE BID #4. SEE ARCHITECTURAL DRAWINGS FOR FURTHER ALTERNATE SCOPE OF WORK.

8 PROVIDE EMPTY JUNCTION BOX FOR FUTURE USE AS A RECEPTACLE. PROVIDE 1" CONDUIT BACK TO PANEL HVP-YA12. PROVIDE 3/4" CONDUIT BACK TO PANEL LVP-YA12-B. BOTH CONDUITS WILL BE STUBBED TO AN ACCESSABLE CEILING SPACE APPROXIMATELY 2' OF CENTERLINE OF PLAN SOUTH WALL. PROVIDE PULL STRING IN EMPTY CONDUITS.

9 BACKBOX FOR TELECOMMUNICATION DEVICE. PROVIDE 1 1/4" CONDUIT TO AN ACCESSIBLE SPACE ABOVE THE CEILING. COORDINATE LOCATIONS WITH THE OWNERS REPRESENTATIVE PRIOR TO INSTALLATION. PROVIDE PULL STRING IN EMPTY RACEWAYS.

10 PROVIDE BACKBOX FOR THE WAP. COORDINATE FINAL LOCATION WITH UNT ITS.

11 BACKBOX FOR FIRE SMOKE DAMPER. COORDINATE FINAL LOCATION.

True NORTH Plan NORTH

3/16"=1'-0" 0' 6' 12'

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UNIVERSITY OF NORTH TEXAS DISCOVERY PARK D170 LAB FIT-OUT

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UNT UNIVERSITY OF NORTH TEXAS

Issued For: ISSUE FOR CONSTRUCTION

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REVISIONS

NO	DESCRIPTION	DATE
1	Addendum 1	5/21/2025

E202

LEVEL 02 POWER PLAN

Treanor NO. XX#####.##

Panel: LVP-YA12-A

UNIVERSITY OF NORTH TEXAS — DISCOVERY PARK D170 LAB FIT-OUT

Location:	CORRIDOR CD100	Volts:	120/208 Wye	Bus Rating:	225A	Feed Through:	NO
Supply...	LVP-YA12	Phases:	3	MCB:	150A	Sub-Feed:	
Mounting:	Recessed	A.I.C....	10,000	MLO:	NO	Neutral Rating:	100.00%
Enclosure:	Type 1						

Notes:

Wires & Conduit	Ckt No.	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	Ckt No.	Wires & Conduit
2#12, #12G, 3/4"C	1	CSP RCPTS RM D170	20 A	1	720 VA / 540 VA			1	20 A	RCPTS RM D170	2	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	3	CSP RCPTS RM D170	20 A	1		720 VA / 90 VA		2	30 A	208V RCPTS RM D170	4	2#10, #10G, 3/4"C
2#12, #12G, 3/4"C	5	CSP RCPTS RM D170	20 A	1			360 VA / 90 VA				6	
2#10, #10G, 3/4"C	7	208V CSP RCPTS RM D170	30 A	2	270 VA / 1040 VA			1	20 A	RCPTS RM D170	8	2#12, #12G, 3/4"C
	9					270 VA / 540 VA		1	20 A	RCPTS RM D170	10	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	11	CSP RCPTS RM D170	20 A	1			720 VA / 860 VA	1	20 A	RCPTS RM D170	12	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	13	CSP RCPTS RM D170	20 A	1	720 VA / 90 VA			2	30 A	208V RCPTS RM D170	14	2#10, #10G, 3/4"C
2#12, #12G, 3/4"C	15	CSP RCPTS RM D170	20 A	1		360 VA / 90 VA					16	
2#10, #10G, 3/4"C	17	208V CSP RCPTS RM D170	30 A	2			270 VA / 540 VA	1	20 A	RCPTS RM D170	18	2#12, #12G, 3/4"C
	19				270 VA / 90 VA			2	30 A	208V RCPTS RM D170	20	2#10, #10G, 3/4"C
2#12, #12G, 3/4"C	21	CSP RCPTS RM D170	20 A	1		720 VA / 90 VA					22	
2#12, #12G, 3/4"C	23	CSP RCPTS RM D170	20 A	1			720 VA / 540 VA	1	20 A	RCPTS RM D171	24	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	25	CSP RCPTS RM D170	20 A	1	360 VA / 90 VA			2	30 A	208V RCPT RM D171	26	2#10, #10G, 3/4"C
2#10, #10G, 3/4"C	27	208V CSP RCPTS RM D170	30 A	2		270 VA / 90 VA					28	
	29						270 VA / 540 VA	1	20 A	RCPTS RM D171	30	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	31	CSP RCPTS RM D170	20 A	1	720 VA / 90 VA			2	30 A	208 V RCPT RM D171	32	2#10, #10G, 3/4"C
2#12, #12G, 3/4"C	33	CSP RCPTS RM D170	20 A	1		720 VA / 90 VA					34	
2#12, #12G, 3/4"C	35	CSP RCPTS RM D170	20 A	1			360 VA / 360 VA	1	20 A	RCPTS RM D171	36	2#12, #12G, 3/4"C
2#10, #10G, 3/4"C	37	208V CSP RCPTS RM D170	30 A	2	270 VA / 360 VA			1	20 A	RCPTS RM D173	38	2#12, #12G, 3/4"C
	39					270 VA / 180 VA		1	20 A	RCPTS RM D173	40	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	41	CONVENIENCE RCPTS RM D170	20 A	1			720 VA / 500 VA	1	20 A	FUME HOOD RM D173 (ALT)	42	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	43	QUAD RCPTS RM D175	20 A	1	360 VA / 0 VA			1	20 A	SPARE	44	
2#12, #12G, 3/4"C	45	QUAD RCPTS RM D175	20 A	1		360 VA / 0 VA		1	20 A	SPARE	46	
2#12, #12G, 3/4"C	47	RCPTS CORRIDOR	20 A	1			540 VA / 0 VA	1	20 A	SPARE	48	
2#12, #12G, 3/4"C	49	MECH ROOM RCPT	20 A	1	180 VA / 0 VA			1	--	SPACE	50	
	51	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	52	
	53	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	54	
	55	SPARE	20 A	1	0 VA / 0 VA			1	--	SPACE	56	
	57	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	58	
	59	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	60	
				Total Load:	6170 VA	4860 VA	7390 VA					
				Total Amps:	53 A	41 A	63 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
RECEPTACLES	18420 VA	77.14%	14210 VA	
				Total Conn. Load: 18420 VA
				Total Est. Demand: 14210 VA
				Total Conn. Current: 51 A
				Total Est. Demand Current: 39 A

Notes:

Panel: LVP-YA12-B

UNIVERSITY OF NORTH TEXAS — DISCOVERY PARK D170 LAB FIT-OUT

Location:	CORRIDOR CD200	Volts:	120/208 Wye	Bus Rating:	225A	Feed Through:	NO
Supply...	LVP-YA12	Phases:	3	MCB:	150A	Sub-Feed:	
Mounting:	Recessed	A.I.C....	10,000	MLO:	NO	Neutral Rating:	100.00%
Enclosure:	Type 1						

Notes:

Wires & Conduit	Ckt No.	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	Ckt No.	Wires & Conduit
2#12, #12G, 3/4"C	1	DDC MECH ROOF	20 A	1	1080 VA / 720 VA			1	20 A	CSP RCPT RM D270	2	2#12, #12G, 3/4"C
2#12 , #12G, 3/4"C	3	LAB EXHAUST FAN ACTUATORS.	20 A	1		1080 VA / 720 VA		1	20 A	CSP RCPT RM D270	4	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	5	ROOF RCPT	20 A	1			360 VA / 720 VA	1	20 A	CSP RCPT RM D270	6	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	7	RCPT RM D270	20 A	1	360 VA / 270 VA			2	30 A	208V CSP RCPT RM D270	8	2#10, #10G, 3/4"C
2#10, #10G, 3/4"C	9	208V RCPT RM D270	30 A	2		90 VA / 270 VA					10	
	11						90 VA / 720 VA	1	20 A	CSP RCPT RM D270	12	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	13	RCPT RM D270	20 A	1	360 VA / 360 VA			1	20 A	CSP RCPT RM D270	14	2#12, #12G, 3/4"C
2#10, #10G, 3/4"C	15	208V RCPT RM D270	30 A	2		90 VA / 360 VA		1	20 A	CSP RCPT RM D270	16	2#12, #12G, 3/4"C
	17						90 VA / 180 VA	2	30 A	208V CSP RCPT RM D270	18	2#10, #10G, 3/4"C
2#12, #12G, 3/4"C	19	RCPT RM D270	20 A	1	540 VA / 180 VA						20	
2#10, #10G, 3/4"C	21	208V RCPT RM D270	30 A	2		90 VA / 720 VA		1	20 A	CSP RCPT RM D270	22	2#12, #12G, 3/4"C
	23						90 VA / 720 VA	1	20 A	CSP RCPT RM D270	24	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	25	RCPT RM D270	20 A	1	540 VA / 720 VA			1	20 A	CSP RCPT RM D270	26	2#12, #12G, 3/4"C
2#10, #10G, 3/4"C	27	208V RCPT RM D270	30 A	2		90 VA / 270 VA		2	30 A	208V CSP RCPT RM D270	28	2#10, #10G, 3/4"C
	29						90 VA / 270 VA				30	
2#12, #12G, 3/4"C	31	RCPT RM D270	20 A	1	180 VA / 860 VA			1	20 A	FUME HOOD RM D270 (ALT)	32	2#12, #12G, 3/4"C
2#10, #10G, 3/4"C	33	208V RCPT RM D270	30 A	2		90 VA / 860 VA		1	20 A	FUME HOOD RM D270	34	2#12, #12G, 3/4"C
	35						90 VA / 860 VA	1	20 A	FUME HOOD RM D270	36	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	37	CONVENIENCE RCPT RM D270	20 A	1	360 VA / 860 VA			1	20 A	FUME HOOD RM D270 (ALT)	38	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	39	RCPT RM D270	20 A	1		540 VA / 1040 VA		1	20 A	RCPT RM D272	40	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	41	RCPT RM D271	20 A	1			540 VA / 90 VA	2	30 A	208V RCPT RM D272	42	2#10, #10G, 3/4"C
2#10, #10G, 3/4"C	43	208V RCPT RM D271	30 A	2	90 VA / 90 VA						44	
	45					90 VA / 540 VA		1	20 A	RCPT RM D272	46	2#12, #12G, 3/4"C
2#10, #10G, 3/4"C	47	208V RCPT RM D271	30 A	2			90 VA / 90 VA	2	30 A	208V RCPT RM D272	48	2#10, #10G, 3/4"C
	49				90 VA / 90 VA						50	
2#12, #12G, 3/4"C	51	QUAD RCPT RM D275	20 A	1		360 VA / 540 VA		1	20 A	RCPT RM D274	52	2#12, #12G, 3/4"C
2#12, #12G, 3/4"C	53	QUAD RCPT RM D275	20 A	1			360 VA / 90 VA	2	30 A	208V RCPT RM D274	54	2#10, #10G, 3/4"C
	55	SPARE	20 A	1	0 VA / 90 VA						56	
	57	SPARE	20 A	1		0 VA / 360 VA		1	20 A	RCPT RM D274	58	2#12, #12G, 3/4"C
	59	SPARE	20 A	1			0 VA / 720 VA	1	20 A	RCPTS CORRIDOR	60	2#12, #12G, 3/4"C
				Total Load:	7840 VA	8200 VA	6260 VA					
				Total Amps:	67 A	70 A	52 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
RECEPTACLES	22300 VA	72.42%	16150 VA	
				Total Conn. Load: 22300 VA
				Total Est. Demand: 16150 VA
				Total Conn. Current: 62 A
				Total Est. Demand Current: 45 A

Notes:

Panel: LVP-YA12-D

UNIVERSITY OF NORTH TEXAS — DISCOVERY PARK D170 LAB FIT-OUT

Location:	ELECTRICAL (EXISTING) D170A	Volts:	120/208 Wye	Bus Rating:	250A	Feed Through:	NO
Supply...	LVP-YA12	Phases:	3	MCB:	NO MCB	Sub-Feed:	
Mounting:	Recessed	A.I.C....	10,000	MLO:	YES	Neutral Rating:	100.00%
Enclosure:	Type 1						

Notes:

Wires & Conduit	Ckt No.	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	Ckt No.	Wires & Conduit
2#10, #10G, 3/4"C	1	RCPT RM D170C	20 A	1	180 VA / 180 VA			1	30 A	RACK RCPT RM D170C (NEMA L5-30)	2	2#10, #10G, 3/4"C
2#10, #10G, 3/4"C	3	RCPT RM D170C	20 A	1		180 VA / 180 VA		1	30 A	RACK RCPT RM D170C (NEMA L5-30)	4	2#10, #10G, 3/4"C
2#10, #10G, 3/4"C	5	RCPT RM D170C	20 A	1			180 VA / 180 VA	1	30 A	RACK RCPT RM D170C (NEMA L5-30)	6	2#10, #10G, 3/4"C
2#10, #10G, 3/4"C	7	RCPT RM D170C	20 A	1	180 VA / 180 VA			1	20 A	RACK RCPT RM D170C	8	2#10, #10G, 3/4"C
2#10, #10G, 3/4"C	9	RCPT RM D170C	20 A	1		180 VA / 180 VA		1	30 A	RACK RCPT RM D170C (NEMA L5-30)	10	2#10, #10G, 3/4"C
2#10, #10G, 3/4"C	11	RCPT RM D170C	20 A	1			180 VA / 180 VA	1	30 A	RACK RCPT RM D170C (NEMA L5-30)	12	2#10, #10G, 3/4"C
2#10, #10G, 3/4"C	13	RCPT RM D170C	20 A	1	180 VA / 180 VA			1	30 A	RACK RCPT RM D170C (NEMA L5-30)	14	2#10, #10G, 3/4"C
2#10, #10G, 3/4"C	15	RCPT RM D170C	20 A	1		180 VA / 180 VA		1	20 A	RACK RCPT RM D170C	16	2#10, #10G, 3/4"C
2#12, #12G, 3/4"C	17	DDC PNLS LVL 1	20 A	1			1000 VA / 1200 VA	1	20 A	FCU CONDENSATE PUMP	18	2#10, #10G, 3/4"C
	19	SPARE	20 A	1	0 VA / 1000 VA			1	20 A	FSD	20	2#12, #12G, 3/4"C
	21	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	22	
	23	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	24	
	25	SPARE	20 A	1	0 VA / 0 VA			1	--	SPACE	26	
	27	SPARE	20 A	1		0 VA / 0 VA		1	--	SPACE	28	
	29	SPARE	20 A	1			0 VA / 0 VA	1	--	SPACE	30	
	31	SPARE	20 A	1	0 VA / 0 VA			1	--	SPACE	32	
	33	SPACE	--	1		0 VA / 0 VA		1	--	SPACE	34	
	35	SPACE	--	1			0 VA / 0 VA	1	--	SPACE	36	
	37	SPACE	--	1	0 VA / 0 VA			1	--	SPACE	38	
	39	SPACE	--	1		0 VA / 0 VA		1	--	SPACE	40	
	41	SPACE	--	1			0 VA / 0 VA	1	--	SPACE	42	
				Total Load:	2080 VA	1080 VA	3010 VA					
				Total Amps:	19 A	9 A	26 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
RECEPTACLES	6170 VA	100.00%	6170 VA	
				Total Conn. Load: 6170 VA
				Total Est. Demand: 6170 VA
				Total Conn. Current: 17 A
				Total Est. Demand Current: 17 A

Notes:

Panel: HVP-YA12-M

UNIVERSITY OF NORTH TEXAS — DISCOVERY PARK D170 LAB FIT-OUT

Location:	ELECTRICAL (EXISTING) D170A	Volts:	480/277 Wye	Bus Rating:	150A	Feed Through:	NO
Supply...		Phases:	3	MCB:	NO MCB	Sub-Feed:	
Mounting:	SURFACE	A.I.C....	50,000	MLO:	YES	Neutral Rating:	100.00%
Enclosure:	Type 1						

Notes:

Wires & Conduit	Ckt No.	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	Ckt No.	Wires & Conduit
	1				1403 VA / 1773 VA						2	
3#12, #12G, 3/4"C	3	VAV-D0703	20 A	3		1403 VA / 1773 VA		3	20 A	VAV-D0701	4	3#12, #12G, 3/4"C
	5						1403 VA / 1773 VA				6	
	7				0 VA / 1640 VA			1	20 A	VAV-D0702	8	2#12, #12G, 3/4"C
3#12, #12G, 3/4"C	9	SV-D0704A	20 A	3		0 VA / 0 VA					10	
	11						0 VA / 0 VA	3	20 A	SV-D0701A	12	3#12, #12G, 3/4"C
	13				0 VA / 0 VA						14	
3#12, #12G, 3/4"C	15	SV-D0704B	20 A	3		0 VA / 0 VA					16	
	17						0 VA / 0 VA	3	20 A	SV-D0701B	18	3#12, #12G, 3/4"C
2#12 , #12G, 3/4"C	19	SV-D0705	20 A	1	1290 VA / 0 VA						20	
2#12 , #12G, 3/4"C	21	SV-D0706	20 A	1		2580 VA / 0 VA					22	
2#12 , #12G, 3/4"C	23	SV-D0707	20 A	1			1160 VA / 0 VA	3	20 A	SV-D0701C	24	3#12, #12G, 3/4"C
	25				8592 VA / 0 VA						26	
3#8, #10G, 3/4"C	27	AHU-D7	35 A	3		8592 VA / 1290 VA		1	20 A	SV-D0702A	28	2#12, #12G, 3/4"C
	29						8592 VA / 1290 VA	1	20 A	SV-D0702B	30	2#12, #12G, 3/4"C
	31				5986 VA / 1290 VA			1	20 A	SV-D0703	32	2#12, #12G, 3/4"C
3#10, #10G, 3/4"C	33	LEF-1	50 A	3		5986 VA / 0 VA		1	20 A	FCU-D01	34	2#12 , #12G, 3/4"C
	35						5986 VA / 0 VA	1	20 A	LVL 1 LTG	36	2#10, #10G, 3/4"C
	37				5986 VA / 0 VA			1	20 A	Lighting	38	
3#10, #10G, 3/4"C	39	LEF-2	50 A	3		5986 VA / 0 VA		1	20 A	SPARE	40	
	41						5986 VA / 0 VA	1	20 A	SPARE	42	
	43	SPACE	--	1	0 VA / 0 VA			1	--	SPACE	44	
	45	SPACE	--	1		0 VA / 0 VA		1	--	SPACE	46	
	47	SPACE	--	1			0 VA / 0 VA	1	--	SPACE	48	
	49	SPACE	--	1	0 VA / 0 VA			1	--	SPACE	50	
	51	SPACE	--	1		0 VA / 0 VA		1	--	SPACE	52	
	53	SPACE	--	1			0 VA / 0 VA	1	--	SPACE	54	
	55	SPACE	--	1	0 VA / 0 VA			1	--	SPACE	56	
	57	SPACE	--	1		0 VA / 0 VA		1	--	SPACE	58	
	59	SPACE	--	1			0 VA / 0 VA	1	--	SPACE	60	
				Total Load:	27961 VA	27611 VA	26191 VA					
				Total Amps:	102 A	100 A	95 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
LIGHTING	0 VA	0.00%	0 VA	
Motor	61194 VA	107.13%	65559 VA	Total Conn. Load: 72234 VA
RECEPTACLES	11040 VA	95.29%	10520 VA	Total Est. Demand: 76079 VA
				Total Conn. Current: 87 A
				Total Est. Demand Current: 92 A

Notes:

PANELBOARD LEGEND

-	LVP-YA12-A	LVP-YA12-B
-	LVP-YA12-D	LVP-YA12-M

Tx. Registration # F-20213

STATE OF TEXAS — RYAN A. VANCE — 100222 — REGISTERED — PROFESSIONAL ENGINEER

05/21/2025

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GONZALEZ SHAH SMITH

UNIVERSITY OF NORTH TEXAS
DISCOVERY PARK D170 LAB FIT-OUT

3940 N Elm Street
Denton, TX 76207

UNT UNIVERSITY OF NORTH TEXAS

Issued For:	ISSUE FOR CONSTRUCTION
Date:	04.01.2025

REVISIONS

NO	DESCRIPTION	DATE
1	Addendum 1	5/21/2025

E701

ELECTRICAL PANELBOARD SCHEDULES

Treanor NO. XX#####.##

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28 3100 FIRE ALARM SYSTEM

DOCUMENT 003132

GEOTECHNICAL DATA

1.1 SUMMARY
- A. This document includes information pertaining to geotechnical data.

1.2 INVESTIGATION
- A. An investigation of subsurface soil conditions at the building site was authorized by the Owner, and was subsequently performed by ***UES***, project number ***W243611-rev1***, dated ***February 19, 2024***.

1.3 REPORT
- A. The Geotechnical Investigation Report is for information only and is not a warranty of subsurface conditions.
- B. The Report is made available for information only.
- C. The information contained in the Report represents design criteria, recommendations, and guidelines that were utilized as the basis of design for the engineering of the earthwork operations, paving design, and foundation design indicated in the Contract Documents. No changes in these design criteria will be considered or permitted.

1.4 RESPONSIBILITY
- A. Bidders are expected to examine the site and subsurface investigation reports.
- B. The Design Professional and Owner assume no responsibility for variations in subsoil conditions, quality, or stability, or for the presence, level, and extent of underground water.
- C. The Design Professional and Owner assume no responsibility for Bidder's interpretation of data contained in the Report.

END OF DOCUMENT

GEOTECHNICAL EXPLORATION

STAIR WELL & INTERIOR ADDITION FOUNDATIONS

3940 N. Elm Street
Denton, Texas
UES Report No. W243611-rev1
February 19, 2024

Prepared for:

UNIVERSITY OF NORTH TEXAS – UNION CIRCLE
3940 N. Elm Street
Denton, Texas 76205
Attention: Thanh Kim Nguyen, AIA

Prepared By:

UES™

February 19, 2024

University of North Texas – Union Circle
3940 N. Elm Street
Denton, Texas 76205
Attention: Thanh Kim Nguyen, AIA

Re: Geotechnical Exploration
Stair Well & Interior Addition Foundations
3940 N. Elm Street
Denton, Texas
UES Report No. W243611-rev1

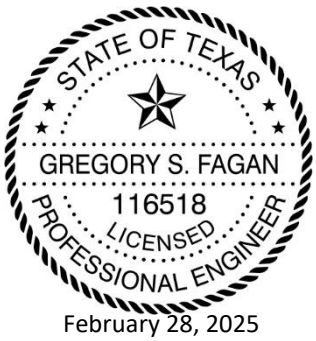
Attached is the report of the geotechnical exploration performed for the project referenced above. This study was authorized using the UNT Purchase Order No. NT100012408 on November 21, 2024 and performed in accordance with UES Professional Solutions 44, LLC (hereinafter UES) Proposal No. 108474-rev1, dated November 13, 2024.

The purpose of this revision is to include subgrade improvement recommendations for the exterior stairwell to reduce potential seasonal movements to about 1 inch.

This report contains results of field explorations and laboratory testing and an engineering interpretation of these with respect to available project characteristics. The results and analyses were used to develop recommendations to aid design and construction of foundations and pavement.

UES Professional Solutions 44, LLC appreciates the opportunity to be of service on this project. If we can be of further assistance, such as providing materials testing services during construction, please contact our office.

Sincerely,
UES PROFESSIONAL SOLUTIONS 44, LLC
TBPE Firm No. 813



February 28, 2025

Karina Cohuo, EIT
Geotechnical Project Manager

Gregory S. Fagan, P.E.
Geotechnical Department Manager

KC/GSF/dt
Copies: (1-PDF) Client

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APPENDIX

A-1 Methods of Field Exploration
Boring Location Plan – Figure 1

B-1 Methods of Laboratory Testing
Logs of Borings
Key to Soil Symbols and Classifications

1.0 PURPOSE AND SCOPE

The purpose of this geotechnical exploration is for UES PROFESSIONAL SOLUTIONS 44, LLC (UES) to evaluate for University of North Texas – Union Circle (Client) some of the physical and engineering properties of subsurface materials at selected locations on the subject site with respect to formulation of appropriate geotechnical design parameters for the proposed construction. The field exploration was accomplished by securing subsurface samples from widely spaced test borings performed across the expanse of the site. Engineering analyses were performed from results of the field exploration and results of laboratory tests performed on representative samples.

Also included are general comments pertaining to reasonably anticipated construction problems and recommendations concerning earthwork and quality control testing during construction. This information can be used to evaluate subsurface conditions and to aid in ascertaining construction meets project specifications.

Recommendations provided in this report were developed from information obtained in test borings depicting subsurface conditions only at the specific boring locations and at the particular time designated on the logs. Subsurface conditions at other locations may differ from those observed at the boring locations, and subsurface conditions at boring locations may vary at different times of the year. The scope of work may not fully define the variability of subsurface materials and conditions that are present on the site.

The nature and extent of variations between borings may not become evident until construction. If significant variations then appear evident, our office should be contacted to re-evaluate our recommendations after performing on-site observations and possibly other tests.

2.0 PROJECT CHARACTERISTICS

We understand the project will consist of a new exterior stairwell and two new interior column foundations supporting an approximate 3,500 SF second floor in the high bay space. The subject site is located at the existing University of North Texas Discovery Park at 3940 North Elm Street in Denton, Texas. A site plan illustrating the general outline of the property is provided as Figure 1, the Boring Location Plan, in the Appendix

At the time the field exploration was performed, the site consisted of the existing discovery park building with associated parking and drives. A review of images available on Google Earth™ indicates grading and clearing activities occurred at the site prior to our field investigation. No information regarding previous development on the site was provided to us. Cursory visual observation and review of the topographical maps available at www.dfwmaps.com indicate the site is generally level (approximate Elev. 714 ft).

We understand the existing building foundation consists of drilled piers. We further understand

the structures will be design for movements of 1 inch or less and maximum column loads up to 100 kips. No below grade slabs are planned. Grading plans were not provided for this study. We understand existing grades will remain relatively unchanged, requiring maximum cuts and fills of less than 1 ft to achieve final grade.

3.0 FIELD EXPLORATION

Subsurface conditions on the site were explored by drilling a total two (2) test borings. Boring 1 was drilled with truck mounted drilling equipment to a depth of about 35 ft on the exterior of the building in the area of the planned stairwell. Boring 2 was drilled on the interior of the building using trailer mounted drilling equipment. Boring 2 was planned to a depth of about 35 ft but was terminated at 20 ft due to auger refusal on hard limestone. The test borings were drilled in general accordance with ASTM Standard D 420 using standard rotary drilling equipment. The approximate location of each test boring is shown on the Boring Location Plan, Figure 1, enclosed in the Appendix. Details of drilling and sampling operations are briefly summarized in Methods of Field Exploration, Section A-1 of the Appendix.

Subsurface types encountered during the field exploration are presented on Log of Boring sheets included in the Appendix. The boring logs contain our Field Technician's and Engineer's interpretation of conditions believed to exist between actual samples retrieved. Therefore, these boring logs contain both factual and interpretive information. Lines delineating subsurface strata on the boring logs are approximate and the actual transition between strata may be gradual.

4.0 LABORATORY TESTS

Selected samples of the subsurface materials were tested in the laboratory to evaluate their engineering properties as a basis in providing recommendations for foundation design and earthwork construction. A brief description of testing procedures used in the laboratory can be found in Methods of Laboratory Testing, Section B-1 of the Appendix. Individual test results are presented on the Log of Boring sheets enclosed in the Appendix.

5.0 GENERAL SUBSURFACE CONDITIONS

Based on geological atlas maps available from the Bureau of Economic Geology, published by the University of Texas at Austin, the site lies within the Grayson Marl and Main Street Limestone formation, mapped as undivided. This formation generally consists of interbedded marl (limey shale) and limestone. Residual soils associated with this formation generally consist of clay soils with moderate to very high shrink-swell potential.

Subsurface conditions encountered in Boring 1 generally consisted of clay, sandy clay and clayey sand to a depth of about 14 below the existing ground surface underlain by sandstone to a depth of about 18 ft. Limestone was then encountered to a depth of 22 ft underlain by shale extending to the 35 ft termination depth of the boring. Subsurface conditions encountered in Boring 2

generally consisted of clayey sand and sandy clay to a depth of about 11 ft below the ground surface underlain by sandstone to a depth of about 14 ft. Limestone was then encountered extending to the 20 ft termination depth of the boring. Boring 2 was terminated at a depth of 20 ft due to auger refusal on hard limestone. About 8½ inches of concrete was encountered at the surface in Boring 2. Plastic sheeting was encountered at a depth of about 1 ft below the ground surface however, a void or vapor barrier were not encountered in the boring. More detailed stratigraphic information is presented on the attached Log of Boring sheets.

The granular soils (clayey sand) encountered in the borings are considered relatively permeable and are expected to have a relatively rapid response to water movement. However, the clay, sandy clay, sandstone, limestone and shale encountered in the borings are considered relatively impermeable and are expected to have a relatively slow response to water movement. Therefore, several days of observation would be required to evaluate actual groundwater levels within the depths explored. Also, the groundwater level at the site is anticipated to fluctuate seasonally depending on the amount of rainfall, prevailing weather conditions and subsurface drainage characteristics.

Free groundwater was not encountered in the borings. However, it is common to encounter shallower seasonal groundwater in granular materials, from natural fractures within the clayey matrix, at the soil/rock (limestone and/or shale) interface or from fractures in the rock (limestone and/or shale), particularly during or after periods of precipitation. If more detailed groundwater information is required, monitoring wells or piezometers can be installed.

Further details concerning subsurface materials and conditions encountered can be obtained from the Log of Boring sheets provided in the Appendix.

6.0 DESIGN RECOMMENDATIONS

The following design recommendations were developed on the basis of the previously described Project Characteristics (Section 2.0) and General Subsurface Conditions (Section 5.0). Should the project criteria change, including the addition locations on the site, our office should conduct a review to determine if modifications to the recommendations are required. Further, it is recommended our office be provided with a copy of the final plans and specifications for review prior to construction.

The design information provided in this report was developed assuming that final grades are constructed within 1 ft of existing grades. Additional cutting and filling beyond that assumed might require modifications to the recommendations provided herein. It is recommended our office be contacted once final grades are established to determine if modifications to the recommendations in this report are necessary.

6.1 Possible Fill and Differential Movement Considerations

As discussed in Section 2.0, it appears the site was graded prior to our field exploration. Although not encountered in the borings, existing fill material related to previous grading activities could be encountered at this site. We expect the existing fill was placed under compaction control during construction of the building. Our recommendations are based on the assumption that the fill was placed in general conformance with fill compaction recommendations contained in Section 7.3. If it is believed this fill was placed without engineering supervision and that the fill is uncontrolled fill, then the fill could be subject to indeterminate levels of settlement. Uncontrolled fill is generally not suitable for support of foundations or floor slabs. Our office should be contacted for further evaluation if it is believed the existing fill encountered in the borings is uncontrolled fill.

We understand the existing building foundation consists of drilled piers. Differential movements can occur between the existing building and the proposed columns even if the columns are constructed with a similar foundation as the existing building. Methods should be implemented to allow for differential movement between the foundation system of the existing building and the new columns. Further, preventative measures should be taken to avoid damaging or adversely affecting the integrity of the existing foundation system during construction activities.

6.2 Drilled, Straight-Shaft Piers

Our findings indicate the interior columns and exterior stairwell could be supported using a system of drilled, straight-shaft pier bearing at least 2 ft into limestone or shale (the bearing stratum). The bearing stratum was encountered at depths of about 18 ft and 14 ft below the ground surface in Borings 1 and 2, respectively. Deeper penetration will be required to develop sufficient skin friction and/or uplift resistance. Allowable end bearing and skin friction parameters are provided in Table A. Sandstone should be neglected in computing pier capacity due to inconsistent strength characteristics.

TABLE A
Allowable End Bearing and Skin Friction Parameters

Bearing Stratum	Allowable End Bearing (ksf)	Skin Friction in Compression (ksf)[1]	Skin Friction in Uplift Resistance (ksf)
At least 2 ft into Limestone or Shale (the bearing stratum)	30	4.5	3.8

[1] Skin friction should be neglected in the upper 2 ft of the bearing stratum above the bottom of temporary casing.

At least two (2) pier shaft diameters should be provided below the bottom of the pier and the termination depth of our deepest boring (35 ft below existing grade) to use the allowable end

bearing parameter. If the minimum clearance between the bottom of the pier and the deepest boring is not provided, piers should be designed as friction piers, neglecting end bearing. In any case, piers should not bear deeper than the deepest boring (35 ft below the existing ground surface). Deeper borings will be required to verify the bearing stratum below 35 ft if deeper piers are planned.

The minimum clear spacing between piers should be at least two (2) pier shaft diameters, based on the larger pier, to develop the full load carrying capacity from skin friction. The allowable skin friction should be reduced by 50 percent for piers with adjacent touching edges. The allowable skin friction can be interpolated between 100 percent and 50 percent for piers spaced between two (2) pier shaft diameters and piers with adjacent touching edges.

The allowable bearing pressure value in Table A has a factor of safety of at least three (3) and the skin friction values have a factor of safety of at least two (2). Normal elastic settlement of piers under loading is estimated at less than about 1 inch.

Each pier should be sufficiently embedded into the bearing stratum and should be designed with full length reinforcing steel to resist the uplift pressure (soil-to-pier adhesion) due to potential soil swell along the shaft from post construction heave and other uplift forces applied by structural loadings. The magnitude of uplift adhesion due to soil swell along the pier shaft cannot be defined accurately and can vary according to the actual in-place moisture content of the soils during construction. It is estimated this uplift adhesion will not exceed about 1.6 kips per sq ft. This soil adhesion is approximated to act uniformly over the pier shaft in contact with clay soils within 12 ft of final grade or to the top surface of sandstone, whichever is encountered first.

Table B contains L-PILE design parameters for design of lateral resistance of drilled piers. Lateral resistance should be neglected within 6 ft of final grade due to potential soil shrinkage and/or disturbance.

TABLE B
DESIGN PARAMETERS FOR L-PILE

Material	Clay Soils Deeper than 6 ft Below Final Grade	Limestone or Shale
L-Pile p-y Model	Stiff clay	Weak Rock
Effective Unit Weight (γ), pci	0.069	0.078
Undrained Cohesion (c), psi	5.0	-
Rock Uniaxial Compressive Strength (q_u), psi	-	250
Rock Mass Modulus (E_r), psi	-	25,000
Rock Quality Designation (RQD)[1], %	-	60-80

Rock Strain Factor (k_{rm})	-	0.0001
[1]Rock Quality Designation (RQD) is based on our area experience and the results of the field exploration.		

6.3 Helical Piers (Alternative)

Considering possible difficulties due to limited overhead conditions with the existing high-bay space, helical piers could be considered for support of the interior column foundations.

Helical piers are a manufactured foundation element consisting of a centralized steel shaft and one or more helical bearing plates. The helical plates are formed with a uniform-pitch screw thread, and the pier is installed by rotating it into the ground to the desired depth or refusal. The helical plate(s) provides end bearing resistance due to gravity loads and uplift resistance due to swelling of high shrink-swell active clays such as encountered at the boring location.

All helixes should bear on the top surface of sandstone. Sandstone was encountered at a depth of about 11 ft below existing ground surface in Boring 2. Vertical spacing between helixes along the shaft should be least three (3) helix diameters, based on the largest adjacent helix. The minimum helix diameter must be sized to prevent the bearing soils from being over-stressed and to develop sufficient uplift capacity to overcome the potential uplift forces acting on the pier. The helix portion should be at least three (3) times the width of the shaft. The minimum clear spacing between edges of adjacent piers should be at least two (2) helix diameters (based on the larger helix). Normal elastic settlement of helical piers under loading is estimated at less than about 1 inch.

Load capacity of helical piers bearing on the top surface of sandstone can be calculated using an allowable bearing pressure of 10 kips per sq ft acting on the bottom of the single helix.

Each helical pier should be designed to resist the uplift pressure (soil-to-pier adhesion) due to potential soil swell along the shaft from post construction heave and other uplift forces applied by structural loadings. The magnitude of uplift adhesion due to soil swell along the helical pier shaft cannot be defined accurately and can vary according to the actual in-place moisture content of the soils during construction. It is estimated this uplift adhesion will not exceed about 1.6 kips per sq ft to a depth of about 12 ft below the ground surface or to the top surface of sandstone, whichever is encountered first.

From our experience, helical piers are frequently designed and installed by specialty contractors. Helical piers should be designed by a professional engineer and should be installed per the manufacturer's requirements. Helical piers should be load tested to verify the pier is capable of supporting the design load. Load tests can also be utilized to maximize the foundation load, thereby reducing the number of piers. We recommend performing at least one helical pier load test. UES would be pleased to assist in design, implementation, and evaluation of a pier load test if desired.

6.4 Grade Beams and Pier Caps

All grade beams connecting piers should be formed and not cast in earthen trenches. Grade beams should be formed with a nominal 6-inch void at the bottom. Commercially available cardboard box forms (cartons) are made for this purpose. The cardboard cartons should extend the full length and width of the grade beams. Prior to concrete placement, cartons should be inspected to verify they are firm, properly placed, and capable of supporting wet concrete. Some type of permanent soil retainer, such as pre-cast concrete panels, must be provided to prevent soils adjacent to grade beams from sloughing into the void space at the bottom of the grade beams. Additionally, backfill soils placed adjacent to grade beams must be compacted as outlined in Section 7.3.

6.5 Potential Seasonal Movements

Interior Columns

We estimate potential movement of the interior columns due to shrinking and swelling of active clay soils to be about 1 inch based on *current* moisture conditions and swell test results. Based on index properties of the soil (Atterberg limits), potential movement of the addition constructed within 1 ft of existing grade could be about 1½ inches if the soils were allowed to cycle between a wet and a dry condition. The proposed foundation area should be maintained in its current moist condition to maintain current potential movements of about 1 inch.

Exterior Stairwell – Flatwork Considerations

We estimate potential movement of the exterior stairwell due to shrinking and swelling of active clay soils to be about 2½ inches after grading consisting of cuts and fills of less than 1 ft. We understand the stairwell will consist of a prefabricated metal staircase on a shallow foundation.

Potential seasonal movements were estimated in general accordance with methods outlined by Texas Department of Transportation (TxDOT) Test Method Tex-124-E, from results of absorption swell tests and engineering judgment and experience. The estimated movements were calculated assuming the moisture content of the in-situ soil within the normal zone of seasonal moisture content change varies between a "dry" condition and a "wet" condition as defined by methods outlined in Texas Department of Transportation Test Method Tex-124-E. Also, it was assumed a 1 psi surcharge load from the flatwork acts on the subgrade soils. Movements exceeding those predicted herein could occur if the existing soils are exposed to an extended dry period, positive drainage of surface water is not maintained or if soils are subject to an outside water source, such as leakage from a utility line or subsurface migration from off-site locations.

We understand it is desired to reduce the potential seasonal movement of the floor slab to about 1 inch. Movements could be reduced to about 1 inch by placing a minimum 2 ft cap of non-expansive fill between the bottom of the floor slab and the top surface of chemically injected soil extending to a depth of 10 ft below the non-expansive soil. Chemical injection is described in Section 6.5.1. Non-expansive fill could consist of select fill or flexible base material as described

in Section 7.3. In choosing this method of foundation movement reduction, the Owner is accepting some post construction seasonal movement of the foundation (about 1 inch).

6.5.1 Subgrade Improvement Using Chemical Injection – Exterior Stairwell

Movement of the floor slab could be reduced to about 1 inch by placing a minimum 2-ft cap of non-expansive material between the bottom of floor slab and the top surface of 10 ft of chemical injected soil. Non-expansive fill could consist of select fill or flexible base material as described in Section 7.3. Chemical Injection of the on-site soil should extend throughout the entire building pad area, at least 5 ft beyond the perimeter of the building and below any adjacent flatwork for which it is desired to reduce movements. At building entrances and outward swinging doors, chemical injection should extend at least 10 ft beyond the building perimeter. However, non-expansive material should not extend beyond the building limits. If flatwork or paving is not planned adjacent to the structure (i.e. above the chemically injected soils), a moisture barrier consisting of a minimum of 10 mil plastic sheeting with 8 to 12 inches of soil cover should be provided above the chemically injected soils. Chemically injected soils should be maintained in a moist condition prior to placement of the required thickness of non-expansive material or flatwork. The chemical injection contractor should verify if plastic sheeting is required for maintenance of long term performance of chemical injection.

Chemical injection consists of injecting the clayey soils with a proprietary chemical specifically formulated for long-term reduction of shrink-swell capacity in expansive clayey soils. The Client should obtain appropriate documentation from the manufacturer indicating the chemical is environmentally safe and long lasting (effective for 10 years or more). Verification that the chemical solution will not heave adjacent structures as a result of the injection process should also be obtained. All references should be obtained and verified. Chemical injection proposals should only be considered from contractors whose chemicals and processes have been studied and shown to be effective by a major U.S. research university.

Satisfactory completion of the injection process will have been achieved when the desired allowable percent free swell has been achieved in the injected soils. In order to reduce overall building pad movements to about 1 inch, the resulting measured free swell of the injected material should not exceed 1 percent. Multiple passes with chemical injection may be required to meet this design requirement. The performance of post-injection free swell testing by UES should be employed as acceptance criteria in engineering analysis to examine accomplishment of the intended objectives of the injection treatment.

Construction specifications as related to the chemical injection process should be provided by the contractor due to the proprietary nature of the chemicals used during the injection process. This includes acceptance criteria and any warranty.

Maximum benefits of this procedure can best be achieved provided the entire process is carefully observed and monitored by UES.

6.6 Mat Foundations (Exterior Stairwell)

Our findings indicate mat foundations can be used for support of the proposed exterior stairwell. Mat foundations will be subject to movement as discussed in Section 6.5 (up to 2½ inches for slabs constructed within 1 ft of final grade). Subgrade improvement recommended in Section 6.5.1 is required to reduce potential movements of mat foundations to about 1 inch or less.

A net allowable soil bearing pressure of 1.5 kips per sq ft and a modulus of subgrade reaction of 150 pci may be used for design of at-grade mat foundations bearing on chemically injected subgrade placed as recommended in Section 6.5.1.

6.7 Seismic Considerations

The Site Class for seismic design is based on several factors that include soil profile (soil or rock), shear wave velocity, and strength, averaged over a depth of 100 ft. Since our borings did not extend to 100-foot depths, we based our determinations on the assumption that the subsurface materials below the bottom of the borings were similar to those encountered at the termination depth of the borings. Based on Section 1613.2.2 of the 2021 International Building Code and Table 20.3-1 in the ASCE-7-16, we recommend using Site Class C (very dense soil and soft rock) for seismic design at this site.

6.8 Area Pavement

To permit correlation between information from test borings and actual subgrade conditions exposed during construction, a qualified Geotechnical Engineer should be retained to provide subgrade monitoring and testing during construction. If there is any change in project criteria, the recommendations contained in this report should be reviewed by our office.

Calculations used to determine the required pavement thickness are based only on the physical and engineering properties of the materials used and conventional thickness determination procedures. Pavement joining buildings should be constructed with a curb and the joint between the building and curb should be sealed. Related civil design factors such as subgrade drainage, shoulder support, cross-sectional configurations, surface elevations, reinforcing steel, joint design and environmental factors will significantly affect the service life and must be included in preparation of the construction drawings and specifications, but all were not included in the scope of this study. Normal periodic maintenance will be required for all pavement to achieve the design life of the pavement system.

Please note, the recommended pavement sections are considered the minimum necessary to provide satisfactory performance based on the expected traffic loading. In some cases, City minimum standards for pavement section construction may exceed those recommended.

6.8.1 Pavement Subgrade Preparation

The exposed surface of the pavement subgrade soil should be scarified to a depth of 6 inches and mixed with a minimum 6 percent hydrated lime (by dry soil weight) in conformance with TxDOT Standard Specification Item 260. Assuming an in-place unit weight of 100 pcf for the pavement subgrade soils, this percentage of lime equates to about 27 lbs of lime per sq yard of treated subgrade. The actual amount of lime required should be confirmed by additional laboratory tests (ASTM C 977 Appendix XI) prior to construction. The soil-lime mixture should be compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of 0 to 4 percentage points above the mixture's optimum moisture content. In all areas where hydrated lime is used to stabilize subgrade soil, routine Atterberg-limit tests should be performed to verify the resulting plasticity index of the soil-lime mixture is at/or below 15.

We recommend subgrade improvement procedures extend at least 1 ft beyond the edge of the pavement to reduce effects of seasonal shrinking and swelling upon the extreme edges of pavement.

Improvement of the pavement subgrade soil will not prevent normal seasonal movement of the underlying untreated materials. Pavement and other flatwork will have the same potential for movement as slabs constructed directly on the existing undisturbed soils. Good perimeter surface drainage with a minimum slope of 2 percent away from the pavement is recommended. Normal maintenance of pavement should be expected over the life of the structures.

6.8.2 Portland Cement Concrete (PCC) Pavement

Following subgrade improvement as recommended in Section 6.8.1, PCC (reinforced) pavement sections are recommended in Table C.

TABLE C Recommended PCC Pavement Sections		
Paving Areas and/or Type	**Subgrade Thickness, Inches**	**PCC Thickness, Inches**
Parking Areas Subjected Exclusively to Passenger Vehicle Traffic,	Scarified and Compacted (native), 6	5
Drive Lanes, Fire Lanes, Areas Subject to Light Volume Truck Traffic	Lime Modified Subgrade, 6	6
Dumpster Traffic Areas, Areas subject to Moderate Volume Truck Traffic,	Lime Modified Subgrade, 6	7

PCC should have a minimum compressive strength of 3,000 psi at 28 days in parking areas subjected exclusively to passenger vehicle traffic. We recommend a minimum compressive strength of 3,500 psi at 28 days for the drive lanes, fire lanes, and truck areas. Concrete should be designed with 4.5+1.5 percent entrained air. Joints in concrete paving should not exceed 15 ft. Reinforcing steel should consist of No. 3 bars placed at 18 inches on-center in two directions.

Improvement of the pavement subgrade is recommended for drive lanes, fire lanes and pavement subject to truck traffic. Improvement of the pavement subgrade is not necessary for pavements subjected exclusively to passenger vehicle traffic, although improvement in these areas would be generally beneficial to the long-term performance of the pavement. Improvement of the subgrade is described in Section 6.8.1.

Alternatively, mechanical improvement of the pavement subgrade could be eliminated by increasing the PCC thickness in the pavement sections presented in Table C by 1 inch and placing on unmodified subgrade. Prior to construction of pavement on unimproved subgrade soil, the exposed subgrade should be scarified to a depth of at least 6 inches and compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of -1 to +3 percentage points of the material's optimum moisture content.

6.9 Drainage and Other Considerations

Adequate drainage should be provided to reduce seasonal variations in the moisture content of foundation soils. All pavement and sidewalks within 10 ft of the structure should be sloped away from the structure to prevent ponding of water around the foundation. Final grades within 10 ft of the structure should be adjusted to slope away from the structure at a minimum slope of 2 percent. **Maintaining positive surface drainage throughout the life of the structure is essential.**

In areas with pavement or sidewalks adjacent to the new structure, a positive seal must be maintained between the structure and the pavement or sidewalk to minimize seepage of water into the underlying supporting soils. Post-construction movement of pavement and flatwork is common. Normal maintenance should include inspection of all joints in paving and sidewalks,

etc. as well as resealing where necessary.

Several factors relate to civil and architectural design and/or maintenance, which can significantly affect future movements of the foundation and floor slab system:

- Preferably, a complete system of gutters and downspouts should carry runoff water a minimum of 10 feet from the completed structure.

- Large trees and shrubs should not be allowed closer to the foundation than a horizontal distance equal to roughly one-half of their mature height due to their significant moisture demand upon maturing.

- Moisture conditions should be maintained "constant" around the edge of the slab. Ponding of water in planters, in unpaved areas, and around joints in paving and sidewalks can cause slab movements beyond those predicted in this report.

- Planter box structures placed adjacent to the building should be provided with a means to assure concentrations of water are not available to the subsoil stratigraphy.

Trench backfill for utilities should be properly placed and compacted as outlined in Section 7.4 and in accordance with requirements of local City standards. Since granular bedding backfill is used for most utility lines, the backfilled trench should not become a conduit and allow access for surface or subsurface water to travel toward the new structure. Concrete cut-off collars or clay plugs should be provided where utility lines cross building lines to prevent water from traveling in the trench backfill and entering beneath the structure.

7.0 GENERAL CONSTRUCTION PROCEDURES AND GUIDELINES

Variations in subsurface conditions could be encountered during construction. To permit correlation between test boring data and actual subsurface conditions encountered during construction, it is recommended a registered Professional Engineering firm be retained to observe construction procedures and materials.

Some construction problems, particularly degree or magnitude, cannot be anticipated until the course of construction. The recommendations offered in the following paragraphs are intended not to limit or preclude other conceivable solutions, but rather to provide our observations based on our experience and understanding of the project characteristics and subsurface conditions encountered in the borings.

7.1 Site Preparation and Grading

As discussed in Section 2.0, the site appears to have been graded prior to our field exploration. Existing fill may be encountered in parts of the site that were not explored. Although not

encountered in the borings, existing fill materials could contain organics, boulders and other debris which could be encountered during site grading and general excavation. Test pit excavations performed prior to construction can be used to evaluate the depth, extent and composition of existing fill at this site. UES would be pleased to provide this service if desired.

All areas supporting pavement, flatwork or areas to receive new fill should be properly prepared.

- After completion of the necessary stripping, clearing, and excavating, and prior to placing any required fill, the exposed soil subgrade should be carefully evaluated by probing and testing. Any undesirable material (organic material, wet, soft, or loose soil) still in place should be removed.

- The exposed soil subgrade should be further evaluated by proof-rolling with a heavy pneumatic tired roller, loaded dump truck or similar equipment weighing approximately 20 tons to check for pockets of soft or loose material hidden beneath a thin crust of possibly better soil.

- Proof-rolling procedures should be observed routinely by a Professional Engineer or their designated representative. Any undesirable material (organic material, wet, soft, or loose soil) exposed during the proof-roll should be removed and replaced with well-compacted material as outlined in Section 7.3.

- Prior to placement of any fill, the exposed soil subgrade should then be scarified to a minimum depth of 6 inches and recompacted as outlined in Section 7.3.

If fill is to be placed on existing slopes (natural or constructed) steeper than six horizontal to one vertical (6:1), the fill materials should be benched into the existing slopes in such a manner as to provide a minimum bench width of five (5) feet. This should provide a good contact between the existing soils and new fill materials, reduce potential sliding planes and allow relatively horizontal lift placements.

Even if fill is properly compacted as recommended in Section 7.3, deep fills in excess of about 10 ft are still subject to settlements over time of up to about 1 to 2 percent of the total fill thickness. This should be considered when planning or placing deep fills.

Slope stability analysis of embankments (natural or constructed) and global stability analysis for retaining walls was not within the scope of this study.

The contractor is responsible for designing any excavation slopes, temporary sheeting or shoring. Design of these structures should include any imposed surface surcharges. Construction site safety is the sole responsibility of the contractor, who shall also be solely responsible for the means, methods and sequencing of construction operations. The contractor should also be aware that slope height, slope inclination or excavation depths (including utility trench

excavations) should in no case exceed those specified in local, state and/or federal safety regulations, such as OSHA Health and Safety Standard for Excavations, 29 CFR Part 1926, or successor regulations. Stockpiles should be placed well away from the edge of the excavation and their heights should be controlled so they do not surcharge the sides of the excavation. Surface drainage should be carefully controlled to prevent flow of water over the slopes and/or into the excavations. Construction slopes should be closely observed for signs of mass movement, including tension cracks near the crest or bulging at the toe. If potential stability problems are observed, a geotechnical engineer should be contacted immediately. Shoring, bracing or underpinning required for the project (if any) should be designed by a professional engineer registered in the State of Texas.

Due to the nature of the soils found near the surface at some of the borings, traffic of heavy equipment (including heavy compaction equipment) may create pumping and general deterioration of shallow soils. Therefore, some construction difficulties should be anticipated during periods when these soils are saturated.

7.2 Foundation Excavations

All foundation excavations should be properly monitored to verify loose, soft, or otherwise unsuitable material are removed. All foundation excavations should be monitored to verify foundations bear on suitable material. The bearing stratum exposed in the base of all foundation excavations should be protected against any detrimental change in conditions. Surface runoff water should be drained away from excavations and not allowed to collect. All concrete for foundations should be placed as soon as practical after the excavation is made. Piers should be excavated and concrete placed the same day.

Prolonged exposure of the bearing surface to air or water will result in changes in strength and compressibility of the bearing stratum. Therefore, if delays occur, straight shaft piers should be slightly widened and deepened to provide a fresh penetration surface, or a new (deeper) full penetration should be provided.

All pier shafts should have a minimum diameter of 1.5 ft to facilitate clean-out of the base and proper monitoring. Concrete placed in pier holes should be directed through a tremie, hopper, or equivalent. Placement of concrete should be vertical through the center of the shaft without hitting the sides of the pier or reinforcement to reduce the possibility of segregation of aggregates. Concrete placed in piers should have a minimum slump of 5 inches (but not greater than 7 inches) to avoid potential honey-combing.

Observations during pier drilling should include, but not necessarily be limited to, the following items:

- Verification of proper bearing strata and consistency of subsurface stratification with regard to boring logs,

- Confirmation the minimum required penetration into the bearing strata is achieved,
- Complete removal of cuttings from bottom of pier holes,
- Proper handling of any observed water seepage and sloughing of subsurface materials,
- No more than 2 inches of standing water should be permitted in the bottom of pier holes prior to placing concrete, and
- Verification of pier diameter and steel reinforcement.

Groundwater was not encountered in the borings. However, groundwater could be encountered during drilled pier excavations depending on groundwater conditions at that time. Temporary casing could be required control water seepage if encountered during drilling. Casing should be seated in the shale below the depth of seepage and all water and loosened material should be removed from the cased excavation before starting the design penetration. As casing is extracted, care should be taken to maintain a positive head of plastic concrete and minimize the potential for intrusion of water seepage or sloughing of sandy soils. Processing of casing through granular soils could be required.

7.3 Fill Compaction

Select fill used as non-expansive material in the building pad should have a liquid limit less than 35, a plasticity index (PI) not less than about 4 nor greater than 15 and contain no more than 0.5 percent fibrous organic materials, by weight. All select material should contain no deleterious material and should be compacted to a dry density of at least 95 percent standard Proctor maximum dry density (ASTM D 698) and within the range of 1 percentage point below to 3 percentage points above the material's optimum moisture content. The plasticity index and liquid limit of material used as select non-expansive material should be routinely verified during placement using laboratory tests. Visual observation and classification should not be relied upon to confirm the material to be used as select, non-expansive material satisfies the Atterberg-limit criteria.

Flexible base used as non-expansive material in the building pad should consist of material meeting the requirements of TxDOT Standard Specifications Item 247, Type A, B, C, or D, Grade 1-2 or 3. The flexible base should be compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of 2 percentage points below to 2 percentage points above the material's optimum moisture content.

Clayey soils with a plasticity index equal to or greater than 25 should be compacted to a dry density between 93 and 98 percent of standard Proctor maximum dry density (ASTM D 698). The

compacted moisture content of the clays during placement should be within the range of +2 to +6 percentage points of the material's optimum moisture.

Clayey soils used for general fill with a plasticity index less than 25 should be compacted to a dry density of at least 95 percent of standard Proctor maximum dry density (ASTM D 698). The compacted moisture content of the clays during placement should be within the range of -1 to +3 percentage points of the material's optimum moisture.

Clayey material used as fill should be processed such that the largest particle or clod is less than 6 inches prior to compaction.

Where mass fills are deeper than 10 ft, the fill/backfill below 10 ft should be compacted to at least 100 percent of standard Proctor maximum dry density (ASTM D 698) and within – 2 to +2 percentage points of the material's optimum moisture content. The portion of the fill/backfill shallower than 10 ft should be compacted as outlined above.

Compaction should be accomplished by placing fill in about 8-inch thick loose lifts and compacting each lift to at least the specified minimum dry density. Field density and moisture content tests should be performed on each lift.

7.4 Utilities

Where utility lines are deeper than 10 ft, the fill/backfill below 10 ft should be compacted to at least 100 percent of standard Proctor maximum dry density (ASTM D 698) and within –2 to +2 percentage points of the material's optimum moisture content. The portion of the fill/backfill shallower than 10 ft should be compacted as previously outlined. Density tests should be performed on each lift (maximum 12-inch thick) and should be performed as the trench is being backfilled.

Even if fill is properly compacted, fills in excess of about 10 ft are still subject to settlements over time of up to about 1 to 2 percent of the total fill thickness. This should be considered when designing pavement over utility lines.

If utility trenches or other excavations extend to or beyond a depth of 5 ft below construction grade, the contractor or others shall be required to develop an excavation safety plan to protect personnel entering the excavation or excavation vicinity. The collection of specific geotechnical data and the development of such a plan, which could include designs for sloping and benching or various types of temporary shoring, is beyond the scope of this study. Any such designs and safety plans shall be developed in accordance with current OSHA guidelines and other applicable industry standards.

7.5 Groundwater

Groundwater was not encountered in the borings. From our experience, shallower groundwater seepage could be encountered in excavations for foundations, utilities and other general excavations at this site. The risk of seepage increases with depth of excavation and during or after periods of precipitation. Standard sump pits and pumping may be adequate to control seepage on a local basis in clayey soils.

In any areas where cuts made, attention should be given to possible seasonal water seepage that could occur through natural cracks and fissures in the newly exposed stratigraphy. In these areas subsurface drains may be required to intercept seasonal groundwater seepage. The need for these or other dewatering devices should be carefully addressed during construction. Our office could be contacted to visually observe final grades to evaluate the need for such drains.

8.0 LIMITATIONS

Professional services provided in this geotechnical exploration were performed, findings obtained, and recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. The scope of services provided herein does not include an environmental assessment of the site or investigation for the presence or absence of hazardous materials in the soil, surface water or groundwater. UES, upon written request, can be retained to provide these services.

UES is not responsible for conclusions, opinions or recommendations made by others based on this data. Information contained in this report is intended for the exclusive use of the Client (and their designated design representatives), and is related solely to design of the specific structures outlined in Section 2.0. No party other than the Client (and their designated design representatives) shall use or rely upon this report in any manner whatsoever unless such party shall have obtained UES's written acceptance of such intended use. Any such third party using this report after obtaining UES's written acceptance shall be bound by the limitations and limitations of liability contained herein, including UES's liability being limited to the fee paid to it for this report. Recommendations presented in this report should not be used for design of any other structures except those specifically described in this report. In all areas of this report in which UES may provide additional services if requested to do so in writing, it is presumed that such requests have not been made if not evidenced by a written document accepted by UES. Further, subsurface conditions can change with passage of time. Recommendations contained herein are not considered applicable for an extended period of time after the completion date of this report. It is recommended our office be contacted for a review of the contents of this report for construction commencing more than one (1) year after completion of this report. Non-compliance with any of these requirements by the Client or anyone else shall release UES from any liability resulting from the use of, or reliance upon, this report.

Recommendations provided in this report are based on our understanding of information provided by the Client about characteristics of the project. If the Client notes any deviation from the facts about project characteristics, our office should be contacted immediately since this may

materially alter the recommendations. Further, UES is not responsible for damages resulting from workmanship of designers or contractors. It is recommended the Owner retain qualified personnel, such as a Geotechnical Engineering firm, to verify construction is performed in accordance with plans and specifications.

APPENDIX

A-1 METHODS OF FIELD EXPLORATION

Using standard rotary drilling equipment, a total of two (2) test borings were performed for this geotechnical exploration. The approximate locations of the borings are shown on the Boring Location Plan, Figure 1. The test boring locations were staked by either pacing or taping and estimating right angles from landmarks which could be identified in the field and as shown on the site plan provided during this study. The locations of test borings shown on the Boring Location Plan are considered accurate only to the degree implied by the methods used to define them.

Relatively undisturbed samples of the cohesive subsurface materials were obtained by hydraulically pressing 3-inch O.D. thin-wall sampling tubes into the underlying soils at selected depths (ASTM D 1587). These samples were removed from the sampling tubes in the field and evaluated visually. One representative portion of each sample was sealed in a plastic bag for use in future visual evaluation and possible testing in the laboratory.

A modified version of the Texas Cone Penetration (TCP) test was completed in the field to determine the apparent in-place strength characteristics of the rock type materials. A 3-inch diameter steel cone driven by a 170-pound hammer dropped 24 inches is the basis for TxDOT strength correlations. In this case, UES has modified the procedure by using a 140-pound hammer dropping 30-inches for completion of the field test. Depending on the resistance (strength) of the materials, either the number of blows of the hammer required to provide 12 inches of penetration, or the inches of penetration of the cone due to 100 blows of the hammer are recorded on the field log and are shown on the Log of Boring sheets as “TX Cone” (reference TxDOT Test Method TEX 132-E, as modified).

Logs of the borings are included in the Appendix. The logs show visual descriptions of subsurface strata encountered using the Unified Soil Classification System. Sampling information, pertinent field data, and field observations are also included. Samples not consumed by testing will be retained in our laboratory for at least 14 days and then discarded unless the Client requests otherwise.

GEOTECHNICAL EXPLORATION
STAIR WELL & INTERIOR ADDITION
FOUNDATIONS
3940 N ELM STREET
DENTON, TEXAS
UES PROJECT NO. W243611

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FIGURE 1

BORING LOCATION PLAN

APPROXIMATE BORING LOCATION

B-1 METHODS OF LABORATORY TESTING

Representative samples were evaluated and classified by a qualified member of the Geotechnical Division and the boring logs were edited as necessary. To aid in classifying the subsurface materials and to determine the general engineering characteristics, natural moisture content tests (ASTM D 2216), Atterberg-limit tests (ASTM D 4318), percent material finer than the No. 200 sieve tests (ASTM D 1140), and dry unit weight determinations were conducted on selected samples. In addition, unconfined compressive strength tests (ASMT D 2166) and pocket-penetrometer tests were conducted on selected soil samples to evaluate the soil shear strength. Results of these laboratory tests are provided on the Log of Boring sheets.

In addition to the Atterberg-limit tests, the expansive properties of the clayey soils were further analyzed by absorption swell tests. The swell test is performed by placing a selected sample in a consolidation machine and applying either the approximate current or expected overburden pressure and then allowing the sample to absorb water. When the sample exhibits very little tendency for further expansion, the height increase is recorded and the percent free swell and total moisture gain calculated. Results of the absorption swell tests are provided on the attached Log of Boring sheets.

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BORING NO.: 1
Sheet 1 of 1

PROJECT NO.: W243611

Client: University of North Texas - Union Circle
Project: Stair Well & Interior Addition Fouundations
Start Date: 12/13/2024 **End Date:** 12/13/2024
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Denton, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 140 / 30

GROUND WATER OBSERVATIONS
On Rods (ft): DRY
After Drilling (ft): DRY
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft, in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	UU Shear Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Swell, %
		Brown CLAY				2.5					18	42	18	24	
		2.0													
		Orange, Tan and Gray CLAYEY SAND				4.5+			43		16				0.0
5						4.5+					15	43	17	26	0.1
		6.0													
		Orange, Tan and Gray SANDY CLAY				4.5+	2.0		57	115	14				
10						4.0					15	48	17	31	
		14.0													
15		Tan SANDSTONE			100/ 1"										
		18.0													
		Gray LIMESTONE			100/ 0.50"										
20		22.0													
		Gray SHALE													
25					100/ 1"										
30					100/ 1"										
35		35.0			100/ 0.50"										
		TEST BORING TERMINATED AT 35 FT													
40															

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BORING NO.: 2
Sheet 1 of 1

PROJECT NO.: W243611

Client: University of North Texas - Union Circle
Project: Stair Well & Interior Addition Fouundations
Start Date: 12/9/2024 **End Date:** 12/9/2024
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Denton, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 140 / 30

GROUND WATER OBSERVATIONS
On Rods (ft): DRY
After Drilling (ft): DRY
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft, in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	UU Shear Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Swell, %
		8.5" CONCRETE, vapor barrier, no void 1.0													
		Orange and Brown CLAYEY SAND				4.25			49		13	41	17	24	0.0
5		6.0				4.5+					14	40	18	22	0.0
		Brown CLAYEY SAND 8.0				2.0			29		16	35	16	19	0.0
		Brown SANDY CLAY							53		19				
10		10.0													
		Tan SANDY CLAY 11.0													
		Red and Tan SANDSTONE with clay seams and layers 14.0													
15		Tan LIMESTONE with clay seams and layers			100/ 1.50"										
20		20.0			100/ 0.50"										
		TEST BORING TERMINATED AT 20 FT DUE TO AUGER REFUSAL ON HARD LIMESTONE													
25															
30															
35															
40															

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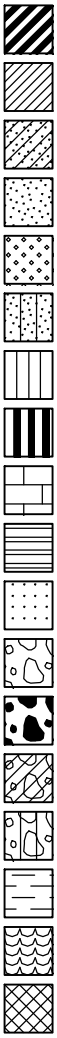
KEY TO SOIL SYMBOLS AND CLASSIFICATIONS

SOIL & ROCK SYMBOLS



(CH), High Plasticity CLAY
(CL), Low Plasticity CLAY
(SC), CLAYEY SAND
(SP), Poorly Graded SAND
(SW), Well Graded SAND
(SM), SILTY SAND
(ML), SILT
(MH), Elastic SILT
LIMESTONE
SHALE / MARL
SANDSTONE
(GP), Poorly Graded GRAVEL
(GW), Well Graded GRAVEL
(GC), CLAYEY GRAVEL
(GM), SILTY GRAVEL
(OL), ORGANIC SILT
(OH), ORGANIC CLAY
FILL

SAMPLING SYMBOLS

SHELBY TUBE (3" OD except where noted otherwise)
SPLIT SPOON (2" OD except where noted otherwise)
AUGER SAMPLE
TEXAS CONE PENETRATION
ROCK CORE (2" ID except where noted otherwise)

RELATIVE DENSITY OF COHESIONLESS SOILS (blows/ft)

VERY LOOSE	0 TO 4
LOOSE	5 TO 10
MEDIUM	11 TO 30
DENSE	31 TO 50
VERY DENSE	OVER 50

SHEAR STRENGTH OF COHESIVE SOILS (tsf)

VERY SOFT	LESS THAN 0.25
SOFT	0.25 TO 0.50
FIRM	0.50 TO 1.00
STIFF	1.00 TO 2.00
VERY STIFF	2.00 TO 4.00
HARD	OVER 4.00

RELATIVE DEGREE OF PLASTICITY (PI)

LOW	4 TO 15
MEDIUM	16 TO 25
HIGH	26 TO 35
VERY HIGH	OVER 35

RELATIVE PROPORTIONS (%)

TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	36 TO 50

PARTICLE SIZE IDENTIFICATION (DIAMETER)

BOULDERS	8.0" OR LARGER
COBBLES	3.0" TO 8.0"
COARSE GRAVEL	0.75" TO 3.0"
FINE GRAVEL	5.0 mm TO 3.0"
COURSE SAND	2.0 mm TO 5.0 mm
MEDIUM SAND	0.4 mm TO 5.0 mm
FINE SAND	0.07 mm TO 0.4 mm
SILT	0.002 mm TO 0.07 mm
CLAY	LESS THAN 0.002 mm

SECTION 05 5100
PREFABRICATED MODULAR STAIR SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Prefabricated stairs.

B. Structural steel stair framing and supports.

C. Handrails and guards.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Placement of metal anchors in concrete.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ANSI/NFSI B101.3 - Test Method for Measuring the Wet DCOF of Hard Surface Walkways; 2020.

C. ASTM A6/A6M - Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling; 2023.

D. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS

A. Shop Drawings: detailed shop drawings including:
   1. Overall layout dimensions
   2. Detailed shop weldment drawings
   3. Footer layout drawings.

B. Warranty Statement

C. Engineering: Professional Engineering sealed drawings..

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Prefabricated Metal Stairs:
   1. Basis-of-Design Product: Subject to compliance with requirements, provide Upside Innovations, a SixAxis company: www.upsideinnovations.com or a comparable product.

2.02 METAL STAIRS - GENERAL REQUIREMENTS

A. Metal Stairs: Provide stairs of the design specified, complete with landing platforms, vertical and horizontal supports, railings, and guards, fabricated accurately for anchorage to each other and to building structure.
   1. Regulatory Requirements: Provide stairs and railings that comply with most stringent requirements of local, state, and federal regulations; where requirements of Contract Documents exceed those of regulations, comply with Contract Documents.
   2. Handrails: Comply with applicable accessibility requirements of ADA Standards and Texas Accessibility Standards.
   3. Structural Design: Provide complete stair and railing assemblies that comply with the applicable local code.
      a. Stair Capacity: Uniform live load of 100 lb/sq ft and a concentrated load of 300 lb with deflection of stringer or landing framing not to exceed 1/360 of span.
      b. Railing Assemblies: Comply with applicable local code.
   4. Aluminum welding will be in accordance with ANSI / AWS D1.2/D1.2M: 2008. Welding shall be performed solely with Pulsed Gas Metal Arc Welding (MIG) processes or Gas Tungsten Arc Welding (TIG) processes by experience operators.
   5. Dimensions: As indicated on drawings.

6. Shop assemble components; disassemble into largest practical sections suitable for transport and access to site.
7. No sharp or rough areas on exposed travel surfaces and surfaces accessible to touch.
8. Separate dissimilar metals using paint or permanent tape.

B. Metal Jointing and Finish Quality Levels:
1. Architectural: All joints as inconspicuous as possible, whether welded or mechanical.
a. Welded Joints: Continuously welded and ground smooth and flush.
b. Mechanical Joints: Butted tight, flush, and hairline; concealed fastenings only.
c. Exposed Edges and Corners: Eased to small uniform radius.
d. Metal Surfaces to be Painted: Sanded or ground smooth, suitable for highest quality gloss finish.

C. Fasteners: Same material or compatible with materials being fastened; type consistent with design and specified quality level.

D. Anchors and Related Components: Same material and finish as item to be anchored, except where specifically indicated otherwise; provide all anchors and fasteners required.

E. Finish: Manufacturer's Standard Powder Coat
1. Color and Sheen: Selected from manufacturer's full range.

2.03 PLATFORMS & LANDINGS

A. Walking surfaces are designed to carry a uniform live load of 100 pounds per square foot and a concentrated vertical load of 300 pounds in an area of one square foot.

B. Platform sections are fabricated in typical lengths between 48" and 96" in each 8" increment. Custom lengths can be fabricated as requested.

C. Walking surfaces are designed to have a coefficient of friction no less than 0.50 in all directions of travel.

D. Walking surfaces are designed and constructed to be continuous, without gaps and shall be made using 1-1/2" x 8" extruded decking. The outside legs of each piece of extrusion should be touching the adjacent piece in order to create a hard stop for structural support.

E. All platforms are designed to be wider than the step leading up to them and at least 60" long in the

F. All platforms are designed to allow at least a 60" diameter area of clearance free of obstructions.

G. Platforms shall be fabricated in typical 5'-4" x 5'-4" sections. Larger sizes will be fabricated as required by layout.

H. Platforms shall be designed as a universal design, so that a common platform can be configured as a resting platform, switchback platform, turning platform, walkway platform, or threshold landing platform.

2.04 PLATFORM LEGS

A. All legs are designed to support the steps and platforms / landings.

B. Platform legs shall be designed using a minimum of 3" x 3" x 0.125" aluminum square tube that connects to the platform and a telescoping 2.7" x 2.7" x 0.125" aluminum square tube with a 6" x 6" x .190" welded foot pad. The legs are bolted wall to wall with two 18-8 stainless steel bolts. The telescoping feature allows leg adjustment in order to meet elevation changes.

C. Depending on total height of platforms, legs can increase in size based on structural design.

D. When needed, 2" x 2" x 3/16" aluminum angle is used for cross-bracing platform legs. As heights are increased cross-bracing sizing will be increased in order to provide structural integrity.

2.05 STEPS

A. Step treads and stringers are designed to carry a uniform live load of 100 pounds per square foot

B. Walking surfaces are designed to have a coefficient of friction no less than 0.50 in the normal direction of travel.

C. Steps are designed to allow a clearance of 48” between handrails.

D. All step treads are designed to have a uniform depth of 12” with a 1” nosing for an effective run of 11” minimum per step, INCLUDING THE TOP STEP ONTO THE PLATFORM / LANDING.

E. All step nosings have a uniform radius of ¼” and an underside angle of 60 degrees from the horizontal.

F. Step treads are designed to have a uniform height of either 6”, 6-½”, or 7” depending on the overall height of the step assembly. All step risers are closed between treads.

G. Step treads are designed to allow a clearance of 48” between handrails.

2.06 HANDRAILS AND GUARDRAILS

A. All step rails are designed to withstand a concentrated load of 200 pounds applied in any direction on the top of the rail.

B. Steps over 30”: Step rails for steps with a vertical rise over 30” shall have a 42” guardrail in addition to the 36” handrail.

C. Steps 30” or under: Step rails for steps at 30” or under do not require a 42” guardrail.

D. All baluster panels and other custom rail panels are designed to withstand a load of 50 pounds in the horizontal direction applied in an area of one square foot.

E. All step rails will not allow a 4” diameter sphere to pass though in any area.

F. Step rails are provided on both sides of the step treads.

G. All step handrails are designed to be continuous along step runs and in between the inside corner of 90 degree and 180 degree turns in step direction. Handrails are not interrupted by posts or other obstructions.

H. All handrails have a clearance of 2-1/4” between the handrail and the guardrail. Handrails are to be constructed of 1-1/4” SCH 40 Pipe with an outside diameter of 1.66”.

I. Step handrails are designed to be 36” high measured vertically from the top of the step nosing to the top of the rail.

J. Step handrails extend 12” past the top Step Nosing parallel to the ground surface and return to the closest rail post or wall if needed due to door swing interference at the top of the step. Step handrails also extend one tread width past the bottom step tread (11”) plus an additional 12” parallel to the ground surface and return to the closest rail post.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install Prefabricated Metal Stairs according to manufacturer's written instructions in orientation, sizes, and locations indicated.

3.03 CLEANING AND PROTECTION

A. On completion of stair installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

B. Replace components that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

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SECTION 09 5113

ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes acoustical panels and exposed suspension systems for interior ceilings.

B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified, 6 inches in size.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Product Test Reports: For each acoustical panel ceiling, for tests performed by manufacturer and witnessed by a qualified testing agency.

C. Evaluation Reports: For each acoustical panel ceiling suspension system and anchor and fastener type, from ICC-ES.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For finishes to include in maintenance manuals.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical panels, suspension-system components, and accessories to Project site and store them in a fully enclosed, conditioned space where they will be protected against damage

from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

1.8 FIELD CONDITIONS

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

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain each type of acoustical ceiling panel and its supporting suspension system from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: Class A according to ASTM E 1264.
2. Smoke-Developed Index: 50 or less.

B. Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL or from the listings of another qualified testing agency.

2.3 ACOUSTICAL PANELS

A. Acoustical Panel Standard: Provide manufacturer's standard panels according to ASTM E 1264 and designated by type, form, pattern, acoustical rating, and light reflectance unless otherwise indicated.

B. Basis of Design: Subject to compliance with requirements, provide products by the following:

1. Armstrong World Industries, Inc.

2. Acoustical Panel Ceiling: APC-1, Armstrong OPTIMA HEALTH ZONE, 3114PB
   a. Color: White.
   b. Light Reflectance (LR): Not less than 0.86.
   c. Noise Reduction Coefficient (NRC): Not less than 0.95.

d. Edge/Joint Detail: Square.
e. Thickness: 1 inch.
f. Modular Size: 24 by 24 inches.
g. Antimicrobial Treatment: Manufacturer's standard broad spectrum, antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273, ASTM D 3274, or ASTM G 21 and evaluated according to ASTM D 3274 or ASTM G 21.

2.4 METAL SUSPENSION SYSTEM

A. Metal Suspension-System Standard: Provide manufacturer's standard, direct-hung, metal suspension system and accessories according to ASTM C 635/C 635M and designated by type, structural classification, and finish indicated.

B. Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized, G30 coating designation; with prefinished 15/16-inch-wide metal caps on flanges.

1. Structural Classification: Intermediate-duty system.
2. End Condition of Cross Runners: Override (stepped) type.
3. Face Design: Flat, flush.
4. Cap Material: Cold-rolled steel.
5. Cap Finish: Painted white.

2.5 ACCESSORIES

A. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

B. Wire Hangers, Braces, and Ties: Provide wires as follows:

1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft If retaining "Angle Hangers" Paragraph below, insert sizes or indicate on Drawings.

C. Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04-inch-thick, galvanized-steel sheet complying with ASTM A 653/A 653M, G90 coating designation; with bolted connections and 5/16-inch-diameter bolts.

2.6 METAL EDGE MOLDINGS AND TRIM

A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.

B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.

B. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION

A. Install acoustical panel ceilings according to ASTM C 636/C 636M and manufacturer's written instructions.

B. Suspend ceiling hangers from building's structural members 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, countersplaying, or other equally effective means.
3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
5. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
6. Do not attach hangers to steel roof deck. Attach hangers to structural members.
7. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
8. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.

C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.

D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.

E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

F. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide precise fit.

3.4 ERECTION TOLERANCES

A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet, non-cumulative.

B. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

3.5 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.

B. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

SECTION 09 6519
RESILIENT TILE FLOORING

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).

B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2023.

C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.

D. ASTM F1344 - Standard Specification for Rubber Floor Tile; 2021a.

E. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2023.

F. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

G. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2023.

1.02 RELATED DOCUMENTS

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

1.03 SUMMARY

A. Section Includes:
   1. Rubber floor tile.

1.04 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For each type of resilient floor tile.
   1. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
   2. Show details of special patterns.

C. Samples: Full-size units of each color, texture, and pattern of floor tile required.
   1. For heat-welding bead, manufacturer's standard-size Samples, but not less than 9 inches long, of each color required.

D. Welded-Seam Samples: For seamless-installation technique indicated and for each floor covering product, color, and pattern required; with seam running lengthwise and in center of 6-by-9-inch Sample applied to a rigid backing and prepared by Installer for this Project.

E. Product Schedule: For floor tile. Use same designations indicated on Drawings.

1.05 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.06 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.07 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Floor Tile (Rubber used in Laboratories) : Furnish one box for every 20 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

1.08 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.
   1. Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F. Store floor tiles on flat surfaces.

1.10 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive floor tile during the following periods:
   1. 48 hours before installation.
   2. During installation.
   3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Close spaces to traffic during floor tile installation.

D. Close spaces to traffic for 48 hours after floor tile installation.

E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For resilient floor tile, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.
   1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

B. Flooring products shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.02 RUBBER FLOOR TILE – RF-1

A. Tile Standard: ASTM F1344, Class I-B, Homogeneous Rubber Tile, through mottled with random scattered design..

B. Hardness: Grade 1, minimum hardness of 85, measured using Shore, Type A durometer according to ASTM D2240.

C. Thickness: 2 mm

D. Size: 24” x 24”” nominal.

E. Colors and Patterns: As indicated on Finish Schedule

2.03 LUXURY VINYL TILE – LVT-1, LVT-2

A. Tile Standard: ASTM F1700, Class III, Type B. Embossed

B. Wearing Surface: Textured.

C. Thickness: 5 mm.

D. Size: 9” x 59” nominal.

E. Install Method: Random, per layout plan

F. Colors and Patterns: As indicated on Finish Schedule

2.04 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
   1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F710.
   1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
   2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
   3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
   4. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
      a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
      b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Access Flooring Panels: Remove protective film of oil or other coating using method recommended by access flooring manufacturer.

D. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

E. Do not install floor tiles until materials are the same temperature as space where they are to be installed.
   1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.

F. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.03 FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.

1. Lay tiles square with room axis.

C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.

D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.

G. Adhere floor tiles to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.04 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.

B. Perform the following operations immediately after completing floor tile installation:
1. Remove adhesive and other blemishes from surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Cover floor tile until Substantial Completion.

END OF SECTION

SECTION 11 5000
LABORATORY EQUIPMENT

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. The laboratory equipment suppliers are to comply with the requirements of this section for laboratory equipment and related components and accessories for “Laboratory Equipment”. This Section includes reference to the following items indicated herein or in the construction documents:
   1. Provide everything necessary for, and incidental to, the complete installation of laboratory equipment as specified herein. Items included are:
      a. Sterilizer
      b. Glassware Washer
   2. Furnish and install laboratory equipment as indicated on the drawings and specified herein to be Contractor Furnished, Contractor Installed (CFCI), unless otherwise specified.
   3. For all pieces of equipment that require water feed, follow manufacturers’ recommendations to optimize equipment performance, reduce maintenance and promote water conservation.

B. Related Requirements:
   1. Section 06 1053 "Miscellaneous Rough Carpentry" for wood blocking for anchoring laboratory equipment.
   2. Section 09 2216 "Non-Structural Metal Framing" for reinforcements in metal-framed partitions for anchoring laboratory equipment.
   3. Section 26 0000 for electrical connections

1.03 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.04 COORDINATION

A. Coordinate layout and installation of framing and reinforcements for support of laboratory equipment.

B. Coordinate installation of laboratory equipment with installation of fume hoods and other laboratory equipment.

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Indicate locations of blocking and other supports required for laboratory equipment, where it corresponds.
   2. Indicate locations and types of services, together with associated service requirements and supply connections.
   3. Show adjacent walls, doors, windows, other building components, laboratory casework, fume hoods, environmental rooms and other laboratory equipment. Indicate clearances from above items.
   4. Include coordinated dimensions with laboratory casework specified in other Sections.

B. Shop Drawings: Submit shop drawing that show, in large scale, methods of construction, joining, dimensions, materials, thicknesses, and finish of materials, installation, and relation to adjoining work, and all other details to fully illustrate the scope of work.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Product Test Reports for Equipment: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating compliance of laboratory equipment with requirements of specified product standard and system structural performance specified in "Performance Requirements" Article.

1.07 QUALITY ASSURANCE

A. Manufacturers Qualifications: Manufacturers shall have an established organization and production facilities specializing in producing the type of equipment specified, with an experienced engineering department. Each shall have the demonstrated ability and capacity to produce and deliver the specified equipment within the required time limits.

B. Any deviations from the Drawings or Specifications, including requests for approval of proposed equals, must be listed in detail. List of deviations shall be submitted along with the Bidder's proposal.

C. Installer Qualifications:
   1. Experience: Installer is to have a minimum of seven (7) years of experience installing laboratory equipment and who has completed a minimum of ten (10) successful installations of products as specified which are similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance within the past five years.
   2. Supervisor/foreman: Maintain a full-time supervisor/foreman on job site during times that laboratory equipment installation is in progress, who has a minimum of five (5) years of experience with the installation of laboratory equipment systems of which three (3) years as a full-time foreman.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Protect finished surfaces during handling and installation with protective covering of polyethylene film or other suitable material.

B. Deliver laboratory equipment after painting, utility roughing-in, and similar operations that could damage, soil, or deteriorate equipment has been completed in installation areas. If equipment must be stored in non-installation areas, store only where environmental conditions meet requirements specified in Project Conditions section below.

C. Protect finished surfaces of room and of equipment from soiling and damage during handling and installation.

1.09 FIELD CONDITIONS

A. Locate concealed framing, blocking, and reinforcements that support equipment by field measurements before being enclosed, and indicate measurements on Shop Drawings.

B. Environmental Limitations: Do not deliver or install laboratory equipment until building is enclosed, utility roughing-in and wet work are complete and dry, and temporary HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

1.10 WARRANTY

A. All equipment furnished under this section shall be guaranteed with the maximum industry warranty against defective materials, design and workmanship—warranty shall be made to the benefit of the owner.

PART 2 PRODUCTS

2.01 EQUIPMENT ITEMS – GENERAL REQUIREMENTS

A. Furnish and install equipment as indicated and identified on the drawings by the manufacturers and in the models, sizes and with the qualities shown. Provide each with the manufacturer's standard features and accessories as well as any other accessories, options or special configurations shown on the drawings or elsewhere in the specifications. For recessed or freestanding equipment, provide trim panels to close opening between equipment and adjacent walls, floors and ceilings.

B. Refer to “Laboratory Equipment Schedule,” on A812A , for additional information on building supplied services and special requirements. Building services are being provided to support the Basis of Design models indicated. Alternate manufacturers must work properly with the utility services provided. Any changes required to the infrastructure to support alternative equipment will be the responsibility of the Contractor, including but not limited to redesign of utility infrastructure.

2.02 GLASSWARE WASHER UNDERCOUNTER

A. Description: High Performance electric laboratory glassware washer. Free-standing without view window

B. Basis-of-Design Product: Subject to compliance with requirements, provide Steris Reliance 100 Series, or comparable product by one of the following:
   1. Miele Professional
   2. Steris
   3. Or approved equal, if specifically approved by Architect via addendum during bidding.

2.03 SMALL STERILIZER/FRONT LOAD AUTOCLAVE

A. Description: Laboratory Steam Sterilizer is designed for fast and efficient sterilization of heat- and moisture- stable materials used in scientific applications.

B. Basis-of-Design Product: Subject to compliance with requirements, provide Steris Amsco, Model 250LS, or comparable product by one of the following:
   1. BMT USA
   2. Beta Star Life Science Equipment, Inc.
   3. Consolidated
   4. Lancer
   5. Primus
   6. SteelCo
   7. Tuttnauer
   8. Or approved equal, if specifically approved by Architect via addendum during bidding.

C. Construction
   1. Freestanding with enclosure cabinet.
   2. Integrated electric steam generator (stainless steel).
   3. Chamber Size: 20” W x 20” H x 38” D, Gravity.

D. Accessories
   1. Provide with loading rack and two shelves.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances, location of reinforcements, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION OF EQUIPMENT

A. Uncrate all equipment and place in locations shown. Remove all crating materials and packing debris.

B. Install all items in accordance with manufacturer's instructions. Provide all accessories necessary for a complete installation.

C. Verify plumbing, ventilation and electrical connection requirements for all equipment with manufacturer’s specifications and options for Contractor-furnished items and with Owner for Owner-furnished items and coordinate connections with Division-22, 23 and 26 work.

D. Furnish instruction manuals for all Contractor-furnished equipment to the Owner.

3.03 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain laboratory equipment.

3.04 CLEANING AND PROTECTING

A. Repair or remove and replace defective work as directed upon completion of installation.

B. Clean shop-finished surfaces, touch-up as required, and remove or refinish damaged or soiled areas, as acceptable to Architect.

C. Protection: Advise Contractor of procedures and precautions for protection of equipment from damage by work of other trades.

END OF SECTION

SECTION 11 5313
LABORATORY FUME HOODS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

B. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.

C. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2019.

D. ASTM D4101 - Standard Classification System and Basis for Specification for Polypropylene Injection and Extrusion Materials; 2017, with Editorial Revision (2019).

E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

F. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

G. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

H. SEFA 1 - Laboratory Fume Hoods; 2010.

I. SEFA 2.3 - Installations; 2010.

J. SEFA 8M - Laboratory Grade Metal Casework; 2020.

K. UL 1805 - Standard for Safety Laboratory Fume Hoods and Cabinets; Current Edition, Including All Revisions.

1.02 RELATED DOCUMENTS

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

1.03 SUMMARY

A. Section Includes:
   1. Bench-top laboratory fume hoods.
   2. Floor-mounted laboratory fume hoods
   3. Piping and wiring within fume hoods for service fittings, light fixtures, fan switches, and other electrical devices included with fume hoods.
   4. Work tops within fume hoods.
   5. Laboratory sinks and cup sinks in fume hoods.
   6. Water, laboratory gas, and electrical service fittings in fume hoods.

B. Related Requirements:
   1. Section 06 1000 "Rough Carpentry" for wood blocking for anchoring fume hoods.
   2. Section 09 2216 "Non-Structural Metal Framing" for reinforcements in metal-framed partitions for anchoring fume hoods.
   3. Section 09 6513 "Resilient Base and Accessories" for resilient base applied to fume hood base cabinets.

1.04 COORDINATION

A. Coordinate layout and installation of framing and reinforcements for lateral support of fume hoods.

B. Coordinate installation of fume hoods with laboratory casework and other laboratory equipment.

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For laboratory fume hoods.

1. Include plans, elevations, sections, and attachment details.
2. Indicate details for anchoring fume hoods to permanent building construction including locations of blocking and other supports.
3. Indicate locations and types of service fittings together with associated service supply connection required.
4. Indicate duct connections, electrical connections, and locations of access panels.
5. Include roughing-in information for mechanical, plumbing, and electrical connections.
6. Show adjacent walls, doors, windows, other building components, laboratory casework, and other laboratory equipment. Indicate clearances from the above items.
7. Include layout of fume hoods in relation to lighting fixtures and air-conditioning registers and grilles.
8. Include coordinated dimensions for laboratory equipment specified in other Sections.

C. Samples: For fume hood exterior finishes.

1.06 INFORMATIONAL SUBMITTALS

A. Product Test Reports: Showing compliance with specified performance requirements for as-manufactured containment and static pressure loss, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency.

B. Source quality-control reports.

C. Field quality-control reports.

1.07 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish complete touchup kit for each type and color of fume hood finish provided. Include fillers, primers, paints, and other materials necessary to perform permanent repairs to damaged fume hood finish.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Protect finished surfaces during handling and installation with protective covering of polyethylene film or another suitable material.

1.09 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install fume hoods until building is enclosed, wet work and utility roughing-in are complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Locate concealed framing, blocking, and reinforcements that support fume hoods by field measurements before being enclosed, and indicate measurements on Shop Drawings.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Bench Mounted – Restricted-Bypass Fume Hoods with VAV Control and Steel Exterior:
1. Basis-of-Design Product: Subject to compliance with requirements, provide Labconco Corporation – Protector Premier Laboratory Hoods or comparable product by one of the following:
   a. Mott Manufacturing.
   b. Kewaunee

B. Floor Mounted – Restricted-Bypass Fume Hoods with VAV Control and Steel Exterior:
1. Basis-of-Design Product: Subject to compliance with requirements, provide Labconco Corporation – Protector XL Laboratory Hoods or comparable product by one of the following:
   a. Mott Manufacturing.
   b. Kewaunee

C. Source Limitations: Obtain laboratory fume hoods from single manufacturer.
1. Obtain laboratory fume hoods from same source as laboratory casework.

D. Product Designations: Drawings indicate sizes, types, and configurations of fume hoods by referencing designated manufacturer's catalog numbers. Other manufacturers' fume hoods of similar sizes, types, and configurations, and complying with the Specifications, may be considered. See Section 01 6000 "Product Requirements."

2.02 PERFORMANCE REQUIREMENTS

A. Accessibility: Provide fume hoods that comply with ADAAG/TAS Protrusion Limits as defined in Section 307.2 when installed adjacent to 30” deep laboratory benches.

B. Containment: Provide fume hoods that comply with the following when tested according to ASHRAE 110 as modified below:
   1. As-Manufactured (AM) Rating: AM 0.05 (0.05 ppm).
   2. As-Installed (AI) Rating: AI 0.10 (0.10 ppm).
   3. Average Face Velocity: 60 fpm plus or minus 10 percent with sashes fully open.
   4. Face-Velocity Variation: Not more than 10 percent of average face velocity across the face opening with sashes fully open.
   5. Sash Position: Fully open.
      a. Test hoods with horizontal sashes with maximum opening on one side, with maximum opening in the center, and with one opening at each side equal to half of maximum opening.
      b. Test hoods with combination sashes fully raised, with maximum opening on one side, with maximum opening in the center, and with one opening at each side equal to half of maximum opening.
   6. Release Rate: 4.0 L/min.
   7. Test Setup Modifications: Conduct tests with a minimum of three and a maximum of five people in the test room and with two 1-gal. round paint cans, one 12-by-12-by-12-inch cardboard box, and three 6-by-6-by-12-inch cardboard boxes in the fume hood during the test. Position items from 6 to 10 inches behind the sash, randomly distributed, and supported off the work surface by 2-by-2-inch blocks.
   8. Walk-by Test: At the conclusion of containment test, execute three rapid walk-bys at 30-second intervals, 12 inches behind the mannequin. Test-gas concentration during each walk-by shall not exceed 0.1 ppm and shall return to specified containment value within 15 seconds.

C. Static-Pressure Loss: Not more than 1/2-inch wg at 60-fpm face velocity with sash fully open when measured at four locations 90 degrees apart around the exhaust duct and at least three duct diameters downstream from duct collar.

2.03 FUME HOODS

A. Product Standards: Comply with SEFA 1, "Laboratory Fume Hoods - Recommended Practices." Provide fume hoods UL listed and labeled for compliance with UL 1805.

B. Restricted-Bypass Fume Hoods: Provide restricted-bypass fume hoods. Partial compensating bypass above the sash opens after sash is closed to less than 20 percent open. Design partial bypass to maintain exhaust capacity of at least 25 cfm per sq. ft. of work surface regardless of sash position.

2.04 MATERIALS

A. Steel Sheet: Cold-rolled, commercial steel (CS) sheet, complying with ASTM A1008/A1008M; matte finish; suitable for exposed applications.

B. Glass-Fiber-Reinforced Polyester: Polyester laminate with a chemical-resistant gel coat on exposed faces, and having a flame-spread index of 25 or less according to ASTM E84.

C. Epoxy: Factory molded, modified epoxy-resin formulation with smooth, nonspecular finish.
   1. Physical Properties:
      a. Flexural Strength: Not less than 10,000 psi.
      b. Modulus of Elasticity: Not less than 2, 000,000 psi.
      c. Hardness (Rockwell M): Not less than 100.

d. Water Absorption (24 Hours): Not more than 0.02 percent.
e. Heat Distortion Point: Not less than 260 deg F.
f. Flame-Spread Index: 25 or less according to ASTM E84.

2. Chemical Resistance: As follows when tested with indicated reagents according to NEMA LD 3, Test Procedure 3.4.5:
   a. No Effect: Acetic acid (98 percent), acetone, ammonium hydroxide (28 percent), benzene, carbon tetrachloride, dimethyl formamide, ethyl acetate, ethyl alcohol, ethyl ether, methyl alcohol, nitric acid (70 percent), phenol, sulfuric acid (60 percent), and toluene.
   b. Slight Effect: Chromic acid (60 percent) and sodium hydroxide (50 percent).
3. Color: Match color specified in Section 12 5335 Metal Laboratory Casework

D. Polypropylene: Unreinforced polypropylene complying with ASTM D4101, Group 01, Class 1, Grade 2.

E. Glass: Clear, laminated tempered glass complying with ASTM C1172, Kind LT, Condition A, Type I, Class I, Quality-Q3; with two plies not less than 0.12 inch thick and with clear, polyvinyl butyral interlayer.
1. Ultraclear Glass: Glass plies each have visible light transmission not less than 91 percent.
2. Safety Glass: Provide products complying with testing requirements in 16 CFR 1201 for Category II materials.
3. Permanently mark safety glass with certification label of the manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

F. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

G. Fasteners: Provide stainless steel fasteners where exposed to fumes.

2.05 FABRICATION

A. General: Assemble fume hoods in factory to greatest extent possible. Disassemble fume hoods only as necessary for shipping and handling limitations. Fume hoods shall be capable of being partly disassembled as necessary to permit movement through a 35-by-79-inch door opening.

B. Steel Exterior: Fabricate from steel sheet, 0.048 inch thick, with component parts screwed together to allow removal of end panels, front fascia, and airfoil and to allow access to plumbing lines and service fittings. Apply chemical-resistant finish to interior and exterior surfaces of component parts before assembly.
1. Color: Match Laboratory Casework Finish

C. Ends: Fabricate with double-wall end panels without projecting corner posts or other obstructions to interfere with smooth, even airflow. Close area between double walls at front of fume hood and as needed to house sash counterbalance weights, utility lines, and remote-control valves.

D. Splay top and sides of face opening to provide an aerodynamic shape to ensure smooth, even flow of air into fume hood.

E. Interior Lining: Provide one of the following unless otherwise indicated:
1. Glass-fiber-reinforced polyester, not less than 3/16 inch thick.

F. Lining Assembly: Unless otherwise indicated, assemble with stainless steel fasteners or epoxy adhesive, concealed where possible. Seal joints by filling them with chemical-resistant sealant during assembly.
1. Fasten lining components together with stainless steel cleats or angles to form a rigid assembly to which exterior panels are attached.
2. Fasten lining components to a rigid frame assembly fabricated from stainless steel and to which exterior panels are attached.
3. Punch fume hood lining side panels to receive service fittings and remote controls. Provide removable plug buttons for holes not used for indicated fittings.

G. Rear Baffle: Unless otherwise indicated, provide baffle, of same material as fume hood lining, at rear of hood with openings at top and bottom. Secure baffle to cleats at rear of hood with stainless steel screws. Fabricate baffle for easy removal for cleaning behind baffle.
   1. Provide preset baffles.
   2. Provide epoxy-coated, stainless-steel screen at bottom baffle opening to prevent paper from being drawn into the exhaust plenum behind baffles.

H. Exhaust Plenum: Full width of fume hood and with adequate volume to provide uniform airflow from hood, of same material as hood lining, and with duct stub for exhaust connection.
   1. Duct-Stub Material: stainless steel..

I. Bypass Grilles: Provide grilles at bypass openings of fume hoods.

J. Sashes: Provide operable sashes of type indicated.
   1. Fabricate from 0.050-inch-thick stainless steel. Form into four-sided frame with bottom corners welded and finished smooth. Make top member removable for glazing replacement. Set glazing in chemical-resistant, U-shaped gaskets.
   2. Glaze with laminated safety glass.
   3. Counterbalance vertical-sliding sash with sash weight and stainless-steel cable system to hold sash in place regardless of position. Provide ball-bearing sheaves, plastic glides in stainless steel guides, and stainless-steel lift handles. Provide rubber bumpers at top and bottom of each sash unit.

K. Airfoil: Unless otherwise indicated, provide airfoil at bottom of fume hood face opening with 1-inch space between airfoil and work top. Sash closes on top of airfoil, leaving 1-inch opening for air intake. Airfoil directs airflow across work top to remove heavier-than-air gases and to prevent reverse airflow.

L. Light Fixtures: LED.

M. Filler Strips& Closure Panels: Provide as needed to close spaces between fume hoods or fume hoods base cabinets and adjacent building construction. Fabricate from the same material and with same finish as fume hoods or fume hood base cabinets, as applicable. Reinforce as necessary to accept a wall mounted cylinder restraint.

N. Ceiling Extensions: Provide filler panels matching fume hood exterior to enclose space above fume hoods at front and sides of fume hoods and extending from tops of fume hoods to ceiling.
   1. Not required for floor mounted hoods

O. Finished Back Panels: Where rear surfaces of fume hoods are exposed to view, provide finished back panels matching rest of fume hood enclosure.

P. Comply with requirements in other Sections for installing water and laboratory gas service fittings, piping, electrical devices, and wiring. Install according to Shop Drawings. Securely anchor fittings, piping, and conduit to fume hoods unless otherwise indicated.

2.06 FUME HOOD BASE CABINETS BASE STANDS WORK TOPS SINKS AND SERVICE FITTINGS

A. Comply with Section 12 3553 "Metal Laboratory Casework." Provide metal base cabinets in finish matching fume hood exterior finish.

B. Work Tops: Epoxy.
   1. Work-Top Configuration: Raised (marine) edge with rounded edge and corners.
   2. Where acid storage cabinets are indicated beneath fume hoods, provide holes in work tops as need to accommodate cabinet vents.
   3. Where epoxy sinks occur in epoxy work tops, provide integral sinks bonded to tops with invisible joint line.

C. Fume Hood Base Stands: Welded steel tubing legs, not less than 2 inches square with channel stretchers and aprons. Weld or bolt stretchers to legs and cross-stretchers, and bolt legs to aprons. Provide leveling device welded to bottom of each leg.
   1. Structural Performance: Capable of withstanding 50-lb/ft. work top, 75 lb/ft. on work top, plus weight of hood, without permanent deformation or excessive deflection.

2. Leg Shoes: Black vinyl or rubber, open-bottom, slip-on type.

2.07 CHEMICAL-RESISTANT FINISH

A. General: Prepare, treat, and finish welded assemblies after welding. Prepare, treat, and finish components that are to be assembled with mechanical fasteners before assembling. Prepare, treat, and finish concealed surfaces same as exposed surfaces.

B. Preparation: Clean steel surfaces, other than stainless steel, of mill scale, rust, oil, and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it.

C. Chemical-Resistant Finish: Immediately after cleaning and pretreating, apply fume hood manufacturer's standard two-coat, chemical-resistant, baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils.
   1. Chemical and Physical Resistance of Finish System: Finish complies with acceptance levels of cabinet surface finish tests in SEFA 8M. Acceptance level for chemical spot test shall be no more than four Level 3 conditions.
   2. Colors for Fume Hood Finish: As selected by Architect from manufacturer's full range.

2.08 ACCESSORIES

A. Sash Alarm: Provide fume hoods with audible and visual alarm that activates when sash is opened beyond preset position.
   1. Provide with silence and test switches.
   2. Coordinate with VAV Control interface.

B. Sash Stops: Provide fume hoods with sash stops to limit hood opening to 50 percent of sash height. Sash stops can be manually released to open sash fully for cleaning fume hood and for placing large apparatus within fume hood.

2.09 SOURCE QUALITY CONTROL

A. Demonstrate fume hood performance before shipment by testing fume hoods according to ASHRAE 110 as modified in "Performance Requirements" Article. Provide testing facility, instruments, equipment, and materials needed for tests.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of fume hoods.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General: Install fume hoods according to manufacturer's written instructions. Install level, plumb, and true; shim as required, using concealed shims, and securely anchor to building and adjacent laboratory casework. Securely attach access panels but provide for easy removal and secure reattachment. Where fume hoods abut other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical.

B. Comply with requirements in Section 12 3553 "Metal Laboratory Casework" for installing fume hood base cabinets, work tops, and sinks.

C. Comply with requirements for installing water and laboratory gas service fittings and electrical devices.
   1. Install fittings according to Shop Drawings, installation requirements in SEFA 2.3, and manufacturer's written instructions. Set bases and flanges of sink and work top-mounted fittings in sealant recommended by manufacturer of sink or work-top material. Securely anchor fittings to fume hoods unless otherwise indicated.

3.03 FIELD QUALITY CONTROL

A. Field test installed fume hoods according to ASHRAE 110 as modified in "Performance Requirements" Article to verify compliance with performance requirements.
   1. Adjust fume hoods, hood exhaust fans, and building's HVAC system, or replace hoods and make other corrections until tested hoods perform as specified.
   2. After making corrections, retest fume hoods that failed to perform as specified.

3.04 ADJUSTING AND CLEANING

A. Adjust moving parts for smooth, near silent, accurate sash operation with one hand. Adjust sashes for uniform contact of rubber bumpers. Verify that counterbalances operate without interference.

B. Clean finished surfaces, including both sides of glass; touch up as required; and remove or refinish damaged or soiled areas to match original factory finish, as approved by Architect.

END OF SECTION

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