Addendum No. 6

PROJECT NO. 161026-00

PROJECT TITLE: Renovate Plant Science Building - Phase 2

DATE: **November 19, 2026**

State University Construction Fund
State University Plaza
353 Broadway
Albany, New York 12246

New York State College of Agriculture and Life Sciences at Cornell University

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REGISTRATION EXPIRES: 08/31/2028

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Reg. Exp: 04/30/2029
Cert. of Auth: 099088

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ADDENDUM NO. 6

The following additions, deletions, and/or changes or clarifications to the drawings, specifications, and bidding documents for this project, shall become and are hereby made part of the Contract Documents. They change the original documents only in the manner and to the extent stated. Each bidder shall acknowledge receipt of this Addendum in the appropriate location on the bid proposal form.

This addendum contains two hundred (297) pages, which consists of six (6) cover pages, seven (7) addendum description pages, project manual attachments consisting of one hundred sixty-two (162) pages, and one hundred fifteen (121) revised drawings.

6.1: MODIFICATIONS TO PROJECT MANUAL

6.1a: 00 73 25 – REPLACE pages 27 and 44 in their entirety.

6.1b: 01 54 13 – REVISE to read: Use of Elevator(s) for Construction

The small, existing passenger elevator in the work area may be used at the contractors' risk until it is taken offline.

The loading dock freight elevator connecting ground and first floors only is to remain in continuous operation for use by the University. Any contractor use of this elevator must be coordinated a week in advance.

Use of the Weill Hall Tunnel elevator will not be permitted.

Use of the Phase 1 west elevator will not be permitted.

6.1c1: 04 01 10 – Masonry Cleaning: REVISE Part 1.5.B.2.d., from "…used in 2020 cornice restoration emergency work…" to read "…used in 2024 Phase 1 Façade Restoration work…"

6.1c2: 04 01 20.64 – Brick Masonry Repointing: DELETE Part 2.3.C in its entirety and REPLACE with: "2.3.C. Mixes: Mix mortar materials in the following ASTM C270 proportions specification, based on 2024 Phase 1 Façade Restoration project on this building. Final mix design to be confirmed via mockups and in-place samples:

75% of Spec Mix Type N mortar Stormville Blend

25% of Spec Mix Type N mortar 987 Blend

5% add of University Gravel, Concrete Sand"

6.1d: 040140 – DELETE MAINTENANCE OF STONE ASSEMBLIES regarding interior stone treads.

6.1e1: 05 50 00 – ADD Section 1.2.A.6. Wire mesh panel enclosure ADD 2.3.I. 2"X1" Cold rolled, welded, 11 ga. Wir mesh panels with 1" U-Edges. 1. Products: Basis of Design: McNichols.

6.1e2: 06 01 20 – REVISE 1.2.A.1, 1.2.A.3, and 1.2.A.4 to replace 'wood gate' with 'wood cold room door'. REVISE 1.2.A.2 to replace 'gate hardware' with 'cold room hardware'. DELETE 2.5.C.2 Exterior Wood Finishing.

6.1e3: 06 42 00 – DELETE section 'Paneling' in its entirety.

6.1e4: 078413 – ADD: 1.8.D. Installation Responsibility: Assign installation of through-penetration firestop systems and fire-resistive joint systems in Project to a single qualified installer.

6.1f1: 08 31 13 – DELETE the 3-page version of 08 31 13. KEEP the 7-page version.

6.1f2: 10 14 00 – REVISE title to Signage – (OFCI).

6.1f3: 10 22 43 – ADDED Section 10 22 43 Sliding Glass Partitions.

6.1g1: 10 26 00 – REVISE 2.4.A.6. and 2.4.B.6. Height to: Varies by floor. Align bottom of corner guards with top of base. Align top of CG with top of adjacent opening frame.

6.1g2: 11 53 00 – REPLACE in full with the attached.

6.1h: 11 53 00A – DELETED all text in the 'Quantity and Locations' column and REPLACE with: See Drawings. REVISED EQ-7 Basis of Design to indicate Airgas Model No. Y40-RW1000. ADDED EQ-11A high heat snorkel.

6.1i: 115313 - REPLACE section in full with the attached.
6.1j: 123553 – REPLACE section in full with the attached.
6.1k: 123553A – REPLACE section in full with the attached.
6.1l: 132100 – 1.5.B: REVISE from Humidity Uniformity: Not required to: Humidity Uniformity: Non-condensing under typical ventilated conditions year-round. DELETE 1.6.E. and 2.3.B. in their entirety. REPLACE the text of 1.7 to read: Product Test Reports: Showing compliance with specified performance and regulatory requirements, including NYSECC 2025 C403.12.
6.1m: 230710 INSULATION – REPLACE section in full with the attached.
6.1n: 232010 – PIPING SYSTEMS – REPLACE section in full with the attached.
6.1o: 233100 - SHEET METAL AND DUCTWORK ACCESSORIES CONSTRUCTION – REPLACE section in full with the attached.
6.1p: 262816.13 – ADDED specification in its entirety to the project manual.
6.1q: Appendix A – Lighting Fixture Schedule – REPLACE schedule in full with the attached.
6.1r: Appendix A – Lighting Fixture Cutsheets – ADD AK lab bench top shelf (AK01) and bottom shelf (AK01b) basis of design fixture cut sheets. ADD AS01a, AX04, and AX05 basis of design fixture cut sheets.
6.1s: Appendix B – REVISE title to POWER SYSTEM STUDY (For Reference Only)

6.2 MODIFICATIONS TO DRAWINGS
6.2a: G0.3 – REVISED graphic symbol text and added graphic symbol and text.
6.2b1: **C0.1** – DELETED fencing and label at Existing Phase 1 Contractor Trailers.
6.2b2: C0.2 – ADDED asphalt walk removal.
6.2c: C0.3 – REVISED text from “REMOVE ARBOR TIES, VINES, AND SEDUM TRAYS FOR SCAFFOLD INSTALLATION” to read: “REMOVE ARBOR TIES, VINES, AND SEDUM TRAYS FOR SCAFFOLD INSTALLATION. TURN OVER SEDUM TRAYS AND PLANTINGS TO UNIVERSITY TO MAINTAIN OFFSITE DURING CONSTRUCTION”.
6.2d: C1.1 – DELETED fencing and label at Existing Phase 1 Contractor Trailers. ADDED label “NORTH SIDE OF BUILDING MAY NOT BE USED BY DELIVERY TRUCKS”. REVISED vegetation protection in East and West Courtyards. ADDED fence and gate at staging storage area to west of building.
6.2e: C2.1 – REMOVED mulch area at west of building. REVISED Vegetation Protection at West and East Courtyards. REVISED text from “REPLACE SEDUM TRAYS” to read: “RE-INSTALL SEDUM TRAYS AND TERRACE PLANTINGS MAINTAINED OFFSITE BY UNIVERSITY”. REVISED Vegetation Protection and Mulch areas in East and West Courtyards. ADDED section of concrete walk at south of West Courtyard. REVISED Layout and Materials Plan Notes.
6.2f: C6.1 – DELETED “ASPHALT PAVEMENT MILL & PAVE OVERLAY” detail. ADDED “ASPHALT PAVEMENT” detail. ADDED “CONCRETE PAVEMENT” detail.
6.2g: HM1.U – REVISED to incorporate abatement scope at existing to remain piping.
6.2h: HM1.0 – REVISED to incorporate abatement scope at existing to remain piping.
6.2i: S1.2 – REVISED to provide detail references at 2nd floor terrace ramp, stair, and landing.
6.2j: S2.3 – REVISED detail 1 with additional information for the foundation region surrounding the new elevator shaft.
6.2k: S2.9 – REVISED detail 2 with additional information for the foundation region surrounding the new elevator shaft.
6.2l: S3.1 – REVISED to provide details for 2nd floor terrace ramp, stair, and landing.
6.2m1: AD1.0, AD1.1, AD1.2, AD 1.3, AD1.4 – REVISED note 17 to indicate Finger Lakes Reuse (607) 257-9699 in place of Significant Elements. ADDED note 18: PARTITIONS BEING DEMOLISHED ARE

CLAY TILE (TERRA COTTA) BLOCK UNLESS NOTED OTHERWISE, REQUIRING FLOOR AND EXTERIOR WALL INFILL FOLLOWING REMOVAL. Also, ADDED keynotes D12: REMOVE EXISTING GYPSUM BOARD & METAL STUD PARTITIONS and D13: REMOVE EXISTING PLASTER, CORK, & METAL STUD PARTITIONS. ADDED tags for D12 and D13.

6.2m2: AD1.0 - DELETED gray fill areas.

6.2m3: AD1.1 – ADDED slab demolition scope in loading dock area to accommodate replacement of fire protection piping.

6.2m4: AD2.0 and AD2.1 – REVISED keynote D17 to read: REMOVE LOWER PLASTER LAYER, CORK INSULATION, UPPER PLASTER LAYER, AND FURRING AT EXISTING COLD ROOMS. ADDED high-heat snorkel in G02. DELETED fire protection piping shown below ACT; all fire protection piping is to run above ceilings. ADDED tag on AD2.1. REVISED scope in G08 and 102.

6.2n1: AD3.4 – On view 2, North Wing East Demolition Elevation – Phase 2: REVISE steam pipe removal to show 12" of pipe remaining at the base (to be capped). DELETE note that read, "STEAMPIPE TO BE CAPPED AND REMOVED" and REPLACE with: "REMOVE STEAMPIPE AND ALL ANCHORS PRIOR TO FACADE RESTORATION". DELETE note that read, "PATCH PAVERS AND WATERPROOFING AT PIPE REMOVAL. INFILL CONCRETE DECK." and REPLACE with: "CUT PIPE 12" ABOVE PAVERS AND CAP".

6.2n2: AD5.1 – ADDED dimensions to clarify parging scope.

6.2o1: A0.U, A0.0, A0.1, A0.2, A0.3, A0.4 – ADDED legend clarifying fire-rating scope.

6.2o2: A0.1 – ADDED slab infill in loading dock.

6.2p1: A1.0 – ADDED corner guard annotations.

6.2p2: A1.1 – East and west of gridline 23, between column lines L and M, REVISED to provide insulated roof caps where Exhaust Fan F-3 and F-4 are to be demolished (MD1.1). ADDED detail tag references to 14/A6.6 and 9/A11.01. ADDED corner guard annotations. REVISED Loading Dock to clarify framing for package storage area; ADDED two interior elevation tags in the Loading Dock.

6.2q: A1.2 – ADDED corner guard annotations.

6.2r: A1.3 – ADDED corner guard annotations.

6.2s: A1.5 – Roof Plan – ADD flexible walkway pad/roll to go around the right side of the duct work on Roof 010 with a dimension of "NOT LESS THAN 10'-0" between the pad and the roof edge. ADD rubber roof walkway pads near the Exhaust Fan Vent at the southeast end of Roof 010 as shown. ADD Hot vent pipe discharge and liquid resin target beneath with a note that reads: "3'-0" X 3'-0" LIQUID RESIN TARGET BELOW HOT VENT DISCHARGE. COORDINATE LOCATION WITH THE MECHANICAL SERIES DRAWINGS." DELETE note that read "NEW SEEDUM TRAYS AND PLANTINGS TO MATCH EXISTING AROUND FACADE" and REPLACE with: "RE-INSTALL SEDUM TRAYS AND PLANTINGS MAINTAINED OFFSITE BY UNIVERSITY".

6.2t1: A2.0, A2.1, A2.2, A2.3, A2.4 - In ceiling legend, REVISE 'EXISTING NIC' to 'EXISTING TO REMAIN'.

6.2t2: A2.0 – REVISED controlled environment room ceiling heights to 7'-6". ADDED gypsum board ceiling and repair scope at G08.

6.2t2: A2.1 – ADDED gypsum board ceiling and repair scope at 102.

6.2u2: A2.3 – REVISED ceiling in 304 to ACT-3.

6.2v: A2.4 – REVISED extent of gypsum board ceiling assembly. REMOVED section references for clarity.

6.2w: A3.4 – View 2 - NORTH WING EAST ELEVATION: ADDED hot vent pipe to the facade equal distance between 2nd and 3rd windows to the left of Mann Library as shown. ADDED a note pointing to the vent pipe that reads: "HOT VENT PIPE. SEE MECHANICAL SERIES DRAWINGS. PAINTED TO MATCH AHU EXTERIOR, FLAT ENAMEL PAINT WHERE NOT INSULATED. ALL ANCHORS INTO

MASONRY SHALL BE STAINLESS STEEL MASONRY SCREWS." ADDED a note pointing to the vent pipe that reads: "AT NEW PIPE, PROVIDE WATERPROOFING FLASHING AT PIPE PENETRATION COMPATIBLE WITH EXISTING COAL TAR PITCH MEMBRANE AT TERRACE. REMOVE AND REINSTALL BRICK PAVERS AND SETTING BED." ADD a note pointing to the top of the vent pipe and the roof that reads: "COORDINATE THE REQUIRED HEIGHT OF THE HOT VENT PIPE ABOVE THE ROOF LINE WITH THE MECHANICAL SERIES DRAWINGS". ADD a note pointing to the remaining base of the removed pipe that reads: "EXISTING PIPE AND WATERPROOFING FLASHING TO REMAIN. CAP WITH WATERTIGHT FERNCO CAP."

6.2x1: A6.6 – ADDED detail 14/A6.6 INSULATED CURB CAP DETAIL

6.2x2: A6.21 – ADDED text clarifying insulation type.

6.2y: A7.07 – ADDED annotations to clarify millwork and appliances scope as shown.

6.2z: A7.31 – ADDED text to detail 9. ADDED detail 10 with photograph and text to clarify stair finishing scope.

6.2aa: A8.11, A8.12, A8.13 – ADDED text to Interior Glazing Types under Notes. ADDED two views to A8.11 indicating scope for package storage enclosure.

6.2ab: A8.20 – REVISED views 2, 7, 8, 10, 13 to clarify scope.

6.2ac: A9.02 – REVISED ramp, ADDED tag floor finish at security closet, ADDED text notes clarifying underlayment scope.

6.2ad: A9.03 – ADDED tag to 309 and 326. REVISED flooring in 302. ADDED text note clarifying underlayment scope.

6.2ad: A9.04 – ADDED text notes clarifying underlayment scope.

6.2ae: A9.05 – ADDED text to Flooring Legend indicating cork is not used. ADDED text to Ceiling Legend indicating ACT-2 is not used. ADDED height column to Base Legend. ADDED text to RB-03 line item: Product Code: 649, Product Name: Sweet Basil, Flooring: T3623 GREEN LEAF. REVISED wording in Detail 3. REVISED flooring in 119, 221, 305, 323 to TZ-01A. REVISED flooring in 228 to RS-01. REVISED flooring in 304/304A to RS-5. Added finishes for 302EA. ADDED RB types and Penthouse finishes to Room Finish Schedule – Phase 2. REVISED Room Finish Schedule to show accurate WT scope in 40020. ADDED SS-06 for shower enclosures to Phenolic Panel & Solid Surface legend.

6.2af: A9.06 – ADDED sheet GRAPHIC WALLPAPER LEGEND.

6.2ag: A9.12 – ADDED general annotations for fire-rated partitions. ADDED partition note text: 2. ALL BLOCKING IN FIRE-RATED PARTITIONS IS TO BE FIRE-RESISTANT. 3. ALL ELEMENTS IN FIRE-RATED PARTITIONS SUCH AS PUTTY PACKS ARE TO BE ASTM E84 CLASS A OR EQUIVALENT.

6.2ah: A10.00 - Types T1, T1A, T1B, T2, T4, T4A, T5, and T6: REPLACE all instances of C-FRAME with:
U-FRAME. Also, ADDED Type: "C18 MOBILE DRAWER BASE". ADDED type "T2A Table - SS" "24" Depth, Butcher Block Work Surface". ADDED Type C19: 2 UNEQUAL DRAWERS

6.2ai: A10.12 – ADDED tag to unlabeled bench: BENCH C.

6.2aj: A10.15 – ADDED corner guards to 302A.

6.2ak: A10.20 – ADDED tag to unlabeled cabinet: C18.18. REVISED text to clarify point of use exhaust scope in G02.

6.2al: A10.21 – ADDED tag to vacuum cabinet in G14. REVISED controlled environment room ceiling heights. ADDED "OFOI EQUIP" tag to unlabeled dashed boxes in rooms G26, G36, and G38. Detail 21, REVISED "FV2A" to read: "FV1A.24"

6.2am: A10.22 – ADDED tags for EQ-7 and EQ-4 in Rm 228. Also, ADD EQ-4 to Room 118, adjacent to 6-E-31.

6.2an: A10.30 – ADDED glass type on interconnecting door 230.2. ADDED signage to 5 and 10/A10.30. Detail 11: TAGGED Unlabeled casework as C19.12. Detail 1/A10.30: REVISED ADA Table. REVISED

Plan Symbol for Electrical Pedestals. REVISED Text Notes. REVISED Details 11/A10.30 and 12/A10.30 as shown. ADDED Details 13/A10.30 and 14/A10.30.

6.2ao: A10.51 – ADDED to titleblock notes: 1. OFCI PAPER TOWEL DISPENSERS AND OFCI SOAP DISPENERS REQUIRED AT ALL SINKS. ADD to details 1 and 2: NOTE: PEGBOARD IS TO BE STAINLESS STEEL AT METAL CHASE LOCATIONS, AND EPOXY AT GYPSUM BOARD ASSEMBLY LOCATIONS.

6.2ap: A10.70 – REVISED fume hood quantity in G23 for EQ-1A to one (1).

6.2aq: A10.71 – In 113G, REVISED "Provided by / Installed by" to read: "CFCI" for 6-E28 (FLAMMABLE STORAGE CABINETS). Under Other EQ Surveyed but New Location Unknown:
REVISED "Provided by / Installed by" to read "OFOI" for 6-EXX (Dry Oven currently not used in Bradfield Rm 302) and for 6-EXX (UV/VIS spectrophotometer in Bradfield Rm 311).

6.2ar1: A10.72 – REVISED fume hood quantities in 219G to one (1) EQ-1 and one (1) EQ-1A.

6.2ar2: A10.73 – In 319E – REVISE Tall Cabinet from 'CASE' to 'CFCI'.

6.2ar3: A10.76 – 11E23 – DELETE question mark after OFOI

6.2ar4: A10.77 – In room G02, REVISE SE-03 to EQ-8 and REVISE from OFOI to CFCI. In room 118, REVISE EQ-XX to EQ-4. Add associated cold water, floor drain, and power service. In room G14, REVISE 'Place Holder' to 'OFOI'

6.2as: A11.01 – REVISED annotations in detail 7. ADDED detail 9 clarifying opening at new loading dock opening and details 10, 11, 12, and 13 clarifying millwork scope.

6.2at1: A11.05 – REVISED details 2 and 3 to clarify scope.

6.2at2: A11.05 – REVISED roller shade details.

6.2au: P7.3 – REVISED Plumbing Waste and Vent Schematic Riser Diagram (Phase 2). REPLACE sheet in its entirety with the attached version.

6.2av: P7.4 – REVISED Plumbing Condensate Drainage Schematic Riser Diagram (Phase 2)

6.2aw: F1.0 – ADDED check valve with ball drip.

6.2ax: F1.5 – REVISED roof manifold.

6.2ay: F2.1 – REVISED roof manifold, ADDED check valve with ball drip.

6.2az: MD2.1 – DELETED (E)CHWS/R piping and associated tag.

6.2ba: M1.1 – REVISED Drawing Note 2.

6.2bb: M2.0 – REVISED Drawing Note 2. REVISED 1 1/2" RHWS/R to 1 1/4" to RHWS/R.

6.2bc: M2.1 – ADDED 3" Flash Tank Venting. ADDED Drawing Note 4, 5 and 6.

6.2bd: M2.2 – ADDED 3" Flash Tank Venting. ADDED Drawing Note 7 and 8.

6.2be: M2.3 – ADDED 3" Flash Tank Venting. ADDED Drawing Note 3 and 4. ADDED SVAV-G-3-16 tag.

6.2bf: M2.4 – ADDED 3" Flash Tank Venting. ADDED Drawing Note 4 and 5. REVISED 1 1/4" CHWS/R to 1 1/2" to CHWS/R.

6.2bg: M2.5 – ADDED 3" Flash Tank Venting. ADDED Drawing Note 1 and 2.

6.2bh: M3.0 – ADDED monitoring of electric meter in G0086. ADDED Drawing Note 18.

6.2bi: M3.1 – ADDED monitoring of electric meter in 10064 and 121. ADDED Drawing Note 10.

6.2bj: M3.2 – ADDED monitoring of electric meter in 20060 and 223. ADDED Drawing Note 6.

6.2bk: M3.3 – ADDED monitoring of electric meter in 30060 and 325. ADDED Drawing Note 6.

6.2bl: M3.4 – ADDED monitoring of electric meter in 40060 and 417. ADDED Drawing Note 6.

6.2bm: M5.8 – ADDED monitoring of electric meters in Detail 3.

6.2bn: M6.4 – REVISED piping sizes, flow rates, configuration and equipment locations for HWS/R system. Revised piping sizes and flow rates for RHWS/R system. ADDED Demolition Note 6 and 7.

6.2bo: M6.5 – REVISED piping sizes, flow rates, configuration and equipment locations for HWS/R system. REVISED piping sizes and flow rates for RHWS/R system. ADDED flow rates for RHWS/R system.
6.2bp: M6.6 – REVISED piping sizes, flow rates, configuration and equipment locations for CHWS/R system. REVISED PCHWS/R piping configuration and equipment locations. ADDED (E)CF-1 to PCHW/R system.
6.2bq: M6.7 – REVISED piping sizes, flow rates, configuration and equipment locations for CHWS/R system. ADDED flow rates for CHWS/R system.
6.2br: M7.2 – REVISED Detail 2 Ductwork Support Detail. ADDED Detail 7 Structural Framing Ductwork Support Detail.
6.2bs: E0.5 – REVISED mechanical circuiting in Phase 1 area. REMOVED Phase 1 EF-1, EF-2, EF-3 recircuiting. REPLACE sheet in its entirety with the attached version.
6.2bt: ED1.0 – ADDED additional mechanical equipment circuit modifications. REPLACE sheet in its entirety with the attached version.
6.2bu: E1.0 – ADDED additional mechanical equipment circuit modifications, VAV power supply circuitry and clarifications. REPLACE sheet in its entirety with the attached version.
6.2bz: E1.0A – ADD sheet to the drawing set depicting Phase 1 loads to be re-circuited to generator-backed panelboards.
6.2bv: E1.1 – ADDED VAV power supply circuitry and clarifications. REPLACE sheet in its entirety with the attached version.
6.2ca: E1.1A – ADD sheet to the drawing set depicting Phase 1 loads to be re-circuited to generator-backed panelboards.
6.2bw: E1.2 – ADDED VAV power supply circuitry and clarifications. REPLACE sheet in its entirety with the attached version.
6.2cd: E1.2A – ADD sheet to the drawing set depicting Phase 1 loads to be re-circuited to generator-backed panelboards.
6.2bx: E1.3 – ADDED VAV power supply circuitry and clarifications. REPLACE sheet in its entirety with the attached version.
6.2ce: E1.3A – ADD sheet to the drawing set depicting Phase 1 loads to be re-circuited to generator-backed panelboards.
6.2by: E1.4 – ADDED VAV power supply circuitry and clarifications. REPLACE sheet in its entirety with the attached version.
6.2cf: E1.4A – ADD sheet to the drawing set depicting Phase 1 loads to be re-circuited to generator-backed panelboards.
6.2cg1: E2.0 - REVISED circuiting for elevator pit lighting fixture. ADDED existing-to-remain lighting tags. REPLACE sheet in its entirety with the attached version.
6.2cg2: E2.1 - ADDED existing-to-remain lighting tags. ADDED AK-01b tasklighting tags to short shelves above sinks.
6.2cg3: E2.2 – ADDED AK-01b tasklighting tags to short shelves above sinks. DELETED three AD02 fixtures from north wing.
6.2cg4: E2.3 – ADDED AK-01b tasklighting tags to short shelves above sinks.
6.2cg5: E2.4 – ADDED AK-01b tasklighting tags to short shelves above sinks.
6.2ch: E4.1 – ADDED additional panelboards and transformer in Electrical rooms. Electrical room receptacles made GFCI type. Circuiting revisions. Replace sheet in its entirety with the attached version.
6.2ci: E4.3 – DELETED PVAV 120V power connection from plan. REPLACE sheet in its entirety with the attached version.

6.2cj: E4.5 – ADDED additional clarification on proposed conduit routing. REPLACE sheet in its entirety with the attached version.
6.2ck: E5.1 – REVISED certain panel names for consistency, REVISED additional circuiting. ADDED panelboards, and transformer. REPLACE sheet in its entirety with the attached version.
6.2cl: E6.2 – ADDED panel schedules where clouded. REPLACE sheet in its entirety with the attached version.
6.2cm: E6.6 – REVISED mechanical equipment connection schedule where clouded. REPLACE sheet in its entirety with the attached version.
6.2cn: E6.7 – REVISED mechanical equipment connection schedule where clouded. REPLACE sheet in its entirety with the attached version.
6.2co: E6.9 – REVISED Lighting Fixture Schedule where clouded. REPLACE sheet in its entirety with the attached version.
6.2cp: E6.10 – REVISED Lighting Fixture Schedule where clouded. REPLACE sheet in its entirety with the attached version.
6.2cq: E6.12 – ADDED panel schedules where clouded. Replace sheet in its entirety with the attached version.
6.2cr: E6.13 – ADDED panel schedules where clouded. Replace sheet in its entirety with the attached version.
6.2cs: E6.14 – ADD sheet to drawing set showing additional electrical schedules for branch panels.

ATTACHMENTS:

- Project Manual: 00 73 25 pages 27 and 44 (two pages), 08 31 13 (eight pages), 115300 (six pages), 115300A (six pages), 115313 (fifteen pages), 123553 (seventeen pages), 123553A (five pages), 230710 (thirteen pages), 232010 (eighteen pages), 233100 (twenty-two pages), 262816.13 (four pages), Appendix A Lighting Fixture Schedule (twelve pages); Appendix A additional Lighting Fixture Cutsheets (AK-01, AK-01b, AS01a, AX04, AX07 (thirty four pages
- Project Drawings: G0.3, C0.1, C0.2, C0.3, C1.1, C2.1, C6.1, HM1.U, HM1.0, S1.2, S2.3, S2.9, S3.1, AD1.0, AD1.1, AD1.2, AD1.3, AD1.4, AD2.0, AD2.1, AD3.4, AD5.1, A0.U, A0.0, A0.1, A0.2, A0.3, A0.4, A1.0, A1.1, A1.2, A1.3, A1.5, A2.0, A2.1, A2.3, A2.4, A3.4, A6.6, A6.21, A7.07, A7.31, A8.11, A8.12, A8.13, A8.20, A9.02, A9.03, A9.04, A9.05, A9.06, A9.12, A10.00, A10.12, A10.15, A10.20, A10.21, A10.22, A10.30, A0.51, A10.70, A10.71, A10.72, A11.01, A11.05, P7.3, P7.4, F1.0, F1.5, F2.1, MD2.1, M1.1, M2.0, M2.1, M2.2, M2.3, M2.4, M2.5, M3.0, M3.1, M3.2, M3.3, M3.4, M5.8, M6.4, M6.5, M6.6, M6.7, M7.2, E0.5, ED1.0, E1.0, E1.0a, E1.1, E1.1a, E1.2, E1.2a, E1.3, E1.3a, E1.4, E1.4a, E2.0, E2.1, E2.2, E2.3, E2.4, E4.1, E4.3, E4.5, E5.1, E6.2, E6.6, E6.7, E6.9, E6.10, E6.12, E6.13, E6.14

END OF ADDENDUM NO. 6

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ARTICLE 22 - FUTURE CHANGES IN SCHEDULE A AREA CONTRACTS

SECTION 1. CHANGES TO AREA CONTRACTS

A. To the extent applicable to the Project Work, Schedule A to this Agreement shall continue in effect until the Contractor and/or Union parties to the Area Collective Bargaining Agreements which are the basis for Schedule A notify the CM and GC in writing of the mutually agreed upon changes in provisions of such agreements which are applicable to the Project Work, and their effective dates. Such changes, including changes in wage and benefit/supplement rates, shall only be effective to the extent consistent with this Agreement.

B. It is agreed that any provisions negotiated into Schedule A will not apply to work on this Project if such provisions are less favorable to Project Work than those uniformly required of Contractors for construction work, other than Project Work, normally covered by those agreements; nor shall any provision be recognized or applied to Project Work if it may be construed to apply exclusively, or predominantly, to work covered by this Agreement.

C. Any disagreement between signatories to this Agreement over the incorporation into Schedule A of provisions agreed upon in the renegotiation of Area Collective Bargaining Agreements shall be resolved in accordance with the procedure set forth in Article 9 of this Agreement.

SECTION 2. LABOR DISPUTES DURING AREA CONTRACT NEGOTIATIONS

The Unions agree that there will be no strikes, work stoppages, sympathy actions, picketing, slowdowns or other disruptive activity or other violations of Article 7 affecting Project Work by any Local Union involved in the renegotiation of Area Local Collective Bargaining Agreements nor shall there be any lock-out with respect to Project Work affecting a Local Union during the course of such renegotiations.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed and effective as of the _____ day of _____, 2026.

FOR CONSTRUCTION MANAGER, BUFFALO CONSTRUCTION CONSULTANTS, LLC

BY Brad Fisher Digitally signed by Brad Fisher DN: C=US, E=bfisher@buffaloconstruct.com, O=Buffalo Construction Consultants, CN=Brad Fisher Date: 2026.10.02 14:31:09-04'00' Vice President of Operations 10/2/2026
(Name/Title)

FOR THE BUILDING & CONSTRUCTION TRADES

TOMPKINS-CORTLAND BUILDING & CONSTRUCTION TRADES COUNCIL

BY: DocuSigned by: 9/22/2026
201337D937A64E7...
(Name/Title) Marcus Williamee Business Manager

FOR THE LOCAL UNIONS

usign Envelope ID: E64A0339-EF1A-8BEC-8374-2320EDEB948B

IN WITNESS WHEREOF the parties have caused this Agreement to be executed and effective as of the _____ day of _____, 2026.

FOR THE CONSTRUCTION MANAGER; BUFFALO CONSTRUCTION CONSULTANTS, LLC

BY: Brad Fisher Digitally signed by Brad Fisher DN: C=US, E=bfisher@buffaloconstruct.com, O=Buffalo Construction Consultants, CN=Brad Fisher Date: 2026.10.02 14:28:51-04'00' Vice President of Operations

(Name/Title) 10/2/2026

FOR THE BUILDING & CONSTRUCTION TRADES

TOMPKINS-CORTLAND BUILDING AND CONSTRUCTION TRADES COUNCIL

BY: DocuSigned by: 20133703A7A64E7... 9/22/2026

(Name/Title) Marcus Williamee Business Manager

FOR THE LOCAL UNIONS

INTERNATIONAL BROTHERHOOD OF BOILERMAKERS LOCAL NO. 5

BY: Signed by: Gregory Peterson A7596FAEAC184EF... 9/28/2026

(Name/Title) Gregory Peterson ABM

BRICKLAYERS AND ALLIED CRAFTWORKERS, LOCAL NO. 3

BY: Signed by: Jason ReQua C0209E82E6A341C... 9/22/2026

(Name/Title) Jason ReQua President

UNITED BROTHERHOOD OF CARPENTERS AND JOINERS OF AMERICA, LOCAL 277

BY: DocuSigned by: James Mason D0BCBA5A446F4F9... 9/22/2026

(Name/Title) James Mason Regional Manager

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS, LOCAL NO. 241

BY: Signed by: Wayne Shipman 885A6A8DCCBD496... 9/22/2026

(Name/Title) Wayne Shipman Business Manager

SECTION 10 22 43

SLIDING GLASS PARTITIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes furnishing and installing a top-hung, individual aluminum and glass door panel system that includes:

1. Aluminum rails
2. Top track with parking bay(s)
3. Side jambs
4. Sliding panels
5. Non-entry single action end panel(s)
6. Sliding/swinging hardware
7. Locking hardware
8. Door closer
9. Sealing brushes with fin
10. Self-activated adjustable compression seals
11. Transparent vertical edge acoustical seals
12. Vertical side jamb seals
13. Glass and glazing
14. Accessories as required for a complete working installation

B. Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to, the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, Specification Sections, apply to this Section.
2. Section 06 10 00, Rough Carpentry: Wood framing R.O. and blocking.
3. Section 06 20 00, Finish CarpentrySection 07 90 00, Joint Protection.
4. Section 09 22 16, Non-Structural Metal Framing: Metal framing R.O. and reinforcement

1.2 REFERENCES

A. Reference Standards in accordance with Division 01 and current editions from the following:

1. AAMA. American Architectural Manufacturers Association; www.aamanet.org
   a. AAMA 611, Voluntary Specification for Anodized Architectural Aluminum
   b. AAMA 920, Specification for Operating Cycle Performance of Side-Hinged Exterior Door Systems
   c. AAMA 1304, Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems

d. AAMA 2604, Voluntary Specifications, Performance Requirements, and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels

2. ANSI. American National Standards Institute; www.ansi.org
   a. ANSI Z97.1, Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings

3. ASTM. ASTM International; www.astm.org
   a. ASTM C1036, Standard Specification for Flat Glass
   b. ASTM C1048, Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass
   c. ASTM D1003, Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics
   d. ASTM E90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
   e. ASTM E2068, Standard Test Method to Determine the Opening and Breakaway Forces of Sliding Windows and Doors

4. CPSC. Consumer Product Safety Commission; www.cpsc.gov
   a. CPSC 16CFR-1201, Safety Standard for Architectural Glazing Materials.

5. DIN. "Deutsches Institut für Normung" (German institute for standardization); www.en-standard.eu/din-standards
   a. DIN EN 1191, Windows and doors - Resistance to repeated opening and closing - Test method; German version EN 1191:2000
   b. DIN EN ISO 12400, Windows and pedestrian doors - Mechanical durability - Requirements and classification

6. HPD. Health Product Declaration v2.3; https://www.hpd-collaborative.org/
   a. VOC Emission, Inherently non-emitting source LEED v4.

7. IBC. International Building Code; www.iccsafe.org
   a. IBC 2403.4, Differential deflection of two adjacent unsupported All Glass Acoustical Sliding Glass panels

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate top-hung head track support with structural drawings. See Section 05 1200.
2. Coordinate All-Glass Acoustical Sliding Glass Partition system and framing R.O.

B. Preinstallation Meetings: See Section 01 30 00.

1.4 SUSTAINABLE DESIGN REQUIREMENTS

A. Sustainable Design Requirements: The Owner requires the Contractor to implement practices and procedures to meet the Project's environmental performance goals, which include achieving LEED v4 Certification. Refer to Section 01 81 13 "Sustainable Design Requirements" for the Project's target certification level and specific LEED requirements. The Contractor shall ensure that the requirements related to the Project's sustainability design goals are

implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, will not be allowed if such changes compromise the Project's sustainability goals and LEED certification.

1.4 SUBMITTALS

A. For Contractor submittal procedures see Section 01 30 00.

B. Product Data: Submit manufacturer's printed product literature for each All Glass Acoustical Sliding Glass Partition system to be incorporated into the Work. Show performance test results and details of construction relative to materials, dimensions of individual components, profiles, and colors.

C. Product Drawings: Indicate All Glass Acoustical Sliding Glass Partition system component sizes, dimensions, configuration, sliding and single action end panels, direction of swing, stacking layout, typical head jamb, side jambs and sill details, type of glazing material, handle height and field measurements.

D. Installation, Operation and Maintenance Data: Submit Owner's Manual from Manufacturer. Identify with project name, location, and completion date, and type and size of unit installed.

E. LEED v4 Submittals:

1. LEED submittals pertaining to material sustainability features with manufacture data and product costs. See Section 01 81 13 Sustainable Design Requirements as relevant for:

   a. Environmental Product Declarations.

   b. Material Ingredients: Health Product Declarations, Cradle to Cradle, approved chemical inventory program.

   c. Raw Materials Sourcing: recycled content, regional materials, material reuse, extended producer responsibility, corporate sustainability reports.

   d. Low Emitting Materials: pertaining to adhesives, sealants, paints, coatings, applied inside the weather barrier.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer capable of providing complete, precision built, engineered, pre-fitted units with over forty (40) years' experience in the sale of folding-sliding door systems for large openings for the North American market.

1. Manufacturer to have ISO 9001: 2015 quality management system registration.
2. Manufacturer to have ISO 14001: 2015 environmental management system registration.

B. Installer Qualifications: Installer experienced in the installation of manufacturer's products or other similar products for large openings. Installer to provide reference list of at least three (3) projects of similar scale and complexity successfully completed in the last three (3) years.

1. Installer to be trained and certified by manufacturer.

C. Single Source Responsibility: Furnish All Glass Acoustical Sliding Glass Partition system materials from one manufacturer for entire Project.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's instructions and recommendations, Section 01 60 00 requirements, and as follows:

1. Deliver materials to job site in sealed, unopened cartons or crates.
   a. Upon receipt, inspect the shipment to ensure it is complete, in good condition and meets project requirements.

2. Store material under cover in a clean and dry location, protecting units against weather and defacement or damage from construction activities, especially to the edges of panels.

1.7 FIELD CONDITIONS

A. Field Measurements: Contractor to field verify dimensions of rough openings (R.O.), stack storage areas, and floor bolt socket locations. Mark field measurements on product drawing submittal.

1.8 WARRANTY

A. Manufacturer Warranty: Provide All Glass Sliding Partition system manufacturer's standard limited warranty as per manufacturer's published warranty document in force at time of purchase, subject to change, against defects in materials and workmanship.

1. Warranty Period beginning with the earliest of 120 days from Date of Delivery or Date of Substantial Completion:
   a. Rollers Failure: Ten (10) years
   b. Transparent Vertical Edge Acoustical Seal UV Resistance: Five (5) years
   c. All Other Components: Ten (10) years
      1) Exception: Five (5) years if NOT installed by manufacturer's specific system approved or certified trained installer.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations for Aluminum-Framed Systems: Obtain from single source from single manufacturer.

B. Manufacturers: Subject to compliance with requirements, manufacturers providing products which may be incorporated into the Work include, but are not limited to, the following:

1. NanaWall PrivaSEE™ by NANA WALL SYSTEMS, INC. (Basis-of-Design)
2. CARVART, glassSTACKWALL Frameless Acoustic

3. Modernus, Telo Acoustic

2.2 PERFORMANCE / DESIGN CRITERIA

A. Performance Criteria (Lab Tested):

1. Acoustic Performance (ASTM E90):
   a. System STC (Rw) 34 (34) with 1/2 inch (13 mm) STC 38 laminated glass.

2. Forced Entry (AAMA 1304, DIN EN 1191): Pass
3. Operation / Cycling Performance - Single Action End Panels with Offset Hinge:
   a. DIN EN ISO 12400: 100,000 cycles
   b. AAMA 920: 500,000 cycles

4. Distributed Load 50 lb. across glass (IBC 2403.4): < 0.1"
   (Applies between sliding only panels and not for single action end panels or end sliding panels)

5. Operating Force (ASTM E-2068):	Initiate Motion	Maintain Motion
a. Sliding Panel:	1.5 lbf (7 N)	1 lbf (4 N)
b. Single Action End Panel:	1 lbf (4 N)	1 lbf (4 N)

6. Health Product Declaration (HPD): Meets requirements

B. Design Criteria:

1. Sizes and Configurations: As indicated by the drawings for selected number and size of panels, location of single action end panels, and location of tracks and parking bays.
2. Unit Operation: Single action end panel(s) (non-sliding) with sliding panels. Adjustable sliding hardware with top track.
3. Mounting Type: Top-hung
4. Panel Configuration: Straight
5. Stack Storage Configuration: As shown.
6. Sill Type: Adjustable Eccentric floor sockets with No floor track.

2.3 MATERIALS

A. All Glass Acoustical Sliding Glass Partition Description: All glass, top-hung, single track sliding system with glass and vertical and horizontal acoustic seals. Manufacturer's standard top and bottom rail profiles, with head track, parking bays, side jambs, single action end panels, with dimensions as shown on Drawings.

1. Provide aluminum head track, side jambs, hinges, and face and edges of top and bottom rails.
   a. Finish - Anodized (AAMA 611):
      1) Clear
2. Panel Size (W x H): As indicated.
3. Single Action End Panel Width: As shown
4. Head Track Height x Depth: 3-1/16 x 2-3/4 inch (78 x 70 mm)
5. Top & Bottom Rail Depth: 2-3/16 inch (56 mm)
6. Top Rail Height: 4-1/8 inch (104 mm)

7. Bottom Rail Height: 4-1/8 inch (104 mm)
8. Rail End Cap: Male/female interlock.
9. Sill Type: Adjustable Eccentric Floor sockets with No floor track.
10. Aluminum Extrusions: AlMgSi0.5 alloy, 6063-T5 (F-22 - European standard)
    a. Thickness: 0.078-inch (2.0 mm) nominal

B. Glass and Glazing:

1. Safety Glazing: In compliance with ANSI Z97.1, CPSC 16CFR 1201, ASTM C1036, and ASTM C1048.
2. Manufacturer's Standard Single Lite Glass:
   a. Glass Thickness: 1/2 inch (13 mm)
   b. Glass Type: Acoustically enhanced laminated

3. Edges: Flat butt for all panels.
   a. Exposed Edges: Flat polished/ground

4. Factory Glazing:
   a. Clamp installed for equal distribution of weight.
   b. Glass edge top rail clearance to be no more than 1/8-inch (3 mm) with a minimum 7/8 inch (22 mm) bite.
   c. Glass installed with bolts only NOT acceptable.

C. Sliding Hardware:

1. Two (2) unidirectional sliding panel carriers that are attached to each panel with a side adjustable stainless-steel cast shoe and a stainless-steel ball bearing axle.
   a. Carriers to be glass fiber reinforced polyamide wheels with memory effect and polyamide bumpers.
   b. Metal-on-metal contact between top track and carriers NOT acceptable.

2. Maximum carrying capacity of two carriers on a panel to be: 330 lbs. (150 kgs)
   a. Carriers on panels to be installed such that each panel can be intelligently guided into the parking bay without error and with single hand operation.
   b. Non-single handed operation, not acceptable.

3. Adjustment: Provide system capable of specified amount of adjustments without removing panels from tracks.

D. Hardware on Single Action End Panel(s) Operable from Both Sides:

1. Locking Ladder pull handles in brushed stainless-steel finish with bumpers and locking at handle height with mortise key/key cylinder.
2. Offset hinged panel that can swing 170°.
3. Standard floor closer with hold-open function.
4. ADA compliant (5-1/2 inch (140 mm) high), acrylic chamfer rail adapter, 1-3/8 inch (35 mm) high by 7/8 inch (22 mm) thick.

E. Mortise Cylinder: 1-1/8 inch mortise lockset, Yale cam clear anodized finish, as a temporary construction core.

1. Final locking by others: key operation
   a. Key operation from either side

b. Key operation inside or outside only
c. Key operation from outside with a thumb turn on the inside, only with Locking Ladder Pull handle.

F. Panels with Push/Pull Handles or Knobs: Provide handle height centered at 41-3/8 inch (105 cm) from bottom of the panel or as indicated otherwise.

G. Other Locking:

1. Between Sliding Panels, provide concealed automatic interlock for floor bolts.
2. For Floor Bolts, provide 1-3/16 inch (30 mm) deep, adjustable, eccentric floor sockets. For concealed automatic interlock, floor socket available with black polyamide insert.

H. Other Components:

1. Horizontal Seals: At bottom rails, provide sealing brush with double fins on the inside and self-activated adjustable compression seal on the outside. At top-rails provide sealing brush with double fin on both sides.
2. Transparent Vertical Edge Acoustical Seals: Between panels, provide UV resistant edge mounted gaskets with light transmission (LT) of 75 percent or higher per ASTM D1003.
   a. H-profile acts as a permanent fastener and capture the edges to prevent differential deflection of two adjacent unsupported All Glass Sliding panels per IBC 2403.4. Applies between sliding only panels and not for single action end panel or end sliding panel. For single action end panel adjacent to a sliding panel, a h-profile is supplied.

3. Vertical Side Jamb Seals: Between side jambs and panels, provide double EPDM seals.

2.4 FABRICATION

A. Extruded aluminum frame and rail profiles, sliding hardware, locking hardware and handles, and glass to construct All Glass Acoustical Sliding Glass Partition.

1. Each unit factory pre-assembled and shipped with all components and installation instructions.
2. Exposed work to be carefully matched to produce continuity of line and design with all joints.
3. No raw edges visible at joints.

2.5 ACCESSORIES

A. Sidelights with finish to match, as indicated. See Door Schedule.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examination and Acceptance of Conditions per Section 01 70 00 and as follows:

1. Carefully examine rough openings with Installer present, for compliance with requirements affecting Work performance.
   a. Verify that field measurements, substrates, tolerance, levelness, plumbness, cleanliness, and other conditions are required by the manufacturer, and ready to receive Work.
   b. Verify the structural integrity of the header for deflection with live and dead loads limited to 1/4 inch (6 mm). Provide structural support for lateral loads and eccentric loads when the panels are stacked open.

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

3.2 INSTALLATION

A. General: Install All Glass Acoustical Sliding Glass Partition system in accordance with the Drawings, approved submittals, manufacturers' recommendations, and installation instructions, and as follows:

1. Properly seal around opening perimeter.
2. Securely attach anchorage devices to rigidly fit top head track and parking bay in place, level, straight, plumb, and square. Install frame in proper elevation, plane and location, and in proper alignment with other work.
3. Install glass panels, handles, lockset, and other accessories in accordance with manufacturers recommendations and instruction.

3.3 FIELD QUALITY CONTROL

A. Field Tests and Inspections per Section 01 40 00 of the following:

1. Verify the All Glass Acoustical Sliding Glass Partition system operates and functions properly. Adjust hardware for proper operation.

B. Non-Conforming Work: Repair or replace non-conforming work as directed by the Architect; see General and Supplementary Conditions, and Division 01, General Requirements.

3.4 CLEANING AND PROTECTION

A. Keep units closed and protect All Glass Acoustical Sliding Glass Partition installation against damage from construction activities.

B. Remove protective coatings and use manufacturer recommended methods to clean exposed surfaces.

END OF SECTION

SECTION 11 53 00

LABORATORY EQUIPMENT

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the Contract and General Requirement and all Sections within Division 01 which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

A. Section Includes:

1. Responsibility for furnishing and installing equipment is noted as follows:

a. CFCI: Contractor-furnished, Contractor-installed.
b. OFOI: Owner- (Campus-) furnished, Owner (Campus)-installed.
c. OFCI: Owner- (Campus-) furnished, Contractor-installed.

2. Laboratory equipment as indicated in Equipment Schedule at the end of this Section and as indicated in Equipment Matrices included in the A10 Drawing series.

B. Related Sections:

1. Section 01 79 00 “Training of Campus Personnel” for demonstration and training requirements for Project equipment.

1.3 PREINSTALLATION MEETINGS AND PRE-ACCEPTANCE MEETINGS

A. Where equipment is indicated to be Contractor-installed, comply with the following.

1. Conduct conference at Project site to comply with requirements in Division 01.
2. Meet with installer, manufacturer’s technical representative, Contractor, Owner (Campus) and Fund to review requirements for pre-construction, start of installation, startup and testing, acceptance inspection, and other coordination interface required to facilitate the Campus’ acceptance of laboratory equipment.
3. Refer to individual Sections for requirements for required conferences.

1.4 DELIVERY AND HANDLING

A. (CFCI) Contractor-Furnished, Contractor-Installed:

1. Deliver equipment in manufacturer's original unopened containers or packaging with identifying labels intact and legible, clearly identifying product, scheduled to arrive at time of installation sequence requirements.

2. Containers or packaging showing indication of damage that may affect condition of contents will not be accepted.
3. Store equipment in original packaging, under cover, in accordance with manufacturer's recommendations in a manner that prevents damage from water or construction activities.
4. Handle equipment in a manner that prevents physical damage to products or finishes.
5. Contractor shall make plumbing, mechanical, electrical and other service connections required for CFCI equipment.

B. (OFOI) Equipment Furnished by Owner (Campus) and Installed by Owner (Campus):

1. New or existing equipment that will be received and installed by the Owner (Campus).
2. Contractor shall coordinate with Owner (Campus) and make plumbing, mechanical, electrical and other service connections required for Owner (Campus)-provided equipment.

C. (OFCI) Equipment Owner (Campus) Furnished and Contractor Installed:

1. Owner (Campus) will furnish equipment to the Contractor at the job site, unless otherwise indicated.
2. Owner (Campus) will arrange for and deliver Shop Drawings, Product Data, and Samples to Contractor.
3. After delivery, Owner (Campus) will inspect delivered items for damage. Contractor shall be present for and assist in Owner's (Campus') inspection.
4. If Owner- (Campus-) furnished items are damaged, defective, or missing, Owner (Campus) will arrange for replacement.
5. Owner (Campus) will arrange for manufacturer's field services and for delivery of manufacturer's warranties to Contractor.
6. Owner (Campus) will furnish Contractor the earliest possible delivery date for Owner- (Campus-) furnished products. Using Owner- (Campus-) furnished earliest possible delivery dates, Contractor shall designate delivery dates of Owner- (Campus-) furnished items in Contractor's Construction Schedule.
7. Contractor is responsible for receiving, unloading, and handling Owner- (Campus-) furnished items at Project site.
8. Contractor is responsible for protecting Owner-furnished items from damage during storage and handling, including damage from exposure to the elements.
9. If Owner- (Campus-) furnished items are damaged as a result of Contractor's operations, Contractor shall repair or replace them.
10. Contractor shall install and otherwise incorporate Owner-furnished items into the Work.
11. Contractor shall provide support systems to receive Owner's equipment and make plumbing, mechanical, electrical, and other service connections.

PART 2 - PRODUCTS

2.1 SCHEDULED EQUIPMENT

A. Products: Refer to Equipment Schedule in Drawings.

B. In addition to the Equipment Schedule on the Drawings, provide the following laboratory equipment.

C. SNORKEL ~~EXHAUST - POINT EXHAUST~~

~~1. Basis of Design Product: Subject to compliance with requirements, provide Movex ME-75 as manufactured by Movex, Inc., Northampton, PA.~~
~~2. Product Description: Adjustable chemical resistant fume extraction arm.~~
~~3. Construction:~~

~~a. Tubes: Type 316, stainless-steel.~~
~~b. Joints and Flanges: Adjustable cast aluminum friction discs.~~

~~4. Mounting and Arm Lengths: As indicated.~~
~~5. Number of Joints: Three.~~
~~6. Optional Mesh Inside Vent Termination: Required; as indicated on Drawings.~~
~~7. Manual Air Volume Damper: Not permitted.~~
~~8. Finish: Brushed stainless steel.~~
~~9. Color(s): Manufacturer's standard.~~
~~10. Fans: Not included in Work of this Section.~~
~~11. Control Switches: Wall switch; not included in Work of this Section.~~

1. **SNORKEL EXHAUST - POINT EXHAUST**

   a. **Basis of Design Product: Subject to compliance with requirements, provide Movex ME-75 as manufactured by Movex, Inc., Northampton, PA.**
   b. **Product Description: Adjustable chemical resistant fume extraction arm.**
   c. **Construction:**

      1) **Tubes: Type PP**
      2) **Polypropylene joints and tubes. All metal parts that come into contact with the airflow are made of stainless steel**

   d. **Mounting and Arm Lengths: As indicated.**
   e. **Number of Joints: Three.**
   f. **Optional Mesh Inside Vent Termination: Required; as indicated on Drawings.**
   g. **Manual Air Volume Damper: Not permitted.**
   h. **Color(s): Manufacturer's standard.**
   i. **MTI Ceiling Bracket with MCT cover plate.**
   j. **MEL round polypropylene dome hood. Temp Range 5°F to 176°F.**

2. **HIGH HEAT SNORKEL**

   a. **Basis of Design Product: Subject to compliance with requirements, provide Movex MEX AA.**
   b. **Parts that come into contact with the pollutants at high temperatures are made of stainless steel.**
   c. **18" telescope movement.**
   d. **Rectangular hood MEX AAF.**
   e. **Heat-resistant Teflon rings with stable locking device.**
   f. **Horizontally adjustable wall bracket.**
   g. **Flexible hose.**
   h. **Sliding Lining: PFTE with temperature range of -22°F to 572°F.**
   i. **Hose: Aluminum with temperature range of -22°F to 482°F.**
   j. **Provide escutcheon painted to match ceiling where hood penetrates ceiling tile.**

D. GAS CYLINDER CHAIN RACKS

1. Manufacturers:

a. Matheson Gas Products
b. Linde Gas & Equipment, Inc.
c. USA Safety

2. Description:

a. Modular units.
b. Framing: 2- by 2-inch welded square steel tubing.
c. Components bolted to framing.
d. Configuration: Dual chain models, configurations as indicated on drawings.

3. Regulatory Compliance: NFPA, Compressed Gas Association and OSHA.
4. Floor protection:

a. Type 304 Stainless Steel diamond plate floor, overlaid on flooring at gas cylinder closets.
b. Provide Type 316 Stainless Steel diamond plate in wet locations.

E. GAS CYLINDER WALL-MOUNTED RESTRAINTS

1. Manufacturers:

a. Matheson Gas Products
b. Troemmer LLC
c. USA Safety

2. Description:

a. Gas Cylinder Restraints - Wall-mounted 2-cylinder steel bracket with strap and chain for each cylinder at labs.

1) Install to resist ≥500 ft-pounds without damage.
2) 66 inch high Type 304 Stainless Steel plate wall protection in continuous lengths and manifold mounting plate on slotted channel stainless steel framing above wall protection.

2.2 OTHER EQUIPMENT

A. Acceptable Manufacturers/Fabricators and Products: Subject to compliance with requirements of Contract Documents as judged by the Architect, provide product by manufacturers/fabricators listed.

1. Refer to LABORATORY EQUIPMENT SCHEDULE, included as an appendix to this Section, for required equipment.

2.3 MOUNTING/FASTENERS

A. Provide Alloy 316 stainless steel seismic rated fasteners engineered by equipment manufacturer.

2.4 VENTED FLAMMABLE SAFETY STORAGE CABINETS

A. 60 Gallon, 2 Shelves, 2 Doors, Flammable Cabinet, Sure-Grip EX, Yellow

1. **Basis of Design: Justrite #896020 or approved equal by Eagle Manufacturing**

B. 18GA steel double wall with 1.5" insulating air space fully welded construction

1. **FM approved**
2. **Compliant with OSHA Requirements**
3. **Compliant with NFPA 1 and NFPA 30**

C. Doors: self-closing with fusible link. Handle Lock with auto-latch and door synchronizer incorporated as an integral function of the cabinet. Provide doors with a three-point locking arrangement.

D. Dual vents with Flame Arrestors

1. **At supply and exhaust piping, provide thermally actuated dampers "SAFE-T-VENT" by Justrite or Eagle Manufacturing.**

E. Adjustable shelves

F. Self-leveling feet

G. Grounding connector

H. Lead-free powder coat finish

I. Each storage cabinet shall be marked "FLAMMABLE - KEEP FIRE AWAY" IN REFLECTIVE LETTERS NOT LESS THAN 2 INCHES IN HEIGHT AND IN COLOR CONTRASTING WITH THE BACKGROUND"

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install equipment indicated as Contractor installed, in accordance with Drawings and equipment manufacturer's written instructions.

3.2 DEMONSTRATION AND TRAINING

A. General: Where laboratory equipment is indicated to be Contractor-Furnished, provide demonstration and training from authorized manufacturer's representative to Campus' personnel in proper use, operation, and periodic maintenance of laboratory equipment. Training of Campus' personnel shall include procedures to follow in identifying sources of operational failures or malfunctions, where applicable.

B. Refer to Section 01 79 00 “Training of Campus Personnel” of the General Requirements, and individual specification sections for additional equipment demonstration and training requirements.

END OF SECTION 11 53 00

Contractor-Furnished, Contractor-Installed Laboratory Equipment Schedule
(See Equipment Matrices on A10-series drawings for OFCI and OFOI equipment)

Equip. No.	Equipment Description	CFCI/ CFOI/ OFCI	BoD/ Acceptable Manufacturer//Model No.	Quantity /Locations	Notes

EQ-1	**Research Chemical Fume Hood:**
	
	5”-0” long x 32.625” deep Chemical Fume Hood – Painted Steel construction
	
	30” polypropylene lined acid cabinet, vented,
	30” flammable liquid storage.
		CFCI	**Basis of Design**
			“Pro Restricted Bypass”
			
			Mott Manufacturing Co.
			www.mott.ca
			
			Contact: Jeffrey Virnoche
			Communications:
			C:
			315.952.5073, jvirnoche @sandvlabs.com
			
			Alternate Acceptable Models:
			Mott: Safeguard
			Kewaunee: Supreme Air H05
			ICI Scientific (Jamestown): F-100 Isolator Gen-5
			Labconco: Protector XStream
				See Drawings
				
				~~**Level G**~~
				~~Quantity: (1)~~
				~~Location: G20 (Main Research Lab)~~
				~~**Level 1**~~
				~~Quantity: (2)~~
				~~Location: 113F (Chemistry Support 1 Lab); Location: 113G (Chemistry Support 2 Lab)~~
				~~**Level 2**~~
				~~Quantity: (3)~~
				~~Location: 202D (Chemistry Support Lab); Location: 202E (Equipment Corridor);~~
				~~Location: 219G (Chemistry Support Lab)~~
				
				~~**Level 3**~~
				~~Quantity:(2)~~
				~~Location: 302C (Chemistry Support Lab); Location: 319G (Chemistry Support Lab)~~
					• Variable Air Volume
					• Vertical sash
					• UL 1805 Classified
					• Designed to operate at 100 FPM face velocity (with a full range of 60-100FPM face velocity) at 18” sash opening.
					• ASHRAE 110 static and dynamic factory and field testing at 100FPM face velocity standard, including Tracer Gas testing
					• LED light fixture
					• Two duplex power receptacles
					• Lab service connections to include;
					  ○ Natural Gas
					  ○ Compressed Air
					  ○ Lab Vacuum
					• Non potable cold water, faucet w/back flow preventer & cup sink
					• Fume hood monitor w/ low flow alarm by Div 23 BACS
					• SS Sash Stop @ 18" st. stl. air foil, #4 finish
					• Chain and Sprocket Sash Drive
					• Epoxy Work Surface
					• See spec section.

Equip. No.	Equipment Description	CFCI/ CFOI/ OFCI	BoD/ Acceptable Manufacturer//Model No.	Quantity /Locations	Notes

EQ-1A	**Accessible Research Chemical Fume Hood:**
	
	5”-0” long x 32.625” deep Chemical Fume Hood – Painted Steel construction
	
	Cabinet units underneath the hood must be 28-3/4” high max. and at a width that provides knee space depth
	
	C-frame table to meet ADA requirements, with electric hydraulic lift moving tabletop surface only
	
	Airfoil by-pas with spill trough
	
	Lever handles on all plumbing service fittings
		CFCI	**Basis of Design**
			Mott: Safeguard; Modified OTF-Optima table (30”-36”H limit)
			Mott Manufacturing Co.
			www.mott.ca
			
			Contact: Jeffry Virnoche
			Communications:
			C:
			315.952.5073, jvirnoche@sandvlabs.com
			
			Alternate Acceptable Models:
			1. ICI Scientific (Jamestown): Isolator ADA Hood with Trough: F-960 (Vertical Sash) or F-961 (Combination Sash)
			2. Labconco: Protector XStream
				See Drawings
				
				~~**Level G**~~
				~~Quantity: (2)~~
				~~Location: G20 (Main Research Lab), Location: G23 (Chemistry Support Lab)~~
				
				~~**Level 1**~~
				~~Quantity: (1)~~
				~~Location: 113G (Chemistry 2 Support Lab)~~
				
				~~**Level 2**~~
				~~Quantity: (2)~~
				~~Location: 202D (Chemistry Support Lab)~~
				
				~~Location: 219G (Chemistry Support Lab~~
				
				~~**Level 3**~~
				~~Quantity: (2)~~
				~~Location: 302C (Chemistry Support Lab)~~
				
				~~Location: 319G (Chemistry Support Lab)~~
				
				~~**Level 4**~~
				~~Quantity: (1)~~
				~~Location: 402C (Chemistry Support Lab)~~
					• Variable Air Volume
					• Combination Vertical / Horizontal sash
					• UL 1805 Classified
					• Designed to operate at 100 FPM face velocity (with a full range of 60-100FPM face velocity) at 18” sash opening.
					• ASHRAE 110 static and dynamic factory and field testing at 100FPM face velocity standard, including Tracer Gas testing
					• Flexible accordion chemical-resistant duct connection
					• LED light fixture
					• Two duplex power receptacles
					• Flexible lab service connections to include;
					  o Natural Gas
					  o Compressed Air
					  o Lab Vacuum
					• Flexible non potable cold water, faucet w/back flow preventer & cup sink
					• Fume hood monitor w/ low flow alarm by Div 23 BACS
					• SS Sash Stop @ 18" st. stl. air foil, #4 finish
					• Chain and Sprocket Sash Drive
					• Epoxy Work Surface
					• Movable acid storage with flexible vent connection
					• Flexible vent for movable vacuum cabinet

Equip. No.	Equipment Description	CFCI/ CFOI/ OFCI	BoD/ Acceptable Manufacturer//Model No.	Quantity /Locations	Notes
EQ-2D	Steam sterilizer, Pre-vacuum Single-hinged door, Recessed in stainless steel headwall	CFCI	**Basis of Design** Amsco Steris 600 LS **Overall Dimensions** **39.5”W x 89.5”H x 74.5”L** **Inside Chamber Dimensions** **26.5”W x 26.5”H x 51”D** ~~53.5x51x78.5 inside chamber~~ **Alternate Acceptable Mfr** Consolidated Lab Series Lancer Getinge Group Primus	**See Drawings** ~~Quantity:(1)~~ ~~Location: 304/ 304A~~ ~~(Autoclave Glasswasher/ Glassware Washer)~~	Single door, recessed, mounted in 316 stainless steel modular wall, 18 gauge with #4 brush finish facing and load probe option ~~61”~~ ~~Chamber Rack and Shelves~~, **51” Loading Car and Transfer Carriage** RODI Water Supply ~~Auto Flush /~~ Electric Steam Generator Unit **(316 SS Construction)** 316L Stainless Steel chamber and piping 480V Provide stainless steel chamber, components and piping as requi for RO/DI service Accessories: 1 set per unit; ~~loading cart~~
EQ-3A	Glassware Washer, Single door Flush Mounted in Stainless Steel Headwall	CFCI	**Basis of Design** Steris 300 XLS **Overall Dimensions** **28-1/2 “W x 78”H x 28-1/2"D** **Inside Chamber Dimensions:** **25”W x 24”H x 23”D** ~~42”Wx33 7/8”Hx80”D inside chamber~~ **Alternate Acceptable Mfr** Betterbuilt Lancer Getinge Group Meile Scientek	**See Drawings** ~~Quantity: (1)~~ ~~Location: G61/G63~~ ~~(Autoclave Glasswasher/ Autoclave Service)~~	**480V** St Stl fold down door, mounted in stainless steel modular wall Electrically Heated Washer Drain discharge cooling 4 Preset wash cycles Automatic dosing pumps (for chemical agents) Pure water rinse (RODI) Integral **Non-Vented** Dryer Cycle Wall Flange Assembly **Printer** Provide stainless steel chamber, components and piping as requi for RO/DI service Accessories: 1 set per unit

Equip. No.	Equipment Description	CFCI/ CFOI/ OFCI	BoD/ Acceptable Manufacturer//Model No.	Quantity /Locations	Notes
EQ-4	Ice Machine	CFCI	**Basis of Design** Hoshizaki America, Inc. **Alternate Acceptable Mfr** Manitowoc Ice-o-Matic	**See Drawings** ~~Quantity: (1)~~ ~~Location: 304 (Autoclave Glasswasher)~~	Physical: 24"w. x 26"d. x 39"h. Utility Requirements: Air cooled 1/4" Nom. ID potable water supply,10-113psig,45-90°F 3/4" Nominal ID hard pipe condensate drain piped to floor drain F-330BAJ - 232lb flake ice production in 24 hr 2.7 cu ft / 80 lbs built-in storage capacity R-404A Refrigerant or lower GWP 3,400 BTU/hr Heat Rejection
EQ-5A	Stainless steel exhaust canopies and stainless steel modular walls	CFCI	**Basis of Design** Steris **Alternate Acceptable Mfr** Consolidated Lab Series Lancer Getinge Group Primus	**See Drawings** ~~Quantity: (1)~~ ~~Location: 302 (Autoclave Glasswasher)~~	Condensate collection channel and drain tube piped to drain at exhaust canopies. Dimensions to be coordinated with ceiling grid, manufacturer, and mechanical requirements. 2’ deep canopy in 316 stainless stee**l** with stainless steel modular wall – see drawings
EQ-6A	Undercounter Glassware Washer	CFCI	**Basis of Design** Lancer 810 LX **Alternate Acceptable Mfr** Betterbuilt Meile Scientek Steris (~~300 XLS~~ **Reliance 100**)	**See Drawings** ~~Quantity: (1)~~ ~~Location: 304 (Autoclave Glasswasher)~~	St stl fold-down door Discharge water cooling 4 preset wash cycles Automatic dosing pumps (for chemical agents) Pure water rinse Integral Dryer Cycle Provide stainless steel chamber, components and piping as required for RO/DI service
EQ-7	Liquid Nitrogen Pour-Off Station	CFCI	**Basis of Design** Airgas **Y40-RW1000** Contact: lance.brennan@airgas.com; chris.birmingham@airgas.com	**See Drawings** ~~Quantity: (1)~~ ~~Location: 228 (Flex Lab Support)~~	Large tank stand 316 stainless steel 1/8” diamond plate wall (3’-4”w x 6’h) and floor (3’ x 3’) protection Stainless steel shelf and hooks

Equip. No.	Equipment Description	CFCI/ CFOI/ OFCI	BoD/ Acceptable Manufacturer//Model No.	Quantity /Locations	Notes
EQ-8	Biological Safety Cabinet, and electric hydraulic C-frame stand allowing equipment storage below	Varies	**Basis of Design** Nuaire: Nominal Labgard Energy Saver ES NU-540-500 Class II, Type 2 **Alternate Acceptable Mfr** Labconco Purifier Logic+ Class II Thermo Fisher Scientific – Nominal 1300 Series Class II, Type 2	**See Drawings** ~~**Levels**~~ ~~Quantity TBD~~ ~~Location: TBD~~	Class II / A2 BSC Exterior dimensions for G50: 66.3” x 31.2” x 61.7”h + 25.5” to 33.5”h table Non-ducted Exterior dimensions for 238, 242: 54” x 31.5 x 61.7” + 25.5” to 33.5”h table (nominal size 4'), 10”H sash Non-ducted Heat Generation: 990 BTU/hr Normal Operating Mode for 4’ model Electrical Service Requirements: 115V AC,15A (cabinet), 2.4 amps (base stand), 60Hz Lab services, as indicated on drawings (exterior connections allowing height adjustability): • Vacuum • Compressed Air
EQ-8A	Electric hydraulic C-frame stand allowing equipment storage below to be provided for one OFOI BSC per lab.	CFCI	**Basis of Design** Nuaire	**See Drawings** ~~See A10 series.~~	See A10 series for locations and dimensions. Lab services as indicated on drawings (exterior connections allowing height adjustability).
EQ-9	Deli Refrigerator	CFCI	**Basis of Design** VWR 1387 **Alternate Acceptable Mfr** Avantco Coreco	**See Drawings** ~~**Level 3**~~ ~~Quantity: (1)~~ ~~Location: 230~~	Construction: 304 Stainless Steel Vertical Exterior Dimensions: 54” w Capacity: 45-50 cu. ft. 115 V 0 GWP Energy Star-compliant
EQ-10	Vacuum Pump	CFCI	**Basis of Design** Vacuubrand ME 4C NT+2AK	**See Drawings** ~~See A10 series.~~	See Section 22 62 19.
EQ-11	Snorkel	CFCI	**Basis of Design** Movex ME-75 PP, MCT	**See Drawings** ~~See A10 series.~~	See 11 53 00 2.1. C.
EQ-11A	**High Heat Snorkel**	**CFCI**	**Basis of Design** **Movex MEX AA**	**See Drawings**	**See 11 53 00 2.1. C.**

Equip. No.	Equipment Description	CFCI/ CFOI/ OFCI	BoD/ Acceptable Manufacturer//Model No.	Quantity /Locations	Notes
EQ-12	Cord Reel Provide above ACT mounting	CFCI	**Basis of Design** Hubbel **Alternate Acceptable Mfr** Hoshizaki America, Inc. Hunter Spring	**See Drawings** ~~See Teaching Lab 104; Teaching Lab Prep 230~~	CR-1 – Electrical Service: provide white finish portable reel with (2) duplex outlets in white box Model: HBLI45143R15Y (verify electrical service with electrical drawings)

General Notes: 1. Contractor shall coordinate equipment space dimensions with equipment manufacturer's recommendations and requirements prior to installation of adjacent casework, countertops or equipment. 2. House Steam not provided; equipment requiring steam to have onboard steam generator. 3. All fasteners securing stainless steel items are to be stainless steel.

SECTION 11 53 13

LABORATORY FUME HOODS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the Contract and General Requirement and all Sections within Division 01 which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

A. Section includes.

1. Low-flow, variable volume fume hoods; ADA units, where indicated.
2. Fume hood metal base cabinets with epoxy countertops.
3. Electrical service fittings in fume hoods.
4. ~~Flammable storage cabinets.~~
5. ~~Acid storage cabinets.~~
6. ~~Stand-alone flammable storage cabinets.~~
7. Field testing of installed fume hoods.

B. Related Sections:

1. Section 01 79 00 “Training of Campus Personnel” of the General Requirements, for additional equipment demonstration and training requirements.
2. Section 01 81 13 “Sustainable Design Requirements” for sustainable design requirements.
3. Section 01 81 19 Sustainability IAQ Management for indoor air quality management.
4. Section 09 22 16 “Non-Structural Metal Framing” for reinforcements in metal-framed gypsum board partitions for anchoring fume hoods.
5. Section 12 35 53 “Laboratory Casework” for laboratory service fitting requirements for fume hoods, to the extent not specified herein **and for flammable storage cabinets and acid / corrosive storage cabinets under fume hoods**.
6. Section 23 05 93 “Testing, Adjusting and Balancing” for field quality-control testing of fume hoods.
7. Division 23 Sections for fume hood duct connections, including ducts.
8. Division 26 for connecting service utilities at back of fume hoods. Piping and wiring within fume hoods are specified in this Section.

1.3 COORDINATION

A. Coordinate exhaust “thimble” sizes and locations, as required to be compatible with exhaust connections indicated on Drawings.

1.4 PREINSTALLATION MEETINGS AND PRE-ACCEPTANCE MEETINGS

A. Conduct preinstallation and pre-acceptance conferences at the Project site in accordance with requirements in Division 01.

1. Meet with installer, manufacturer's technical representative, Contractor, Owner (Campus) and Fund to review requirements for pre-construction, start of installation, startup and testing, acceptance inspection, and other coordination interface required to facilitate the Campus' acceptance of laboratory equipment.

1.5 SUSTAINABLE DESIGN REQUIREMENTS

A. Sustainable Design Requirements: The Owner requires the Contractor to implement practices and procedures to meet the Project's environmental performance goals, which include achieving LEED v4 Certification. Refer to Section 01 81 13 "Sustainable Design Requirements" for the Project's target certification level and specific LEED requirements. The Contractor shall ensure that the requirements related to the Project's sustainability design goals are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, will not be allowed if such changes compromise the Project's sustainability goals and LEED certification.

1.6 PERFORMANCE REQUIREMENTS

A. Note: Field testing provided under Section 230593 "Testing, Adjusting and Balancing".

B. Containment: Provide fume hoods that comply with the following when tested according to ASHRAE 110 as modified below at a release rate of 4.0 L/min.:

1. Average Face Velocity: 100 fpm (0.51 m/s) plus or minus 10 percent for vertical sashes at 18-inch height.
2. Face Velocity Variation: Not more than 10 percent of average face velocity once variable volume is set.
3. Sash Position:

a. Hoods tested with vertical sashes with 14-inches maximum opening.

C. Structural Performance: Provide fume hood components capable of withstanding the following loads without permanent deformation, excessive deflection, or binding of cabinet drawers and doors:

1. Fume Hood Base Stands: 50-lb/ft. (74-kg/m) work top, 75 lb/ft. (112 kg/m) on work top, plus weight of hood.

1.7 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. LEED v4 Submittals:

1. LEED submittals pertaining to material sustainability features with manufacture data and product costs. See Section 01 81 13 Sustainable Design Requirements as relevant for:

    a. Environmental Product Declarations.
    b. Material Ingredients: Health Product Declarations, Cradle to Cradle, approved chemical inventory program.
    c. Raw Materials Sourcing: recycled content, regional materials, material reuse, extended producer responsibility, corporate sustainability reports.
    d. Low Emitting Materials: pertaining to adhesives, sealants, paints, coatings, applied inside the weather barrier.

C. Shop Drawings: For laboratory fume hoods. Include plans, elevations, sections, details, and attachments to other work.

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

D. Samples for Initial Selection: For factory-applied metal finishes and phenolic composite counters.

E. Samples for Verification: For factory-applied finishes interior lining and countertop material, in manufacturer's standard sizes.

1.8 INFORMATIONAL SUBMITTALS

A. Product Test Reports: Based on evaluation of comprehensive tests according to SEFA 1.2, "Laboratory Fume Hoods--Recommended Practices" and ASHRAE 110 performed by manufacturer and witnessed by a qualified independent testing agency, for fume hoods.

B. Field quality-control reports.

1.9 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.

B. Deliver maintenance materials to Cornell Plant Science Building and coordinate receiving with Facilities Manager.

1.10 QUALITY ASSURANCE

A. Product Designations: Drawings and Fume Hood Schedule (appended to this Section), indicate sizes, types, and configurations of fume hoods by referencing designated manufacturer's catalog numbers. Other manufacturers' hoods of similar sizes, types, and configurations, and complying with the Specifications may be considered.

B. Product Standard: Comply with SEFA 1.2, "Laboratory Fume Hoods--Recommended Practices."

C. Laboratory Design Standards: Provide laboratory fume hoods that comply with NFPA 45 “Standard on Fire Protection for Laboratories Using Chemicals,” OSHA “Lab Standard Guidelines,” and ANSI/AIHA Z9.5-2003 “Laboratory Ventilation.”

~~D. Flammable Storage Cabinets: Where fume hood base cabinets are indicated for solvent or flammable liquid storage, provide units that are listed and labeled as complying with the requirements of NFPA 30 for design, construction, and capacity of storage cabinets by UL, Warnock Hersey, or another testing and inspection agency acceptable to authorities having jurisdiction.~~

E. Safety Glass: Products complying with testing requirements in 16 CFR 1201 for Category II materials.

1. Subject to compliance with requirements, permanently mark safety glass with certification label of Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.

F. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

G. Listed and Labeled Fume Hoods: Face of each fume hood shall bear the UL’s listing mark indicating compliance with UL 1805 “Laboratory Hoods and Cabinets.” UL listing to only electrical characteristics or other listings that do not encompass all issues covered in UL 1805 are unacceptable.

H. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01.

1.11 DELIVERY, STORAGE, AND HANDLING

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

1.12 PROJECT 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.

1.13 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, fume hood exhaust ducts, and plumbing and electrical work.

1.14 EXTRA MATERIALS

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.

1.15 WARRANTY

A. Provide warranty for defects including but not limited to: rusting, peeling, blistering, fading of fume hood “painted” and stainless-steel finishes, failure of cable/counterweight system, damper, sash guides.

1. Warranty Period: 2 years from date of Substantial Completion.

B. General: At no additional cost to the Fund, for the work of this Section which is completed prior to Substantial Completion, obtain, and pay for warranty extensions that cover the additional time between the earlier date of their completion and the date of Substantial Completion. Refer to General Requirements, Section 01 78 36 “Warranties”.

PART 2 - PRODUCTS

2.1 LEED PERFORMANCE REQUIREMENTS

A. For all permanently installed products and materials related to the work of this Section, provide products and materials that meet the Project's LEED performance criteria as outlined in PART 2 - PRODUCTS of Section 018113 “Sustainable Design Requirements.”

2.2 MANUFACTURERS

A. Available Manufacturers - Typical Fume Hoods: Subject to compliance with requirements, provide products from one of the following manufacturers. Substitutions not accepted.

1. Kewaunee Scientific Corporation: Supreme Air H05.
2. ICI Scientific (Jamestown): F-100 Isolator Gen-5 with Vertical Sash.
3. Labconco Corporation: Protector Premier.
4. Mott Manufacturing, Ltd.: Pro Restricted Bypass – Vertical Sash.

B. Available Manufacturers - Barrier Free Fume Hoods: Subject to compliance with requirements, provide products from one of the following manufacturers. Substitutions not accepted.

1. ICI Scientific (Jamestown), Isolator ADA Hood with Trough: F-960 (Vertical Sash) or F-961 (Combination Sash).
2. Labconco Corporation: Protector XL
3. Mott Manufacturing, Ltd.: Pro 32-5/8-inch Deep Fully Accessible – Combination Sash with S2 restricted bypass plate.

C. Fume Hood Type: Restricted bypass type suitable for 2-position or VAV airflow operation.

2.3 MATERIALS

A. Steel Sheet: Cold-rolled commercial steel sheet, complying with ASTM A 1008/A 1008M; matte finish; suitable for exposed applications.

B. Stainless-Steel Sheet: ASTM A 666, Type 304; stretcher-leveled standard of flatness.

C. Glass-Fiber-Reinforced Polyester: Polyester laminate complying with ASTM D 4357, with a chemical-resistant gel coat on the exposed face and having a flame-spread index of 25 or less per ASTM E 84.

D. Epoxy: Factory-molded, modified epoxy-resin formulation with smooth, nonspecular finish.

1. Manufacturers: Subject to compliance with requirements, manufacturers providing products which may be incorporated into the Work include, but are not limited to, the following.

a. Durcon Company (The).
b. Epoxy Products. (Basis-of-Design)
c. Prime industries, inc.

2. Physical Properties:

a. Flexural Strength: Not less than 10,000 psi (70 MPa).
b. Modulus of Elasticity: Not less than 2,000,000 psi (1400 MPa).
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 (127 deg C).

3. Chemical Resistance: Epoxy-resin material has the following ratings 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).

E. Laminated Safety Glass: ASTM C 1172, Kind LT, Condition A, Type I, Class I, Quality q3 with clear, polyvinyl butyral interlayer.

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.

2.4 FUME HOOD VENTILATION - DUCTED-TYPE FUME HOOD

A. Variable-Air-Volume Control: Equip fume hoods with an electronic control unit with a sensing device that monitors face velocity, and a motorized damper on the exhaust connection that maintains a constant face velocity by controlling air volume in response to control unit. Equip units with manual override switch that opens motorized damper to provide maximum exhaust capacity regardless of sash position.

1. Provide output transmitter on electronic control unit that produces 0- to 10-V dc signal proportional to fume hood exhaust volume for interface with building's HVAC control system.
2. Provide a stop at 18-inch sash height.

2.5 ACCESSIBLE (BARRIER FREE) FUME HOODS

A. In addition to requirements specified herein, accessible fume hoods shall incorporate the following features:

1. Airfoil by-pass with spill trough.
2. Electric hydraulic lift base stand, Labconco or approved comparable product.
3. Lever handles on all plumbing service fittings.

2.6 LABORATORY FUME HOOD FABRICATION

A. General: Preassemble 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 (889-by-2007-mm) door opening.

1. Pre-wire fume hoods at factory. All fittings shall be factory-installed.
2. Wiring shall be routed to rear of hood.

B. Steel Exterior: Fabricate from steel sheet, not less than 0.0478 inch (1.2 mm) 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.

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. Hood Linings:

1. Glass Fiber Reinforced Polyester Lining: End panels, back panel, preset rear baffle, and top joined together with manufacturer's standard plastic extrusions.
2. Punch fume hood lining side panels to receive service fittings and remote controls. Provide removable plug buttons for holes not used for indicated fittings.
3. No metal shall be exposed on fume hood interior.

F. Rear Baffle: Provide baffle, of same material as fume hood lining, at rear of hood with openings at top and bottom for airflow through hood. Secure baffle to cleats at rear of hood with stainless-steel screws. Fabricate baffle for easy removal for cleaning behind baffle.

1. Provide manufacture's standard baffles.
2. 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.
3. Duct-Stub Material: Manufacturer's standard urethane powder coated stainless steel, unless otherwise indicated.
4. Bypass Grilles: Provide grilles at bypass openings of bypass and restricted bypass fume hoods.

G. Sashes: Provide operable sashes of type indicated.

1. Glaze with frameless laminated safety glass, with 3-mm thick plies.
2. Counterbalance vertical sliding sash with sash weight and chain and sprocket system. 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.
3. Provide sash opening full height of 18 inches (457 mm), unless otherwise indicated. Provide removable stops to allow opening hoods beyond 18-inches for servicing.

H. Provide airfoil at bottom of sash opening to direct airflow across countertop from 1-inch (25-mm) space between airfoil and countertop.

1. Fabricate airfoil from stainless steel coated with urethane powder coated finish.

I. Thimble Connections

1. Provide where scheduled and as indicated on Drawings.
2. Fabricate from minimum 0.0312-inch-thick Type 316 stainless steel; finished to match fume hood cabinet.
3. Coordinate thimble sizes with duct sizes indicated, as required to ensure a proper fit.
4. Configuration: Round.
5. At accessible hoods, provide adjustable exhaust collar with capability for 8-inch vertical movement, for connection to HVAC exhaust system.

J. Light Fixtures: Provide vapor proof, LED fixtures, of longest practicable length at each fume hood. Shield fixtures from hood interior with 1/4-inch- (6.35-mm-) thick laminated glass or 3-mm-thick tempered glass, sealed into hood with silicone sealant. Provide units with LED fixtures easily replaceable from outside of fume hood.

1. Provide LED fixtures with color temperature of 3500 K and minimum color-rendering index of 85.

K. Convenience receptacles:

1. Unless noted otherwise, provide two receptacles, one on either side of the sash opening wired to dedicated separate circuits.

L. Countertops

1. Epoxy Countertops: Fabricate 1 inch (25 mm) thick with marine edge and front overhang of 1 inch (25 mm) over base cabinets, continuous drip groove on underside 1/2 inch (13 mm) from edge.

a. Countertop Material: Epoxy resin, uniform throughout full thickness.

1) Color: Manufacturer's range of colors.

b. Fabrication: Where acid storage cabinets are indicated beneath fume hoods, provide holes in work tops as needed to accommodate cabinet vents. Provide polyolefin vent pipe routed through the jamb enclosure to the top of the hood structure, for connection by HVAC contractor to the lab exhaust system.

M. Coordinate service fitting and accessory locations. All cutouts and drilling required for mounting accessories shall be provided in-shop.

N. Filler Strips: Provide as needed to close spaces between fume hoods or fume hood base cabinets and adjacent building construction. Fabricate from same material and with same finish as fume hoods or fume hood base cabinets, as applicable.

O. Fascia Panels: Provide fascia panels on front and sides of each hood to extend hood structures to the 9-ft. (2743-mm) scheduled ceiling height. Fabricate from same material and with same finish as fume hoods, reinforce panels as required. Provide panels that are removable from outside of the hood without disturbing hood functions.

P. Comply with requirements in Divisions 22, 23 and 26 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.

2.7 BASE CABINETS - METAL

A. Metal: Cold-rolled, commercial steel (CS) sheet, complying with ASTM A 1008/A 1008M; matte finish; suitable for exposed applications.

B. Nominal Metal Thickness:

1. Sides, Ends, Fixed Backs, Bottoms, Tops, Soffits, and Items Not Otherwise Indicated: 0.048 inch (1.21 mm). ~~Except for flammable liquid storage cabinets~~, bottoms may be 0.036 inch (0.91 mm) if reinforced.
2. Back Panels, Doors, Drawer Fronts and Bodies, and Shelves: 0.036 inch (0.91 mm) except 0.048 inch (1.21 mm) ~~for back panels and doors of flammable liquid storage cabinets and~~ for unreinforced shelves more than 36 inches (900 mm) long.
3. Intermediate Horizontal Rails, Table Aprons and Cross Rails, Center Posts, and Top Gussets: 0.060 inch (1.52 mm).
4. Drawer Runners and Hinge Reinforcements: 0.075 inch (1.90 mm).

5. Leveling and Corner Gussets: 0.105 inch (2.66 mm).

C. Fabrication: Assemble and finish units at point of manufacture. Use precision dies for interchangeability of like-size drawers, doors, and similar parts. Perform assembly on precision jigs to provide units that are square. Reinforce units with angles, gussets, and channels. Except where otherwise specified, integrally frame and weld cabinet bodies to form dirt and vermin-resistant enclosures. Maintain uniform clearance around door and drawer fronts of 1/16 to 3/32 inch (1.5 to 2.4 mm).

D. Flush Doors: Outer and inner pans that nest into box formation, with full-height channel reinforcements at center of door. Fill doors with noncombustible, sound-deadening material.

E. Hinged Doors: Mortise for hinges and reinforce with angles welded inside inner pans at hinge edge.

F. Design of Doors and Fronts: Flush Overlay.

1. Provide 1/8-inch (3.2-mm) reveals between adjacent doors and adjacent fixed panels and between adjacent cabinets.
2. Refer to “CHEMICAL-RESISTANT FINISH” Article below for color and finishing requirements.

G. Adjustable Shelves: Front, back, and ends formed down, with edges returned horizontally at front and back to form reinforcing channels.

H. Toe Space: Fully enclosed, 4 inches (100 mm) high by 3 inches (75 mm) deep, with no open gaps or pockets.

I. Hinges: Stainless-steel, 5-knuckle hinges complying with BHMA A156.9, Grade 1, with antifriction bearings and rounded tips. Provide 2 for doors 48 inches (1200 mm) high or less and 3 for doors more than 48 inches (1200 mm) high.

J. Hinged Door Pulls: Solid aluminum, stainless steel, or chrome-plated brass back-mounted pulls.

1. Design: Wire pulls.
2. Overall Size: As selected from manufacturer's full range.

K. Drawer Slides: Side mounted, epoxy-coated steel, self-closing, ball bearing; designed to prevent rebound when drawers are closed; matching depth of cabinet or pull out writing surface; complying with BHMA A156.9, Type B05091.

1. Provide Grade 1HD-100; for drawers not more than 6 inches (150 mm) high and 24 inches (600 mm) wide. 100 lb. minimum capacity; full-extension.
2. Provide Grade 1HD-100; for drawers more than 6 inches (150 mm) high or 24 inches (600 mm) wide. 100 lb. minimum capacity; full-extension.
3. Heavy Duty (Grade 1HD-100 and Grade 1HD-200): For file or box size drawers; 150 lb. minimum capacity; full-extension.

L. Door and Drawer Silencers: BHMA A156.16, L03011.

M. Label Holders: Stainless steel or aluminum; sized to receive standard label cards approximately 1 by 2 inches (25 by 50 mm), attached with screws or rivets. Provide where indicated.

N. Numbering Plates: Stainless steel or aluminum. Provide at drawers under hoods.

1. Engrave numbering plates; consecutively-numbered, for each lab space.
2. Size: 1-1/2 by 3-inches.

~~O. Flammable Liquid Storage Cabinets: Provide units within fume hood base cabinets and separate standalone units, as indicated.~~

~~1. General: Flammable storage cabinets shall conform to the construction, details and dimensions as set forth in the National Fire Protection Association (NFPA) 30 standards "Flammable and Combustible Liquids Code".~~

~~a. Minimum Metal Thickness: Bottoms, tops, sides, fixed backs, and doors minimum 0.0478-inch (1.2 mm) thick.~~
~~b. Construction: Double walled with a 1-1/2-inch (38 mm) air space, all welded construction.~~
~~c. Doors: Self-closing with fusible link. Auto-latch and door synchronizer incorporated as an integral function of the cabinet. Provide doors with a three-point locking arrangement.~~
~~d. Markings: Each storage cabinet shall be marked "FLAMMABLES - KEEP FIRE AWAY" in letters not less than 2 inches (51 mm) height and in color contrasting with the background.~~
~~e. Cabinet width: as indicated.~~
~~f. Locations: As indicated.~~

~~2. Standalone Flammable Liquid Storage Cabinets: 15-gallon painted metal cabinet with self-closing doors.~~

~~a. Basis-of-Design: Subject to compliance with requirements, provide Justrite cabinets or comparable products approved by Consultant, in locations where indicated on Drawings.~~

~~1) Justrite Sure-Grip EX Compac #891223, 12-gallon capacity.~~
~~2) Justrite Model #891520, 15-gallon capacity.~~
~~3) Justrite Sure-Grip EX Piggyback #891721, 17-gallon capacity.~~

~~P. Acid Storage Cabinets:~~

~~1. Minimum Metal Thickness: Back panels, doors bodies, and shelves: 0.0359 inch (0.9 mm). For shelves more than 36 inches (900 mm) long, use 0.0478-inch (1.2 mm) thick metal or provide suitable reinforcement.~~
~~2. Cabinet Lining: 1/4-inch (6 mm) thick, polyethylene or polypropylene.~~
~~3. Cabinet: Width: as indicated.~~
~~4. Locations: As indicated.~~
~~5. Cabinet Vents: Provide cabinets with polyolefin vent pipes for venting to the fume hood.~~

2.8 BASE STANDS

A. Fume Hood Base Stands (ADA Units): Fabricated from not less than 2-inch- (50-mm-) square, electrically welded steel tubing. Provide leg stretchers where necessary to comply with structural performance requirements. Weld leg stretchers, cross stretchers, and work top

support rails to legs, and finish entire assembly with chemical-resistant finish. Provide leveling device at each corner of base stand at floor.

1. Provide clear floor space, as indicated on Drawings, within fume hood base stands unless otherwise indicated.

2.9 CHEMICAL-RESISTANT FINISH

A. General: Prepare, treat, and finish welded assemblies after assembling. 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 (0.05 mm).

1. Chemical and Physical Resistance of Finish System: Finish complies with acceptance levels of cabinet surface finish tests in SEFA 8. Acceptance level for chemical spot test shall be no more than four Level 3 conditions.

D. Color: Custom colors to match Consultant’s samples. (Intent is to match casework in Section 12 35 53 “Laboratory Casework”.)

1. Base Cabinets: Provide base cabinets in two different colors with drawer and door fronts a different paint color from the rest of the cabinets. Coordinate colors with Section 12 35 53 “Laboratory Casework.”

2.10 ACCESSORIES

A. Service Fittings: Refer to Fitting Schedule appended to this Section.

1. Provide service fittings with exposed surfaces, including fittings, escutcheons, and trim Bright Chrome finish standard, with chemical-resistant clear coating.
2. Provide service fittings with parts exposed within fume hoods made from PVDF.
3. Provide service fittings complying with either of the above.

B. Accessories Provided by BACS, Building Automation and Control System:

1. Controller.
2. Airflow indicators.
3. Sash alarms.
4. Refer to Section 23 09 23 “Digital Building Control System”.

C. Airflow Alarm: Provide fume hoods with audible and visual alarm that activates when airflow sensor reading is outside of preset range.

1. Provide with either thermal-anemometer or aneroid (Magnehelic-type) gage airflow sensor.
2. Provide with reset and test switches.
3. Provide with switch that silences audible alarm and automatically resets when airflow returns to within preset range.

D. Sash Stops: Provide fume hoods with sash stops to limit hood opening to 14 inches. Sash stops can be manually released to open sash fully for cleaning fume hood and for placing large apparatus within fume hood.

1. Sash Stop Construction: Stainless-steel.

E. Bypass Grille Blank-off Panel: Provide fume hoods with blank-off panel on bypass grille designed for use with sash stops to reduce exhaust air volume and provide design face velocity with sash at 18-inch open position.

2.11 SOURCE QUALITY CONTROL

A. Demonstrate fume hood performance before shipment by testing fume hoods according to ASHRAE 110 as modified in Part 1 "Performance Requirements" Article. Provide testing facility, instruments, equipment, and materials needed for tests.

PART 3 - EXECUTION

3.1 EXAMINATION

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

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

3.2 INSTALLATION

A. General: Install fume hoods according to Shop Drawings and 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 35 53 “Laboratory Casework” for installing fume hood base cabinets, and countertops.

C. Comply with requirements in Divisions 22, 23 and 26 Sections for installing water and laboratory gas service fittings, piping, electrical devices, and wiring. Install according to Shop Drawings and manufacturer's written instructions. Securely anchor fittings, piping, and conduit to fume hoods, unless otherwise indicated.

3.3 FIELD QUALITY CONTROL

A. Field test installed fume hoods for face velocity according to a modified ASHRAE Standard 110 testing procedure, as follows:

1. Hoods with combination sashes shall be tested in both vertical and horizontal sash positions and shall include dynamic sash movement containment tests.
2. Testing of occupied and unoccupied modes shall be incorporated.
3. At the conclusion of each 5-minute test, perform three rapid walk-bys at 112-inches (300 mm) behind the mannequin. Each walk-by shall be spaced 30 seconds apart. If there is a rise in test gas concentration, it shall not exceed 0.10 ppm and must return to 0.05 ppm within 15 seconds.
4. Hoods will be tested with a simulated apparatus. These items shall be positioned from 6-inches (150-mm) to 12-inches (250-mm) behind the sash, randomly distributed, and supported off the work surface by 2-inch (50-mm) blocks. This apparatus will consist of the following items:

    a. Two, 1-gallon (3.8 L) round paint cans
    b. One, 12-inch x 12-inch x 12-inch (300-mm cube) cardboard box
    c. Three, 6-inch x 6-inch x 6-inch (150-mm cube) cardboard boxes

B. Acceptance Criteria

1. Exhaust Airflow and the fume hood face velocity shall be within ±5% of setpoint.
2. The range shall not be more than 15 fpm between the high/low face velocity readings for each hood.
3. ASHRAE Standard 110 Static Performance Rating: AI 0.05
4. ASHRAE Standard 110 Sash Movement Performance Rating: SME-AI 0.05

C. Representatives from Campus' Environmental Health Services and the Building Automation and Control System Contractor shall be present to participate and witness fume hood face velocity testing as well as ASHRAE Standard 110 tracer gas capture tests.

1. Comment: Having these parties represented during testing will streamline final certification efforts; deficiencies can be discussed at the time of testing, the potential for operation at lower face velocities can be authorized and BACS setpoints can be finalized – all of which will avoid multiple trips during project close-out.

D. Testing Failures

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.

E. Acceptance

1. Prior to substantial completion of all the work, demonstrate full operation of hood, services, and accessories in the presence of the Consultant, Campus, and Fund.

3.4 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 Consultant.

3.5 PROTECTION OF FINISHED WORK

A. Provide protective measures necessary to prevent exposure of the fume hood to other construction activity during installation.

B. Advise subcontractors of manufacturer recommended procedures and precautions for protection of material, installed fume hood, and fixtures from damage by work of other trades.

3.6 DEMONSTRATION AND TRAINING

A. Engage manufacturer's-authorized technical representative to demonstrate and train Campus' personnel in proper use, operation, and periodic maintenance of laboratory fume hoods. Training of Campus' personnel shall include procedures to follow in case of operational failures or malfunctions.

B. Refer to Section 01 79 00 "Training of Campus Personnel" of the General Requirements, for additional equipment demonstration and training requirements.

END OF SECTION 11 53 13

9SECTION 12 35 53

LABORATORY CASEWORK

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the Contract and General Requirement and all Sections within Division 01 which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

A. Section Includes:

1. Metal laboratory casework, with metal doors and drawer fronts (typ at research labs) and with wood doors and drawer fronts (typ at teaching labs) in the following configurations:

    a. Wall
    b. Island
    c. Peninsula

2. Tall storage cabinets.
3. Laboratory countertops, epoxy.
4. Tables.
5. Laboratory sinks.
6. Adjustable shelving and shelving support framing at workstations.
7. Laboratory service fittings.
8. Specialty Items:

    a. ADA-compliant epoxy sink
    b. Hard-wired shelf edge tasklighting

9. Stainless steel canopy hoods.
10. **Non-vented flammable liquid storage cabinets.**
11. **Acid / Corrosive storage cabinets**

B. Related Requirements:

1. Section 01 81 13 “Sustainable Design Requirements” for sustainable design requirements.
2. Section 01 81 19 Sustainability IAQ Management for indoor air quality management.
3. Section 05 50 00 "Metal Fabrications" for in-partition framing and supports.
4. Section 06 10 54 "Miscellaneous Rough Carpentry - Interior" for wood blocking for anchoring laboratory casework.
5. Section 06 40 23 “Interior Architectural Woodwork” for non-laboratory casework and drawer faces at teaching labs.
6. Section 09 22 16 "Non-Structural Metal Framing" for reinforcements in metal-framed partitions for anchoring laboratory casework.

7. Section 09 65 13 "Resilient Base and Accessories" for resilient base applied to metal laboratory casework.
8. **Section 11 53 00 "Laboratory Equipment" for vented flammable safety storage cabinets.**
9. Section 11 53 13 "Laboratory Fume Hoods" for fume hoods~~, fume hoods base cabinets, countertops, sinks and flammable storage cabinets~~.
10. **Section 12 35 53A "Laboratory Accessories Schedule" for laboratory sinks, fixtures, safety centers, regulators, and manifolds.**
11. Divisions 22 and 26 Sections for service fittings and connections to service utilities.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

B. Keying Conference: Conduct conference at Project site. Incorporate keying conference decisions into final keying requirements.

1.4 COORDINATION

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

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

1.5 SUSTAINABLE DESIGN REQUIREMENTS

A. Sustainable Design Requirements: The Owner requires the Contractor to implement practices and procedures to meet the Project's environmental performance goals, which include achieving LEED v4 Certification. Refer to Section 01 81 13 "Sustainable Design Requirements" for the Project's target certification level and specific LEED requirements. The Contractor shall ensure that the requirements related to the Project's sustainability design goals are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, will not be allowed if such changes compromise the Project's sustainability goals and LEED certification.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. LEED v4 Submittals:

1. LEED submittals pertaining to material sustainability features with manufacture data and product costs. See Section 01 81 13 Sustainable Design Requirements as relevant for:

   a. Environmental Product Declarations.
   b. Material Ingredients: Health Product Declarations, Cradle to Cradle, approved chemical inventory program.
   c. Raw Materials Sourcing: recycled content, regional materials, material reuse, extended producer responsibility, corporate sustainability reports.

d. Low Emitting Materials: pertaining to adhesives, sealants, paints, coatings, applied inside the weather barrier.

C. Shop Drawings: For laboratory casework. Include plans, elevations, sections, and attachment details.

1. Indicate types and sizes of cabinets.
2. Indicate locations and types of service fittings.
3. Indicate locations of hardware and keying of locks.
4. Indicate locations and types of service fittings.
5. Indicate locations of blocking and reinforcements required for installing laboratory casework.
6. Include details of utility spaces showing supports for conduits and piping.
7. Include details of support framing system.
8. Include details of exposed conduits, if required, for service fittings.
9. Indicate locations of and clearances from adjacent walls, doors, windows, other building components, and other laboratory equipment.
10. Include coordinated dimensions for laboratory equipment specified in other Sections.

D. Keying Schedule: Include schematic keying diagram and index each key set to unique designations that are coordinated with the Contract Documents.

E. Samples for Initial Selection: For factory-applied finishes and other materials requiring color selection. Provide in manufacturer's standard sample size.

F. Samples for Verification: Unless otherwise directed, approved full-size Samples may become part of the completed Work, if in an undisturbed condition at time of Substantial Completion. Notify Consultant of their exact locations. If acceptable full-size Samples at Project site are not incorporated into the Work, retain and remove them when directed by Consultant.

1. One full-size, finished base cabinet complete with hardware, doors, and drawers.
2. One full-size, finished tall cabinet complete with hardware, doors, and adjustable shelves.
3. One Sample each of hinged and sliding doors.
4. 6-inch- (150-mm-) square Samples for each type of countertop material.
5. One of each service fitting specified, complete with accessories and specified finish.
6. One of each type of hardware item specified.

G. Mock-Ups: Prior to commencing the primary work of this Section, provide mock-up complete with lab fittings (but not required to be connected to building utilities) of laboratory casework items at location as directed by Consultant. Obtain Consultant's acceptance of visual qualities. Protect and maintain accepted mock-ups throughout the remainder of the work of this Section to serve as criteria for acceptance of the work. Approved mock-ups will be incorporated in the finish work. Provide the following:

1. Base cabinet unit with shelving, typical configuration at a dedicated support space, typical configuration.
2. Island Bench and Peninsula Bench: 1 of each, inclusive of frame-supported shelving, typical configuration.
3. Adjustable table bench unit.
4. **Vented Flammable Safety Storage Cabinet with access panel, exhaust connections, insulation, and thermally-actuated dampers.**

H. Seismic Anchoring Submittal: Provide laboratory casework manufacturer's written and signed certification that the architectural components, attachments and fasteners, specified herein are seismically qualified in accordance with applicable requirements of Chapter 13 of ASCE7 for

components with a seismic importance factor of 1.5. Applicable components include, but are not limited to, the following:

1. Tall storage cabinets
2. Flammables cabinets
3. Wall cabinets

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Product Test Reports for Casework: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating compliance of laboratory casework with requirements of specified product standard and system structural performance specified in "Performance Requirements" Article in Part 2.

C. Product Test Reports for Countertop Surface Material: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating compliance of laboratory countertop surface materials with requirements specified for chemical and physical resistance.

1.8 MAINTENANCE MATERIAL SUBMITTALS

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

B. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Cabinet Mounting Clips and Related Hardware: Quantity of 20 of each type.
2. Cabinet Hinges: Quantity of 20 of each type.
3. Cabinet Pulls: Quantity of 20 of each type.
4. Cabinet Drawer Slides: Quantity of 4 of each type.
5. Reagent Shelves and Support Brackets: Quantity of 10 shelves of each type and 2 support brackets for each shelf provided.
6. Service Fittings: Types as indicated on Drawings. Refer to Division 22 “PLUMBING” and Division 26 “ELECTRICAL” for additional requirements.

    a. Gas Turrets: Quantity of 5 of each type.
    b. RO/DI Faucets: Quantity of 2-each.
    c. Replacement Globes for Specialty Lighting Fixtures: Quantity of 4 of each type.

C. Deliver maintenance materials to Cornell Plant Science Building and coordinate receiving with Facilities Manager.

1.9 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that produces casework of types indicated for this Project that has been tested for compliance with SEFA 3, 7, 8-M, and 11.

B. Source Limitations: Obtain laboratory casework from single source from single manufacturer unless otherwise indicated.

1. Obtain countertops, tabletops, sinks, accessories, and service fittings from casework manufacturer.

C. Product Designations: Drawings indicate sizes and configurations of laboratory casework by referencing designated manufacturer's catalog numbers. Other manufacturers' laboratory casework of similar sizes and similar door and drawer configurations and complying with the Specifications may be considered. Refer to Division 01 Section "Product Requirements."

D. Casework Product Standard: Comply with SEFA 8, "Laboratory Furniture - Casework, Shelving and Tables - Recommended Practices."

E. Flammable Liquid Storage: Where cabinets are indicated for solvent or flammable liquid storage, provide units that are listed and labeled as complying with requirements in NFPA 30 by a testing and inspecting agency acceptable to authorities having jurisdiction.

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.

1.10 DELIVERY, STORAGE, AND HANDLING

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

1.11 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install laboratory casework 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.

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

PART 2 - PRODUCTS

2.1 LEED PERFORMANCE REQUIREMENTS

A. For all permanently installed products and materials related to the work of this Section, provide products and materials that meet the Project's LEED performance criteria as outlined in PART 2 - PRODUCTS of Section 018113 “Sustainable Design Requirements.”

2.2 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Mott Manufacturing, by Spencer Vernoche (Basis of Design).
2. Kewaunee Scientific Corporation; by Lab Furniture Installation and Sales.
3. Bedcolab.

B. Product Designations: Drawings indicate sizes and configurations of laboratory casework by referencing designated manufacturer's catalog numbers. Other manufacturers' laboratory casework of similar sizes and similar door and drawer configurations and complying with Specifications may be considered. See Section 01 60 00 "Product Requirements."

C. Systems and Specialty Items, Basis-of-Design Manufacturer

1. Stationary metal laboratory base cabinets, Mott Manufacturing.
2. Storage cabinets, Mott Manufacturing.
3. Laboratory tables, Mott Altus Table System.
4. ADA-compliant, drop-in epoxy sinks, Phenolic Resin Labs, www.phenolicresinlabs.com/ada-epoxy-sinks.html .

2.3 PERFORMANCE REQUIREMENTS

A. System Structural Performance: Laboratory casework and support framing system shall withstand the effects of the following gravity loads and stresses without permanent deformation, excessive deflection, or binding of drawers and doors:

1. Support Framing System: 600 lb/ft. (900 kg/m).
2. Suspended Base Cabinets (Internal Load): 160 lb/ft. (240 kg/m).
3. Work Surfaces: 160 lb/ft. (240 kg/m).
4. Shelves: 40 lb/sq. ft. (200 kg/sq. m).

B. Seismic Performance: Laboratory casework installation shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

1. Refer to Structural Drawings for spectral response accelerations.
2. Component Importance Factors

a. Laboratory workstations: 1.0
b. Tall cabinets and tall shelving cabinets: 1.5

2.4 CASEWORK, GENERAL

A. Casework Product Standard: Comply with SEFA 8 M, "Laboratory Grade Metal Casework."

2.5 METAL CABINET, SHELVING AND TABLE MATERIALS

A. Painted Metal: Cold-rolled, commercial steel (CS) sheet, complying with ASTM A 1008/A 1008M; matte finish; suitable for exposed applications.

B. Stainless Steel Sheet: ASTM A 666, Type 316 (UNS S31600), acid resistant stainless steel, stretcher-leveled standard of flatness.

C. Stainless Steel Tubing: ASTM A 269, Grade TP304 (UNS S30400).

D. Nominal Metal Thickness:

1. Sides, Ends, Fixed Backs, Bottoms, Tops, Soffits, and Items Not Otherwise Indicated: 0.048 inch (1.21 mm). Except for flammable liquid storage cabinets, bottoms may be 0.036 inch (0.91 mm) if reinforced.
2. Back Panels, Doors, Drawer Fronts and Bodies, and Shelves: 0.036 inch (0.91 mm) except 0.048 inch (1.21 mm) for back panels and doors of flammable liquid storage cabinets and for unreinforced shelves more than 36 inches (900 mm) long.
3. Intermediate Horizontal Rails, Table Aprons and Cross Rails, Center Posts, and Top Gussets: 0.060 inch (1.52 mm).
4. Drawer Runners and Hinge Reinforcements: 0.075 inch (1.90 mm).
5. Leveling and Corner Gussets: 0.105 inch (2.66 mm).

2.6 COUNTERTOP, TABLETOP, AND SINK MATERIALS

A. General

1. Provide side-splashes where countertop meets a wall, including under a window sill. Where the column is inset into a countertop adjacent to an umbilical pipe chase in the Main Research Labs, the column is to be wrapped together with countertop to form a continuous backsplash/sidesplash.

B. Epoxy: Factory-molded, modified epoxy-resin formulation with smooth, nonspecular finish.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   a. Durcon Company (The).
   b. American Epoxy Scientific.
   c. Prime industries, inc.

2. Physical Properties:

   a. Flexural Strength: Not less than 10,000 psi (70 MPa).
   b. Modulus of Elasticity: Not less than 2,000,000 psi (1400 MPa).
   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 (127 deg C).

3. Chemical Resistance: Epoxy-resin material has the following ratings 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).

4. Color: Basis of Design: Durcon - Dark Khaki (Research Countertops); Tan (Teaching Countertops and Pegboards); Lunar White (Research Pegboards).

2.7 METAL CABINETS AND TABLES

A. Fabrication: Assemble and finish units at point of manufacture. Use precision dies for interchangeability of like-size drawers, doors, and similar parts. Perform assembly on precision jigs to provide units that are square. Reinforce units with angles, gussets, and channels. Except where otherwise specified, integrally frame and weld cabinet bodies to form dirt- and vermin-resistant enclosures. Where applicable, reinforce base cabinets for sink support. Maintain uniform clearance around door and drawer fronts of 1/16 to 3/32 inch (1.5 to 2.4 mm).

B. Overlay Doors: Outer and inner pans that nest into box formation, with full-height channel reinforcements at center of door. Fill doors with noncombustible, sound-deadening material.

C. Hinged Doors: Mortise for hinges and reinforce with angles welded inside inner pans at hinge edge.

D. Metal Door and Drawer Fronts, epoxy coated, full flush overlay.

E. Wood Door and Drawer Fronts, full flush overlay, with 1/8” reveals between adjacent doors and adjacent drawers and between adjacent cabinets.

1. Joinery must meet AWI Premium Grade requirements
2. Wood veneer: Quarter-sawn white oak.

    a. Select and arrange veneers for compatible grain and color~~; no matching required~~.
    b. Provide veneers for each elevation from a single flitch, book and running matched.
    c. Provide continuous matching of adjacent drawer fronts within each cabinet and end matching between drawer fronts of adjacent cabinets.

3. Grain Direction for Wood Doors and Drawer Fronts: Vertical on both doors and drawer fronts, with continuous vertical matching.
4. Doors: ¾’ thick with particleboard or MDF core, solid-hardwood stiles and rails, and hardwood face veneers and crossbands.
5. Drawers with Wood Fronts: Fronts made from 3/4-inch- thick, hardwood plywood or solid hardwood. **Painted metal** subfronts, sides, back, and bottom fabricated in one piece with rolled or formed top of sides for stiffening and comfortable grasp for drawer removal. ~~Provide drawers with rubber bumpers, polymer roller slides, and positive stops to prevent metal-to-metal contact or accidental removal.~~

F. Adjustable Shelves: Front, back, and ends formed down, with edges returned horizontally at front and back to form reinforcing channels.

G. Toe Space: Fully enclosed, 4 inches (100 mm) high by 3 inches (75 mm) deep, with no open gaps or pockets.

H. Tables: Welded tubing legs, not less than 2 inches (50 mm) square with channel stretchers as needed to comply with product standard. Weld or bolt stretchers to legs and cross-stretchers, and bolt legs to table aprons.

1. Steel Table Framing - Basis-of-Design: Provide the following framing configurations, as indicated on Drawings.

    a. Mott All-Welded Table Frame.
    b. Mott Heavy Duty “O” Frame Table.
    c. ~~ADA compliant C-frame~~ **ADA compliant U-frame**.

2. Accessories:

    a. Leg Shoes: Satin-finished, stainless-steel, open-bottom, slip-on type with heavy-duty locking casters, where indicated.
    b. Provide leveling device welded to bottom of each leg.
    c. Manufacturer's heavy-duty casters, where indicated.

2.8 LABORATORY CASEWORK SYSTEM, GENERAL

A. Provide casework manufacturer's standard fixed casework system that includes support framing, floor-supported modular cabinets, countertops, and fittings needed to assemble system.

1. Cabinet Construction: Metal with metal doors and drawer fronts.
2. Cabinets can be removed and reinstalled without use of special tools for relocation within system.
3. Support framing has provision for adjustable metal shelving at approximately 1-inch (25-mm) increments.
4. System includes filler and closure panels to close spaces between support framing, cabinets, shelves, countertops, floors, and walls unless otherwise indicated. Fabricate panels from same material and with same finish as metal cabinets and with hemmed or flanged edges.

B. Countertops: Provide in lengths indicated, without seams.

2.9 METAL CABINET FINISH

A. General: Prepare, treat, and finish welded assemblies after assembling. 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: After assembly, clean surfaces 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 laboratory casework 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 (0.05 mm).

1. Chemical and Physical Resistance of Finish System: Finish complies with acceptance levels of cabinet surface finish tests in SEFA 8 M. Acceptance level for chemical spot test shall be no more than four Level 3 conditions.
2. Colors for Metal Laboratory Casework Finish:

    a. As selected by Consultant from manufacturer's full range.
    b. Colors: Provide laboratory casework in two different colors with drawer and door fronts a different paint color from the rest of the cabinets.
        i. Basis of Design: Cabinet Bodies/Fume Hoods/Flammable Cabinets/Shelving/Tables/ Benches/Cylinder Racks/Fillers/Kickspace - Mott: Cool White;
        ii. Drawers/Door Fronts/Apron Frames: Dove Gray

2.10 HARDWARE

A. General: Provide laboratory casework manufacturer's standard, commercial-quality, heavy-duty hardware complying with requirements indicated for each type.

B. Hinges: Stainless-steel, five-knuckle hinges complying with BHMA A156.9, Grade 1, with antifriction bearings and rounded tips. Provide two for doors 48 inches (1200 mm) high or less and three for doors more than 48 inches (1200 mm) high.

C. Hinged Door and Drawer Pulls: Solid-aluminum, stainless-steel, or chrome-plated-brass, back-mounted pulls. Provide two pulls for drawers more than 24 inches (600 mm) wide.

1. Design: As selected from manufacturer's full range.
2. Overall Size: As selected from manufacturer's full range.

D. Pulls: Recessed aluminum pulls. Provide at chemical storage cabinets (acid, flammable, ampoule base storage).

E. Door Catches: Nylon-roller spring catches. Provide two catches on doors more than 48 inches (1200 mm) high.

F. Drawer Slides: Side mounted, epoxy-coated steel, self-closing; designed to prevent rebound when drawers are closed; complying with BHMA A156.9, Type B05091.

1. Provide Grade 1HD-100; for drawers not more than 6 inches (150 mm) high and 24 inches (600 mm) wide.
2. Provide Grade 1HD-200; for drawers more than 6 inches (150 mm) high or 24 inches (600 mm) wide.
3. Heavy Duty (Grade 1HD-100 and Grade 1HD-200): Full-overtravel-extension, ball-bearing type.

G. Label Holders: Stainless steel, aluminum, or chrome plated; sized to receive standard label cards approximately 1 by 2 inches (25 by 50 mm), attached with screws or rivets. Provide where indicated.

H. Locks: Cam or half-mortise type with five-pin tumbler, brass with chrome-plated finish; complying with BHMA A156.11, Type E07281, Type E07111, or Type E07021.

1. Provide a minimum of two keys per lock and two master keys.
2. Provide at all cabinets and drawers.
3. Keying: Key locks alike within each room; key each room separately.
4. Master Key System: Key all locks to be operable by master key.
5. Locations: Flammable storage cabinets, Eagle and Justrite chemical storage cabinets.

2.11 COUNTERTOPS, TABLETOPS, SINKS AND SHELVES

A. Countertops, General: Provide units with smooth surfaces in uniform plane, free of defects. Make exposed edges and corners straight and uniformly beveled. Provide front and end overhang of 1 inch (25 mm), with continuous drip groove on underside 1/2 inch (13 mm) from edge.

B. Epoxy Countertops, Sinks, and Tabletops

1. Countertop Fabrication: Fabricate with factory cutouts holes for service fittings and accessories, and butt joints assembled with epoxy adhesive and concealed metal splines.

    a. Countertop Configuration: Flat, 1 inch (25 mm) thick, with beveled or rounded edge and corners, and with drip groove and integral coved backsplash.
    b. Countertop Construction: Uniform throughout full thickness.

2. Sinks, General: Provide sizes indicated or laboratory casework manufacturer's closest standard size of equal or greater volume, as approved by Consultant.

    a. Outlets: Provide with strainers and tailpieces, NPS 1-1/2 (DN 40), unless otherwise indicated.
    b. Sink Fabrication: Molded in 1 piece with smooth surfaces, coved corners, and bottom sloped to outlet; 1/2-inch (13-mm) minimum thickness.

        1) Provide with polypropylene strainers and tailpieces.
        2) Provide integral sinks in epoxy countertops, bonded to countertops with invisible joint line.

3. Tabletop Fabrication:

    a. Tabletop Configuration: Flat, 1 inch (25 mm) thick, with beveled or rounded edge and corners, and with drip groove at perimeter.
    b. Tabletop Construction: Uniform throughout full thickness.

4. Shelving

    a. Adjustable, painted steel shelves with integral ‘bookend’ brackets.
    b. Adjustable Island Bench Supports: Heavy-duty shelf standards integral with support framing.
    c. Adjustable Shelf Supports: Heavy-duty surface-type steel standards and steel shelf.
    d. Provide shelf bracket ends, where indicated.
    e. Provide stainless steel shelf retainer rods where indicated.
    f. Finish: Epoxy powder-coat.

5. ADA-Compliant Epoxy Sink: Provide as fabricated by manufacturer.

6. Epoxy Finishes to match Phase 1:

    a. Research and Support Space Lab Countertops: Dark Khaki.
    b. Teaching and Teaching Prep spaces: Tan.

C. Stainless Steel Counter Tops with Sinks: Fabricate tops and sinks from stainless steel sheet complying with ASTM A 666 as follows:

1. Countertop: Fabricate from 16 gage stainless steel.
2. Integral Sinks: Fabricate from 14 gage stainless steel.
3. Scullery Sinks: Provide 14 inch deep basins; welded 1/4 inch radius coved construction; welds ground smooth: satin finish; with NSF certification; with 1-5/8 inch O.D. tubular stainless steel legs, 16 gauge wall thickness and adjustable bullet feet. Equal to Elkay "Weldbuilt."

4. Construction: Shall be fabricated in one piece, where practicable, with welded corners, channel shaped exposed edges and reinforced with three (3) full length hat shaped galvanized channels. Sink bowls shall be fabricated with horizontal and vertical corners coved to a 1 inch radius, corners made spherical without fillers or solder, and welded to top. Back and/or end splashes shall be integral with countertop an coved at point of turn up to a 3/8 inch radius. Exposed edges of sink countertops shall be provided with integral inverted "V" nosing. After fabrication, a moisture proof sound deadening mastic shall be applied to the underside of the countertop and outside the sink bowl.
5. **Welding: Comply with requirements of AWS D1.3 and D10.4. Accomplish welding in a manner that minimizes distortion or discoloration of finished surfaces. Remove any discoloration by mechanical or electro-mechanical cleaning. Remove weld splatter and welding oxides on finished surfaces by blasting, grinding or, electro-mechanical process.**
6. **Grinding and Polishing: Grind and polish exposed welded seams and joints to match finish of parent metal. Grind and polish using clean wheels and compounds free from iron and iron compounds.**
7. **Stainless Steel Finish: Comply with NAAMM Metal Finishes Manual.**
8. **Exposed surfaces: provide No. 4 polished satin finish.**
9. **Concealed surfaces: standard mill finish.**
10. **Cleaning: After grinding and polishing, clean exposed stainless steel surfaces of extraneous material. Thoroughly rinse with clean water and dry. Remove all lubricants used in fabrication of stainless steel work. Cover finished surfaces with strippable film or other protective covering.**

D. Butcher Block Tops

1. **Basis of Design: Bally block Company, www.butcherblock.com**
2. **Wood Species: Maple (acer saccharum)**

   a. **Janka Hardness: 1450**
   b. **Lamination: Edge-Grain**
   c. **Finger Joints for Length: allowed**
   d. **Visible Finger Joints: Permitted at counter top edges only.**
   e. **Finished Counter Top Thickness: 1.75 inches**
   f. **Factory Edge: Square with slight ease.**
   g. **Sizes: As shown including custom sizes.**
   h. **Wood Moisture content at time of fabrication: 6 percent.**
   i. **Factory Finish: "Durakryl 102" U.V. Cured Polyurethane.**
   j. **ANSI A161.1-1995 Performance and Construction Standard**
   k. **Fasteners: #14 diameter, Phillips head wood screws, stainless steel**
   l. **Shims: Hard plastic. Do not use wood or materials which can swell / shrink with moisture.**

2.12 ACCESSORIES

A. General: Provide the following items, as indicated on Drawings.

2.13 LABORATORY ACCESSORIES

A. Pegboards: Epoxy and stainless steel pegboards with removable polypropylene pegs and stainless-steel drip troughs with drain outlet and flexible tubing to sink.

1. Color: Manufacturer's epoxy board with pegs; color to match epoxy countertops.

2. Stainless steel: 18 ga thickness.

B. ADA-compliant Epoxy Drop-In Sink: Phenolic Resin Labs model ADAAL-26CR-Dual Level.

C. Top-shelf-mounted tasklights **(AK-01)**: BOD: Top Shelf Edgewave by New England Lab.

1. Occupancy sensor: 30 minute minimum timeout.
2. Shelf height to be adjustable and removable.
3. Power fed via shelf support; not to be fed via stanchion-mounted receptacles serving lab equipment.

D. Bottom-shelf-mounted tasklights (AK-01b): BOD: Bottom Shelf Edgewave by New England Lab.

1. Occupancy sensor: 30 minute minimum timeout.
2. Shelf height to be adjustable and removable.
3. Power fed via shelf support; not to be fed via stanchion-mounted receptacles serving lab equipment.

2.14 SERVICE FITTINGS

A. As indicated on Drawings and Section 12 35 53A Schedule.

B. Refer to Division 22 “PLUMBING” and Division 26 “ELECTRICAL” for additional requirements.

2.15 POWER AND DATA TOMBSTONE FIXTURES

A. As indicated on drawings.

B. Coordinate with Division 26.

C. Basis of Design: E800SA-WS by Watersaver Faucet Co.

1. Cast aluminum exterior shell with:

a. Satin (brushed) aluminum finish
b. Removable interior metal partitions to divide the interior space prevent interference between power and data lines.
c. Threaded inlets for connecting conduit and bringing wiring into each division of the interior space.

2. Provide white power and data receptacles with Satin (brushed) aluminum face plates.

2.16 NON-VENTED FLAMMABLE LIQUID STORAGE CABINETS.

A. Construct storage cabinets of double wall, welded sheet steel construction with double panel door; overall thickness 2”. Provide cabinets with four adjustable levelling devices to compensate for approximately 1” base building floor differential. Raised door sill 2” above bottom of the cabinet to form a liquid-tight well. Overlap cabinet frame with

hinged doors having continuous piano type hinges with three-point locking mechanism ship lapped at opening stile. Shiplap shall be provided with braided fiberglass gasket.

B. Walls, back, side, and top of cabinet shall be insulated with 2" (50mm) thick mineral fiber insulation.

C. Provide adjustable galvanized sheet steel shelves with four edges turned down 1" and additionally returned under 5/8" on all edges. Provide 1/2" incremental shelf adjustment.

D. Provide overlaid red warning letters 2" (50mm) high on doors as follows: "FLAMMABLE – KEEP FIRE AWAY".

E. Construction shall meet requirements of OSHA Standard 1910-106(d)(3), considered as organized storage locations for flammable and combustible liquids.

F. Cabinets shall comply with National Fire Protection Association's flammable and combustible liquids Code #30 and #45.

G. Provide grounding screw lug.

H. Provide 2" vents with flame arrestors and vent covers.

I. Construction shall meet requirements of OSHA Standard 1910-106(d)(3), considered as organized storage locations for flammable and combustible liquids.

J. Provide safety storage cabinets for under-counter, under fume, and free-standing configurations and sizes as required by drawings.

K. Cabinet shall be provided with self-closing doors. If cabinet has double doors, self-closing mechanism shall properly sequence the doors in the correct closing order to accommodate the shiplap.

L. Provide hold-open fusible links on each door. Links shall melt at 165 degrees if the door is chained in the hold open position. Doors shall close in the proper order when both links have melted.

M. Cabinet shall be listed and labelled to the UL 1275 Standard.

N. See Section 115300 for Vented Flammable Safety Storage Cabinets.

2.17 ACID / CORROSIVE STORAGE CABINETS:

A. Construction storage cabinets in similar manner to steel base cabinets with addition of a molded polyethylene interior liner.

B. The lining on the back of doors shall be fitted so that it overlays the flange on the front of the molded cabinet liner to protect all metal areas of the cabinet from corrosive vapors.

C. Cabinets shall contain one full-width 1" thick phenolic shelf. It shall be possible to locate shelf in four positions on 3" increments. Shelf supports shall be integrally molded into cabinet liner.

D. Provide the door with a decal signifying storage type ("ACID" or "CORROSIVE" as indicated on drawings. On cabinets with two doors, provide one decal on each door.

E. Cabinet Vents: Provide cabinets with polyolefin vent pipes for venting to the fume hood.

F. Provide an entirely plastic door catch.

G. Provide cabinets for under-counter, under fume, and free-standing configurations and sizes as required by drawings.

PART 3 - EXECUTION

3.1 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.

3.2 INSTALLATION OF CABINETS

A. Comply with installation requirements in SEFA 2.3. Install level, plumb, and true; shim as required, using concealed shims. Where laboratory casework abuts other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical. Do not exceed the following tolerances:

1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet (1.5 mm in 3 m).
2. Variation of Bottoms of Upper Cabinets from Level: 1/8 inch in 10 feet (3 mm in 3 m).
3. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet (3 mm in 3 m).
4. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch (0.8 mm).
5. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch (1.5 mm).

B. Base Cabinets: Fasten cabinets to utility-space framing, partition framing, wood blocking, or reinforcements in partitions, with fasteners spaced not more than 16 inches (400 mm) o.c. Bolt adjacent cabinets together with joints flush, tight, and uniform.

1. Where base cabinets are installed away from walls, fasten to floor at toe space at not more than 24 inches (600 mm) o.c. and at sides of cabinets with not less than two fasteners per side.

C. Install hardware uniformly and precisely. Set hinges snug and flat in mortises.

D. Adjust laboratory casework and hardware so doors and drawers align and operate smoothly without warp or bind and contact points meet accurately. Lubricate operating hardware as recommended by manufacturer.

3.3 INSTALLATION OF COUNTERTOPS

A. Comply with installation requirements in SEFA 2.3. Abut top and edge surfaces in one true plane with flush hairline joints and with internal supports placed to prevent deflection. Locate joints only where indicated on Shop Drawings.

B. Field Jointing: Where possible, make in same manner as shop-made joints, using dowels, splines, fasteners, adhesives, and sealants recommended by manufacturer. Shop prepare edges for field-made joints.

1. Use concealed clamping devices for field-made joints in countertops. Locate clamping devices within 6 inches (150 mm) of front and back edges and at intervals not exceeding 24 inches (600 mm). Tighten according to manufacturer's written instructions to exert a uniform heavy pressure at joints.

C. Fastening:

1. Secure countertops, except for epoxy countertops, to cabinets with Z-type fasteners or equivalent, using two or more fasteners at each cabinet front, end, and back.
2. Secure epoxy countertops to cabinets with epoxy cement, applied at each corner and along perimeter edges at not more than 48 inches (1200 mm) o.c.
3. Where necessary to penetrate countertops with fasteners, countersink heads approximately 1/8 inch (3 mm), and plug hole flush with material equal to countertop in chemical resistance, hardness, and appearance.

D. Provide required holes and cutouts for service fittings.

E. Provide scribe moldings for closures at junctures of countertop, curb, and splash with walls as recommended by manufacturer for materials involved. Match materials and finish to adjacent laboratory casework. Use chemical-resistant, permanently elastic sealing compound where recommended by manufacturer.

F. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

3.4 INSTALLATION OF SINKS

A. Comply with installation requirements in SEFA 2.3.

B. Underside Installation of Epoxy Sinks: Use laboratory casework manufacturer's recommended adjustable support system for table- and cabinet-type installations. Set top edge of sink unit in sink and countertop manufacturers' recommended chemical-resistant sealing compound or adhesive and firmly secure to produce a tight and fully leakproof joint. Adjust sink and securely support to prevent movement. Remove excess sealant or adhesive while still wet and finish joint for neat appearance.

3.5 INSTALLATION OF LABORATORY ACCESSORIES

A. Install accessories according to Shop Drawings, installation requirements in SEFA 2.3, and manufacturer's written instructions.

B. Securely fasten adjustable shelving supports, stainless-steel shelves, and pegboards to partition framing, wood blocking, or reinforcements in partitions.

C. Install shelf standards plumb and at heights to align shelf brackets for level shelves. Install shelving level and straight, closely fitted to other work where indicated.

D. Securely fasten pegboards to partition framing, wood blocking, or reinforcements in partitions.

3.6 INSTALLATION OF SERVICE FITTINGS

A. Comply with requirements in Divisions 22 and 26 Sections for installing water and laboratory gas service fittings and electrical devices.

B. Install fittings according to Shop Drawings, installation requirements in SEFA 2.3, and manufacturer's written instructions. Set bases and flanges of countertop-mounted fittings in sealant recommended by manufacturer of countertop material. Securely anchor fittings to laboratory casework unless otherwise indicated.

3.7 CLEANING AND PROTECTING

A. Clean finished surfaces, touch up as required, and remove or refinish damaged or soiled areas to match original factory finish, as approved by Consultant.

B. Protect countertop surfaces during construction with 6-mil (0.15-mm) plastic or other suitable water-resistant covering. Tape to underside of countertop at a minimum of 48 inches (1200 mm) o.c.

3.8 ACCEPTANCE

A. Prior to Substantial Completion of all the Work, demonstrate full operation of casework services, and accessories in the presence of the Consultant, Campus, and Fund.

END OF SECTION 12 35 53

Laboratory Accessory Schedule

Lab Sinks	Sink Size (LxWxD)	Service	Manufacturer	Model No.	Notes:
MRL Peninsula (Panel Mounted)					
LS-1A Lab Sink w/ RODI	24"x16"x12" Epoxy, Undermount Durcon U56C	Hot, Cold Mixing - Panel	WaterSaver	L214-6VB-BH-WSA-pcl-**8**	Panel Mount / https://wsflab.com/product/l412vb-bh/
		RODI Faucet / Panel	WaterSaver	L7840MSC-6VB-7110-pcl-**8**	Panel Mount / https://wsflab.com/product/l7840/; 100 psi compliant, typ
MRL Peninsula (Panel Mounted)					
LS-1B Lab Sink w/ RODI & EEW	24"x16"x12" Epoxy, Undermount Durcon U56C	Hot, Cold Mixing - Panel	WaterSaver	L214VB-BH-6-WSA-pcl-**8**	
		RODI Faucet / Panel	WaterSaver	L7840MSC-VB6-7110-pcl-**8**	https://wsflab.com/standard-products/laboratory-service-fixtures/pure-water-faucets/pure-water-faucets-plastic-lined/l7840/ 100 psi compliant, typ
		Emergency Eyewash / Deck	WaterSaver	~~EW1022BP~~ **EW895**	~~https://wsflab.com/standard-products/laboratory-safety-equipment/eyewash-drench-hose-units/ew1022/~~
Dedicated Support Labs					
LS-1C Accessible Lab Sink w/ RODI & EEW	25" x 15" x 5 / 11" Epoxy, Undermount Durcon SNKA-56	Hot, Cold Mixing - Deck	WaterSaver	L414-6VB-BH-WSA-pcl-**8**	Deck Mounted
		RODI Faucet / Deck	WaterSaver	L7833MSC-6-7110-pcl-**8**	Deck Mounted / 100 psi compliant, typ **(with L3001 foot pedal where indicated)**
		Emergency Eyewash / Deck	WaterSaver	EW895	Deck Mounted / https://wsflab.com/standard-products/laboratory-safety-equipment/eyewashes/ew895/
MRL Pre-Rinse (Panel Mounted)					
LS-1D Pre-rinse at glasssware wash sinks w/ RODI and EEW	24"x16"x12" Epoxy, Undermount Durcon U61C	Water pre-rinse / Hot, Cold Mixing / Panel	Watersaver	PR1711WSA-110-BH-pcl	Hot & cold w/vacuum break & blade handles https://wsflab.com/product/pr1711wsa/
		RODI Faucet / Panel	WaterSaver	L7840MSC-8-7110-pcl	Panel Mount / https://wsflab.com/product/l7834/ **(with L3001 foot pedal where indicated)**
		Emergency Eyewash / Deck	WaterSaver	EW1022BP	Deck Mounted / https://wsflab.com/standard-products/laboratory-safety-equipment/eyewash-drench-hose-units/ew1022/

Lab Sinks	Sink Size (LxWxD)	Service	Manufacturer	Model No.	Notes:
LS-2A Stainless Steel, Flex spray head and EEW	24"x18"x12" Stainless Steel Integral	Water pre-rinse / Hot, Cold Mixing / Deck	Watersaver	PR411-110BH-WSA-PCL	Hot & cold w/vacuum break & blade handles
		RODI Faucet / Deck	WaterSaver	L7833-8-7110-PCL	Max pressure 100 psi
		Emergency Eyewash / Deck	Guardian	~~G1899 /~~ EW895	Deck Mounted / ~~http://www.gesafety.com/products/eyewash/G1899.shtml~~ **https://wsflab.com/standard-products/laboratory-safety-equipment/eyewashes/ew895/**
LS-2B H/C at glasssware wash sinks w/ RODI and EEW	24"x18"x12" Stainless Steel Integral	Hot, Cold Mixing - Deck	WaterSaver	L414-8VB-BH-WSA-PCL	
		RODI Faucet / Deck	WaterSaver	L7833-8-7110-PCL	Max pressure 100 psi
		Emergency Eyewash / Deck	Guardian	~~G1899 /~~ EW895	Deck Mounted / ~~http://www.gesafety.com/products/eyewash/G1899.shtml~~ **https://wsflab.com/standard-products/laboratory-safety-equipment/eyewashes/ew895/**
LS-2C Accesible Stainless Steel Sinks w/ Flex spray head, RODI and EEW	25"x15"x11 / 5" Stainless Steel, Integral	Water pre-rinse / Hot, Cold Mixing / Deck	Watersaver	PR411-BH-WSA-PCL	Hot & cold w/vacuum break & blade handles
		RODI Faucet / Deck	WaterSaver	L7833-8-7110-PCL	Max pressure 100 psi
		Emergency Eyewash / Deck	Guardian	~~G1899 /~~ EW895	Deck Mounted / ~~http://www.gesafety.com/products/eyewash/G1899.shtml~~ **https://wsflab.com/standard-products/laboratory-safety-equipment/eyewashes/ew895/**

LS-2D Stainless Steel, Flex spray head, RODI, EEW	25"x15"x11 / 5" Stainless	Water pre-rinse / Hot,	Watersaver	PR411-BH-WSA-PCL	Hot & cold w/vacuum break & blade handles
		RODI Faucet / Deck	WaterSaver	L7833-8-7110-PCL	Max pressure 100 psi
		Emergency Eyewash / Deck	Guardian	~~G1899 /~~ EW895	Deck Mounted / ~~http://www.gesafety.com/products/eyewash/G1899.shtml~~ **https://wsflab.com/standard-products/laboratory-safety-equipment/eyewashes/ew895/**

LS-2E Stainless Steel, Flex spray head, RODI, EEW	25"x15"x11 / 5" Stainless Steel, Integral	Water pre-rinse / Hot, Cold Mixing / Deck	Watersaver	PR411-BH-WSA-PCL	Hot & cold w/vacuum break & blade handles
		RODI Faucet / Deck	WaterSaver	L7833-8-7110-PCL	Max pressure 100 psi
		Emergency Eyewash / Deck	Guardian	~~G1899 /~~ EW895	Deck Mounted / ~~http://www.gesafety.com/products/eyewash/G1899.shtml~~ **https://wsflab.com/standard-products/laboratory-safety-equipment/eyewashes/ew895/**
LS-2F Stainless Steel, Flex spray head, RODI, EEW	25"x15"x11 / 5" Stainless Steel, Integral	Water pre-rinse / Hot, Cold Mixing / Deck	Watersaver	PR411-BH-WSA-PCL	Hot & cold w/vacuum break & blade handles
		RODI Faucet / Deck	WaterSaver	L7833-8-7110-PCL	Max pressure 100 psi
		Emergency Eyewash / Deck	Guardian	~~G1899 /~~ EW895	Deck Mounted / ~~http://www.gesafety.com/products/eyewash/G1899.shtml~~ **https://wsflab.com/standard-products/laboratory-safety-equipment/eyewashes/ew895/**

LS-2G Stainless Steel, Flex spray head, RO, EEW	25"x15"x11 / 5" Stainless	Water pre-rinse / Hot,	Watersaver	PR411-BH-WSA-PCL	Hot & cold w/vacuum break & blade handles
		RODI Faucet / Deck	WaterSaver	L7833-8-7110-PCL	Max pressure 100 psi
		Emergency Eyewash / Deck	Guardian	~~G1899 /~~ EW895	Deck Mounted / ~~http://www.gesafety.com/products/eyewash/G1899.shtml~~ **https://wsflab.com/standard-products/laboratory-safety-equipment/eyewashes/ew895/**

LS-2H Stainless Steel, Flex spray head, RO and EEW	25"x15"x11 / 5" Stainless Steel, Integral	Water pre-rinse / Hot, Cold Mixing / Deck	Watersaver	PR411-BH-WSA-PCL	Hot & cold w/vacuum break & blade handles
		RODI Faucet / Deck	WaterSaver	L7833-8-7110-PCL	Max pressure 100 psi
		Emergency Eyewash / Deck	Guardian	~~G1899 /~~ **EW895**	Deck Mounted / ~~http://www.gesafety.com/products/eyewash/G1899.shtml~~ **https://wsflab.com/standard-products/laboratory-safety-equipment/eyewashes/ew895/**

T-1B	Wall Mount	Vacuum	Vacuubrand	by manufacturer	
T-1C	Wall Mount	Gas	WaterSaver	L4200-158ft-pcl	https://wsflab.com/product/l4200-158ft/

T-2A	Casework Post Mount	Compressed Air	WaterSaver	L4200-158wsa-pcl	https://wsflab.com/product/l4200-158wsa/
T-2B	Casework Post Mount	Vacuum	Vacuubrand	by manufacturer	https://wsflab.com/product/l4200-158wsa/
T-2C	Casework Post Mount	Gas	WaterSaver	L4200-158wsa-pcl	https://wsflab.com/product/l4200-158wsa/
T-3A	Deck Mount / ADA	Compressed Air	Watersaver	L4200-131wsa-pcl	https://wsflab.com/product/l4200-131wsa/
T-3B	Deck Mount / ADA	Vacuum	Vacuubrand	by manufacturer	
T-3C	Deck Mount / ADA	Gas	Watersaver	L4200-131wsa-pcl	https://wsflab.com/product/l4200-131wsa/

Laboratory Standard Needle Valves / Adjustable flow function - L4800 Series with Removable Hose End (Max Pressure 150PSI)

T-4A	Wall	Specialty Gas 1 & 2	WaterSaver	L4200FT-325-pcl cleaned	https://wsflab.com/product/l4880ft-325/ Select "cleaned"
T-4B	Deck	Specialty Gas 1 & 2	WaterSaver	L4200FT-131-pcl cleaned	https://wsflab.com/product/l4880f-131wsa/ Select "cleaned"
T-4C	Deck	Specialty Gas 1 & 2	WaterSaver	L4200FT-131-pcl cleaned	https://wsflab.com/product/l2880-131wsa/ Select "cleaned"

Fume Hoods

T-5A	**Fume Hood**	**Air, Vac, Gas**	**WaterSaver**	**L740N / L022WSA**	
T-5B	**Fume Hood**	**Cold Water**	**WaterSaver**	**L740W / L074VB-WSA**	
T-5A	**Accesible Fume Hood**	**Air, Vac, Gas**	**WaterSaver**	**LPM4200 / L022WSA**	
T-5B	**Accesible Fume Hood**	**Cold Water**	**WaterSaver**	**LPM4200 / L074VB-**	

~~Electrical Items~~

Safety Stations	Mounting	Service	Manufacturer	Model No.	Notes
SC-1	Recessed wall unit	Tempered Water	Guardian	G16-C502	Recessed safety center, barrier free ES w/ exposed shower head. Integrated Fire Extinguisher cabinet and audio/visual alarm. Where located in a rated wall, provide separate FEC.
SC-2	**Recessed wall unit**	**Tempered Water**	**Guardian**	**G16-C502 with exposed wall-mounted shower head**	**Recessed safety center, barrier free ES w/ exposed wall-mounted shower head. Integrated FEC and audio/visual alarm. Where located in a rated wall, provide separate FEC.**

Auto-Changeover / Manifolded Gas Delivery System

Single Stage Gas Regulator	Product	Service	Manufacturer	Model No.	Notes:
SSGR-1	Heavy Duty Gas Regulator	Nitrogen (N2)	Harris		
SSGR-2	Heavy Duty Gas Regulator	Argon (Ar)	Harris		
SSGR-3	Heavy Duty Gas Regulator	Helium (He)	Harris		

Auto-Changeover / Manifolded Gas Delivery System for Cylinder Closets

Gas Delivery System	Product	Service	Manufacturer	Model No.	Notes:
GDS-1	Automatic Changeover 2 Cylinder Gas Manifold	Nitrogen (N2) **and Specialty Gas**	AirGas	Model Y11-CP720F (CGA) **with Y15-4PFLX30FM; Y99-(CGA)C13CVK; CGA 580**	Provide Remote Alarm Y78EN200ALPK-AG **with extended cord. Manifolds serving specialty gases are to be compatible with CO2, Argon, Helium, and Nitrogen.**
GDS-2	Automatic Changeover 2 Cylinder Gas Manifold	Argon (Ar)	AirGas	Model Y11-CP720D (CGA) **with Y15-4PFLX30FM; Y99-(CGA)C13CVK; CGA 580**	Provide Remote Alarm Y78EN200ALPK-AG **with extended cord.**

Confirm provisions for manifolds for cylinders at dedicated support spaces with University; where O2 is desired, University to coordinate provisions with EH&S; where CO2 is desired, University to confirm locations and anticipated flow rates with users to verify if heaters ar required.

General Notes:

1. All laboratory faucets to receive vacuum breakers and removable serrated hose nozzles.
2. All epoxy sinks to be provided with color matched epoxy outlet, strainer, and overflow.
3. At Safety Station shower heads are to be centered on overall unit width.

SECTION 23 07 10

INSULATION

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide labor, materials, equipment and services to perform operations required for the complete installation and related Work as required in Contract Documents.

1.2 SUBMITTAL

A. Submit product data, product description, manufacturer's installation instructions.

B. Submit schedule of types and thicknesses for each application, and location of materials.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Section 232010 - Piping Systems and Accessories.

B. Section 233100 - Sheet Metal and Ductwork Accessories Construction.

PART 2 - PRODUCTS

2.1 GENERAL

A. See Exhibits at the end of this section for where insulating materials shall be applied, thickness, jacketing and remarks.

B. Provide work in compliance with the following Codes and Standards based on the current edition in effect at project location:

1. Energy Conservation Code of New York State.

C. Insulation, jackets, adhesive, and coatings shall comply with the following:

1. Products shall not contain asbestos, lead, mercury, or mercury compounds.

2. Insulation, including jackets, finishes and adhesives on the exterior surfaces of ducts, pipes, and equipment, shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less, when tested in accordance with ASTM E84 or UL 723.

a. Plenums: Insulation materials shall be noncombustible or listed and labeled per ASTM E84 or UL 723.

b. Treatment of jackets or facing for flame and smoke safety must be permanent. Water-soluble treatments are not permitted.

3. All adhesives, coatings and sealants used for insulation in the interior of the building shall comply with the maximum Volatile Organic Compound (VOC) limits as called for in the current version of U.S. Green Building Council LEED Credits EQ 4.1 and EQ 4.2.

4. Provide materials which are the standard products of manufacturers regularly engaged in the manufacture of such products and that essentially duplicate items that have been in satisfactory use for at least two (2) years prior to bid opening. Provide insulation systems in accordance with the approved MICA or NAIMA Insulation Standards.

5. Insulation shall be clearly marked with manufacturer's name, identification of installed thermal resistance (R) value, out-of-package R value, flame spread and smoke developed indexes in accordance with Energy Code requirements.

6. Products that come into contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested in accordance with ASTM C 871.

7. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable in accordance with ASTM C 795.

2.2 ACCEPTABLE MANUFACTURERS

A. Flexible Elastomeric: Armacell AP ArmaFlex/FS (Indoor: AP ArmaFlex up to 1", FS 1-1/2" to 2"; Outdoor: All sizes), Aeroflex (Indoors/Outdoors: All sizes), K-Flex Insul-Lock (Indoors: All sizes), K-Flex Titan (Indoors: Up to 1-1/2"; Indoors/Outdoors: All sizes).

B. Fiberglass: Johns Manville, Knauf/Manson, Owen-Corning.

C. Fire-Rated Insulation: Unifrax -FyreWrap, 3M Fire Wrap, EFS Engineering Flame Wrap.

D. Polyisocyanurate: Johns Manville Trymer 25-50 PIR (Indoors), 2000XP (Outdoors), HiTherm, Kingspan.

E. PVC Jacketing: Johns Manville Zeston, Knauf/Manson Proto, Speedline.

~~E.~~F. Stainless Jacketing: Johns Manville, PABCO-Childers Metals, RPR Products.

~~F.~~G. Adhesives, Coatings, Mastics, Sealants: Childers, Foster, Tremco.

2.2 FLEXIBLE ELASTOMERIC

A. Closed-cellular, sponge or expanded-rubber with integral vapor barrier.

B. Tube and Sheet:

1. Product meeting ASTM C 534, Type I/II Grade 1.

2. 'K' Value at 75°F mean temperature

a. 0.245 BTU-in/ft^2 hr. °F (up to 1 in. wall thickness).

b. 0.28 BTU-in/ft^2 hr. °F (1-1/2 in. to 2 in. wall thickness).

C. Sheet:

1. Density: As required to meet specified R-value in Exhibit, unless otherwise noted.

2.3 FLEXIBLE FIBERGLASS

A. Glass fibers bonded with a resin.

B. Blanket:

1. Product meeting ASTM C 553 Types I, II and III, and ASTM C 1290; Greenguard compliant.

2. 'K' Value: 0.27 BTU-in/ft^2 hr. °F at 75°F mean temperature.

3. Maximum Service Temperature (Faced): 250°F.

4. Vapor Retarder Jacket: FSK conforming to ASTM C 1136 Type II.

5. Density: As required to meet specified R-value in Exhibit, unless otherwise noted.

2.4 RIGID FIBERGLASS

A. Pre-formed glass fibers bonded with a thermosetting resin.

B. Pipe:

1. Product meeting ASTM C 547, ASTM C 585, and ASTM C 795; rigid, molded, noncombustible.

2. 'K' Value: 0.23 BTU-in/ft^2 hr. °F at 75°F mean temperature.

3. Maximum Service Temperature: 1000°F.

4. Vapor Retarder Jacket: Factory applied ASJ/SSL conforming to ASTM C 1136 Type I, secured with self-sealing longitudinal laps and butt strips.

5. Field applied PVC Fitting Covers with Flexible Fiberglass Insulation: Indoor/Outdoor, UV resistant fittings, jacketing and accessories, white or colored. Fitting cover system consists of pre-molded, high-impact PVC materials with blanket type fiberglass wrap inserts.

Blanket fiberglass wrap inserts shall have a thermal conductivity ('K') of 0.26 at 75°F mean temperature. Closures to be stainless steel tacks, matching PVC tape, or PVC adhesive per manufacturer's recommendations.

C. Board:

1. Product meeting ASTM C 612 Type IA and IB. Maximum Service Temperature: 450º F.

2. 'K' Value: 0.24 BTU-in/ft^2 hr. °F at 75°F mean temperature.

3. Vapor Retarder Jacket:

a. ASJ conforming to ASTM C 1136 Type I

b. FSK or PSK conforming to ASTM C 1136 Type II.

4. Density: As required to meet specified R-value in Exhibit, unless otherwise noted.

2.5 FIRE-RATED INSULATION

A. Fire-resistant wrap consisting of an inorganic fiber blanket encapsulated with a scrim-reinforced foil.

B. Blanket:

1. Product meeting ASTM E 2336, ASTM 814/UL 1479, ASTM E 136, ASTM E 119/UL 263, ASTM E 84/UL 723.

2. "K" value: 0.60 BTU-in/ft^2 hr. °F at 500°F mean temperature.

3. Maximum Service Temperature: 2300°F.

4. Thickness: 1-1/2 in., 0.9 lb/sq.ft.

5. Density: 6 PCF.

6. 2-hr rated.

2.6 RIGID POLYISOCYANURATE

A. Pre-formed closed-cellular foam, rigid molded.

B. Pipe:

1. Product meeting ASTM C591, rigid molded, noncombustible.

2. 'K' Value: 0.19 BTU-in/ft^2 hr. °F at 75°F mean temperature.

3. Maximum Service Temperature: 300°F.

4. Vapor Retarder Jacket: Dow Saranex Vapor Retarder Film and Tape.

5. Fittings shall match pipe requirements.

C. Board:

1. Product meeting ASTM C1289 Type I, Class I.

2. "K" value: 0.17 BTU-in/ft^2 hr. °F at 75°F mean temperature.

3. Density: As required to meet specified R-value in Exhibit, unless otherwise noted.

2.7 FIELD APPLIED JACKETS

A. PVC: High-impact UV resistant PVC; roll stock ready for shop or field cutting and forming.

1. Thickness: 30 mil.

2. PVC Jacket Color: White.

B. Stainless Steel: Factory cut and rolled to indicated sizes. Product meeting ASTM A 240/C 1767.

1. Material: 304SS.

2. Finish: Bare Smooth finish to be field painted.

3. Thickness (including insulation):

a. Rigid insulation installations: 0.016 (up to 24-in overall diameter) and 0.024 (greater than 24-in overall diameter).

4. Moisture Barrier: 3 mil thick, heat-laminated polyethylene and Surlyn.

5. Elbows: Preformed multi-piece or gored, 45 and 90-degree, short and long-radius elbows; same material, finish, and thickness as roll.

~~2.~~6. Banding: 304SS, 0.020" thick, 0.75" wide. Provide same material wing seals. Screws, rivets, stapes or any other fastener capable of penetrating vapor barrier are not allowed.

2.8 ADHESIVES, COATINGS, MASTICS, SEALANTS

A. Provide per manufacturer product requirements for associated system and application/installation location.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. All materials shall be installed by skilled labor regularly engaged in this type of work and installed in strict accordance with manufacturer's recommendations, building codes, and industry standards. Install insulation materials, forms, vapor barriers or retarders, jackets, and of thicknesses required for each item of pipe system per manufacturer requirements. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

B. Locate insulation and cover seams in the least visible location. All surface finishes shall be extended in such a manner as to protect all raw edges, ends and surfaces of insulation. No glass fibers shall be exposed to the air. Install insulation with longitudinal seams at top and bottom of horizontal runs. Install multiple layers of insulation with longitudinal and end seams staggered and with the least number of joints possible.

C. All pipe and duct insulation shall be continuous through hangers.

D. Provide thermal insulation on clean, dry surfaces and after piping, ductwork and equipment (as applicable) have been tested. Do not cover pipe joints with insulation until required tests are completed.

E. All cold surfaces that may "sweat" must be insulated. Vapor barrier must be maintained; insulation shall be applied with a continuous, unbroken moisture and vapor seal. All hangers, supports, anchors, or other projections that are secured to cold surfaces shall be insulated and vapor sealed to prevent condensation.

F. Items such as boiler manholes, handholds, clean-outs, ASME stamp, and manufacturers' nameplates, may be left uninsulated unless omitting insulation would cause a condensation problem. When such is the case, appropriate tagging shall be provided to identify the presence of these items. Provide neatly beveled edges at interruptions of insulation.

G. Provide protective insulation as required to prevent personnel injury: Piping from zero to seven feet above all floors and access platforms including hot (above 140°F) piping and any other related hot surface.

H. If any insulation material has become wet because of transit or job site exposure to moisture or water, the contractor shall not install such material, and shall remove it from the job site.

I. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.

J. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches in similar fashion to butt joints.

K. For above-ambient services, do not install insulation to the following:

1. Vibration-control devices.

2. Testing agency labels and stamps.

3. Nameplates and data plates.

3.2 PENETRATIONS

A. Aboveground Exterior Wall: Install insulation continuously through penetrations.

1. Seal penetrations with flashing sealant.

2. For applications requiring only indoor insulation, terminate insulation above through surface and seal with joint sealant.

3. Extend jacket of outdoor insulation outside wall/roof flashing at least 2-in. beyond flashing. Seal jacket to flashing with flashing sealant per roofing manufacturer requirements.

B. Interior Floor, Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

C. Fire-Rated Floor, Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.

1. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping and fire-resistive joint sealers.

3.3 PIPE INSULATION

A. All pipes shall be individually insulated. Cover valves, including control valves, fittings and similar items in each piping system with insulation as applied to adjoining pipe run. Provide a removable re-usable insulation cover at fittings, valves, strainers and other specialties that require access. For below-ambient services, provide a design that maintains vapor barrier or provide manufactured removable valve insulation wrap. Extra care must be taken on piping appurtenances to insure a tight fit to the piping system.

B. Piping insulation is allowed to be reduced in thickness only when a specific UL assembly detail for piping passing thru a rated wall indicates a maximum insulation thickness that is less than this specification section calls for. In this case reduce the insulation thickness just for the rated wall penetration. The reduction of insulation thickness shall be limited to the length of the penetration only.

3.4 DUCTWORK INSULATION

A. Provide external thermal insulation for ductwork. Not required where ducts have internal acoustical insulation. Make special provisions at dampers, damper motors, thermometers, instruments, and access doors.

B. Provide factory ASJ jacket for ductwork required to be insulated and to be painted.

C. Laboratory Exhaust Duct Wrap: Install fire-rated duct wrap in strict accordance with the manufacturer's written installation methods.

D. Exterior duct insulation (or ductwork) shall be pitched as required to prevent water from ponding on ductwork.

3.5 EQUIPMENT INSULATION

A. Apply insulation with joints firmly butted as close as possible to the equipment surface.

3.6 EXISTING INSULATION

A. Patch existing insulation damaged during the course of the work.

B. Insulate existing piping, ductwork, and equipment as called for.

EXHIBIT "I" - PIPE INSULATION MATERIALS

SERVICE	INSULATION MATERIAL	THICKNESS	REMARKS
Hot water and glycol/hot water (up to 200°F)	Rigid Fiberglass	1-1/2 in. and Larger: 2 in. 1-1/4 in. and Smaller: 1-1/2 in.	Refer to plans for locations of high temperature hot water.
Low temperature hot water (up to 140°F)	Rigid Fiberglass	1-1/2 in. and Larger: 1-1/2 in. 1-1/4 in. and Smaller: 1 in.	
Low temperature glycol hot water (up to 140°F)	Flexible Elastomeric	1-1/2 in. and Larger: 2 in. 1-1/4 in. and Smaller: 1-1/2 in.]	Only within AHU cabinet for piping staggered coil.
Low pressure steam (up to 15 psi) and low pressure condensate; pumped condensate, boiler feed water, vents for PRV safety valves receivers and flash tanks, and related hot pipes.	Rigid Fiberglass	4 in. and Larger: 3 in. 3 in. and Smaller: 2-1/2 in.	
High pressure steam (greater than 120 psi); associated condensate	Rigid Fiberglass	1 in. and Larger: 5 in. 3/4 in. and Smaller: 4-1/2 in.	
Chilled water, process chilled water (temperature greater than 40°F)	Rigid Fiberglass	1-1/2 in. and Larger: 1 in. 1-1/4 in. and Smaller: 1/2 in.	

SERVICE	INSULATION MATERIAL	THICKNESS	REMARKS
Concealed AC unit condensate drains	Rigid Fiberglass	All Sizes: 1 in.	
Domestic cold water/makeup water	Rigid Fiberglass	3 in. and Smaller: 1/2 in.	
Outdoor Piping	**Rigid Fiberglass**	**Insulate pipe with the thickness called for the associated service.**	**Insulate and jacket only to the extent noted on plan.**

NOTES FOR EXHIBIT "I":

NOTE 1: Piping within the air handling unit curb shall be insulated with double the thickness called for the associated service.

NOTE 2: Vapor seal chilled and process chilled water service piping with two (2) coats of vapor barrier coating in high humidity spaces (tunnel).

NOTE 3: All interior exposed piping below ceilings and above finished floor in occupied spaces shall be insulated with rigid polyisocyanurate insulation (for cold services) and rigid fiberglass (for hot services) with rigid fiberglass fittings and PVC jacket.

NOTE 4: All interior exposed piping, valves, fittings, and specialties in mechanical/electrical rooms, penthouses, AHU vestibule, the tunnel and services aisles/pipe chases shall be jacketed with PVC.

EXHIBIT "II" - DUCT INSULATION MATERIALS

SERVICE	INSULATION MATERIAL	THICKNESS	REMARKS
Supply (concealed)	Flexible Fiberglass	2 in.	Min. installed R value of 6
Supply (within mechanical rooms or exposed at 8'-0" or less above finished floor)	Rigid Fiberglass	1-1/2 in.	Min. installed R value of 6
Supply (to cold rooms)	Flexible Elastomeric	1-1/2 in.	Min. installed R value of 6 Insulate from cold room to ductwork main.
Supply (exposed within the conditioned space served)	Not insulated	Not insulated	Does not include the associated supply ductwork within the Mechanical Room or supply duct to the conditioned space.
Return and exhaust within heated building envelope	Not insulated	Not insulated	
Laboratory exhaust within building envelope indicated to be wrapped (W)	Fire Rated Blanket	1-1/2 in.	1 layer
Exhaust (from cold rooms)	Flexible Elastomeric	1-1/2 in.	Min. installed R value of 6 Insulate from cold room to ductwork main.

SERVICE	INSULATION MATERIAL	THICKNESS	REMARKS
Exhaust, relief or vent ducts and plenums (concealed)	Flexible Fiberglass	2 in.	Min. installed R value of 6 Insulate ducts 15 ft. from exterior opening and plenums. Insulation not required in AHU curb.
Exhaust, relief or vent ducts and plenums (exposed)	Rigid Fiberglass	1-1/2 in.	Min. installed R value of 6 Insulate ducts 15 ft. from exterior opening and plenums.

EXHIBIT "III" - EQUIPMENT INSULATION MATERIALS

SERVICE	INSULATION MATERIAL	THICKNESS	REMARKS
Filter assembly housings and sound attenuators when factory un-insulated	Rigid Fiberglass	Same as associated ductwork	
Air removal assemblies and fabric filter assemblies		Same as water piping	
System expansion tanks and chemical feed tanks		Same as water piping	
Pumps	Flexible Elastomeric	1 in.	Arrange for easy removal and reinstallation.

NOTES FOR EXHIBIT "III":

NOTE 1: Insulate any cold surfaces subject to condensation that have not been factory insulated.

END OF SECTION 23 07 10

SECTION 23 20 10

PIPING SYSTEMS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide labor, materials, equipment and services as required for the complete installation designed in Contract Documents.

1.2 SUBMITTALS

A. Schedule of pipe materials, fittings, and connections.

B. Applicable miscellaneous materials (i.e. dielectric protection, hangers, inserts, supports, sealing elements, etc.).

C. Anchors and Guides:

1. Provide submittals for pre-manufactured anchors and guides.

D. Shop Drawings: Signed and sealed by a qualified professional engineer. Show fabrication and installation details and include calculations for the following:

1. Trapeze pipe hangers.

2. Metal framing systems.

3. Fiberglass strut systems.

4. Pipe stands.

5. Equipment supports.

~~D.~~E. Trapeze Hangers:

1. Submit hanger, support and attachment design, installation details, and plans indicating locations of hangers. Calculations, plans, hanger, and installation details shall be stamped and signed by a professionally licensed engineer.

2. For each trapeze hanger configuration, that requires analysis restraint as outlined in this section, include the following:

a. Dimensioned Drawings of Hanger.

b. Anchorage: Provide detailed description of equipment anchorage devices on which the calculations are based and their installation requirements. Identify anchor bolts, studs and other mounting devices.

Provide information on the size, type and spacing of mounting brackets, holes and other provisions.

~~E.~~F. Welding certification (Refer to Part 3).

~~F.~~G. Cleaning & Water Treatment (Refer to Part 3)

1. Initial Water Quality Sample Analysis
2. Water Quality Sample Analysis after Cleaning
3. Final Water Quality Sample Analysis

~~G.~~H. Certification of successful pressure testing (Refer to Part 3).

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Section 055000 – Metal Fabrications

~~1.3~~1.4 APPLICABLE CODES AND STANDARDS

A. Provide work in compliance with the following Codes and Standards based on the current edition in effect at project location:

1. American Society of Civil Engineers (ASCE) Minimum Design Loads for Buildings and Other Structures with Supplement No. 1 - Standard ASCE/SEI 7-16.

~~1.4~~1.5 QUALITY ASSURANCE

A. General:

1. The contractor shall provide Professional Engineer stamped and signed engineering calculations and details of hanger, hanger supports and attachment to the building structure using the performance and design criteria specific to the project and system in question. Engineer shall be licensed to practice in the state in which the project is located.
2. The trapeze hanger engineering calculations and details shall provide the quantity of attachments and size/type of attachments for the mounting of the hanger to the building structure and the design of the hanger.
3. Systems requiring delegated design include:

a. Trapeze hangers for pipes 2” and greater.

PART 2 - PRODUCTS

2.1 GENERAL

A. Pipe and fittings shall be new, marked with manufacturer's name and comply with applicable ASTM and ANSI Standards.

B. All adhesives, sealants, primers and paint used for piping in the interior of the building shall comply with the maximum Volatile Organic Compound (VOC) limits called for in the current version of U.S. Green Building Council LEED Credits EQ 4.1 and EQ 4.2.

2.2 STEEL PIPING AND FITTINGS

A. Pipe: ASTM A53, Schedule 40, or extra strong (Schedule 80) weight; black or galvanized finish as called for; ends chamfered for welding.

B. Fittings: Same material and pressure class as adjoining pipe.

1. Welded Fittings: Factory forged, seamless construction, butt weld type, chamfered ends. Where branch connections are two or more sizes smaller than main size, use of "Weldolets", "Thredolets", or "Sockolets" are acceptable. Socket weld type, 2000 psi wp, where required.

   a. Mitered elbows, "shaped" nipples, and fabricated reductions and fabricated branch connections are not acceptable unless specifically required and reviewed by the Engineer.

2. Threaded fittings: Cast or malleable iron, black or galvanized, as called for; drainage type where called for. Street type 45° and 90° elbows are not acceptable.

C. Flanges, Unions and Couplings:

1. Threaded connections:

   a. Flanges: Cast iron companion type; for sizes 2-1/2 in. and larger.

   b. Unions: Malleable iron, bronze to iron seat, 300 lb. wwp; for sizes 2 in. and smaller.

   c. Couplings: Malleable iron, 150 or 300 lb. wwp, based on system pressure. Steel thread protectors are not acceptable as couplings.

2. Welded connections:

   a. Flanges: Welding neck type. Slip-on type not allowed unless noted and shall not be installed in conjunction with butterfly valves.

b. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents and working temperatures and pressures.

c. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.

D. Gauge and Instrument Connections: Nipples and plugs for adapting gauges and instruments to piping system shall be IPS brass.

E. Base Elbows:

1. Cast iron or steel type, flange connections; Crane 500 or equivalent. Made from welding elbows, with welded pipe support and steel base. Reducing elbows where necessary.

ELBOW SIZE	SUPPORT SIZE	BASE PLATE
2 in. to 3 in.	1-1/4 in.	6 in. x 6 in. x 1/4 in.
4 in. to 6 in.	2-1/2 in.	8 in. x 8 in. x 1/4 in.
8 in. and larger	6 in.	14 in. x 14 in. x 5/16 in.

2. Anchor bolt holes in each corner of base for securely bolting to floor or concrete base; minimum 3/4 in. bolts.

2.3 COPPER TUBE AND FITTINGS - SOLDER JOINT

A. Pipe: ASTM B88; Type L hard temper. Plans show copper tube sizes.

B. Tees, Elbows, Reducers: Wrought copper, ASME B16.22; ASME B16.18 solder end connections.

C. Unions And Flanges: 2 in. and smaller use unions, solder type, cast bronze, ground joint, 150 lb. swp: 2-1/2 in. and over use flanges, cast bronze, companion type, ASME drilled, solder connection, 150 lb. swp.

D. Solder Materials: No-lead solder, using alloys made from tin, copper, silver and nickel.

E. Make: Harris "Stay-Safe 50" and "Bright", Engelhard "Silverbright 100", Willard Industries "Solder Safe (silver bearing), Canfield "Watersafe".

2.4 COPPER DRAINAGE TUBE AND FITTINGS - SOLDER JOINT

A. Pipe: ASTM B88; Type M hard temper.

B. Tees, Elbows, Reducers: Wrought copper, ASME B16.22; ASME B16.18 solder end connections.

C. Solder Materials: No lead solder, using alloys made from tin, copper, silver and nickel.

D. Make: Harris "Stay-Safe 50" and "Bright", Engelhard "Silverbright 100", Canfield "Watersafe".

2.5 POLYPROPYLENE ACID RESISTANT WASTE PIPING AND FITTINGS

A. Pipe: ASTM D4101, Schedule 40 flame retardant polypropylene.

B. Fittings: ASTM D4101, Schedule 40 flame retardant polypropylene with thermal welded joints.

1. For accessible 1-1/2 in. and 2 in. piping below counters and equipment, provide mechanical joint or thermal welded unions at traps to permit disassembly.

2. Piping through wall or floor at roughing point for equipment shall be provided with male IPS threaded adapter.

C. Make: IPEX "Enfield", Orion Fitting, Inc., R&G Sloane.

2.6 DIELECTRIC PIPE FITTINGS

A. Description: Assembly or fitting having insulating material isolating joined dissimilar metals to prevent galvanic action and stop corrosion.

B. Dielectric unions shall not be used due to their tendency to leak. Provide a dielectric waterway fitting or a brass nipple for dielectric protection. A brass valve is also an acceptable method of dielectric protection.

C. Flanges: Factory-fabricated, companion-flange assembly, for 150 or 300 psig minimum pressure to suit system fluid pressures and temperatures with flange insulation kits and bolt sleeves.

D. Waterway Fittings: 300 psi maximum working pressure at 230°F, male threaded or grooved ends, electroplated ductile iron or steel body with LTHS high temperature polyolefin polymer liner.

E. Make: EPCO, Capitol Manufacturing, Watts.

2.7 HANGERS, INSERTS, AND SUPPORTS

A. Hangers, Inserts, Clamps: B-Line, Grinnell, Michigan Hanger, PHD Manufacturing.

B. Hangers:

1. Adjustable, wrought malleable iron or steel with electroplated zinc or cadmium finish. Copper plated or PVC coated where in contact with copper piping. Hot-dipped galvanized finish for exterior locations.

2. Adjustable ring type where piping is installed directly on hanger for piping 3 in. and smaller.

3. Adjustable steel clevis type for 4 in, and larger, and where insulation passes through hanger.

4. Hangers sized to permit passage of insulation through the hanger for chilled water piping.

5. Nuts, washers and rods with electroplated zinc or cadmium finish. Hot-dipped galvanized finish for exterior locations.

C. Hanger Shields:

1. Pre-insulated type:

a. Insulated pipes shall be protected at point of support by a 360° insert of high density, 100 psi waterproof calcium silicate, encased in a 360° sheet metal shield. Insulation insert to be same thickness as adjoining pipe insulation and extend 1 in. beyond sheet metal shield. Insulation shall be provided with a factory installed ASJ.

2. Field-insulated type:

a. #18 USSG, galvanized steel shields, minimum 120° arc. Provide ICA-HAMFAB-BLOCK, 18# density molded fiberglass inserts, between pipe and hanger shield to maintain proper spacing for insulation. Insulation inserts shall extend 1 in. beyond the sheet metal shields. Material shall comply with ASTM E84 25/50, have a thermal conductivity of K=.30 (stable) and have a service temperature of -120°F to +650°F. Install in accordance with manufacturer's printed instructions.

3. Shield Sizing:

PIPE SIZE	SHIELD LENGTH	MINIMUM GAUGE
1/2 in. to 3-1/2 in.	9 in.	20
4 in.	9 in.	20
5 in. and 6 in.	9 in.	20
8 in. to 12 in.	12 in.	18
14 in. to 24 in.	18 in.	16

4. Hanger shield gauges listed are for use with band type hangers only. For point loading (roller support), increase shield thickness by one gauge, and length by 50%.

D. Spacing Schedule: (Based upon most stringent requirement of MCNYS and ASME B31.9)

COPPER OR PLASTIC PIPE SIZE	COPPER PIPE HANGER SPACING	PLASTIC PIPE HANGER SPACING	HANGER ROD SIZE
3/4 to 1 in.	6 ft.	3 ft.	3/8 in.

COPPER OR PLASTIC PIPE SIZE	COPPER PIPE HANGER SPACING	PLASTIC PIPE HANGER SPACING	HANGER ROD SIZE
1-1/4 in.	6 ft.	4 ft.	3/8 in.
1-1/2 to 2 in.	8 ft.	4 ft.	3/8 in.
2-1/2 to 4 in.	10 ft.	4 ft.	1/2 in.
5 in. and larger	10 ft.	4 ft.	3/4 in.

STEEL PIPE SIZE	STEEL PIPE HANGER SPACING	HANGER ROD SIZE
3/4 to 1 in.	8 ft.	3/8 in.
1-1/4 in.	10 ft.	3/8 in.
1-1/2 to 2-1/2 in.	12 ft.	3/8 in.
3 to 4 in.	12 ft.	1/2 in.
5 in. and larger	12 ft.	3/4 in.

E. Inserts: Carbon steel body and square insert nut, galvanized finish, maximum loading 1,300 lbs., for 3/8 in. to 3/4 in. rod sizes. Drill through decking for hanger rods and secure devices with integral support plate strap with sheet metal screws. Devices shall have a safety factor of four.

F. Beam Attachments:

1. C-Clamp, locknut, electroplated finish, UL listed, FM approved, for pipe sizes 2 in. and smaller.

2. Center load style with clamp attachments that engage both edges of beam, electroplated finish, UL listed, FM approved, for pipe sizes larger than 2 in., refer to "Supports" for additional requirements.

G. Supports:

1. Provide intermediate structural steel members where required for hanger attachment. Secure member to structure. Select size of members based on a minimum factor of safety of four.

2. For Weights Under 1000 lbs.: Insert, "U" shaped channel, beam clamps or other structurally reviewed support. The factor of safety shall be at least four. Follow manufacturer's recommendations.

3. For Weights Above 1000 lbs.: Drill through floor slabs and provide flush plate welded to top of rod or provide additional inserts and hangers to reduce load per hanger below 1000 lbs.

4. Make: Hilti, ITW Ramset, Phillips "Red Head".

H. Trapeze Hangers:

1. For use on racking multiple pipes, up to 6 pipes, 1-1/2" and smaller piping only.

2. For use of trapeze hangers for piping 2" and greater, all hangers shall include detail fabrication drawings submittals accompanied by comprehensive structural engineering design and analysis performed by a qualified, professional engineer licensed to practice in the State which the project is located, for design of the hangers, hanger supports and attachment to building structure using the performance and design criteria specific to the project and system in question.

3. Hangers shall be supported with rod sized with a safety factor of four.

4. May be manufactured type "U" shaped channel, or suitable angle iron or channel. Round off all sharp edges.

5. Securely fasten piping to trapeze with "U" bolt or straps, dissimilar metals shall not touch, use isolation gaskets.

6. Make: B-Line, Kindorf, Unistrut.

2.8 PIPING ACCESSORIES

A. Escutcheon Plates: Provide escutcheon plates on piping in exposed and finished areas. Steel or cast brass polished chrome, split hinge type with setscrew, high plates where required for extended sleeves.

Escutcheons plates for process spaces shall be stainless steel.

B. Pipe Guides: Cylindrical steel guide sleeve, proper length for travel, integral bottom base anchor, top half removable. Split steel spider to bolt to pipe, copper plated spider for copper pipe. Insulated style where pipe is required to be insulated. Design make: Tri-Sate Industries.

C. Anchors:

1. Pipe support; same material as pipe; as manufactured by Pipe Shields Model C1000 or C2000, Keflex, Metraflex, Flexonics or Advanced Thermal Systems.

2. Pipe Anchors:

a. Anchors shall be designed and located as to prevent stress to piping or building structural components from exceeding those permitted by ASME B31.9 and to prevent transfer of loading and stressing to connected equipment.

D. Pipe Roll Stand: Cast iron roll stand. Make: Advanced Thermal Systems, Carpenter and Patterson, ITT Grinnell, Pipe Shields.

2.9 SLEEVES

A. Standard Type:

1. Schedule 40 black steel pipe sleeves shall be used for sleeves in horizontal and vertical applications through structural surfaces. Sleeves shall extend a minimum of 1 in. beyond both sides of the structure surface being penetrated. The sleeve shall be sized to account for the total diameter of the service, inclusive of insulation and the appropriate annular space for firestopping installation or requirements of the sealing element manufacturer.

2. Full circle water stop collar for sleeves located in below grade walls, wet wells and waterproofed surfaces. The collar shall be fabricated from steel plate and welded to the sleeve around its entire circumference.

3. Schedule 40, PVC sleeves or sheet metal sleeves for nonstructural surfaces and existing construction. Sheet metal sleeves shall be 18 gauge minimum and braced to prevent collapsing. Sleeves shall extend a minimum of 1/2 in. beyond both sides of the non-structural vertical surface being penetrated. The sleeve shall be sized to account for the total diameter of the service, inclusive of insulation and the appropriate annular space for firestopping.

B. Pre-Insulated Type:

1. Adjustable or fixed length metal cans, 24 gauge minimum sized for 1 in. spacing between insulation and can. Insulation shall consist of a 360° waterproofed calcium silicate insert sized to extend 1 in. beyond wall or floor penetration. Calcium silicate insert shall be the same thickness as adjoining pipe insulation. Spacing between shield and can packed at each end with double neoprene rope positively fastened.

2.10 FIRESTOP SYSTEM FOR OPENINGS THROUGH FIRE RATED WALL FLOOR ASSEMBLIES

A. Materials for firestopping seals shall be listed by an approved independent testing laboratory for "Penetration Firestop Systems". The system shall meet the standard fire test for Penetration Firestop Systems designated ASTM E814. Firestop system shall be provided at locations where piping passes through fire rated wall, floor/ceiling, or ceiling/roof assembly. Minimum required fire-resistant ratings of the assembly shall be maintained by the Firestop System. Installation shall conform with the manufacturer's recommendations and other requirements necessary to meet the testing laboratory's listing for the specific installation.

2.11 PIPING MATERIALS AND SCHEDULE

A. See Exhibit "A", "Schedule of Piping Materials" at end of this Section for (HVAC) piping.

2.12 CLEANING AND TREATMENT CHEMICALS

A. Cornell University shall furnish cleaning and water treatment chemicals to the contractor. Cleaning and treatment chemicals are furnished from The Metro Group. The information on the various materials listed below is for reference only.

1. Probable cleaning chemicals: Metro Cleaner CS35 or CS46. General detergent-based, heavy duty, alkaline cleaners, multifunctional. Selection based on an understanding the deposit being removed and system materials (steel, copper, aluminum, etc.).

2. Treatment chemicals for Closed Loop Non-Glycol Heating and Cooling Systems: Vaporene 6400. A material with a combination of sodium molybdate, sodium tolutriazole, sodium polyacrylate and borax amber in color.

3. Treatment chemicals for Closed Loop Glycol Heating and Cooling Systems: Metro PG36. A material with a combination of 40% propylene glycol, nitrite, and tolytriazole with an olive-green colorant. Contact Facilities Engineering for applications that have the potential to deviate from this requirement, for example ground loop geo-exchange systems.

B. The approximate system volumes are as follows:

1. Glycol Preheat: 2400 Gallons

2. Reheat Hot Water: 450 Gallons.

3. Perimeter Hot Water: 450 Gallons.

4. Process Chilled Water: 100 Gallons.

5. Chilled Water: 1000 Gallons.

PART 3 - EXECUTION

3.1 EQUIPMENT AND SYSTEMS

A. Provide equipment and systems in accordance with laws, codes, and provisions of each applicable section of these specifications. Accurately establish grade and elevation of piping before setting sleeves. Install piping without springing or forcing (except where specifically called for), making proper allowance for expansion and anchoring. Arrange piping at equipment with necessary offsets, union, flanges, and valves, to allow for easy part removal and maintenance. Offset piping and change elevation as required to coordinate with other work. Avoid contact with other mechanical or electrical systems. Provide adequate means of draining and venting units, risers, circuits and systems. Install drains consisting of a tee fitting with a 3/4 in. ball valve with hose end cap and chain, at low points in hydronic piping system mains, and elsewhere as required for system drainage.

B. Conceal piping unless otherwise called for. Copper tubing shall be cut with a wheeled tubing cutter or other approved copper tubing cutter tool. The tubing must be cut square to permit proper joining with the fittings. Ream pipes after cutting and clean before installing. Cap or plug equipment and pipe openings during construction. Install piping parallel with lines of building, properly spaced to provide clearance for insulation. Make changes in direction and branch connections with fittings unless submitted and accepted per Part 2. Do not install valves, union and flanges in inaccessible locations. Provide trap seal of adequate depth on drain pans.

C. Provide reducers at all control valves, where control valve is smaller than pipeline size. Reducers for steam control valves shall be eccentric type. Provide unions at each side of every control valve and reducers directly adjacent to the unions.

D. Provide reducers at all balance valves, where balance valve is smaller than pipeline size.

3.2 PIPING OVER ELECTRICAL EQUIPMENT

A. Contractor shall route piping to avoid installation directly over electric equipment, including, but not limited to panels, transformers, disconnects, starters, motor control center, adjustable speed drives and fused switches.

B. Piping shall not be installed in the dedicated electric and working space as defined by NEC 110. Dedicated electrical space is generally equal to the depth and width of electrical equipment, and extends 6 ft. above the electrical equipment, or to a structural ceiling. Dedicated working space is a minimum of 30 in. wide or the width of equipment (whichever is larger) a minimum of 6 ft.-6 in. tall, with a depth of 3 ft. to 9 ft. depending on the voltage.

3.3 WATER AND GLYCOL SYSTEMS

A. Top connection for upfeed, bottom or side connection for downfeed. Grade off level; up in direction of flow and down toward drain.

3.4 CONDENSATE DRAIN PIPING

A. Condensate drain piping shall be sloped a minimum of 1% in the direction of flow to an approved place of disposal. Condensate shall not be disposed into a street, alley or other areas so as to cause a nuisance.

B. Condensate drain piping shall not be less than 3/4" internal diameter and shall not decrease in size from the drain pan connection to the location of condensate disposal.

C. Condensate drains shall be trapped as required by the equipment or appliance manufacturer.

D. Condensate drain piping shall be configured to permit the clearance of blockages and performance of maintenance without requiring the drain piping to be cut.

3.5 HANGERS, INSERTS AND SUPPORTS

A. Piping shall not be supported by wires, band iron, chains, or from other piping. Support each pipe with individual hangers from concrete inserts, welded supports, or beam clamps of proper configuration and point loading design requirements for each location including the designated safety factor. Trapeze hangers are acceptable for racking of multiple pipes, up to **6** pipes, of 1-1/2 in. or less in size. Follow manufacturer's safe loading recommendations. Suspend with rods of sufficient length for swing and of size as called for, using four nuts per rod. Provide additional rustproofed structural steel members, where required for proper support. Provide oversized hangers where insulation/supports must pass between pipe and hanger. Concentric type hangers are permissible on piping larger than 2-1/2 in., "C" types are permitted for piping 2-1/2 in. and smaller. Trapeze hangers for piping 2" and greater, are permitted after comprehensive structural engineering design and analysis performed by a qualified, professional engineer licensed to practice in the State which the project is located. Provide riser clamps for each riser at each floor.

B. Provide a pipe hanger within 12 in. of pipe unions and piping connections to equipment, in order to facilitate disconnections of piping without pipe sagging.

3.6 HANGERS ATTACHED TO JOISTS

A. Individual hangers may be suspended directly from the bottom chord panel point provided that the sum of the concentrated loads within the chord panel does not exceed 100 pounds and the attachments are concentric to the chord. (Eccentrically loaded joists using beam clamps or other attachment methods are not acceptable.)

B. For nominal concentrated loads between panel chords, which have been accounted for in the specified uniform design load for the joists, this Contractor is to provide struts to transfer the load to a panel point on the opposite chord as reviewed and acceptable by the Structural Engineer of Record.

3.7 PIPE CONNECTIONS

A. Solder Connections: Nonacid flux and clean off excess flux and solder.

B. Threaded Connections: Clean out tapering threads, made up with pipe dope; screwed until tight connection. Pipe dope must be specific for each application.

C. Flanged Joints: Select appropriate gasket material, size, type and thickness for service applications. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

D. Dielectric Pipe Fittings: Provide dielectric protection devices at ALL piping connections and ALL equipment connections, where dissimilar metals meet. Follow all applicable manufacturer's recommendations at equipment connections. Dielectric protection systems are not required for air or gas systems.

3.8 WELDING

A. Welding shall be performed in compliance with the welding procedure specifications prepared by the National Certified Pipe Welding Bureau. Welded pipe fabricated by certified welder. Contractor shall submit proof of current certification of each welder if requested by Owner. Use full-length pipe where possible; minimum distance between welds, 18 in. on straight runs. Welds must be at least full thickness of pipe inside smooth and remove cutting beads, slag and excess material at joints; chamfer ends. Minimum gap 1/8 in., maximum 1/4 in., for butt welds. Overlaps on position and bench welds to be not less than 3/4 in. One internal pass and one external pass minimum required on slip-on flanges. Do not apply heat to rectify distorted pipe due to concentrated welding; replace distorted pipe. When welding galvanized pipe, apply cold galvanizing on joint after welding.

3.9 HANGER SHIELDS

A. Provide at hangers for all piping. Pre-insulated type or field-insulated type at Contractor's option.

3.10 SLEEVES

A. Provide for pipes passing through floors, walls or ceilings. Not required for floors which are core-drilled, except where floor is waterproofed.

B. Pre-Insulated Type: Required for chilled water.

C. Standard type: Provide for piping, except as called for.

D. Extend 1/8 in. above finished areas. In above grade mechanical and other areas with floor drains; use steel pipe sleeves 2 in. above floor. Use pipe sleeves in bearing walls, structural slabs, beams and other structural surfaces, and where called for. Sleeves shall be as small as practical, consistent with insulation, so as to preserve fire rating. Fill abandoned sleeves with concrete. Provide rubber grommet seals for pipes passing through ducts or air chambers or built-up housings.

3.11 ANCHORS

A. Provide piping system anchors where shown on the plans, and as recommended by the expansion joint/loop manufacturer.
Where an anchor is shown at a change in piping direction, it shall fully control movement in both directions. In lieu of a single anchor fabricated for two directional control, two (2) individual anchors may be provided. Provide detailed fabrication drawings for all field-fabricated anchors.

3.12 ALIGNMENT GUIDES

A. Provide alignment guides to guide expansion and to avoid end-loading and torsional stress.

B. Install two (2) or more guide(s) on each side of flexible expansion loop. Install guides nearest to expansion joint not more than four (4) pipe diameters from expansion joint.

C. Attach guides to pipe and secure guides to building structure.

3.13 SLEEVE PACKING

A. Seal void space at sleeves as follows

1. Interior locations: Firmly pack with fiberglass and caulk.

2. Fire rated, partitions and floor slabs: Use fire rated sealing elements, materials and methods. Provide per manufacturer's instructions to maintain firestop.

3. Waterproofed walls and floors: Use waterproof sealing element, device, or compound.

3.14 ESCUTCHEON PLATES

A. Provide polished chrome escutcheon plates for uninsulated exposed piping passing through floors, walls or ceilings in finished areas.

3.15 CLEANING HOT WATER AND CHILLED WATER AND GLYCOL SYSTEMS

A. Cornell University’s continual approach of protecting its community and the environment must be adhered to in the application of chemicals. Under no circumstances should chemicals be disposed of by pouring into sinks or other drains leading to sanitary or storm sewers.

B. Water quality testing shall be performed prior to system cleaning and testing. The quality of water delivered to each facility on the Cornell campus has significant variation based on the distribution system piping materials and source; therefore, incoming water conditions cannot be accurately predicted. Coordinate with the Cornell Facilities Management Water Treatment Lab (FMWTL) for water samples. Samples will need to be sent to an independent laboratory for analysis; information will be needed when testing residual concentrations during cleaning and treatment. As a minimum, water samples shall be analyzed for the following parameters:

WATER PARAMETER	UNITS
pH	-
Total Dissolved Solids	(mg/L)
Conductivity	(µS/cm)
Chlorides	(mg/L)
Iron	(mg/L)
Copper	(mg/L)

WATER PARAMETER	UNITS
Calcium	(mg/L)
Magnesium	(mg/L)
Alkalinity as CaCo3	(mg/L)
Calcium Hardness as CaCo3	(mg/L)
Total Hardness as CaCo3	(mg/L)

C. All closed loop recirculating water systems for new and existing piping systems require cleaning or passivation prior to the introduction of chemical treatment.

1. Cleaning of existing systems removes dislodged corrosion products. Provide temporary piping, valving, and pumping system isolated from the existing building system as needed to perform cleaning procedures prior to final connection to the existing building system.

2. Cleaning of new systems removes oils, mill scales and other residual materials of construction introduced during construction.

D. Cleaning procedures shall be as follows:

1. Step 1: Adjust all control valves and balancing valves to full-open position.

2. Step 2: Drain/flush system volume for removal of preliminary suspended matter. Bleed-off rate should not exceed rate of make-up. Confirm quality using conductivity test (system ≈ make-up water ± 25%)

3. Step 3: Add cleaning agent through the bypass feeder at a concentration recommended by the chemical manufacturer. Validate presence of dispersed species by inspection of filter papers and by monitoring water quality (pH, iron and conductivity values). Circulate solution for 4-8 hours or as specified the manufacturer.

4. Step 4: Drain/flush system until system water until water is visibly clear. Bleed-off rate should not exceed rate of make-up. Verify completion of flushing process with a conductivity test (system ≈ make-up water ± 10%)

5. Step 5: Clean strainers and dead-end piping legs.

6. Step 6: Arrange for inspection by a representative from the Facilities Management Water Treatment Lab before proceeding with chemical treatment. Test results shall be forwarded to the Facilities Management Water Treatment Lab and Project Manager.

3.16 TREATMENT OF HOT WATER AND CHILLED WATER AND GLYCOL SYSTEMS

A. Cornell University's continual approach of protecting its community and the environment must be adhered to in the application of chemicals pertinent to process water loops. In addition, University policy dictates that "under no circumstances should chemicals be disposed of by pouring into sinks or other drains leading to sanitary or storm sewers".

B. Pumps shall not be operated continuously until system is flushed, strainers cleaned and water treatment is complete. Immediately after cleaning and inspection, drain the system and fill the system as follows:

1. Chilled Water Systems directly connected to the campus distribution system:

   a. Chemical treatment shall not be used.

   b. Fill the system with potable water.

   c. Notify the Central Energy Plant (CEP) for permission to begin circulating water into the campus chilled water loop.

2. Treatment for Closed Loop Non-Glycol Heating and Cooling Systems: Dose with Vaporene 6400 using manufacturer's recommendations. Circulate for 24 hours then coordinate with Metro to test water to validate product concentration. Add more inhibiters if required.

3. Treatment for Closed Loop Glycol Heating and Cooling Systems: Fill with pre-mixed Metro PG36, 40% propylene glycol solution. Test for residual concentrations as follows:

   a. Propylene glycol: 400,000 ppm (40%)

   b. Nitrite: 1500 ppm

   c. Tolytriazole: 20 ppm

   d. Water: Balance

C. Arrange for inspection by a representative from the Facilities Management Water Treatment Lab prior to final acceptance. Test results shall be forwarded to the Facilities Management Water Treatment Lab and Project Manager.

D. Provide a three-ring binder in the mechanical room containing the following information for each hydronic system treated with chemicals:

1. SDS, product data sheets, chemical type, test points, control limits and system volume.

2. Direction to drain system to sanitary drain.

3.17 TESTS

A. Test piping and accessories before insulation, connection to existing piping, or concealment. Repeat as many times as necessary to prove tight system. Notify Owner's Representative at least seven days in advance of each test. Isolate valves and equipment not capable of withstanding test pressures. Make leaks tight; no caulking permitted. Remove and replace defective fittings, pipe or connections. Furnish necessary pumps, gauges, equipment, piping, valving, power and labor for testing. Certify that tests have been successfully completed.

B. Test: No change in pressure under stable temperature conditions.

C. Schedule of Test Requirements:

1. Hot, Glycol, Chilled: Hydrostatic, 100 psig at high point of system; two hours duration.

2. Equipment: Test at working pressures.

3.18 PROTECTION AGAINST PHYSICAL DAMAGE

A. In concealed locations where piping, other than cast-iron or steel, is installed through holes or notches in studs, joists, rafters or similar members less than 1-1/2 in. from the nearest edge of the member, the pipe shall be protected by shield plates. Protective steel shield plates having a minimum thickness of 0.0575 in. (No. 16 gage) shall cover the area of the pipe where the member is notched or bored, and shall extend note less than 2 in. above sole plates and below top plates.

3.19 PIPE LINE SIZING

A. Pipe sizes called for are to be maintained. Pipe sizing changes made only as reviewed by Owner's Representative. Where discrepancy in size occurs, the larger size shall be provided.

EXHIBIT "A" - PIPING MATERIALS (HVAC)

SERVICE	PIPE MATERIALS	FITTINGS	CONNECTIONS
Hot water / Glycol hot water heating 3 in. and larger	ASTM A53 Schedule 40, black steel	ASME B16.9 Wrought steel	ASME B16.9 Butt weld
Hot water / Glycol hot water heating 2-1/2 in. and smaller	ASTM B88 Type L hard copper	ASME B16.22 Wrought copper	ASTM B32 95 Sn/5 Sb solder or 95.5 Sn/4 cu/.5 Ag solder
Chilled water 3 in. and larger	ASTM A53 Schedule 40, black steel	ASME B16.9 Wrought steel	ASME B16.9 Butt weld
Chilled water/ Process chilled water 2-1/2 in. and smaller	ASTM B88 Type L hard copper	ASME B16.22 Wrought copper	ASTM B32 95 Sn/5 Sb solder or 95.5 Sn/4 cu/.5 Ag solder
Corrosive cabinet vent	ASTM D4101 Schedule 40, flame retardant polypropylene	ASTM D4101 Schedule 40, flame retardant polypropylene	ASTM F3722 Thermal fused (joint) including concealed locations, mechanical joint at equipment only
Flammable cabinet vent	ASTM A53 Schedule 40, black steel	ASME B16.9 Wrought steel	ASME B16.4 Threaded
Steam over 50 psi, including steam & condensate relief vent piping	ASTM A53 Schedule 40, black steel	ASME B16.9 Wrought steel	ASME B16.9 Butt weld
Vent, overflow, condensate drain	ASTM B88 Type M hard copper	ASME B16.22 Wrought copper	ASTM B32 95 Sn/5 Sb solder or 95.5 Sn/4 cu/.5 Ag solder

END OF SECTION 23 20 10

SECTION 23 31 00

SHEET METAL AND DUCTWORK ACCESSORIES CONSTRUCTION

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide labor, materials, equipment and services required for the complete installation designed in Contract Documents.

1.2 QUALITY ASSURANCE

A. Ductwork shall be fabricated and installed in compliance with latest edition of the following standards and with the edition of the Codes in effect at the time the building permit is obtained.

1. SMACNA Duct Construction Standards - Metal and Flexible Ductwork.

2. SMACNA Duct Liner Application Standard.

3. SMACNA HVAC Air Duct Leakage Test Manual.

4. Mechanical Code of New York State.

5. Energy Conservation Construction Code of New York State.

6. Plans and Specifications which exceed the requirements in any of the referenced standards.

B. All sheet metal shall be fabricated and installed by an experienced Contractor specializing in this type of work.

C. All ductwork and fittings shall have a computer generated label affixed to the exterior surface of each section, detailing all applicable information including the duct dimensions, gauge, reinforcement type/class and connection type by systems manufacturer. Galvanizing thickness shall be clearly stenciled on each duct section.

D. All ductwork on the project shall meet the SMACNA Duct Cleanliness For New Construction Guidelines, "Advanced Level" of duct cleanliness for production, delivery, storage and installation of ductwork.

1.3 SUBMITTALS

A. Submit a complete shop standard manual including miscellaneous materials, and construction details for all shop fabricated materials including, but not limited to, volume dampers, turning vanes, duct sealant, equipment flexible connections, access doors, flexible duct, acoustical duct lining, etc.

~~A.~~B. Hangers and supports, including methods for duct and building attachment and vibration isolation.

~~B.~~C. Ductwork Shop Drawings

1. Prepare minimum 1/4 in. scale drawings:

   a. Detailed ductwork shop drawings shall include size, layouts and pressure classifications. Any ductwork installed without benefit of review by the Engineer of Record may be subject to replacement at the expense of the Contractor.

   b. Constructed from actual field inspections and measurements so as to assure a complete job.

   c. Incorporate dimensions of actual equipment proposed for use on the project.

   d. Showing adequate sections, elevations, and plan views and indicating the bottom of ductwork elevations from the finished floor.

   e. Indicating all volume dampers, fire dampers, smoke dampers, damper access doors and other accessories required for a completed project.

   f. Indicate roof, wall and floor opening dimensions and locations shown on shop drawings.

   g. Indicate the location of the duct smoke detectors, increase duct size, ensure the minimum straight ductwork upstream or/and downstream at smoke detectors, where required for proper installation, per smoke detector manufacturer's recommendations. Coordinate minimum duct size required with Division 28 "Electronic Safety and Security".

2. Call to the attention of the Engineer immediately, any major deviations from the Contract Drawings, which must be made. All deviations shall be documented in writing. Resubmit with corrections for final Engineer review.

~~C.~~D. Prepare a duct pressure testing report similar to that suggested by SMACNA and submit for review. Duct testing shall be conducted in the presence of the Owner's Representative. Provide test reports indicating pressure tests performed. Include date, a ductwork approved shop drawings sheet with the section tested highlighted, test pressure and leakage rate.

1.4 GENERAL

A. All adhesives, sealants, primers and paint used for ductwork in the interior of the building shall comply with the maximum Volatile Organic Compound (VOC) limits called for in the current version of U.S. Green Building Council LEED Credits EQ 4.1 and EQ 4.2.

1.5 DUCTWORK CLASSIFICATION

A. Duct systems are to be classified and constructed per the SMACNA Velocity-Pressure classification system as follows:

1. All ductwork shall be constructed for a minimum pressure class of 2 in. w.g., unless stated otherwise, for the following systems, as applicable:

a. Supply duct downstream of terminal units.

b. Typical low pressure supply ductwork.

c. Typical return ductwork.

d. Typical low pressure exhaust ductwork.

2. Supply duct upstream of terminal units shall be constructed for a minimum pressure class of 3 in. w.g., unless otherwise stated, or required as per below.

3. Pressure classes above 3 in. w.g. shall be provided as follows, based upon the external static pressure as scheduled for each specific fan.

Scheduled External Static Pressure	**Pressure Class**
Over 3 in. up to 4 in. w.g.	4 in. w.g.
Over 4 in. up to 6 in. w.g.	6 in. w.g.
Over 6 in. up to 10 in. w.g.	10 in. w.g.

B. Any new ductwork connected to existing systems must adhere to the requirements outlined above. Contractors are responsible for verifying the maximum static pressure of the existing systems to determine the appropriate pressure class for the new ductwork. Inform Owner's Representative and Engineer of any unknown conditions or discrepancies.

PART 2 - PRODUCTS

2.1 DUCTWORK MATERIALS

A. See Exhibit at the end of this section for where sheetmetal materials shall be applied, and remarks.

1. Galvanized Sheet Steel: Comply with ASTM A653 and A924, with G90/Z275 coating.

2. Stainless Steel Sheets: Comply with ASTM A 480/A 480M, Type 304 or 316, as indicated in Exhibit "I"; cold rolled, annealed, sheet. Exposed surface finish shall be No. 2B, No. 2D or No. 3 as indicated in Exhibit "I".

3. Aluminum Sheets: Comply with ASTM B 209 (ASTM B 209M) Alloy 3003, H14 temper; with mill finish for concealed ducts, and standard, one-side bright finish for duct surfaces exposed to view.

4. Gauges per SMACNA HVAC Duct Construction Standards, Metal and Flexible.

2.2 SQUARE AND RECTANGULAR DUCTWORK

A. Transverse and longitudinal duct seams reinforcement shall conform to appropriate tables and figures per SMACNA Velocity-Pressure Classification for duct construction.

1. Transverse joints shall be sealed with duct joint sealant. "Ductmate" or "Nexus" 4-bolt connection systems may be used in lieu of standard construction.

2. Field assembled longitudinal seams shall be sealed with duct sealant. Factory or shop fabricated rolled or machine pressed longitudinal seams does not require sealant.

B. Corner closures shall be required as described and illustrated by SMACNA Duct Construction Standards.

C. Throat radius on all elbows shall not be less than the dimension of the duct plane of radius. Where this cannot be maintained, use shorter radius with internal guide vanes, or square elbow with turning vanes.

D. Bracing and hanging of ductwork shall be per SMACNA Standards for size and system class of ductwork being used.

E. Any transformations shall not reduce the ductwork cross-sectional area. Maximum angle in straight duct, 20° for diverging flow and 30° for contraction flow. Transformation from square to round seams welded or brazed.

2.3 ROUND DUCTWORK

A. Standard Round Ductwork:

1. All spiral ducts shall have locked seams so made as to eliminate leakage under pressure for which this system has been designed. Longitudinal seams duct shall have fusion-welded butt seams.

2. No stovepipe will be allowed.

3. Round Ductwork Fittings:

a. All fittings fabricated per SMACNA Standards for round ductwork, material to match straight pieces of ductwork.

b. Fittings shall have continuous, welded seams.

c. 90° tees shall be conical type. 90° tees and 45° laterals up to and including 12 in. diameter tap size shall have a radiused entrance into the tap, produced by machine or press forming. The entrance shall be free of any restrictions.

d. Round taps off the bottom of rectangular ducts down to diffusers shall be made with a 45° square to round shoe-tap.

4. Elbows:

a. Diameters 3 in. through 8 in.: Two-section stamped and continuously welded elbows, material to match straight pieces of ductwork.

b. Over 8 in.: Gored construction with standing seam construction and internally sealed or continuously welded. Less than 35° - two gores, 36° to 71° - three gores, over 71° - five gores.

c. Fabricated to a centerline radius of 1.5 times the cross-section diameter.

d. Adjustable elbows are not allowed.

5. Joints:

a. For duct construction pressure 3 in. w.g. or greater:

1) Round Joints:

a) Unexposed Duct 3 in. - 30 in. Diameter: Connect round duct with a one piece interior slip coupling, at least two gauges heavier than duct wall, beaded at center and fastener to duct with screws. Seal joint with an approved sealant applied continuously around both end of coupler prior to assembling and after fastening.

b) All Exposed Duct and Unexposed Duct 30 in. - 72 in. Diameter: Install using a three piece, gasket flanged-joint consisting of two internal flanges, with integral mastic sealant, and one external closure band, which compress the gasket between the internal flanges.

(1) Acceptable Manufacturer: Ductmate Industries “Spiralmate”, ECONOflange and Lindab.

c) Above 72 in. Diameter: Install using companion angle flanged joints as defined in Figure 3-1 of the 2005 SMACNA Manual, "HVAC Duct Construction Standards, Metal and Flexible" Third Edition. Refer to manual for proper sizing and construction details.

d) Dust collection systems and exposed duct 3 in. - 14 in. use a one piece, polyethylene lined gasket connector with integrated bolt for the closure system.

(1) Acceptable Manufacturer: Ductmate Industries "Quicksleeve", ECONOflange and Lindab.

b. Pipe-to-pipe joints in diameters up to 60 in. shall be by the use of sleeve couplings, reinforced by rolled beads.

c. Pipe-to-fitting joints in diameters up to 60 in. shall be by slip-fit of projecting collar of the fitting into the pipe.

d. Insertion length of sleeve coupling and fitting collar shall be 2 in. up to 36 in. diameter and 4 in. above 36 in. diameter.

e. Pipe-to-pipe and pipe-to-fitting connections in ductwork above 60 in. in diameter shall be made by angle ring flanges. The flange on the pipe shall be a 2 in. x 2 in. x 3/16 in. angle attached to the pipe with a continuous weld. The fittings shall have a loose ring "Van Stone" flange. A 5/8 in. flange shall be provided to act as a gasketing surface for sealing with the angle ring being a rolled, welded ring 2 in. x 2 in. x 3/16 in. Bolt hole spacing for angle rings shall be 6 in. centers.

f. If longitudinal seam duct greater than 60 in. in diameter is supplied in lengths greater than 4 ft., one angle ring must be welded to the duct on 4 ft. centers for support.

2.4 DUCTWORK SEALING

A. SMACNA Duct Sealing Classification shall be used for duct systems using the following criteria:

1. Ductwork and all plenums with pressure class ratings shall be constructed to seal Class A, as required to meet the requirements of SMACNA Duct Construction Standards and with standard industry practice, including transverse joints, longitudinal seams, fitting connections, and all penetrations of the duct wall.

2. Openings for rotating shafts shall be sealed with bushings or other devices that seal off air leakage. Pressure sensitive tape or sealing compounds shall not be used. Sealing compounds used to seal openings for rotating shafts shall not be used.

3. All connections shall be sealed, including but not limited to spin-ins, taps, other branch connections, access doors, access panels and duct connections to equipment.

4. Sealing that would void product listings is not required.

5. Spiral lock seams need not be sealed.

B. Sealants and tapes shall be listed and labeled in accordance with UL 181A or UL181B and marked according to type, and per manufacturer product requirements for associated system and application/installation location.

1. Duct sealant for indoor applications shall be non-fibrated, water based, Hardcast Iron-Grip IG-601, Ductmate PRO Seal, Foster 32-17 or Childers CP146.

2. Duct sealant for outdoor applications shall be fibrated, water based, Hardcast Versa-Grip VG-102, Ductmate Fiberseal, Foster 32-17 or Childers CP148.

2.5 TURNING VANES

A. Provide in mitered elbows as shown on contract drawings. Vanes 36 in. or longer shall be double wall air foil type. All turning vanes shall be installed as per the latest SMACNA Standards. Turning vane size and spacing shall be as per SMACNA. Turning vane spacing greater than SMACNA Standards is not acceptable.

B. Turning vanes shall be Harper or equivalent double wall turning vanes fabricated from the same material as the duct.

C. Turning vane front and back panels shall be securely locked together with adequate crimping to prevent twisting of vane. Vane shall be capable of withstanding 250 pounds of tensile load when secured according to the manufacturer's instructions.

D. Rails for mounting turning vanes shall have self locking, friction fit tabs designed to facilitate proper alignment of vanes. Tab spacing shall be as specified in Figure 4-3 of the 2005 SMACNA Manual, "HVAC Duct Construction Standards, Metal and Flexible". Rail systems with non-compliant tab spacing shall not be accepted.

E. Acoustical Turning Vane: Shall be used in applications that require quiet operating systems. Mounting rails shall have friction insert tabs that align the vanes automatically.

F. Acceptable Manufacturer: Ductmate Industries PRO-Rail Turning Vane, Lindab, or Ruskin.

2.6 DAMPERS IN DUCTWORK

A. Blade Type Volume Dampers: Constructed per SMACNA, one gauge heavier than duct material, securely fastened to 3/8 in. sq., cold rolled steel operator rod. Provide stainless steel operator rod in stainless steel ductwork. Provide elevated dial regulator for 2 in. insulated ductwork (design make: Ventlock 639). Provide dial regulator for non-insulated ductwork (design make: Ventlock 635)

B. Multiple Blade Type Volume Dampers: Provide multiple blade volume dampers in ductwork above 12 in. in height.

1. Heavy duty, manual balancing dampers suitable for application in HVAC systems with velocities to 1,500 ft. per minute, open position and max. pressure of 3 in. w.g. close position. Ruskin MD 35, Greenheck VCD-23 or Pottorff VCD-10.

2. Fabrication:

a. Frame: 5 in. x minimum 16 gauge roll formed, galvanized steel hat-shaped channel, reinforced at corners. Structurally equivalent to 13 gauge U-channel.

3. Blades:

a. Style: Single skin with 3 longitudinal grooves.

b. Action: Opposed.

c. Orientation: Horizontal

d. Material: Minimum 16 gauge equivalent thickness, galvanized steel.

e. Width: Nominal 6 in.

4. Bearings: Molded synthetic sleeve, turning in extruded hole in frame.

5. Linkage: Concealed in frame.

6. Axles: Minimum 1/2 in. diameter, plated steel, hex-shaped, mechanically attached to blade.

7. Control Shaft: 3/8 in. square plated steel.

8. Finish: Mill galvanized.

a. Actuator: Hand quadrant for 3/8 in. square extended shaft.

b. Hand Quadrant Standoff Bracket: 2 in. standoff for insulated ductwork.

c. Oillite bearings.

d. Factory Sleeve: Minimum 20 gauge thickness, minimum 12 in. length.

C. Blast Gates:

1. For galvanized ductwork: Aluminum housing, locking thumbscrew, galvanized slide blade.

2. For stainless steel ductwork: Airtight, stainless Steel housing, locking thumbscrew, stainless steel slide blade.

D. Fire and Smoke Dampers: See "Fire and Smoke Dampers" Section.

E. Automatic Air Dampers: Furnished as part of "Building Management System" Section 230923, and installed by this Contractor.

2.7 FLEXIBLE AIR DUCTS

A. Flexible air ducts and connectors shall be constructed in compliance with SMACNA and UL Standard 181 and shall be listed and labeled as Class I Air Duct.

B. Flexible air ducts and connectors shall be tri-laminate:

1. Consisting of corrosion resistant galvanized steel helix encapsulated by a double lamination of polyethylene or spun bond nylon.

2. Factory applied (R 6.0) fiberglass exterior insulation, sheathed in a seamless, tri-directionally reinforced, metalized polyester, exterior vapor barrier.

3. R-value shall be classified by Underwriters Laboratories, and certified by the Air Diffusion Council, in accordance with ADC Flexible Duct Performance and Installation Standard (1991), using ASTM C-518, at installed wall thickness, on flat insulation only. Comply with ASHRAE/IESNA 90.1.

4. Recommended operating pressure for flexible ductwork shall be three times maximum system press but not less than 6 in. w.g. positive pressure for 4 in. - 20 in. dia., 5 in. w.g. negative pressure through 16 in. dia., 1 in. negative pressure for 18 in. and 20 in. dia. Maximum velocity of 5500 fpm.

5. Operating temperature range - 20°F to 250°F, intermittent @1/2 in. pos. w.g. max., -20°F to 140°F, continuous at maximum pressure.

6. Flame Spread: 25 max. smoke developed rating: 50 max.

7. Porous inner core flexible duct shall not be used.

C. Static pressure and thermal performance shall be tested and certified in accordance with Air Diffusion Council (ADC) Test Code FD-72-R1 under conditions of 140°F for 164 hours and 180°F for 4 hours.

D. Acoustical performance shall be certified in accordance with ASTM E 477 and/or Air Diffusion Council Test Code FD-72-R1.

1. Minimum Acoustic Performance:

a. The insertion loss (dB) of a 6 foot length of duct when tested in accordance with ASTM E477 at a velocity of 1000 feet per minute shall be at least:

	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
8 inch dia.	26	27	27	31	32	27
12 inch dia	22	26	24	31	31	20

E. Friction loss and leakage for flexible duct only shall be certified in accordance with Air Diffusion Council Test Code FD-72-R1. Leakage for connections shall be accordance with UL 181 requirements.

F. Basis-of-Design: Flexmaster 6B (R-6.0).

G. Acceptable Manufacturers:

1. Dundas-Jafine Type SPC R6.0.

2. Hart & Cooley Type F216 (R-6.0).

3. Flexible Technologies, Inc. Thermaflex Type M-KE (R-6.0).

4. Atco Rubber Products, Inc. Type 036 (R-6.0).

2.8 FLEXIBLE AIR DUCT ELBOW SUPPORT

A. Provide flexible duct elbow support for flexible duct connected directly to a diffuser collar.

B. Elbow support shall be a radius forming brace designed to form flexible duct into a 90° elbow not less than one duct diameter in centerline radius.

C. Elbow support shall be manufactured from 100% recycled copolymer polypropylene with a universal fit of 4 in. thru 16 in. and be UL listed.

2.9 FLEXIBLE AIR CONNECTIONS TO FANS AND EQUIPMENT

A. Basis-of-Design: Ventfabrics, Inc.

B. Acceptable Manufacturers: Ductmate Industries, Inc., Duro Dyne Inc., Elgen Manufacturing, Ward Industries, Inc.; a division of Hart & Cooley, Inc.

C. Materials: Flame-retardant or noncombustible fabrics, water and mildew resistant UL Standard 214.

D. Coatings and Adhesives: Comply with UL 181, Class 1.

E. Metal-Edged Connectors: Factory fabricated with a fabric strip 3-1/2 in. wide attached to two (2) strips of 2-3/4-in. wide, 0.028-in. thick, galvanized sheet steel or 0.032 in. thick aluminum sheets. Provide metal compatible with connected ducts.

F. Indoor System, Flexible Connector Fabric: Glass fabric double coated with neoprene.

1. Minimum Weight: 26 oz./sq. yd.

2. Tensile Strength: 480 lbf/in. in the warp and 360 lbf/in. in the filling.

3. Service Temperature: Minus 40 to plus 200°F.

G. High-Corrosive-Environment System, Flexible Connectors: Glass fabric with chemical-resistant coating.

1. Minimum Weight: 14 oz./sq. yd.

2. Tensile Strength: 450 lbf/in. in the warp and 340 lbf/in. in the filling.

H. Thrust Limits: Combination coil spring and elastomeric insert with spring and insert in compression, and with a load stop. Include rod and angle-iron brackets for attaching to fan discharge and duct.

1. Frame: Steel, fabricated for connection to threaded rods and to allow for a maximum of 30 degrees of angular rod misalignment without binding or reducing isolation efficiency.

2. Outdoor Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.

3. Minimum Additional Travel: 50 percent of the required deflection at rated load.

4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.

5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

6. Elastomeric Element: Molded, oil-resistant rubber or neoprene.

7. Coil Spring: Factory set and field adjustable for a maximum of 1/4-in. movement at start and stop.

2.10 FLEXIBLE PVC HOSE

A. Flexible PVC hose shall be constructed in compliance UL Standard 94V-0.

B. Basis-of-Design: BLO-R-Vac McMaster-Carr Part No. 566K46 (12 in. duct).

C. Materials: Flame-retardant, flexible PVC with metal spiral.

D. Size: Refer to plans.

E. Color: Blue.

2.11 ACCESS DOORS

A. General:

1. Provide access doors of adequate size to allow easy access to the equipment that will require maintenance. Provide insulated or acoustically lined doors to prevent condensation where applicable.

2. Manufacturer to provide an installed neoprene gasket around perimeter of access door for airtight seal.

3. Systems 3 in. w.g. or less shall utilize a hinged, cam, or hinged and cam square framed access door.

4. Systems 4 in. w.g. and above shall utilize a sandwich type access door. Construct doors in accordance with Figure 7-3 of the 2005 SMACNA Manual, "HVAC Duct Construction Standards, Metal & Flexible" Third Edition.

5. Approved Manufacturer: Ductmate Industries "Sandwich", Ruskin, Greenheck.

6. All access doors shall be continuous piano hinged type, unless noted otherwise.

7. Non-hinged only allowed where clearance to ceiling does not allow a full 90° swing.

8. Double panel insulated type when used in insulated duct.

9. Single panel uninsulated type allowed in un-insulated duct.

10. Pressure rated according to system in which being installed. Door-to-frame and frame-to-duct gasketing.

11. Provide specified Seal Class A or B ductwork sealing around frame, and hand adjust the latch tension for proper seal, on all access doors other than sandwich panel (Ductmate) style.

12. MINIMUM access door size for ducts 12 in. or less in depth is 12 in. x 8 in.

13. MINIMUM access door size for ducts 12 in. to 18 in. in depth is 18 in. x 14 in.

14. MINIMUM access door size for ducts more than 18 in. in depth is 24 in. x 18 in.

15. In ducts which require multiple section fire dampers due to duct size, provide one access door for each fire damper section.

16. Access doors for fire and smoke dampers shall be permanently labeled with 1/2 in. high lettering reading "SMOKE DAMPER", "FIRE DAMPER" or FIRE/SMOKE DAMPER".

B. Door Types:

1. Low Pressure Systems (2 in. w.g. pressure class): National Controlled Air ADH-1, Ruskin ADH22, Vent Products 9701, Air Balance FSA-100, Safe Air SAH, Nailor.

2. Medium and High Pressure Systems (3 in. w.g. pressure class and higher):

a. Rectangular Duct: Ductmate Industries "Ultimate" Style Door.

b. Round Duct: Ductmate Industries Round Sandwich type, Ruskin, Greenheck. 8 in. x 4 in. for ducts 14 in. and less in diameter. Ductmate Industries Round Sandwich type 16 in. x 12 in. for ducts more than 14 in. in diameter.

c. Furnish and install factory supplied protector molding on cut medal edge for all Ductmate access doors.

d. Acceptable Manufacturers: Ductmate, Ruskin, Greenheck.

3. Doors In Outside Air Plenums: 18 gauge galvanized steel double wall door with 2 inch polyurethane foam insulation, continuous piano hinge, outswing type, Allegis latches (minimum two (2) latches per door), fully gasketed. Size as indicate on plans. AJ Door.

2.12 EXHAUST HOODS AND HOOD CONNECTIONS

A. General Requirements:

1. Provide duct connections to hoods, where furnished by others.

2. Duct material, thickness and joints as required for gases and vapors involved and per SMACNA.

2.13 DUCT ACCESSORY HARDWARE

A. Instrument Test Holes: Cast iron or cast aluminum to suit duct material, including screw cap and gasket. Size to allow insertion of pitot tube and other testing instruments and of length to suit duct-insulation thickness.

B. Ventlock 699 or 699-2 based upon insulation thickness.

C. Install duct test holes where required for duct traverse testing and balancing purposes.

PART 3 - EXECUTION

3.1 REQUIREMENTS

A. Equipment and systems shall be installed in accordance with local and state codes and regulations having jurisdiction. Bracing and hanging of ductwork shall be per SMACNA - HVAC Duct Construction Standard.

B. Install all ductwork concealed and tight to the structure above unless noted otherwise on shop drawings. Fabricate only after the approval of shop drawings, and in locations to avoid interferences.

1. Ductwork installed without approved shop drawings, which requires removal/modification and/or reinstallation due to conflicts or improper installation shall be repaired at no cost to the Owner.

C. Sizes given on contract drawings are inside dimensions.

D. The ductwork sizes and types (round and rectangular) were selected for space limitation and acoustical requirements within the building. In addition, the ductwork sizes and types were chosen to allow space above the ceilings for future ductwork, piping and/or conduit. It is not acceptable for the contractor to change the size or type of ductwork for bidding or installation unless specifically approved by the engineer.

E. Keep openings continuously closed and sealed with protective plastic wrapping during construction to prevent entrance of dirt and debris.

F. Extend access openings, damper rods and levers, to outside of external insulation make systems airtight.

G. No piping, conduit or other obstruction to airflow is permitted in ductwork.

H. Provide necessary openings, hanger inserts, framing, chases, and recesses, not provided by other trades.

I. Exposed exhaust or return registers and grilles shall be flush with face of duct; exposed supply registers and grilles shall be mounted outside airstream with 45° shoe-tap extension collars.

J. Provide 14 gauge sleeves for ducts passing through Mechanical Room floors. Set sleeves 4 in. above finished floor in Mechanical Rooms, seal watertight to floor.

K. Where a supply, return or exhaust duct is shown to be left open ended, provide hardware 0.5inch aluminum mesh screen at opening.

L. Do not utilize flexible ductwork or connection in any way to connect variable or constant volume boxes to ductwork.

M. Penetrations:

1. Provide 14 gauge sleeves for ducts passing through Mechanical Room floors. Set sleeves 4 in. above finished floor in Mechanical Rooms, seal watertight to floor.

2. For duct penetrations of non-rated walls, provide sheet metal angle framing or sheet metal closure panels around the entire perimeter of each duct wall penetration on both sides of the wall, where the gap exceeds 1/4 inch. Where the gap is less than 1/4 inch, the gap may be caulked on both sides of the wall. Non-rated wall penetrations SHALL NOT be fire caulked under any circumstances.

3. For duct penetrations of rated walls, see Specification Section 230500 - Basic Mechanical and Electrical Requirements.

N. Ductwork that is called for to be welded shall be fully welded, continuous around the entire perimeter at all joints/seams, and shall be fully airtight and watertight.

3.2 TEST OF DUCTWORK

A. Conduct duct leakage tests per SMACNA "HVAC Air Duct Leakage Test Manual" and per the requirements of the Energy Conservation Construction Code of New York State, for ductwork systems as indicated below. Positive pressure leakage testing is acceptable for negative pressure ductwork. The rate of air leakage (CL) must be less than or equal to 4.0 for rectangular ductwork and 2.0 for round ductwork, as determined by the equation in the code referenced above, which reads: $CL=F/P^{0.65}$ where F = measured leakage rate in CFM per 100 sq. ft. of duct surface, and P = static pressure of the test. When leakage above stated limits occurs, ascertain location of leaks and rebuild, repair, or seal the ductwork as required. Repeat tests as required to obtain allowable leakage rates. Prepare a report similar to that suggested by SMACNA and submit for review.

B. Leakage testing shall be witnessed by representatives from Cornell University.

C. Systems designed to operate at static pressures of 3.0" w.c. and below: All duct mains, duct sub-mains, duct branch mains, and duct risers shall be leak tested. If any of the duct sections fail the leakage test, the entire system shall be re-tested until it passes. Duct mains and sub-mains shall include all supply and return ductwork from an air handling unit, to the space(s) served. Branch ducts to terminal units, diffusers and grilles do not require testing, and pressure testing should be done prior to making the branch duct connections.

1. A duct main is defined as a duct containing the system's total airflow.

2. A duct sub-main is defined as a duct containing part of the system's airflow and serving two or more duct branch mains.

3. A duct branch main is defined as a duct serving two or more terminals.

4. A branch duct is defined as a duct serving a single terminal.

5. A terminal unit is defined as a VAV terminal.

D. Provide test reports indicating pressure tests performed. Include date, approved shop drawings with the section tested highlighted, test pressure and leakage rate.

E. Ductwork not required to be tested for leakage, shall be checked and guaranteed to meet the standards of the specified SMACNA Duct Seal Class A. All joints and connections on this ductwork shall be sealed using the approved ductwork sealant. Air balancing and testing shall be used to determine satisfactory operation of duct systems. Balancing reports indicating excessive leakage amounts shall be required to rebuild, repair or seal ductwork having excessive leakage.

3.3 INSTALLATION OF ROUND DUCTWORK

A. Use factory-fabricated couplings for joints.

B. After the joint is slipped together, sheet metal screws are placed 1/2 in. from the joint bead for mechanical strength.

C. Sealer is applied to the outside of the joint and covering the screw heads.

D. Flanged joints shall be made with neoprene rubber gaskets.

3.4 DUCT SEALING

A. Preparation:

1. Clean surfaces of dirt, oil, grease and loose of foreign matter that could impair adhesion, using soap and water or solvent.

2. Allow surfaces to dry completely before proceeding.

B. Installation of Sealant System:

1. Apply sealant system to duct joints, fasteners, and seams in accordance with manufacturer's instructions.

2. Apply sealant by brush, putty knife or caulk gun, to full coverage. Remove excess adhesive immediately.

3. Completely seal duct joint, fasteners and seams without voids, to a minimum 20 mil thick wet film.

4. Apply and store at ambient temperature of 40°F to 100°F; and protect from freezing until dry.

C. Field Quality Control:

1. Allow duct sealant system to cure a minimum of 72 hours before operating the system.

2. Do not apply external duct insulation or coatings until the joints have been inspected by the Owner's Representative.

3.5 AIR AND WATERTIGHT DUCTWORK

A. Where water and snow may accumulate on ductwork or where odors or corrosive gasses may collect, ductwork and plenums shall be made watertight by soldering, brazing or welding of joints. Grade ducts down toward waste points and/or toward louvers. Provide valve and drain piping from low point to waste point.

1. Chemical fume hood exhaust.

2. Intake and exhaust plenums.

3. Canopy hood and exhaust ductwork.

B. Test for Watertightness: Before concealment, apply water by hose to check for leaks, witnessed by Owner's Representative.

3.6 TURNING VANES

A. Install only in square elbows of equal dimensions.

B. Install as per latest SMACNA Standards.

C. Secure vane runners to duct with spot welding, riveting or sheet metal screws.

D. When installing in ductwork with internal insulation.

1. Install runners in ductwork inside insulation and bolt through insulation and duct sides, welding bolts to insure rigid installation. Provide build-outs for duct Velocity-Pressure classes above 2 in. w.g.

3.7 DAMPERS AND AIR CONTROL DEVICES

A. Provide volume dampers at all air outlets, diffusers, grilles and as noted on plans. Provide volume dampers at all low pressure supply, return and exhaust, branch ducts and as noted on the plans.

B. Provide dampers necessary to permit proper balancing of air quantities. Comply with code requirements for smoke and fire control. Prevent introduction of uncontrolled outside air into building through roof and wall openings.

C. Install all dampers furnished as part of "Building Management System" Section.

D. Install fire and smoke dampers in accordance with "Fire and Smoke Dampers" Section and applicable codes.

3.8 FLEXIBLE AIR DUCTS

A. For round to oval connections, provide round-oval flexible adapter.

B. Flexible air ducts shall be provided in fully extended condition, free from kinks.

C. Flexible air ducts and connectors shall not be used in systems with entering air temperatures in excess of 250°F.

D. Flexible air ducts shall use only the minimum length required to make the connection and shall be installed in the horizontal or vertical position. Do not exceed a maximum length of 36 in., fully extended.

E. Flexible air ducts shall use minimum 1/2 in. wide positive locking, steel worm drive clamp, or nylon plenum rated straps for joints and connections. One clamp or strap for the inside core liner and one clamp or strap for the outer jacketing. When non-metallic (nylon) straps are used, they should be listed and labeled to standard UL 181B. Fastener package should be marked UL 181 B-C.

F. Collars to which flexible duct is attached shall be beaded and a minimum of 2 in. in length.
Wrap twice with UL 181 tape and secure with clamp or strap. Sleeves used for joining two sections of flexible duct shall be beaded and a minimum of 4 in. in length. The draw band shall be positioned behind the bead on the metal collar.

G. Outer vapor barrier and insulation shall be slid over inner core and collar, wrapped twice with UL 151 tape and secured with a clamp or strap.

H. Connections shall be per SMACNA "HVAC Duct Construction Standards - Metal and Flexible", Air Diffusion Council "Flexible Duct Performance and Installation Standards" and NAIMA Installation Standards.

I. Flexible duct shall be supported at manufacturer's recommended intervals, but no greater distance than 2'-6" on center and prior to all 90 degree bends. Maximum permissible sag shall be 1/2 in. per foot of support spacing. Provide a minimum of one hanger on each run of flexible duct.

J. A connection to rigid duct or equipment shall be considered a support joint. Long horizontal duct runs with sharp bends shall have additional supports before and after the bend approximately one duct diameter from the centerline of the bend.

K. Hanger or saddle material in contact with the flexible duct shall be of sufficient width to prevent any restriction of the internal diameter of the duct when the weight of the supported section rests on the hanger or saddle material. In no case shall the material contacting the flexible duct be less than 1-1/2 in. wide.

Factory installed suspension systems integral to the flexible duct are an acceptable alternative hanging method when the manufacturer's recommended procedures are followed.

L. The hanger shall be strapped around the flexible duct and secured to the structure above. Hangers shall not be attached to other mechanical or electrical objects. Hangers may be attached to an approved trapeze. Ceiling grid shall not be used to fabricate a trapeze. Support hangers shall be installed horizontal. Screws shall not be used to penetrate the flexible duct to attach to the hanger.

M. Provide flexible duct connections and splices in accordance with manufacturer's recommended installation instructions.

N. Seal flexible duct connections with sealing materials listed and labeled in accordance with UL 181B. Mechanically secure connections with approved clamping materials.

3.9 FLEXIBLE AIR CONNECTORS TO FANS AND EQUIPMENT

A. Provide flexible connections for the intake and discharge connections of duct connected to fans and air handling equipment.

B. Round connections are to be made with adhesive and metal drawbands with ends tightly bolted.

C. Rectangular connections shall be made with material securely held in grooved seam between flanges. Attach with adhesive and mechanical fasteners on 6 in. centers.

D. Connections shall be made with a minimum of 2 in. space between duct and equipment collars, installed in line, and with 1 in. excess material folded so as not to interfere with airflow through connection.

E. Mechanically fastened and sealed, with specified duct sealant, at duct and equipment connections.

3.10 DUCT CLEANLINESS AND CLEANING AFTER INSTALLATION

A. Duct Cleanliness:

1. All ductwork on the project shall meet the SMACNA Duct Cleanliness For New Construction Guidelines, "Advanced Level" of duct cleanliness for production, delivery, storage and installation of ductwork.

2. Prior to shipment to the jobsite, all duct ends and openings must be covered with a heavy duty, dual-ply, clear polyethylene protective film. Open ends are to be kept covered during transport, storage, and installation. As ductwork is installed at the job site, open ends are to be covered to maintain cleanliness.

3. The film must be securely affixed to protect against dirt and debris, and must be translucent to facilitate inspection of interior surfaces without removing the film.

The film is have a elongation rating of 600% and a break strength of 13.1 lbs./in. The film shall contain no VOC's, and shall leave no residue on duct after removal.

4. Manufacturer: Ductmate Industries ProGuard (heavy duty grade clear).

B. Cleaning After Installation:

1. Interior surfaces shall be free of dust and debris prior to initial start up. Protect equipment which may be harmed by excessive dirt with filters, or bypass during cleaning. Provide adequate access into ductwork for cleaning purposes. Any cleaning of duct systems shall comply with recommendations of NAIMA and NADCA.

2. Clean external surfaces of foreign substances that might cause corrosion, deterioration of the metal, or where ductwork is to be painted.

3. Clean debris from system before fans are turned on.

4. Keep openings continuously closed during the construction period.

5. Pay damages resulting from dirt blown on painted or other finished surfaces.

6. Repair or replace damaged fan wheels, dampers, or other system parts damaged as a result of debris.

7. Clean system as many times as required until the entire system is dirt free.

3.11 FLEXIBLE PVC HOSE

A. Provide quick release clamp for connection to fume hood and ductwork.

B. Flexible PVC hose shall be provided in fully extended condition, free from kinks when fume hood is at ADA height.

C. Flexible PVC hose shall not be used in systems with entering air temperatures in excess of 160°F.

D. Flexible PVC hose shall use only the minimum length required to make the connection and accommodate the adjustable height fume hood. Do not exceed a maximum length of 24 in., fully extended.

3.12 ACCESS DOORS

A. Provide for access to upstream side of duct mounted reheat coils, dampers, damper motors, fire dampers, smoke dampers, smoke detectors, control devices, fan bearings, and equipment requiring periodic inspection or service. Provide labels for fire and smoke dampers as called for in Part 2 - Products.

B. For ducts that are too small to install an access door of the minimum specified size, provide a 12 in. long section of removable ductwork for maintenance and inspection access. Removable ductwork shall be fastened between device requiring access and next duct section with duct flanges or Donaldson Torit clamp with PVC foam seal. For ducts that are required to be insulated, provisions shall be made to allow insulation to be easily removed and re-installed.

3.13 DUCT SUPPORTS

A. Provide per SMACNA, same material as duct. Hanger bands to extend down sides and turn under bottom 2 in. Minimum two metal screws per hanger. Angle iron on larger duct spaced per building structural system but not greater that 8 ft. Provide extra support angles as required.

B. Provide additional supports as required to support reheat coils, air terminal units, filter enclosures, and any other duct mounted equipment independent from the associated ductwork system.

3.14 SMOKE DETECTION

A. Smoke detectors shall be furnished by Division 28 " Electronic Safety and Security ". This Contractor shall install detectors located in ductwork. Clearly indicate locations of smoke detectors on the sheet metal shop drawings.

B. Increase duct size at smoke detectors, where required for proper installation, per smoke detector manufacturer's recommendations. Coordinate minimum duct size required with Division 28 " Electronic Safety and Security".

EXHIBIT I - DUCTWORK MATERIALS

SERVICE	MATERIAL	SPECIAL REQUIREMENTS
Supply, return, vent, relief, outside, general exhaust, laboratory exhaust excluding fume hood exhaust, canopy exhaust excluding sterilizer exhaust.	Lock forming quality, galvanized steel ASTM A653 and A924, galvaneal/paint grip if not insulated and exposed	Joints and features as called for
Exterior double wall ductwork	Pre-manufactured l, double wall, 3 in. rigid insulation (min. installed R value of 12) between walls, solid inner galvanized liner with thickness per SMACNA, outer duct aluminum one gauge heavier (ready for paint)	Horizontal top surfaces cross-broken for positive water drainage where shown as rectangular, Ductmate joints, seal Class A, and outdoor duct sealant applied per spec, watertight construction.
Fume hood exhaust (from fume hood to point of connection to the main)	Type 316 stainless steel	Braze or weld airtight/watertight
Vacuum pump & ~~Corrosive~~ corrosive c~~C~~abinet ~~Exhaust~~ exhaust (from termination to point of connection to the main)	Type 316 stainless steel	Braze or weld airtight/watertight
Sterilizer canopy hood exhaust (from hood to connection to the main)	Type 304 stainless steel	Braze or weld airtight/watertight
Cold room supply and exhaust (from cold room to connection to the main)	Aluminum	Aluminum fasteners
Accessories, dampers and air turns	Same material and gauge as parent duct	----------
Field constructed apparatus casings	Galvanized steel ASTM 525	Sealed airtight

END OF SECTION 23 31 00

SECTION 26 28 16.13
ENCLOSED CIRCUIT BREAKERS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Enclosed circuit breakers.

1.2 RELATED REQUIREMENTS

A. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
B. Section 26 05 29 - Hangers and Supports for Electrical Systems.
C. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.
D. Section 26 05 73 - Power System Studies: Additional criteria for the selection and adjustment of equipment and associated protective devices specified in this section.

1.3 REFERENCE STANDARDS

A. FS W-C-375 - Circuit Breakers, Molded Case; Branch Circuit and Service; 2013e, with Amendments (2022).
B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.
C. NEMA EN 10250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2024.
D. NETA ATS - Standard for Acceptance Testing Specifications for Electrical Power Equipment And Systems; 2025.
E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
F. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
G. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
H. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate work with other trades. Avoid placement of ductwork, piping, equipment, or other potential obstructions within dedicated equipment spaces and within working clearances for electrical equipment required by NFPA 70.
   2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
   3. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
   4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.5 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for circuit breakers, enclosures, and other installed components and accessories.
B. Shop Drawings: Indicate outline and support point dimensions, voltage and current ratings, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.
   1. Include dimensioned plan and elevation views of enclosed circuit breakers and adjacent equipment with all required clearances indicated.

1.6 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. ABB/GE
B. Eaton Corporation
C. Schneider Electric; Square D Products
D. Siemens Industry, Inc
E. Source Limitations: Furnish enclosed circuit breakers and associated components produced by the same manufacturer as the other electrical distribution equipment used for this project and obtained from a single supplier.

2.2 ENCLOSED CIRCUIT BREAKERS

A. Description: Units consisting of molded case circuit breakers individually mounted in enclosures.
B. Provide products listed, classified, and labeled as suitable for the purpose intended.
C. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
    1. Altitude: Less than 6,600 feet (2,000 m).
    2. Ambient Temperature: Between 23 degrees F (-5 degrees C) and 104 degrees F (40 degrees C).
D. Short Circuit Current Rating:
    1. Provide enclosed circuit breakers with listed short circuit current rating not less than the available fault current at the installed location as determined by short circuit study performed in accordance with Section 26 05 73.
E. Conductor Terminations: Suitable for use with the conductors to be installed.
F. Provide thermal magnetic circuit breakers unless otherwise indicated.
G. Provide electronic trip circuit breakers where indicated.
H. Provide solidly bonded equipment ground bus in each enclosed circuit breaker, with a suitable lug for terminating each equipment grounding conductor.
I. Enclosures: Comply with NEMA EN 10250, and list and label as complying with UL 50 and UL 50E.
    1. Environment Type per NEMA EN 10250: Unless otherwise indicated, as specified for the following installation locations:
        a. Indoor Clean, Dry Locations: Type 1.
        b. Outdoor Locations: Type 3R.
    2. Finish for Painted Steel Enclosures: Manufacturer's standard, factory applied grey unless otherwise indicated.
    3. Provide surface-mounted enclosures unless otherwise indicated.
J. Provide externally operable handle with means for locking in the OFF position.

2.3 MOLDED CASE CIRCUIT BREAKERS

A. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
B. Interrupting Capacity:
    1. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than:
        a. 10,000 rms symmetrical amperes at 240 VAC or 208 VAC.

2. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.

C. Conductor Terminations:
1. Provide mechanical lugs unless otherwise indicated.
2. Lug Material: Copper, suitable for terminating copper conductors only.

D. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.
1. Provide field-adjustable magnetic instantaneous trip setting for circuit breaker frame sizes 100 amperes and larger.

E. Electronic Trip Circuit Breakers: Furnish solid state, microprocessor-based, true rms sensing trip units.
1. Provide the following field-adjustable trip response settings:
a. Long time pickup, adjustable by replacing interchangeable trip unit or by setting dial.
b. Long time delay.
c. Short time pickup and delay.
d. Instantaneous pickup.
e. Ground fault pickup and delay where ground fault protection is indicated.

F. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.

G. Provide the following features and accessories where indicated or where used for elevator power disconnecting means:
1. Shunt Trip: Provide coil voltage as required for connection to indicated trip actuator. For elevator power disconnect, shunt trip capability to be connected to fire alarm system such that Machine room heat detector activation shall cause circuit breaker to trip. Coordinate with F and FA drawings/specifications.
2. Auxiliary Switch: SPDT switch suitable for connection to system indicated for indicating when circuit breaker has tripped or been turned off.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that the ratings of the enclosed circuit breakers are consistent with the indicated requirements.

C. Verify that mounting surfaces are ready to receive enclosed circuit breakers.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Provide required support and attachment in accordance with Section 26 05 29.

E. Install enclosed circuit breakers plumb.

F. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed circuit breakers such that the highest position of the operating handle does not exceed 79 inches (2000 mm) above the floor or working platform.

G. Provide grounding and bonding in accordance with Section 26 05 26.

H. Set field-adjustable circuit breaker tripping function settings as determined by overcurrent protective device coordination study performed according to Section 26 05 73.

I. Identify enclosed circuit breakers in accordance with Section 26 05 53.

3.3 FIELD QUALITY CONTROL

A. Inspect and test in accordance with manufacturer's instructions and NETA ATS, except Section 4.

B. Perform inspections and tests listed in NETA ATS, Section 7.6.1.1. Tests listed as optional are not required.

C. Test shunt trips to verify proper operation.

D. Correct deficiencies and replace damaged or defective enclosed circuit breakers.

3.4 ADJUSTING

A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

3.5 CLEANING

A. Clean dirt and debris from circuit breaker enclosures and components according to manufacturer's instructions.

B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

Lighting Fixture Schedule

Schuler Shook
LIGHTING DESIGN / THEATRE PLANNING / AUDIO VIDEO DESIGN
240 W 40th St, 2nd Floor
New York, New York 10018
+1 212 439 5650

Project: Cornell University, Renovated Plant Science Building Phase 2
Architect: Ellenzweig Architecture | Planning, Boston MA

General Notes and Instructions:

1. Voltage for all luminaire types to be confirmed by Electrical Engineer and Contractor.
2. All controls are to be hardwired. Refer to Lighting Control Specifications for additional information.
3. All stem lengths, special mounting details, etc. to be confirmed by Contractor with Architect.
4. Provide specified luminaires or equal in all respects by alternate approved manufacturer as listed only.
5. Shop drawings submittals, including unit pricing, must be received within 21 days following award of bid for review and approval by Lighting Designer and Electrical Engineers.
6. All luminaire finishes to be confirmed by Architect.
7. All lumen outputs shown for LED luminaires are delivered lumens. Luminaires considered for alternates must have comparable delivered output.
8. Correlated Color Temperature (CCT) 3500 degrees Kelvin (unless requested otherwise). A minimum of Color Rendering index (CRI) of 80.

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AD01	LED 3" Round Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 14W Lumens Delivered: 1408 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33RF-15-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF Alt Mfr: Lightheaded Lighting Camber/Taper Series, Lucifer Lighting Faxion Series, USA Illumination BeveLED 2.2 Series, Lumenwerx Voila 4 Series	IP44 Rated Emergency where required.	Throughout
AD01a	LED 3" Round Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 14W Lumens Delivered: 1408 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33RF-15-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF-WL Alt Mfr: Lightheaded Lighting Camber/Taper Series, Lucifer Lighting Faxion Series, USA Illumination BeveLED 2.2 Series, Lumenwerx Voila 4 Series	Same as AD01, except: Wet-Location Rated Emergency where required.	Showers

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AD02	LED 3" Round Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 22W Lumens Delivered: 2132 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33RF-22-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF Alt Mfr: Lightheaded Lighting Camber/Taper Series, Lucifer Lighting Faxion Series, USA Illumination BeveLED 2.2 Series, Lumenwerx Voila 4 Series	Emergency where required.	Research Labs, Ground Flr Meeting Room
AD03	Type not used in Ph2						
AD04	LED 3" Square Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 14W Lumens Delivered: 1408 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33SF-15-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF Alt Mfr: Lightheaded Lighting Camber/Taper Series, Lucifer Lighting Faxion Series, USA Illumination BeveLED 2.2 Series, Lumenwerx Voila 4 Series	IP44 Rated Emergency where required.	Circulation Throughout
AD10	LED 24" Round Pendant	Ceiling, Suspended	Nominal Aperture: 24" Round Nominal Size: 4"H x 24"O.D. Optics: Diffuse Lens Suspension Style: Rigid Stem Internal Reflector: White Finish: White Housing: Diffuse acrylic Driver: Integral - Dimming, 0-10V Voltage: Univ 120-277V	Wattage: 22.4W Lumens Delivered: 3000 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: RUBO Model: 3G-PRU24-L30-S80-35K-UNV-DIM-WH-RSW-S__ Alt Mfr: Lumenwerx POP, Axis Helios, Prulite P4000	Contractor to confirm stem length prior to ordering. Emergency where required.	Stair 2
AF01	LED Troffer	Ceiling, Recessed	Nominal Aperture: N/A Nominal Size: 24" W x 48" L x 2 1/2" H Optics: Diffuse Lens, with Center Element Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Cold Rolled Steel Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Universal 120-277V	Wattage: 60W Lumens Delivered: 7800 lm Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Visioneering by Viscor Series: LRTH Series Model: LRTH2X4-LED835K078LCUNV Alt Mfr: Mercury Lighitng LR402 Series, Day-O-Lite Harmony Series, Axis Lighting Aura, Cooper Lighting Metalux Encounter 24EN	Emergency where required. Ultra Shallow Recess Luminaire Suitable for Damp Location	Support Lab Spaces, Flex Lab,

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AF02	LED Troffer - Wet Location	Ceiling, Recessed	Nominal Aperture: N/A Nominal Size: 24" W x 48" L x 3 15/16" H Optics: Diffuse Lens, Flush with Center Element Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Cold Rolled Steel Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Universal 120-277V	Wattage: 60W Lumens Delivered: 7800 lm Type: LED Board Color Temp: 3500K Min CRI: 81	Mfr: Visioneering by Viscor Series: LRTH Series Model: LRTH-C29-2X4-LED835K078LCUNV Alt Mfr: Mercury Lighitng LR402 Series, Day-O-Lite Harmony Series, Axis Lighting Aura, Cooper Lighting Metalux Encounter 24EN	Emergency where required. Ultra Shallow Recess Luminaire Suitable for Wet Location	Field Work Suite
AK01 & AK01b	LED Lab Bench Task Lighting	Lab Shelving			Note: Lab bench lighting to be supplied as of casework package. Refer to 12 35 53 Laboratory Casework for additional information		Laboratory
AK03	LED Linear Light - Wall	Ceiling, Surface - Vertical & Horizontal Mount	Nominal Aperture: Nominal Size: 1.14" W x .6" H x 11'-0" Overall Length Optics: Diffuse Lens with Omni Directional Distribution Trim Style: Round Profile Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: (2x) 3W/ft Lumens Delivered: (2x) 233lm/ft Type: LED Tape Color Temp: 3500K Min CRI: 80	Mfr: Klus Housing: GIZA B5556-W-LC-35-1220/2-24-XX'-P-TBD-IP20 LED Tape: K-CR-1220-24V Provide Remote 0-10V Dimmable Driver Alt Mfr: Luminii Bara Series, Acolyte AT4 Series, Klus Giza Series	Note: Provide (2x) runs of LED tape for total output of ~450lm/ft. Provide 25' wire harness. Architect to coordinate mounting hardware. Luminaire is available with mounting clip and magnetic metal strip. Contractor to coordinate location of remote power supplies. Emergency where required.	1st Floor Corridor Connector/ Vestibule
AP01 - 04'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3,25" W 3.1" H x 4'-0"L Optics: Diffuse Lens, Regressed 18% Up / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP|80DN LED Model: PF1-B-D-C-35-W-04-G-E1-M-03 Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Faculty Office, Write-Up, Admin

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AP01 - 08'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3,25" W 3.1" H x 8'-0"L Optics: Diffuse Lens, Regressed 18% Up / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP|80DN LED Model: PF1-B-D-D-35-W-08-G-E1-M-03 Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Faculty Office, Write-Up, Admin
AP01 - 10'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3,25" W 3.1" H x 10'-0"L Optics: Diffuse Lens, Regressed 18% Up / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP|80DN LED Model: PF1-B-D-D-35-W-10'-G-E1-M-03 Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	4th Floor Write-Up, Admin
AP01 - 12'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3,25" W 3.1" H x 12'-0"L Optics: Diffuse Lens, Regressed 18% UP / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP|80DN LED Model: PF1-B-D-D-35-W-12-G-E1-M-03-G Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. Luminaire provided with 6'-0" modules for 12ft row. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Faculty Office, Write-Up, Admin
AP01 - 20'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3,25" W 3.1" H x 20'-0"L Optics: Diffuse Lens, Regressed 18% UP / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP|80DN LED Model: PF1-B-D-D-35-W-20-G-E1-M-03-G Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. Luminaire provided with 6'-0" and 8'-0" modules for 20ft row. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Faculty Office, Write-Up, Admin

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AP02 - 04'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3,25" W 3.1" H x 4'-0"L Optics: Diffuse Lens, Regressed 60% UP / 40% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile INDEP. UP|DN LED Model: PF3-B-B-D-35-W-04-D-E1-M-03-F Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for independent up and down operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated clip provide by Manufacturer.	1st Flr Heart Event Space
AP03 - 6'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3,25" W 3.1" H x 6'-0"L Optics: Diffuse Lens, Regressed 18% UP /82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP|80DN LED Model: PF1-B-D-D-35-W-06-G-E1-M-03-F Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Classroom, Teaching Lab,
AP03 - 10'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3,25" W 3.1" H x 10'-0"L Optics: Diffuse Lens, Regressed 18% UP /82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP|80DN LED Model: PF1-B-D-D-35-W-10-G-E1-M-03-F Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Classroom, Teaching Lab,

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AP03 - 12'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3,25" W 3.1" H x 12'-0"L Optics: Diffuse Lens, Regressed 18%UP / 82%DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP|80DN LED Model: PF1-B-D-D-35-W-12-G-E1-M-03-G Luminaire to be provide for 2 circuit operation - 8'-0" and 4'-0" section - 4'-0" section near window location to controlled by a daylight response protocol. Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for two circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Research Labs
AS01-04'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 4'-0" L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG500-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout
AS01-06'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x"H x 6'-0" L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG500-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AS01-08'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 8'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG500-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout
AS01-12'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 12'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG500-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout
AS01-16'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 16'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG500-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AS01a	LED Slotlight	Ceiling, Suspended	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x Length Optics: Diffuse Lens, Flush Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-LIN-FLSH-LED35-PROG500-XX'-TMW-SAL-SC-UNV-CA48-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	Same as AS01, except suspended mounting. DLC Certified luminaire. Emergency where required.	Corridor 40040
AS02-04'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 4'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG750-XX'-TMW-SAL-LP-SC(10'DC)-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Ground, 1st, 2nd, 3rd Flr Lab Circulation
AS02-08'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 4-1/32" W x 3-3/4"H x 8'-0" L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 7.25W/ft Lumens Delivered: 750lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG750-XX'-TMW-SAL-LP-SC(10'DC)-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Ground Floor Office

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AS03-12'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 4-1/32" W x 3-3/4"H x 12'-0" L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 7.25W/ft Lumens Delivered: 750lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG750-XX'-TMW-SAL-LP-SC(10'DC)-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	2nd Floor Teaching Lab
AW01	LED Perimeter Wallwasher	Ceiling, Recessed	Nominal Aperture: 3" Continuous Nominal Size: 3"W x 5"H x Various Length Optics: Diffuse Lens, Regressed Trim Style: Overlap Flange - Drywall Reflector: White Finish: W Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5.6W/ft Lumens Delivered: 640lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro3 Model: BPRO3-PER-REG1-LED35-MO-XX'-TMW-SAL-WTW-SC-UNV-X7-DM01 Alt Mfr: Axis Lighting Beam 4 Perimeter, Selux Lighting M100 Series, Lumenwerx Via3 Perimeter	Emergency where required. Various length - refer to drawings for location.	Circulation - Niche
AW01B	LED Perimeter Wallwasher	Ceiling, Recessed	Nominal Aperture: 3" Continuous Nominal Size: 3"W x 5"H x Various Length Optics: Diffuse Lens, Regressed Trim Style: Overlap Flange - Drywall Reflector: White Finish: W Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5.6W/ft Lumens Delivered: 640lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro3 Model: BPRO3-PER-REG1-LED35-MO-XX'-TMW-SAL-WTW-SC-UNV-X7-DM01 Alt Mfr: Axis Lighting Beam 4 Perimeter, Selux Lighting M100 Series, Lumenwerx Via3 Perimeter	Emergency where required. Various length - refer to drawings for location.	1st Floor Meeting Room and Breakroom

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AW03	LED Linear Wallwasher	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5"W x 4" H x Various Length (4'-6'-8'-10'-12',14') Optics: Wall Wash Distribution with Diffuse Lens, Flush Trim Style: Overlap Flange- Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5.6W/ft Lumens Delivered: 710lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-MO-XX'-TMW-WWF-LP-SC-UNV-X1-DM01 Alt Mfr: Axis Lighting Wall Wash Perfekt, Selux Lighting M100 Series, Lumenwerx Via4	Emergency where required. Various length - refer to drawings for location.	1st, 2nd and 3rd Floor - Classroom and Teaching Lab
AX01	Not Used						
AX02	LED 7" Round Downlight	Ceiling, Surface	Nominal Aperture: 7" Nominal Size: 7 7/8"OD x 5/8"H Optics: Diffuse Lens Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V Voltage: 120V	Wattage: 14W Lumens Delivered: 1000 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: Lightolier Series: SlimSurface Model: S7R835K10WZ10U Alt Mfr: Lightheaded Lighting Camber/Taper Series, Lucifer Lighting Faxion Series, USA Illumination BeveLED 2.2 Series	IP44 Rated for Outdoor Canopies Emergency where required.	South Lab Exterior Entry - Canopy
AX03	Not Used						
AX04	LED Pedestrian Pole	Post-mounted	Nominal Size: 15'H x 20" diameter Optics: Seeded Acrylic Type IV Finish: Sherwin Williams Acrolon - Classic Black Housing: Cas Aluminum Alloy Driver: Integral Voltage: 120-277V	Wattage: 40W Lumens: 3600 lm Type: LED Module Color Temp: 4000K Min CRIL 80	Mfr: Spring City Electrical Series: Northampton Pole, Edgewater top Model: ALMEDM-LE040-EVX-2G2-40-CR4-PPBP-FED-CU	Cornell University Campuse Standard pedestrian pole. Provide with 4000K CCT per campus standards. Provide with 13'-0" Pole.	
AX05	LED Wallpack Sconce	Wall, Surface	Nominal Size: 5"H x 8"W x 12"D Optics: Textured Glass Finish: TBD by Architect Housing: Cast Aluminum Driver: Integral Voltage: 120V, Phase-dim	Wattage: 20W Lumens: 1,422 lm Type: LED Module Color Temp: 3000K Min CRI: 80	Mfr: KIM Lighting Series: Site Wallforms Model: SW1-18L3K-TG	Emergency where required.	Exterior

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AX07	LED Sconce	Wall, Surface	Nominal Size: 5"H x 10"W x 3.9"D Optics: Textured Glass Finish: TBD by Architect Housing: Cast Aluminum Driver: Integral Voltage: 120V, ELV dimming	Wattage: 30W Lumens: 1,500 lm Type: LED Module Color Temp: 3000K Min CRI: 80	Mfr: WAC Lighting Series: Tube Wall Mount Model: WS-W2610-3-xx	Emergency where required.	Exterior
AZ01	LED Pendant 12'x8'	Ceiling, Suspended	Nominal Aperture: 2" Continuous Nominal Size: 2 3/4" W x 4 1/2" H x 40'-0" L Optics: Direct - Diffuse Lens, Flush, Indirect Wide Spread Suspension Style: Aircraft Cable Reflector: White Finish: Custom Finish - Wood Pattern Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 500lm/ft Direct and 600lm/ft Indirect Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Day-o-Lite Series: Profile Series Model: PRFL-24-DI-FL/BW-35-LO-**X*R-AC-CC"White Oak"-DIM10 Alt Mfr: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED, Lumenwerx Via4	Luminaire to be suspended at 9'-0" AFF. Luminaire to be designed with 1 circuit to control direct and indirect distribution simultaneously Emergency where required.	Ground, 1st, 2nd and 3rd floor - Collaboration
AZ05	LED Pendant 10'x20'	Ceiling, Suspended	Nominal Aperture: 2" Continuous Nominal Size: 2 3/4" W x 4 1/2" H x 60'-0" L Optics: Direct - Diffuse Lens, Flush, Indirect Wide Spread Suspension Style: Aircraft Cable Reflector: White Finish: Custom Finish - Wood Pattern Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 500lm/ft Direct and 600lm/ft Indirect Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Day-o-Lite Series: Profile Series Model: PRFL-24-DI-FL/BW-35-LO-**X*R-AC-CC"White Oak"-DIM10 Alt Mfr: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED, Lumenwerx Via4	Luminaire to be suspended at 9'-0" AFF. Luminaire to be designed with 1 circuit to control direct and indirect distribution simultaneously. Architect to select wood pattern finish. Contractor to coordinate mounting hardware. Emergency where required.	Large Meeting Room 340

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AZ06	LED Pendant 8'x8'	Ceiling, Suspended	Nominal Aperture: 2" Continuous Nominal Size: 2 3/4" W x 4 1/2" H x 32'-0" L Optics: Direct - Diffuse Lens, Flush, Indirect Wide Spread Suspension Style: Aircraft Cable Reflector: White Finish: Custom Finish - Wood Pattern Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Mfr: Day-o-Lite Series: Profile Series Model: PRFL-24-DI-FL/BW-35-LO-**X*R-AC-CC"White Oak"-DIM10 Alt Mfr: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED, Lumenwerx Via4	Mfr: Lumenwerx Series: Via 2 - Pattern Pendant Direct/Indirect Model: VIA2PDIPAT-HLO-FH-WIO-LED-80-500-500-35-32'-0"-LEV-90(4)-UNV-D1-1-53WAC36-CUSTOM FINISH/ Wood Pattern TBD Alt Mfr: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED	Luminaire to be suspended at 9'-0" AFF. Luminaire to be designed with 1 circuit to control direct and indirect distribution simultaneously. Architect to select wood pattern finish. Contractor to coordinate mounting hardware. Emergency where required.	North Wing

EdgeWave™ TopPro

LED LIGHTING SOLUTIONS FOR OPTIMA™ BENCH SYSTEMS

Lighting is an important aspect of health and comfort in the workplace. Good lighting is even known to improve cognitive ability. Mott's sleek EdgeWave™ TopPro LED shelf task light provides bright light, using less energy. Integrated directly into the front underside of a steel, wood, or laminate top shelf, it delivers continuous and extremely uniform lighting.

Illuminate the workspace

Workers need well-lit spaces in order to work efficiently and feel their best. Proper illumination can reduce eye fatigue and headaches. It helps workers focus with ease and encourages productivity.

Light Housing – Constructed of slim extruded aluminum with clear lens and no visible fasteners; designed to be recessed across the width of shelves. Finished bottoms will be provided on the underside of light containing steel shelves.

Hand Motion Sensor Switch – Simply wave your hand over the infrared sensor to turn on your LEDs. Wave your hand over again to turn your LEDs off.

Motion Sensor – Turns the lights on automatically when motion is detected and turns off automatically in 30 seconds when motion is not detected. It is a practical way to reduce energy costs and extend the lamp life.

Power Connection – The driver is concealed within the bench channel and the small low voltage white power plugs connect the light to the channel for easy shelf adjustability.

Optional Model – Includes an on/off switch and occupancy sensor which shuts the fixture off after 30 minutes of inactivity and back on immediately when detection is found. It has a dimming feature that allows you to adapt the light level to the task, conserving energy at the same time.

SPECIFICATIONS

Product Width - 1"
Product Lengths - Available on shelf assemblies up to 96" wide
Wattage - 6.7 watts per linear foot
Illuminance - Average 70 foot-candles to the work surface, when work surface is positioned at 36" high
Light Source Efficiency - 180 Lumens/Watt
Color Temperature - Cool White 4000k
Color Rendering Index - 82
Estimated Lifetime - Approximately 50,000 hours, with at least 70% luminous intensity retention

Barrel connector, 24V DC, center positive, 5.5mm OD, 2.5mm ID x 12mm long, driver built into bench, powered from a bench circuit.

Corporate Headquarters - 452 Hardy Rd, Brantford ON, Canada N3T 5L8 • T. 519.752.7825
Wood Casework Division - 562 Industrial Park Rd, WV, USA 24957 • T. 304.497.2115
www.mott.ca

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ISO 9001:2015 REGISTERED

QUALITY BY DESIGN

June 2019

AK01b

EdgeWave™ LowPro

LED LIGHTING SOLUTIONS FOR OPTIMA™ BENCH SYSTEMS

Dimmable On/Off Switch – Soft touch on/off dimmable light switch with programmed on/off memory; the intensity when turned off is the same intensity when turned back on. Dimmable feature not compatible with Occupancy Sensor.

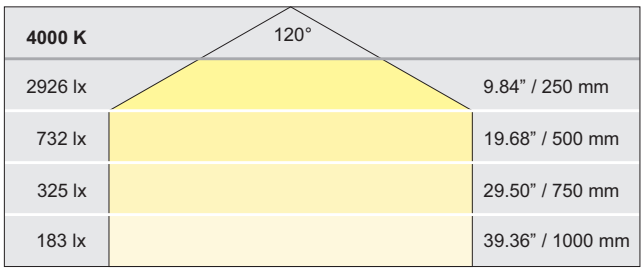
Power Connection – The driver is concealed within the ~~horizontal raceway~~. Small low voltage power plugs connect light to electrical raceway for easy shelf adjustability.

bench channel

Occupancy Sensor – It's a simple, easy, and low cost way to save energy and add automation to your lab benches. The optional sensor ensures that the lights will turn on automatically when motion is detected and turns off automatically in ~~30 seconds~~ when motion is no longer detected. Sensor does not work in conjunction with Dimmable on/off switch.

30 minutes

Product Width - 1"
Product Lengths - Available on shelf assemblies up to 96" wide
Wattage - 4.6 watts per linear foot
Illuminance - Average of 65 foot-candles to the work surface, when work surface is positioned at 36" high
System Efficacy - 91 Lumens/Watt
Color Temperature - Cool White 4000k
Color Rendering Index - 83
Estimated Lifetime - Approximately 30,000 hours, with at least 70% luminous intensity retention



Note: The values above apply to a strip light length of 3' / 1 m.

Corporate Headquarters - 452 Hardy Rd, Brantford ON, Canada N3T 5L8 • T. 519.752.7825
Wood Casework Division - 562 Industrial Park Rd, Maxwelton, WV, USA 24957 • T. 304.497.2115
www.mott.ca

LIGHTING FIXTURE CUTSHEETS

Renovate Plant Science Building Phase 2

Cornell University, Ithaca, NY

Bid Documents – 31 August 2026

Addendum No. 6 – November 19, 2026

Schuler Shook
LIGHTING DESIGN / THEATRE PLANNING / AUDIO VIDEO DESIGN
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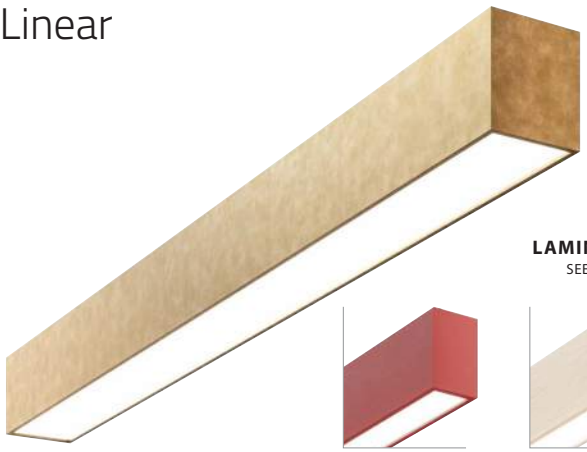
PRUDENTIAL LTG.

BionicPro4

Linear



LAMINATE FINISH OPTIONS
SEE PAGE 7 FOR ALL OPTIONS

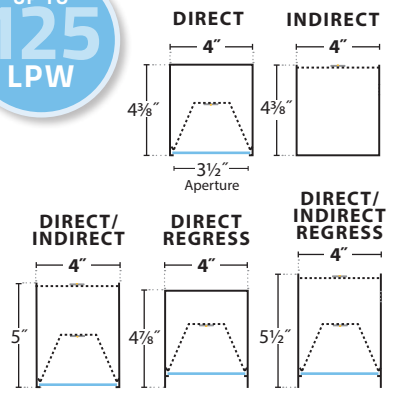
OXIDIZED GOLD

RED LEATHER

LIGHT WALNUT

VARA OAK

UP TO 125 LPW



Lumen output may vary +/– 5%
Light Loss Factor (LLF) for CCTs other than 3500K:
4000K +2%, 3000K -5%, 2700K -20%
90 CRI -15% (3K, 3500K, 4K & 5K
ADC -2% LLF
Louver LLF 30% White, 50% Silver, 70% Black

STATIC DIRECT:		LO	MO	SO	HO
SAL	Lm/Ft	460	685	925	1200
BTW	Lm/Ft	490	720	1000	1250
WWF	Lm/Ft	485	710	1000	1275
WWG / PFL	Lm/Ft	485	710	1000	1275
NGZ	Lm/Ft	550	800	1125	1500
MGZ	Lm/Ft	485	710	1000	1275
WGZ	Lm/Ft	550	800	1125	1500
LGP	Lm/Ft	485	710	1000	—
	W/Ft	3.8	5.6	7.8	10.5
INDIRECT:		LO	MO	SO	HO
SYM	Lm/Ft	625	850	1125	1400
HCW	Lm/Ft	315	475	660	825
MCW	Lm/Ft	400	550	750	1000
SCW	Lm/Ft	575	875	1170	1450
SACW	Lm/Ft	500	750	1000	1200
	W/Ft	3.8	5.6	7.8	10.5
DIRECT / INDIRECT:					
	W/Ft	7.6	11.2	15.6	21

LUMEN CHART AT 3500K-80 CRI
SEE PAGE 7 FOR REGRESS

CONTENTS:

SMART SPECS

02 — Ordering Matrix
03 — Downlights
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Downlights
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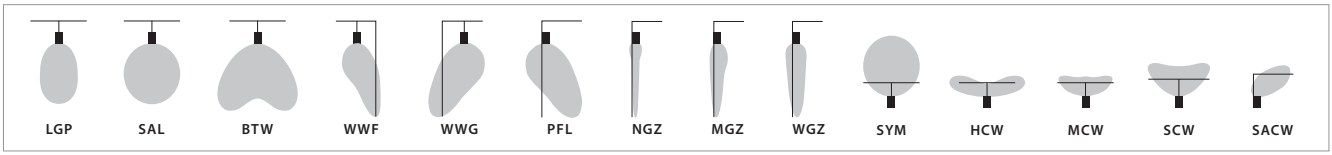
Wall Mounting
11 — WMC/WMC2 (Channels):
Surface Mounting
12 — WMU/WMU1/WMU2 (Brackets):
Wall Mounting
13 — WMU/WMU1/WMU2 (Brackets):
Surface Mounting
14 — Cable + Stem Mounting
15 — Surface + Wall Mounting
16 — Corners
17 — FTR + LGP Details
18 — Row Builder
19 — Distribution Comparisons
22 — PruHue Details
24 — LM79 + TM30 Data
25 — LM79 + TM30 PruHue Data
26 — Sensor Details

BionicPro
SERIES PAGE



TUNABLE WHITE AVAILABLE:

Tū Hue · Amber Hue · Blu Hue · Chroma Hue · SOCIAL MEDIA KIT · SEAMLESS · Declare · BABAA BUILD BUY AMERICA ACT · UGR17 WELL Building Standard · JA8 TITLE 24 · 5 YEAR LED WARRANTY · Made in the USA

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BionicPro4 | Linear

Ordering Matrix

PRUDENTIAL LTG.

TYPE: **JOB:**

SERIES	LENS POS.	LED COLOR	OUTPUT	LENGTH	COLOR / LAMINATE	LAMINATE CANOPY COLOR	LOUVER COLOR	DISTRIBUTION	
BPRO4-LIN		–	–					–	
BionicPro 4˝ Linear	FLSH Flush Lens LVR ½˝ Regress with Louver REG.5 ½˝ Regress IND Indirect Only (Select NW No Down-light)	LED27 2700K (90CRI) LED3 3000K LED35 3500K LED4 4000K LED3-90 3000K (90CRI) LED35-90 3500K (90CRI) LED4-90 4000K (90CRI) LED5-90 5000K (90CRI) **PRUHUES:** bios **STATIC:** BLU3S BLU35S BLU4S **DYNAMIC:** BLU3D* BLU35D* BLU4D* * Dynamic BIOS, SkyBlue spike can be dimmed, CCT warms slightly TU TuHue 2700-6500K Tunable White TU2 **TuHue 2200-5000K Tunable White AMB** AmberHue Warm Dim 2200K-5000K ** NA HO CHR ChromaHue RGBW (DMX at HO only) **DOWN & UP CCT IF DIFFERENT**	LO Low MO Medium SO Standard HO High PROG Programmable Light Output (Specify desired lm/ft or w/ft)	2´ 3´ 4´ 5´ 6´ 7´ 8´ R___ (Row Length, 1´ increments. Consult factory for custom lengths) SRL Symmetric Row Length (See page 13) **NOTE:** Individual fixtures are NOT intended for row mounting	TMW Textured Matte White (Standard) YGW Gloss White Y__ Premium Color CC__ Custom Color *LUXE METALLICS:* YBZ Bronze YCP Copper Penny YGN Gold Nugget **NOTE:** For LUXE finishes, Stem and Canopy are White (TMW) unless specified otherwise. **LAMINATE FINISHES** **(SPECIFY CANOPY COLOR IN NEXT COLUMN ➡)** LOK Vara Oak LEW Evreux Walnut LOG Oxidized Gold LOB Oxidized Black L__ Special Order Laminate (EXTENDED LEAD TIMES) **NOTE:** For Laminate finishes, Stem and Canopy are White (TMW) unless specified otherwise.	**(SKIP THIS COLUMN IF LAMINATE FINISH IS NOT SELECTED)** TMW Textured Matte White (Standard) YGW Gloss White Y__ Premium Color CC__ Custom Color *LUXE METALLICS:* YBZ Bronze YCP Copper Penny YGN Gold Nugget **NOTE:** For LUXE finishes, Stem and Canopy are White (TMW) unless specified otherwise.	**(SKIP THIS COLUMN IF LOUVER IS NOT SELECTED)** TMW Textured Matte White (Standard) YGW Gloss White Y__ Premium Color CC__ Custom Color *LUXE METALLICS:* YBZ Bronze YCP Copper Penny YGN Gold Nugget **NOTE:** All canopies painted White (TMW) unless specified otherwise.	**CHOOSE DOWN –AND– UP** **DOWN:** NW No Direct SAL Satin Lens BTW Batwing WWF Flat Wall Wash WWG Focal Glow Wall Wash PFL Perimeter Room Fill NGZ Narrow Wall Graze MGZ Medium Wall Graze WGZ Wide Wall Graze LGP Low Glare Prismatic (NA HO)	**UP:** NU No Indirect SYM Symmetric (Frosted ADC, Standard) HCW Hard Ceiling Wash MCW Medium Ceiling Wash SCW Soft Ceiling Wash SACW Soft Asymmetric Ceiling Wash

UP OPTIONS	CIRCUITING	VOLTAGE	MOUNTING	CEILING TYPE	DRIVERS	OPTIONS & SENSORS	
TG Top Glow ADC Acrylic Dust Cover (Clear) Standard for SYM (Frosted) TGADC Top Glow with Acrylic Dust Cover **UP OPTIONS AVAILABLE WITH ANY UP DISTRIBUTION**	SC Single Circuit (Down & Up will dim together) DC Dual Circuit (Needed if dimming Down separately from Up)	UNV (120-277) 347 (Emergency battery requires remote driver box)	**(SPECIFY CEILING TYPE IN NEXT COLUMN ➡)** CA48˝, 96˝ or 144˝ Aircraft Cable (Adjustable) SURF Surface Mount (Direct only) RSC Rigid Stem Center SSC Swivel Stem Center (~45˚ of rotation)	**CEILING TYPE:** X1 T-Bar X3 Hard Ceiling X6 Slot Grid	ND Non-Dimming DM01 0-10v, 1% Dimming (Standard) LDE1 Hi-lume 1% EcoSystem LED (Soft fade on, fade-to-black dimming) ECO 1% 0-10v, EldoLED (Logarithmic dimming std) ECDA 1% DALI, EldoLED or Equal (Logarithmic dimming std) nLight-Air Acuity nLight Drivers (ECDA driver ONLY) nLight-Wired Acuity nLight Drivers (ECO driver ONLY) SOLO 0.1% 0-10v, EldoLED (Dim-to-dark, Logarithmic dimming std) SODA 0.1% DALI, EldoLED (Dim-to-dark, Logarithmic dimming std) STEP Signify Advance Step Dimming 2WIRE ELV/Forward/Reverse Phase Driver **PRUHUES:** E10V 2 Channel Color Control EDALI 2 Channel Color Control SOLO 0.1% 0-10v, EldoLED (Dim-to-dark, Logarithmic dimming std) SODA 0.1% DALI, EldoLED (Dim-to-dark, Logarithmic dimming std) EDMX ChromaHue or Static White	EMHE CA T20 Emergency Battery (1250 Delivered lumens; CA Title 20 compliant, 2´-3´ remote) ETS-DR Iota ETS-DR Emergency Transfer Switch EMC Emergency Circuiting FTR Feather WTW Asymmetric on Perpendicular Wall (NA HO or LGP) EBCP1G /2G Single / Dual Gang (Electrical Box Cover Plate/ Mud Ring) EQK Seismic Attachment (CA mount only) COS Custom On-Center Spacing for Wall/Surface Brackets JA8 90 CRI, ECO or 2WIRE (consult factory for pricing) **SENSORS: (NA w/EDMX)** 205 WattStopper PIR Occupancy **205-ON/OFF** **205-STEP:** Dim to 50% **205-DM:** Dim to 1% (NA with DALI) ATHENA Lutron RF (Dim-to-Off Standard) LVOC‡‡ Lutron Vive (Occ & RF) LVRF‡‡ Lutron Vive (RF Only) ‡‡ Requires Lutron driver NXSMP Hubbell (Occ) rES7 Daylight+(PIR Acoustic) (Occ) (nLight-Air) Part Number: rES7-PDT-180D-G2 nES7 Daylight+(PIR Acoustic) (Occ) LUX Philips DLR	**CORNERS:** C2-60 Lit 60° C2-90 Lit 90° C2-120 Lit 120° C2-135 Lit 135° C3T Lit 90° 3-Way: T C3Y Lit 120° 3-Way: Y C4T Lit 90° 4-Way: + C4X Lit 45°-135° 4-Way: X C8I Lit Inside 2-Plane C8O Lit Outside 2-Plane **90˚ LOUVERS AVAILABLE (CONSULT FACTORY FOR OTHER ANGLES)** LRT Linear to Recessed Transition (Straight rows only) DWNLT Downlights
			(SPECIFY MOUNTING LOCATION IN NEXT COLUMN ➡) WMC (Channel) .75˝ Tall Continuous Channel WMC2 (Channel) 2˝ Tall Continuous Channel WMU (Bracket) .5˝ Tall Bracket WMU1 (Bracket) 1˝ Tall Bracket WMU2 (Bracket) 2˝ Tall Bracket	**MOUNTING LOCATION:** WALL (For Wall or Mullion Mount) SUR Ceiling			
			WM Direct to Wall WBx.x Wall Bracket (2˝-6˝ in .5˝ increments, 3˝ standard if not specified)	WALL			

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BionicPro4 | Linear
Downlights

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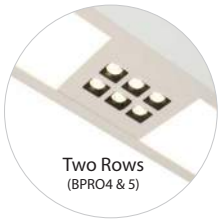
Want Downlights without a lens?

Specify *'NW'* No Direct + desired indirect
+ Downlight option in last column
NW-_____-DWNLT

One Row
(BPRO2 & 3)



Two Rows
(BPRO4 & 5)

LEFT
(Start) Placement
(BPRO2 Linear shown with Louver)

MID
Middle of Row Placement
(BPRO4 Recessed shown with Flush Lens)

		NRW 20°	MED 35°	WDE 55°
1 ROW	Lm	445	425	350
	W	9	9	9
2 ROWS	Lm	500	465	425
	W	8.7	8.7	8.7

NRW 20°

DISTANCE	FOOTCANDLES 1 ROW	FOOTCANDLES 2 ROWS	BEAM
3′	251	281.5	12.7″
4′	104.7	116.7	17.0″
5′	82.3	91.7	21.1″
6′	52.9	58.5	25.4″
7′	29.5	32.7	29.6″
8′	27.6	30.53	33.8″
9′	25.7	28.36	38.1″

MED 35°

DISTANCE	FOOTCANDLES 1 ROW	FOOTCANDLES 2 ROWS	BEAM
3′	138	144	22.8″
4′	67.3	70	30.3″
5′	47	49.2	37.8″
6′	31.5	32.7	45.4″
7′	17.6	18.4	53.0″
8′	16.05	16.9	60.5″
9′	14.5	15.4	68″

WDE 55°

DISTANCE	FOOTCANDLES 1 ROW	FOOTCANDLES 2 ROWS	BEAM
3′	80	67	37.5″
4′	40	35.7	50.0″
5′	27	23.7	62.5″
6′	18	16.1	75.0″
7′	10	9.1	87.5″
8′	9	8.15	100.0″
9′	9	7.2	112.4″

SERIES	QUANTITY	LOCATION	CCT	DISTRIBUTION	COLOR	VOLTAGE	DRIVERS
DWN-LT							
Down-light	**SPECIFY DOWNLIGHT QUANTITY PER FIXTURE/ROW** Maximum One (1) Downlight Every 4′ 16′Row = 4 Downlights 30′Row = 7 Downlights	MID One Downlight in Middle of Fixture LT One Downlight on Left (Start) RT One Downlight on Right (End) LT-RT Two Downlights on Ends LT-MID Two Downlights on Left and Middle MID-RT Two Downlights on Middle and End MOD Downlight Location(s) per Spec	LED3-90 3000K-90CRI (Standard) LED35-90 3500K-90CRI LED4-90 4000K-90CRI **NOTES:** – NA 2700K, 5000K – Only 1 Output Offered	NRW Narrow 20° Beam MED Medium 35° Beam WDE Wide 55° Beam	TMW Textured Matte White (Standard) YGW Gloss White Y__ Premium Color CC Custom Color ***LUXE METALLICS:*** YBZ Bronze YCP Copper Penny YGN Gold Nugget	UNV (120-277) 347	DM01 0-10v, 1% Dimming (Standard) LDE1 Hi-lume 1% EcoSystem LED (Soft fade on, fade-to-black dimming) ECO 1% 0-10v, EldoLED (Logarithmic dimming std) ECDA 1% DALI, EldoLED (Logarithmic dimming std) SOLO 0.1% 0-10v, EldoLED (Dim-to-dark, Logarithmic dimming std) SODA 0.1% DALI, EldoLED (Dim-to-dark, Logarithmic dimming std)

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BionicPro4 | Linear

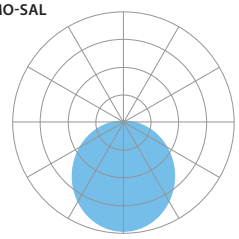
PRUDENTIAL LTG.

FLSH:

SATIN LENS

MEDIUM OUTPUT:
BPRO4-LIN-FLSH-LED35-MO-SAL

2740	Delivered Lumens
23	Watts
120	lm/w
3500	CCT
1.22	Spacing Criteria



Zonal Lumen Summary:
0-90 = 100%

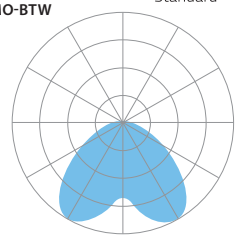
Vertical Angle	0°	25°	45°	65°	90°
0°	986	986	986	986	986
5°	980	980	977	982	982
15°	934	935	934	942	943
25°	852	852	854	865	869
35°	742	742	746	760	463
45°	613	612	617	630	639
55°	472	471	477	488	497
65°	323	323	329	339	348
75°	175	175	181	190	198
85°	37	37	42	49	56
90°	0	0	0	0	0

BATWING

UGR16 WELL Building Standard

MEDIUM OUTPUT:
BPRO4-LIN-FLSH-LED35-MO-BTW

2886	Delivered Lumens
23	Watts
127	lm/w
3500	CCT
1.90	Spacing Criteria



Zonal Lumen Summary:
0-90 = 100%

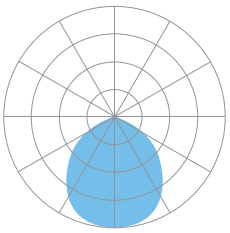
Vertical Angle	0°	25°	45°	65°	90°
0°	721	721	721	721	721
5°	773	765	742	724	714
15°	996	961	854	724	655
25°	1110	1074	933	698	561
35°	1084	1057	925	634	463
45°	906	907	824	533	378
55°	612	640	635	411	306
65°	360	381	402	287	235
75°	183	192	204	170	154
85°	48	49	55	55	55
90°	0	0	0	0	0

LOW GLARE PRISMATIC

UGR16 WELL Building Standard

STANDARD OUTPUT:
BPRO4-LED35-SO-LGP

3622	Delivered Lumens
32	Watts
113	lm/w
3500	CCT



Zonal Lumen Summary:
0-90 = 100%

Vertical Angle	0°	25°	45°	65°	90°
0°	1887	1887	1887	1887	1887
5°	1883	1876	1866	1876	1878
15°	1802	1789	1765	1758	1752
25°	1631	1610	1562	1521	1500
35°	1381	1347	1253	1122	1061
45°	1070	1005	822	680	629
55°	696	594	459	380	351
65°	351	305	232	201	186
75°	147	134	100	95	87
85°	38	39	55	23	23
90°	0	0	0	0	0

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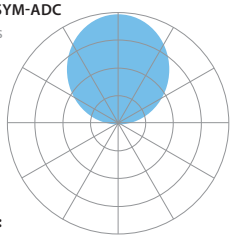
NW(NO DIRECT) — UP:

SYMMETRIC

STANDARD OUTPUT:
BPRO4-LED35-SO-NW-SYM-ADC
4570 Delivered Lumens
33 Watts
139 lm/w
3500 CCT



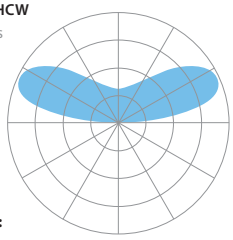
Zonal Lumen Summary:
90-180 = 100%

1816

Vertical Angle	0°	22.5°	45°	67.5°	90°
90°	0	0	0	0	0
95°	73	73	72	71	73
105°	261	263	262	261	266
115°	505	503	499	500	508
125°	764	765	769	774	786
135°	1050	1052	1054	1063	1075
145°	1325	1327	1326	1338	1350
155°	1554	1555	1552	1564	1578
165°	1711	1712	1708	1720	1735
175°	1791	1792	1786	1799	1816
180°	1805	1805	1805	1805	1805

HARD CEILING WASH

STANDARD OUTPUT:
BPRO4-LED35-SO-NW-HCW
2653 Delivered Lumens
33 Watts
80 lm/w
3500 CCT



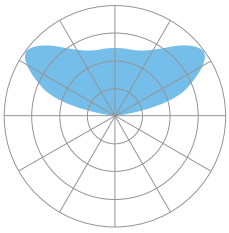
Zonal Lumen Summary:
90-180 = 100%

1040

Vertical Angle	0°	22.5°	45°	67.5°	90°
90°	0	0	0	0	0
95°	74	125	163	129	25
105°	859	777	525	255	96
115°	1040	913	598	301	169
125°	932	815	556	322	229
135°	716	636	474	330	272
145°	530	489	406	331	299
155°	417	399	363	330	315
165°	356	351	339	329	324
175°	330	330	328	328	329
180°	327	327	327	327	327

MEDIUM CEILING WASH

STANDARD OUTPUT:
BIOPRO-LIN-SO-MCW
3115 Delivered Lumens
32 Watts
97 lm/w
3500 CCT



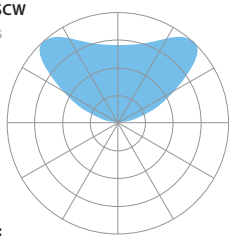
Zonal Lumen Summary:
90-180 = 100%

1138

Vertical Angle	0°	22.5°	45°	67.5°	90°
90°	0	0	0	0	0
95°	41	45	57	33	1
105°	464	475	344	146	92
115°	852	787	495	539	204
125°	1060	916	573	256	296
135°	973	843	601	469	442
145°	811	739	1138	544	530
155°	709	683	619	600	598
165°	667	657	642	635	640
175°	659	657	655	653	656
180°	664	664	664	664	664

SOFT CEILING WASH

STANDARD OUTPUT:
BPRO4-LED35-SO-NW-SCW
4639 Delivered Lumens
33 Watts
143 lm/w
3500 CCT



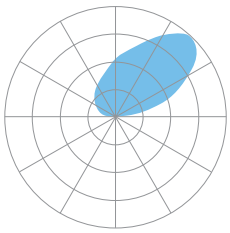
Zonal Lumen Summary:
90-180 = 100%

1584

Vertical Angle	0°	22.5°	45°	67.5°	90°
90°	0	0	0	0	0
95°	102	123	161	136	48
105°	367	409	463	344	198
115°	755	804	824	539	369
125°	1270	1283	1117	701	539
135°	1584	1492	1179	823	700
145°	1484	1381	1138	921	851
155°	1279	1220	1102	1005	978
165°	1149	1130	1094	1074	1073
175°	1114	1111	1106	1114	1123
180°	1117	1117	1117	1117	1117

SOFT ASYMMETRIC CEILING WASH

STANDARD OUTPUT:
BPRO4-LIN-SO-SACW
4073 Delivered Lumens
33 Watts
125 lm/w
3500 CCT



Zonal Lumen Summary:
90-180 = 100%

2106

Vertical Angle	0°	22.5°	45°	67.5°	90°
90°	0	0	0	0	0
95°	341	366	345	222	46
105°	939	946	853	503	174
115°	1475	1458	1268	697	320
125°	1906	1856	1504	848	463
135°	2106	1962	1499	946	599
145°	1906	1745	1373	1011	724
155°	1544	1443	1245	1046	828
165°	1268	1230	1149	1042	904
175°	1069	1048	1018	985	945
180°	936	936	936	936	936

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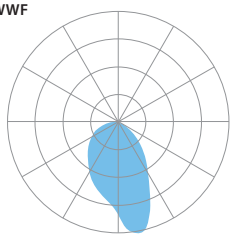
PRUDENTIAL LTG.

FLSH:

FLAT WALL WASH — DISTRIBUTION

Standard Output:
BPRO4-FLSH-LED35-LO-4-WWF
2056 Delivered Lumens
15 Watts
134 lm/w
3500 CCT

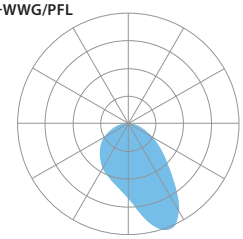

1321

Zonal Lumen Summary:
0-90 = 100%

	Vertical Angle	0°	25°	45°	65°	90°
WALL SIDE	90°	0	0	0	0	0
	85°	22	23	25	27	28
	75°	75	82	91	96	93
	65°	135	159	181	201	185
	55°	224	274	316	393	346
	45°	372	457	526	668	533
	35°	625	736	821	944	670
	25°	967	1070	1140	1095	763
	15°	1321	1297	1257	1058	828
	5°	1065	1027	992	930	862
	0°	863	863	863	863	863
ROOM SIDE	5°	740	757	766	804	862
	15°	646	655	661	704	828
	25°	567	583	591	622	763
	35°	456	482	497	533	670
	45°	344	369	384	419	533
	55°	496	506	531	570	690
	65°	173	167	165	164	185
	75°	109	96	89	85	93
	85°	33	30	27	26	28
	90°	0	0	0	0	0
	Vertical Angle	180°	202.5°	225°	247.5°	270°

FOCAL GLOW WALL WASH / PERIMETER FILL

Low Output:
BPRO4-FLSH-LED35-LO-4-WWG/PFL
1989 Delivered Lumens
15 Watts
132 lm/w
3500 CCT

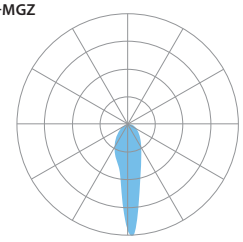

1205

Zonal Lumen Summary:
0-90 = 100%

	Vertical Angle	0°	25°	45°	65°	90°
WALL SIDE	90°	0	0	0	0	0
	85°	23	24	28	30	30
	75°	77	81	103	108	96
	65°	153	165	225	224	166
	55°	278	309	437	416	256
	45°	513	574	756	629	370
	35°	946	998	1014	746	487
	25°	1205	1165	1006	794	600
	15°	1022	997	910	810	693
	5°	844	836	810	779	739
	0°	747	747	747	747	747
ROOM SIDE	5°	644	658	810	779	739
	15°	518	525	543	595	693
	25°	458	461	468	497	600
	35°	408	409	411	417	475
	45°	403	403	405	416	487
	55°	291	284	262	244	256
	65°	222	210	183	160	166
	75°	137	130	104	92	96
	85°	42	42	33	29	30
	90°	0	0	0	0	0
	Vertical Angle	180°	202.5°	225°	247.5°	270°

MEDIUM WALL GRAZER

LOW OUTPUT:
BPRO4-FLSH-LED35-LO-4-MGZ
1994 Delivered Lumens
15 Watts
133 lm/w
4000 CCT


2339

Zonal Lumen Summary:
0-90 = 100%

	Vertical Angle	0°	25°	45°	65°	90°
WALL SIDE	90°	0	0	0	0	0
	85°	32	32	26	25	27
	75°	106	101	84	89	93
	65°	175	162	148	179	189
	55°	219	213	226	311	380
	45°	274	282	315	471	722
	35°	358	371	413	663	1225
	25°	460	476	554	998	1782
	15°	662	724	961	1627	2172
	5°	1838	1951	2116	2338	2335
	0°	2339	2339	2339	2339	2339
ROOM SIDE	5°	1549	1574	1771	2066	2335
	15°	615	646	810	1337	2172
	25°	442	453	515	838	1782
	35°	349	358	394	587	1225
	45°	262	268	304	426	722
	55°	203	198	217	291	380
	65°	165	148	144	172	189
	75°	110	96	81	87	93
	85°	36	31	23	24	27
	90°	0	0	0	0	0
	Vertical Angle	180°	202.5°	225°	247.5°	270°

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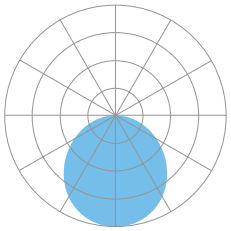
REG.5:

SATIN LENS

STANDARD OUTPUT:
BPRO4-LIN-REG.5-LED35-SO-SAL

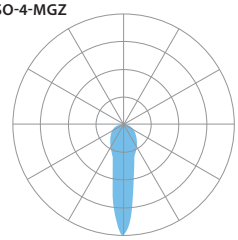
3683 Delivered Lumens
31 Watts
118 Lm/W
3500 CCT



MEDIUM WALL GRAZER

STANDARD OUTPUT:
BPRO4-LIN-REG.5-LED35-SO-4-MGZ

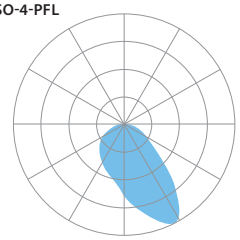
3879 Delivered Lumens
31 Watts
125 Lm/W
3500 CCT
16° FWHM



PERIMETER FILL

STANDARD OUTPUT:
BPRO4-LIN-REG.5-LED35-SO-4-PFL

3826 Delivered Lumens
31 Watts
123 Lm/W
3500 CCT



UPTO **125** LPW

REG.5:		LO	MO	SO	HO
SAL	Lm/Ft	450	670	900	1175
BTW	Lm/Ft	460	685	935	1200
WWF	Lm/Ft	475	700	975	1225
WWG/PFL	Lm/Ft	475	700	975	1225
MGZ	Lm/Ft	475	700	975	1225
	W/Ft	4	6	8	10.5

LUMEN CHART AT 3500K-80 CRI

Consult factory for Louver IES: *marketing@prulite.com*

LUMEN MAINTENANCE

L70 — 200,000+ Hours
L90 — 100,000+ Hours (LO, MO & SO)
L90 — 60,000+ Hours (HO)

LED SYSTEM LED modules and drivers are field replaceable.

PROG (OPTIONAL) Programmable light output. Specify desired lumens or watts per linear foot.

LABELS CSA and ETL damp labeled and I.B.E.W. manufactured.

ELECTRICAL Must specify LED dimming controls. LED fixtures have constant current driver(s) with less than 20% THD when loaded to a minimum of 60%. Drivers sink a maximum of 6mA per driver. DM01 LED drivers are 0-10V dimmable and are compatible with most 0-10V wall slide dimmers and direct 0-10V analog signal dimmers. Max driver size 1.65˝ w x 1.25˝ h.

CONSTRUCTION

Housing Extruded aluminum housing and side wall >25% PC recycled, 100% recyclable.

Lens Seamless lens up to 250´. Consult factory for longer lengths. Polymer, 100% recyclable.

Weight 3.5 lbs/ft

MOUNTING Surface mounted to walls or ceilings, wall spacer, wall bracket to wall, suspended by cable.

WARRANTY Single-source, 5 year limited warranty covers standard components and construction.

FINISH COLORS

STANDARD:

- TMW — Textured Matte White
- YGW — Gloss White

PREMIUM:

- YSW – Seashell White (Matte)
- YPE – Pewter (Matte)
- YRG – Rain Grey (Gloss)
- YSTM – Storm Grey (Matte)
- YBK – Black (Matte)
- YBB – Black (Semi Gloss)
- YSKM – Sky (Matte)
- YMB – Military Blue (Matte)
- YSAM – Sapphire (Matte)

LUXE METALLICS:

- YCP – Copper Penny (Metallic)
- YIB – Interstate Blue (Matte)
- YOR – Orange (Matte)
- YSL – Silver (Metallic)
- YBZ – Bronze (Metallic)
- YBR – Bronze (Matte)
- YDAM – Daffodil (Matte)
- YGN – Gold Nugget (Metallic)
- YSRM – Sunset Red (Matte)
- YFGM – Forest Green (Matte)

LAMINATE FINISHES:

Choose from one of our Premium Colors with no set-up fee. For paint chip samples, please email: **info@prulite.com**

STANDARD:

- LOK – Vara Oak
- LEW – Evreux Walnut
- LOG – Oxidized Gold
- LOB – Oxidized Black

SPECIAL ORDER (EXTENDED LEAD TIMES):

- LKK – Dark Oak
- LMD – Medium Walnut
- LLW – Light Walnut
- LCP – Oxidized Copper
- LCF – Carbon Fiber
- LRL – Red Leather
- LGR – Grey Suede

NOTE: For Laminate finishes Stem is YBK Matte Black except for LOK and LLW it will be TMW White.

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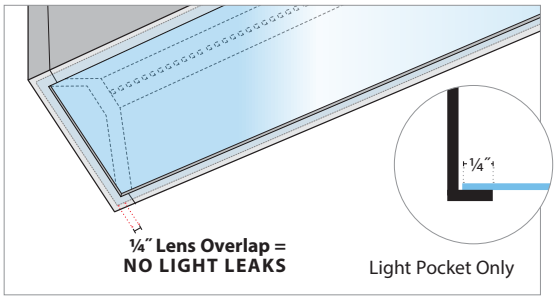
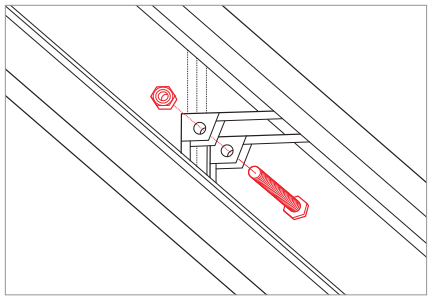
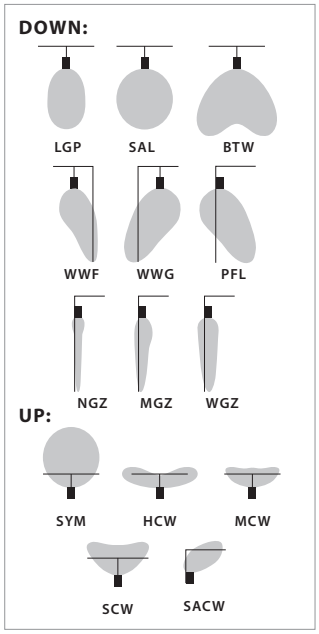
CAST ALUMINUM END CAPS



ADJOINING DETAILS

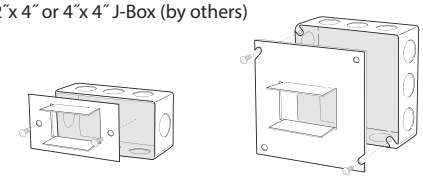


DISTRIBUTIONS



EBCP — ELECTRICAL BOX COVER PLATE

OPTIONAL: ⅞″ Dia. K.O. will accommodate 2″x 4″ or 4″x 4″ J-Box (by others)



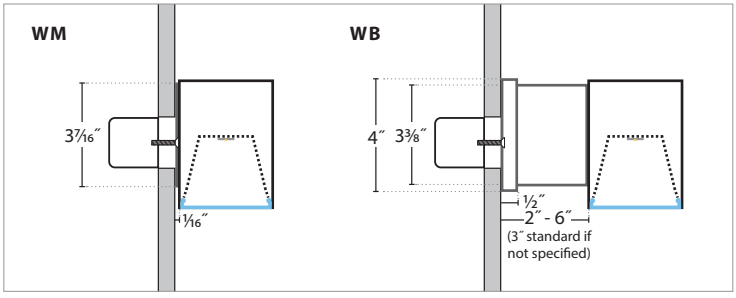
1G: SINGLE GANG **2G: DUAL GANG**

CANOPY DETAIL

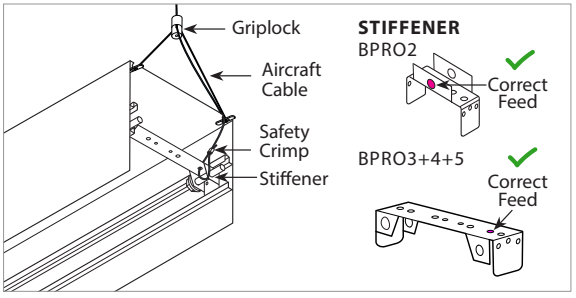
RIGID (RSC)

SWIVEL (SSC)
Allows for sloped ceilings up to 45° SSC Canopy Round ONLY

WALL CROSS SECTIONS



SEISMIC ATTACHMENT (EQK)



FIXTURE SIZE VARIES

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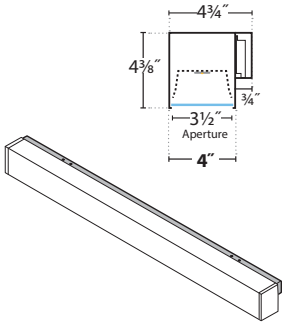
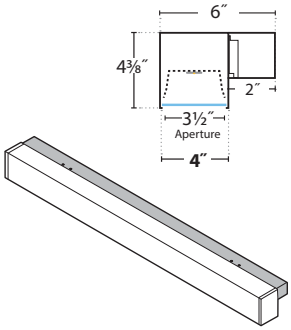
Why Channels?

Channels provide maximum flexibility in mounting points on the ceiling/wall (drilled in the field into structure).
2 mounting points per channel required, all channels are the length of the fixture. .75″ Channel accommodates SOOW cord (8 foot, 6 conductor cord), 2″ Channel accommodates liquitite Flex with sealed connectors (6′ long 6′ conductor cord).

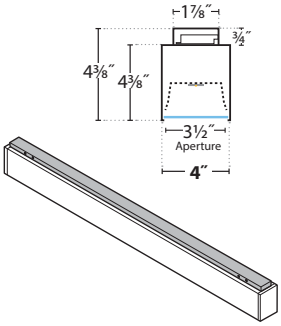
WMC — WALL



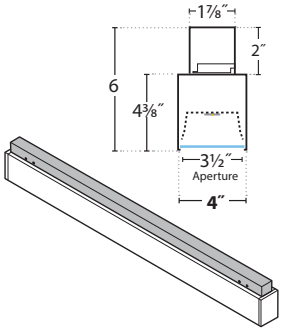
WMC2 — WALL



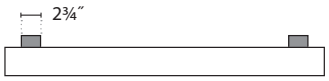
WMC — SURFACE



WMC2 — SURFACE



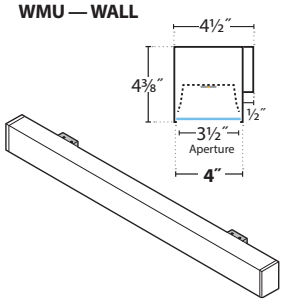
Why Brackets?



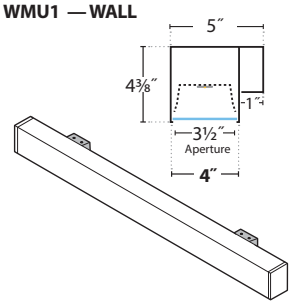
Clean look. Two options.

1. Installed at our standard dimensions.
2. COS (Custom on-center spacing) —
   Provide dimensions and our factory will install bracket cleats at provided dimensions.

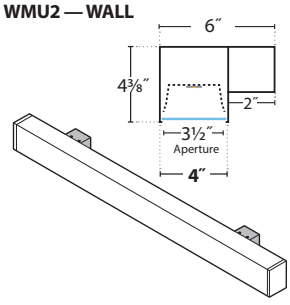
WMU — WALL



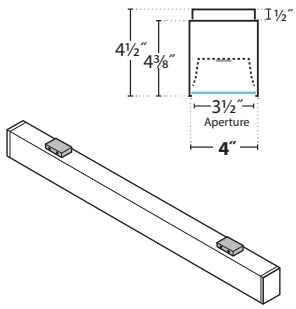
WMU1 — WALL



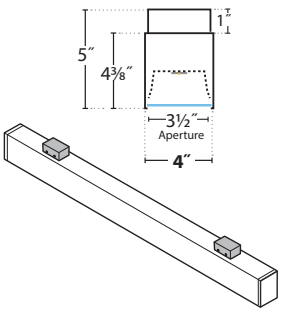
WMU2 — WALL



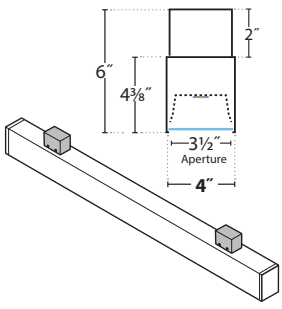
WMU — SURFACE



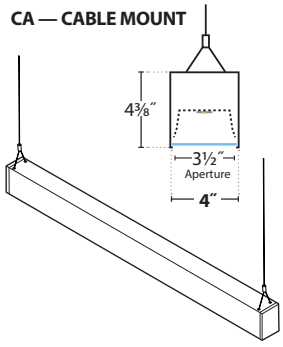
WMU1 — SURFACE



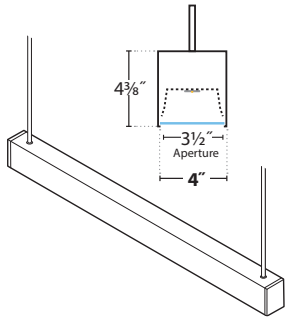
WMU2 — SURFACE



CA — CABLE MOUNT



R/SSC — STEM MOUNT



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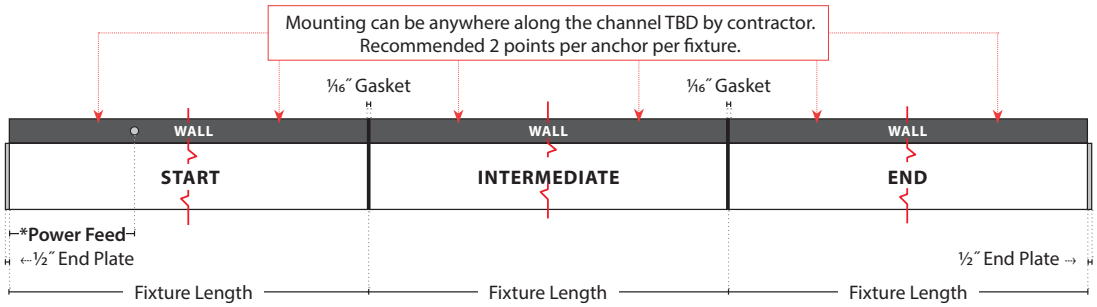
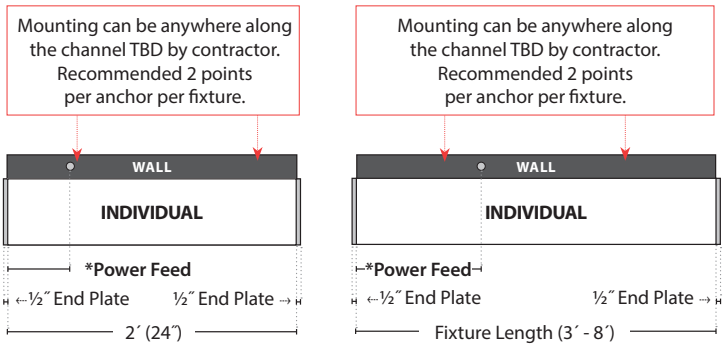
WMC/WMC2 (CHANNELS): WALL — MOUNTING

NOTE: 2′ ROW FIXTURES NOT AVAILABLE

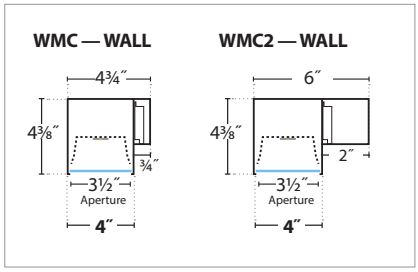
POWER FEED



INDIVIDUAL (2′):



	FIXTURE LENGTHS	
	*Power Feed	All
2′	4″	24″
3′	10″	36″
4′	10″	48″
5′	10″	60″
6′	36″	72″
7′	42″	84″
8′	48″	96″



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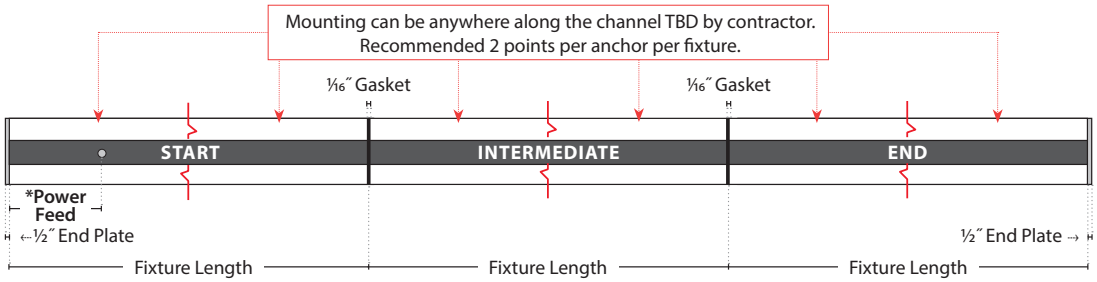
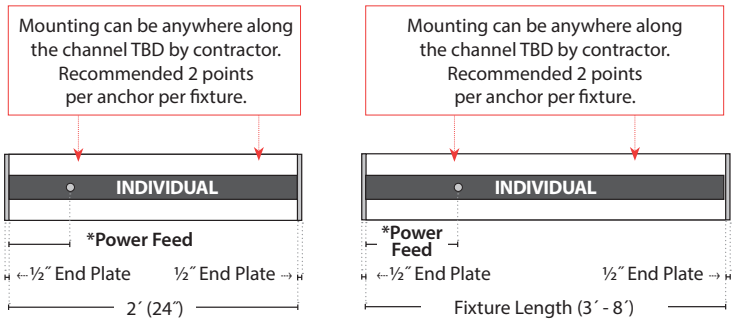
WMC/WMC2 (CHANNELS): SURFACE — MOUNTING

NOTE: 2′ ROW FIXTURES NOT AVAILABLE

POWER FEED

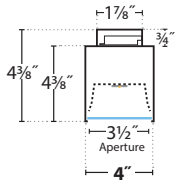


INDIVIDUAL (2′):

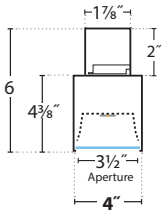


	FIXTURE LENGTHS	
	*Power Feed	All
2′	4″	24″
3′	6″	36″
4′	6″	48″
5′	6″	60″
6′	36″	72″
7′	42″	84″
8′	48″	96″

WMC — SURFACE



WMC2 — SURFACE



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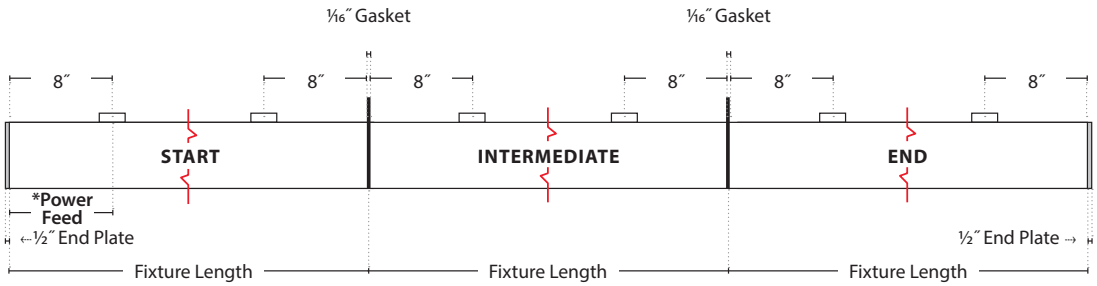
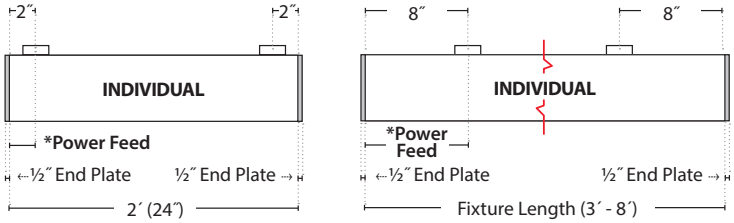
WMU/WMU1/WMU2 (BRACKETS): WALL — MOUNTING

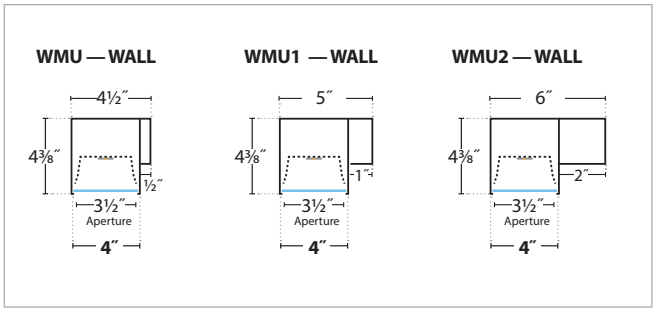
NOTE: 2′ ROW FIXTURES NOT AVAILABLE



INDIVIDUAL (2′):



	FIXTURE LENGTHS	MOUNTING LOCATIONS		
	*Power Feed	All	Start / Intermediate / End	Individual	COS (Custom On-Center Spacing)
2′	2″	24″	—	20″	Customer to provide on-center mounting dimensions, PRU will pre-drill and mount Brackets
3′	8″	36″	20″	20″	
4′	8″	48″	32″	32″	
5′	8″	60″	44″	44″	
6′	8″	72″	56″	56″	
7′	8″	84″	68″	68″	
8′	8″	96″	80″	80″	



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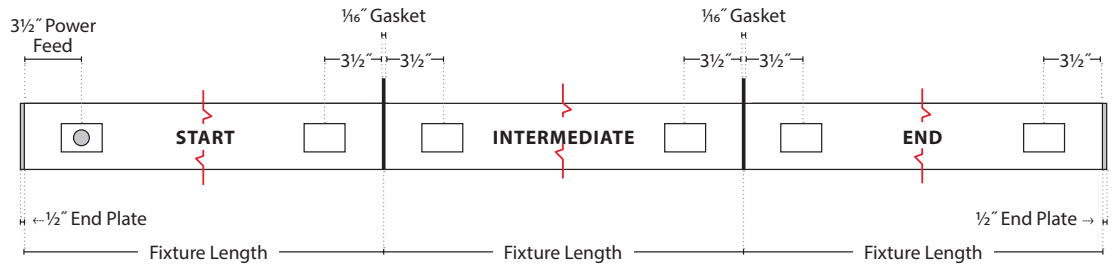
PRUDENTIAL LTG.

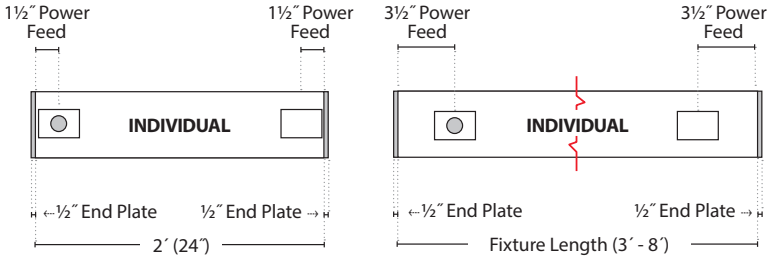
WMU/WMU1/WMU2 (BRACKETS): SURFACE — MOUNTING

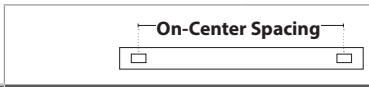
NOTE: 2′ ROW FIXTURES NOT AVAILABLE

POWER FEED



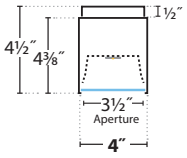
INDIVIDUAL (2′):



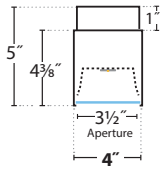


	FIXTURE LENGTHS	MOUNTING LOCATIONS		
	All	Start / Intermediate / End	Individual	COS (Custom On-Center Spacing)
2′	24″	—	21″	Customer to provide on-center mounting dimensions, PRU will pre-drill and mount Brackets
3′	36″	29″	29″	
4′	48″	41″	41″	
5′	60″	53″	53″	
6′	72″	65″	65″	
7′	84″	77″	77″	
8′	96″	89″	89″	

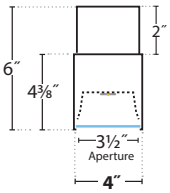
WMU — SURFACE



WMU1 — SURFACE



WMU2 — SURFACE



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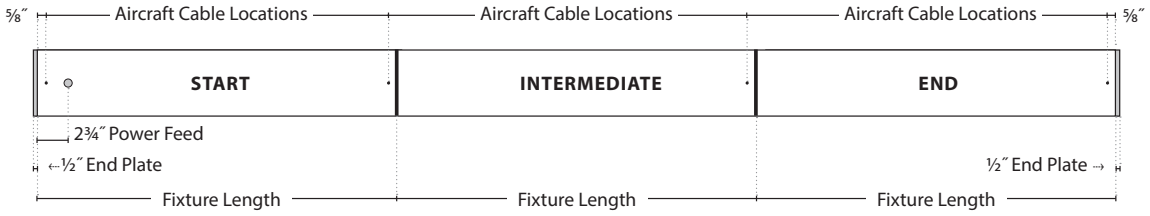
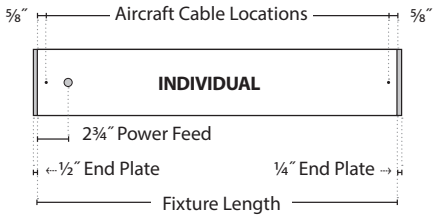
CABLE (CA) — MOUNTING

NOTE: 2′ ROW FIXTURES NOT AVAILABLE

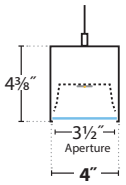
POWER FEED



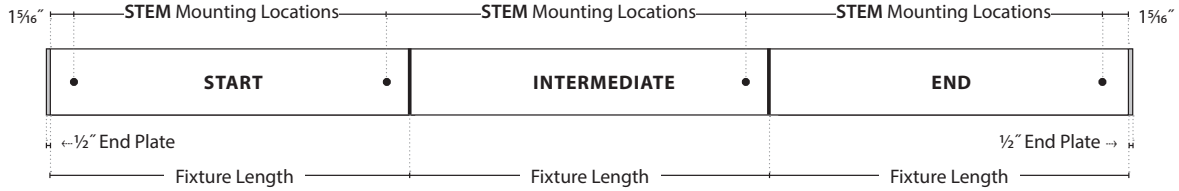


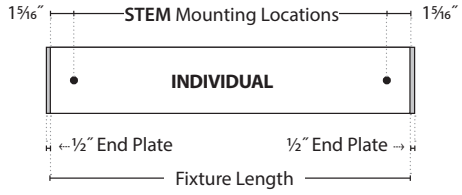
	FIXTURE LENGTHS	AIRCRAFT CABLE LOCATIONS	
	All	Start / Individual	Intermediate / End
2′	24″	22¾″	24″
3′	36″	34¾″	36″
4′	48″	46¾″	48″
5′	60″	58¾″	60″
6′	72″	70¾″	72″
7′	84″	82¾″	84″
8′	96″	94¾″	96″

CA — CABLE



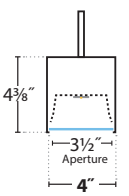
STEM (RSC/SSC) — MOUNTING





	FIXTURE LENGTHS	AIRCRAFT CABLE LOCATIONS	
	All	Start / Individual	Intermediate / End
2′	24″	21¾″	24″
3′	36″	33¾″	36″
4′	48″	45¾″	48″
5′	60″	57¾″	60″
6′	72″	69¾″	72″
7′	84″	81¾″	84″
8′	96″	93¾″	96″

R/SSC — STEM



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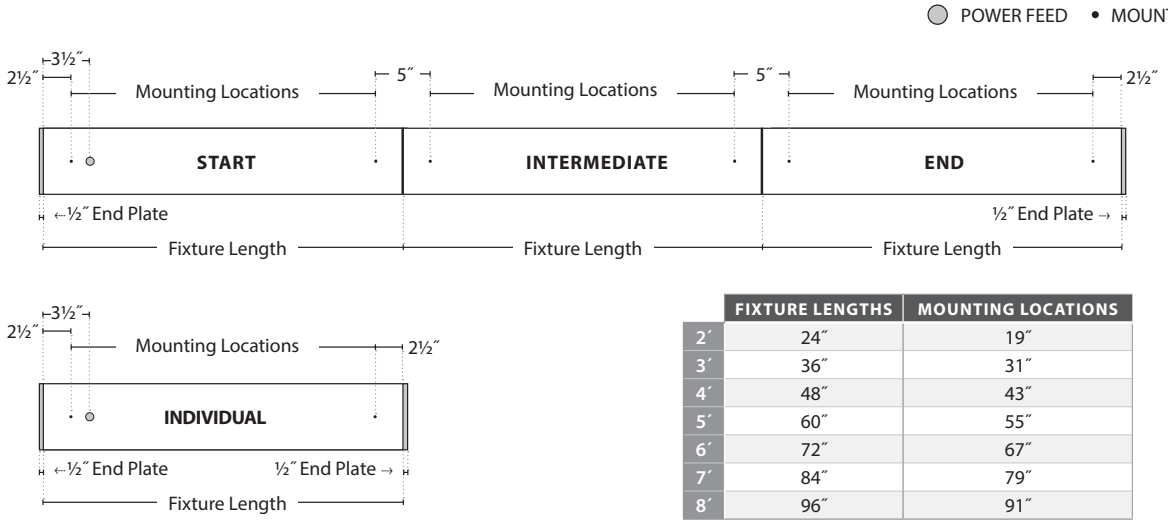
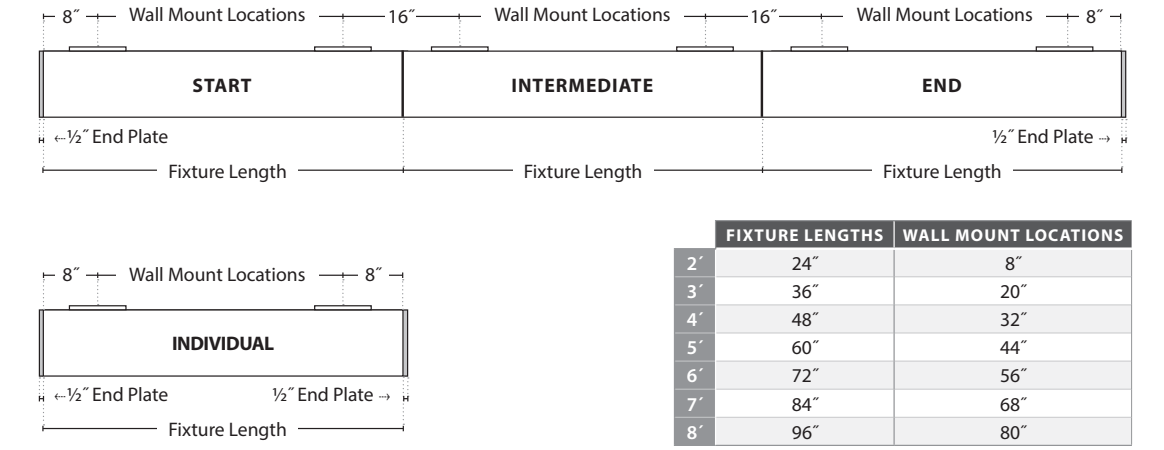
SURFACE (SURF) — MOUNTING



	FIXTURE LENGTHS	MOUNTING LOCATIONS
2′	24″	19″
3′	36″	31″
4′	48″	43″
5′	60″	55″
6′	72″	67″
7′	84″	79″
8′	96″	91″

WALL (WM) — MOUNTING



	FIXTURE LENGTHS	WALL MOUNT LOCATIONS
2′	24″	8″
3′	36″	20″
4′	48″	32″
5′	60″	44″
6′	72″	56″
7′	84″	68″
8′	96″	80″

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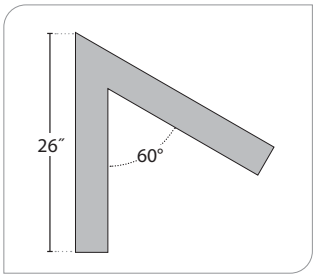
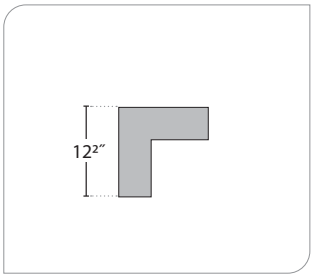
CORNERS

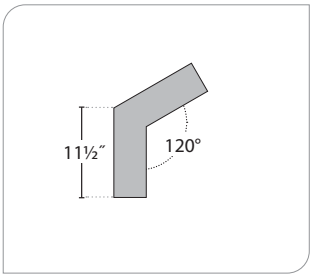
C2-60:



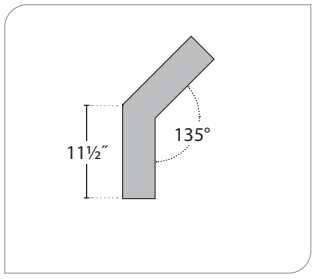
C2-90:



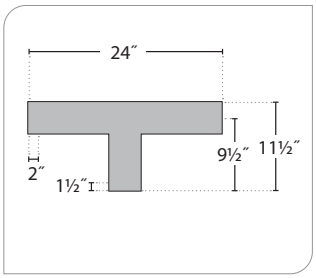
C2-120:



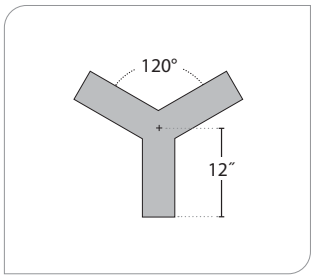
C2-135:



C3T:



C3Y:



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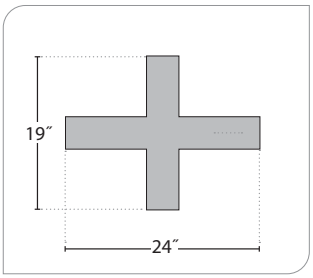
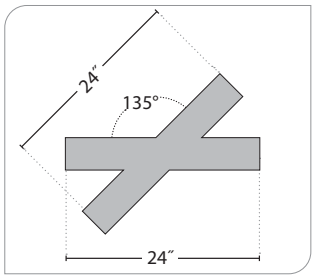
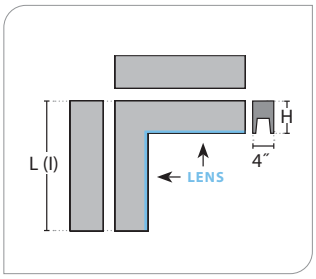


C4X:



C8I:



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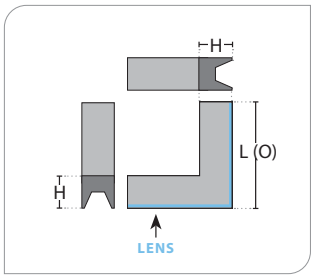

BODY TYPE	DIM "H"	DIM "L" (I)	DIM "L" (O)
Direct Flush	4⅜″	16 ⅜″	12″
Direct Regress	4⅞″	16 ⅜″	12½″
Direct/Indirect Flush	5″	17″	12″
Direct/Indirect Regress	5½″	17″	12½″

SENSOR PLATE

LOUVER DETAIL

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FTR END OF ROW FEATHERING

Wall to wall (WTW) fixtures can project strong lighting distributions on perpendicular wall which some find undesirable.

Medium Wall Graze (MGZ) shown above.

Feather (FTR) softens distributions on perpendicular walls.

Medium Wall Graze (MGZ) shown above with FTR.

LGP LOW GLARE PRISMATIC LENS

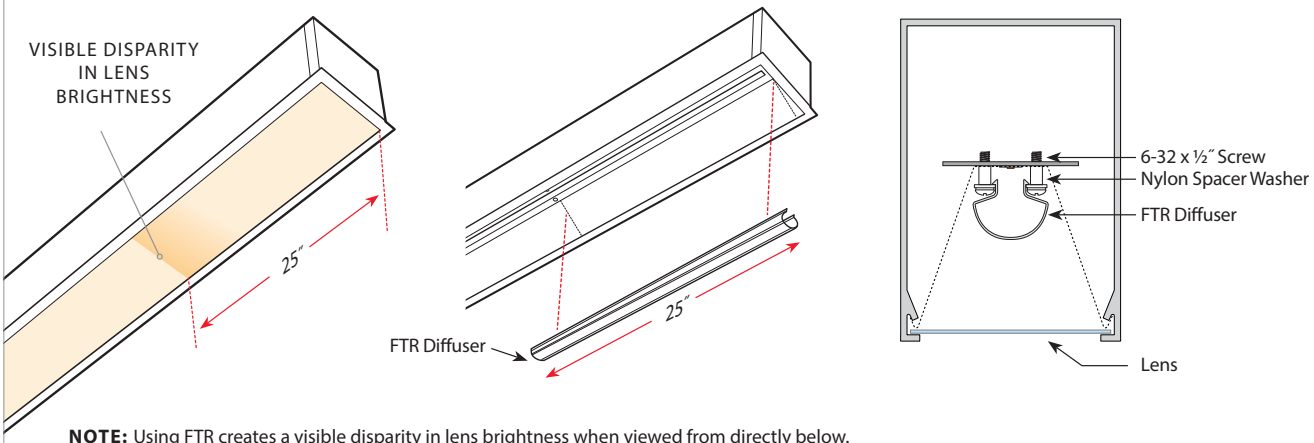
Low Glare Prismatic lens has a dynamic 'prismatic stripe' that 'follows the viewer' and offers a sense of depth. The narrow distribution has low glare (UGR) and meets WELL UGR of 16 or lower. It utilizes the FTR Diffuser (see below).

NOTE: Our Batwing lens also meets WELL UGR of 16 or less (BioPro 3-4-5)

INTERNATIONAL WELL BUILDING INSTITUTE™

WELL OPTION 1 B, FIXTURE UGR 16 OR LESS

FTR (FEATHERING DIFFUSER) DETAIL



NOTE: Using FTR creates a visible disparity in lens brightness when viewed from directly below. FTR is NOT available dual-sided on two corners 5´or less.

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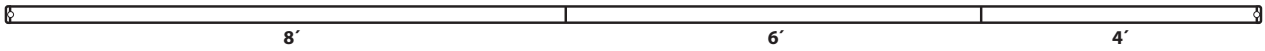
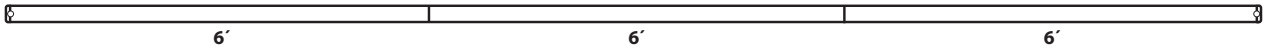
ROW BUILDER

18´ STANDARD ROW LENGTH:



18´ SYMMETRIC ROW LENGTH (SRL):



STANDARD

ROW LENGTH		
9´	5+4	5FT STR + 4FT END
10´	6+4	6FT STR + 4FT END
11´	7+4	7FT STR + 4FT END
12´	8+4	8FT STR + 4FT END
13´	8+5	8FT STR + 5FT END
14´	8+6	8FT STR + 6FT END
15´	8+7	8FT STR + 7FT END
16´	8+8	8FT STR + 8FT END
17´	8+5+4	8FT STR + 5FT INT + 4FT END
18´	8+6+4	8FT STR + 6FT INT + 4FT END
19´	8+7+4	8FT STR + 7FT INT + 4FT END
20´	8+8+4	8FT STR + 8FT INT + 4FT END
21´	8+8+5	8FT STR + 8FT INT + 5FT END
22´	8+8+6	8FT STR + 8FT INT + 6FT END
23´	8+8+7	8FT STR + 8FT INT + 7FT END
24´	8+8+8	8FT STR + 8FT INT + 8FT END
25´	8+8+5+4	8FT STR + 8FT INT + 5FT INT + 4FT END
26´	8+8+6+4	8FT STR + 8FT INT + 6FT INT + 4FT END
27´	8+8+7+4	8FT STR + 8FT INT + 7FT INT + 4FT END
28´	8+8+8+4	8FT STR + (2) 8FT INT + 4FT END
29´	8+8+8+5	8FT STR + (2) 8FT INT + 5FT END
30´	8+8+8+6	8FT STR + (2) 8FT INT + 6FT END
31´	8+8+8+7	8FT STR + (2) 8FT INT + 7FT END
32´	8+8+8+8	8FT STR + (2) 8FT INT + 8FT END
33´	8+8+8+5+4	8FT STR + (2) 8FT INT + 5FT INT + 4FT END
34´	8+8+8+6+4	8FT STR + (2) 8FT INT + 6FT INT + 4FT END
35´	8+8+8+7+4	8FT STR + (2) 8FT INT + 7FT INT + 4FT END
36´	8+8+8+8+4	8FT STR + (3) 8FT INT + 4FT END
37´	8+8+8+8+5	8FT STR + (3) 8FT INT + 5FT END
38´	8+8+8+8+6	8FT STR + (3) 8FT INT + 6FT END
39´	8+8+8+8+7	8FT STR + (3) 8FT INT + 7FT END
40´	8+8+8+8+8	8FT STR + (3) 8FT INT + 8FT END
41´	8+8+8+8+5+4	8FT STR + (3) 8FT INT + 5FT INT + 4FT END
42´	8+8+8+8+6+4	8FT STR + (3) 8FT INT + 6FT INT + 4FT END
43´	8+8+8+8+7+4	8FT STR + (3) 8FT INT + 7FT INT + 4FT END
44´	8+8+8+8+8+4	8FT STR + (4) 8FT INT + 4FT END
45´	8+8+8+8+8+5	8FT STR + (4) 8FT INT + 5FT END
46´	8+8+8+8+8+6	8FT STR + (4) 8FT INT + 6FT END
47´	8+8+8+8+8+7	8FT STR + (4) 8FT INT + 7FT END
48	8+8+8+8+8+8	8FT STR + (4) 8FT INT + 8FT END
49´	8+8+8+8+8+5+4	8FT STR + (4) 8FT INT + 5FT INT + 4FT END
50´	8+8+8+8+8+6+4	8FT STR + (4) 8FT INT + 6FT INT + 4FT END

SYMMETRICAL

ROW LENGTH		
9´	3+3+3	3FT STR + 3FT INT + 3FT END
10´	5+5	5FT STR + 5FT END
11´	4+3+4	4FT STR + 3FT INT + 4FT END
12´	6+6	6FT STR + 6FT END
13´	4+5+4	4FT STR + 5FT INT + 4FT END
14´	7+7	7FT STR + 7FT END
15´	5+5+5	5FT STR + 5FT INT + 5FT END
16´	8+8	8FT STR + 8FT END
17´	6+5+6	6FT STR + 5FT INT + 6FT END
18´	6+6+6	6FT STR + 6FT INT + 6FT END
19´	6+7+6	6FT STR + 7FT INT + 6FT END
20´	8+4+8	8FT STR + 4FT INT + 8FT END
21´	8+5+8	8FT STR + 5FT INT + 8FT END
22´	8+6+8	8FT STR + 6FT INT + 8FT END
23´	8+7+8	8FT STR + 7FT INT + 8FT END
24´	8+8+8	8FT STR + 8FT INT + 8FT END
25´	6+4+5+4+6	6FT STR + 4FT INT + 5FT INT + 4FT INT + 6FT END
26´	8+5+5+8	8FT STR + (2) 5FT INT + 8FT END
27´	6+5+5+5+6	6FT STR + (3) 5FT INT + 6FT END
28´	8+6+6+8	8FT STR + (2) 6FT INT + 8FT END
29´	8+4+5+4+8	8FT STR + 4FT INT + 5FT INT + 4FT INT + 8FT END
30´	8+7+7+8	8FT STR + (2) 7FT INT + 8FT END
31´	8+5+5+5+8	8FT STR + (3) 5FT INT + 8FT END
32´	8+8+8+8	8FT STR + (2) 8FT INT + 8FT END
33´	8+6+5+6+8	8FT STR + 6FT INT + 5FT INT + 6FT INT + 8FT END
34´	8+6+6+6+8	8FT STR + 6FT INT + 6FT INT + 6FT INT + 8FT END
35´	8+6+7+6+8	8FT STR + 6FT INT + 7FT INT + 6FT INT + 8FT END
36´	8+8+4+8+8	8FT STR + 8FT INT + 4FT INT + 8FT INT + 8FT END
37´	8+8+5+8+8	8FT STR + 8FT INT + 5FT INT + 8FT INT + 8FT END
38´	8+8+6+8+8	8FT STR + 8FT INT + 6FT INT + 8FT INT + 8FT END
39´	8+8+7+8+8	8FT STR + 8FT INT + 7FT INT + 8FT INT + 8FT END
40´	8+8+8+8+8	8FT STR + (3) 8FT INT + 8FT END
41´	8+6+4+5+4+6+8	8FT STR + 6FT INT + 4FT INT + 5FT INT + 4FT INT + 6FT INT + 8FT END
42´	8+8+5+5+8+8	8FT STR + 8FT INT + (2) 5FT INT + 8FT INT + 8FT END
43´	8+6+5+5+5+6+8	8FT STR + 6FT INT + (3) 5FT INT + 6FT INT + 8FT END
44´	8+8+6+6+8+8	8FT STR + 8FT INT + (2) 6FT INT + 8FT INT + 8FT END
45´	8+8+4+5+4+8+8	8FT STR + 8FT INT + 4FT INT + 5FT INT + 4FT INT + 8FT INT + 8FT END
46´	8+8+7+7+8+8	8FT STR + 8FT INT + (2) 7FT INT + 8FT INT + 8FT END
47´	8+8+5+5+5+8+8	8FT STR + 8FT INT + (3) 5FT INT + 8FT INT + 8FT END
48	8+8+8+8+8+8	8FT STR + (4) 8FT INT + 8FT END
49´	8+8+6+5+6+8+8	8FT STR + 8FT INT + 6FT INT + 5FT INT + 6FT INT + 8FT INT + 8FT END
50´	8+8+6+6+6+8+8	8FT STR + 8FT INT + (3) 6FT INT + 8FT INT + 8FT END

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BionicPro4 | Linear

PRUDENTIAL LTG.

BionicPro4 Batwing Vs. Top 4" Competitor (Satin Lens)

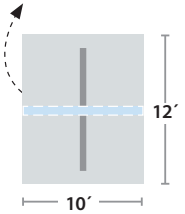
SINGLE OFFICE

BionicPro4

28 32 35 34 30 30 33 34 32 28

Top Competitor

22 28 36 44 52 52 44 36 28 22



	BionicPro4	Competitor
LPW	127	113
SPACING CRITERIA	**1.9**	**1.2**
MAX/MIN	1.6	2.6
W/SQ. FT.	.38	.4
FC AVERAGE	27	29

9´ ceiling .85 llf BionicPro4— 5.7w/ft Competitor—6w/ft Footcandles at 30˝ working plane

OPEN OFFICE

BionicPro4

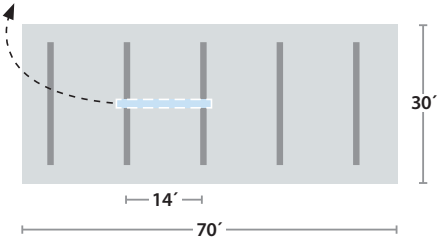
41 45 48 48 46 42 39 38 39 42 45 48 48 44 41

14´

Top Competitor

75 67 58 48 39 33 29 28 29 33 39 48 58 67 75

14´



	BionicPro4	Competitor
LPW	127	117
SPACING CRITERIA	**1.9**	**1.2**
MAX/MIN	2.0	4.5
MAX/MIN BETWEEN ROWS	1.2	2.7
W/SQ. FT.	.36	.38
FC AVERAGE	36	37

9´ ceiling .85 llf BionicPro4— 5.7w/ft Competitor—6w/ft Footcandles at 30˝ working plane

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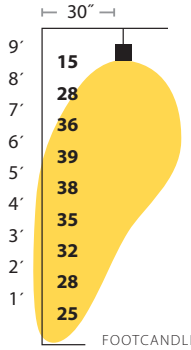
BionicPro4 | Linear

PRUDENTIAL LTG.

Smooth, Flat Wall Washing (WWF)

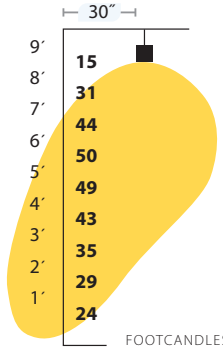
Our patent-pending TruBeam™ optics redirect light in an ideal flat wall wash for smooth, even illumination.



	Watts/ Ft.	Ceiling Height	Average Illuminance	Max/Min	Max/Min Ratio
Medium Output | 700 lumens/ft	6	9′	**31 fc**	39/15	2.6

Focal Glow Wall Washing (WWG)

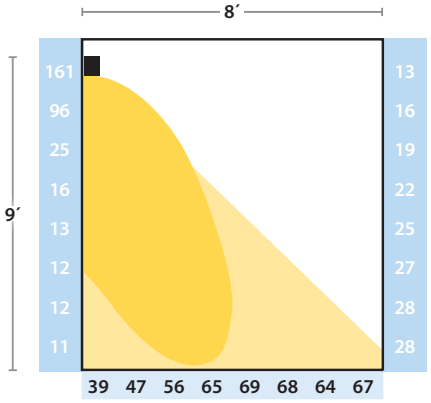
Pique interest by giving works of art 'pop' — more light at eye level



	Watts/ Ft.	Ceiling Height	Average Illuminance	Max/Min	Max/Min Ratio
Medium Output | 700 lumens/ft	6	9′	**36 fc**	50/15	3.3

Perimeter Fill (PFL)

Wash a corridor in light from one side of the perimeter. Our Perimeter Fill is ideal for hospital corridors where a 50 fc average is needed.

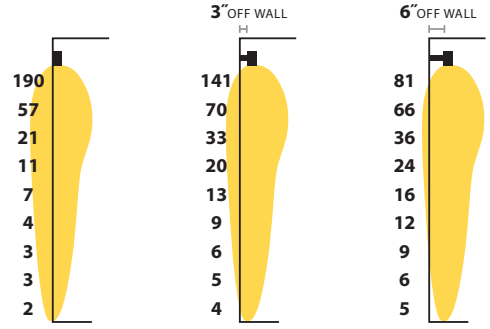


	Watts/ Ft.	Ceiling Height	Average Illuminance	Max/Min	Max/Min Ratio
High Output | 1225 lumens/ft	1	10′	**64 fc**	70/57	1.2

Medium Wall Graze (MGZ)

Wall grazing performance often better just off a wall.

DIRECT TO WALL (WM) **WALL BRACKET (WB)**



See perimeter specs

USE WB WALL BRACKET FOR BETTER PERFORMANCE THAN FLUSH TO WALL

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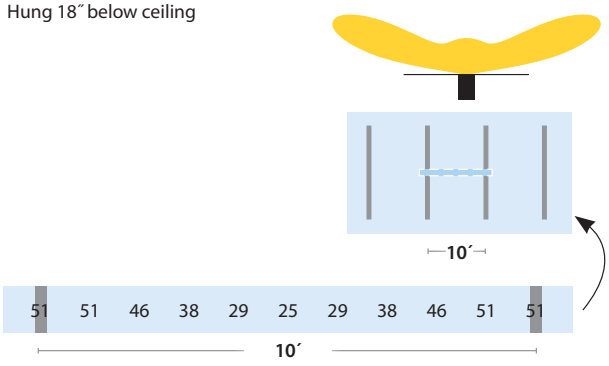
BionicPro4 | Linear

PRUDENTIAL LTG.

Hard Ceiling Wash (HCW)

OPEN OFFICE/CLASSROOM

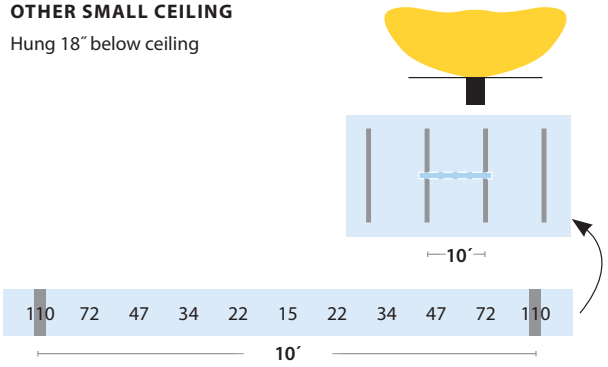
Hung 18˝ below ceiling



Medium Ceiling Wash (MCW)

SINGLE OFFICE OR OTHER SMALL CEILING

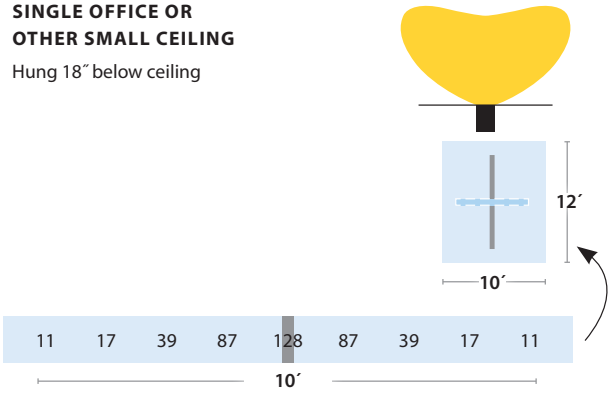
Hung 18˝ below ceiling



Soft Ceiling Wash (SCW)

SINGLE OFFICE OR OTHER SMALL CEILING

Hung 18˝ below ceiling



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BionicPro4 | Linear

WIRING DIAGRAMS SPEC

PRUDENTIAL LTG.

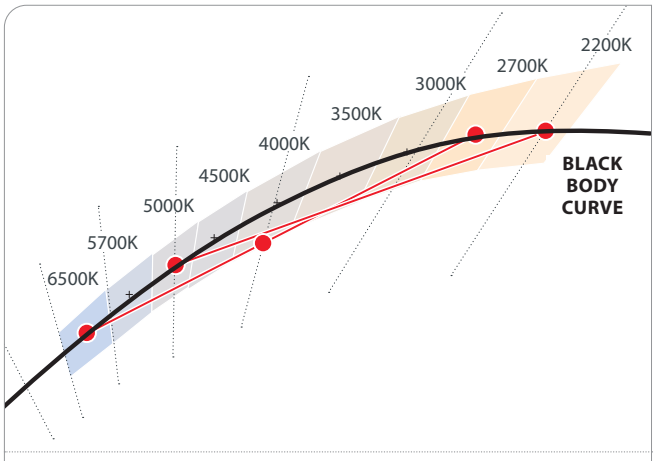
Lumen Outputs:	BLUHUE, TUHUE, TUHUE2, AMBERHUE			
DIRECT:	LO	MO	SO	HO*
SAL Lm/Ft	205	385	550	715
BTW / WWG / PFL Lm/Ft	215	395	565	730
LGP / WWF / MGZ Lm/Ft	225	405	580	750
W/Ft	3.8	5.6	7.8	10.5
INDIRECT:	LO	MO	SO	HO*
SYM Lm/Ft	360	480	630	800
HCW Lm/Ft	150	300	450	575
SCW Lm/Ft	350	525	700	870
SACW Lm/Ft	300	450	600	720
W/Ft	3.8	5.6	7.8	10.5

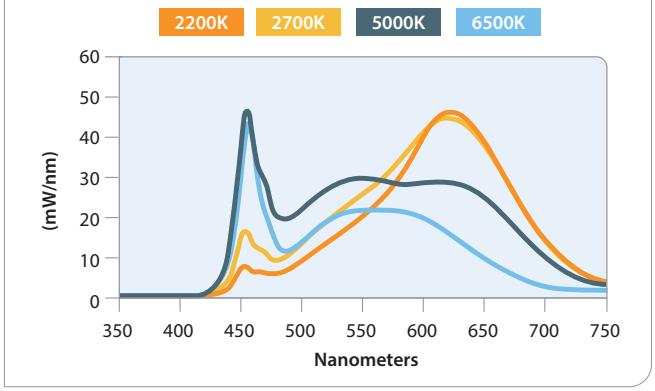
** TU2 + AMB NOT AVAILABLE HO / CHROMAHUE ONLY AVAILABLE ON HO

Tū Hue

Prudential Lighting's **TuHue** Tunable White provides warm to cool white light simulating sunlight. Controlling the light source color temperature offers differing design aesthetics with potential benefits via circadian rhythm support. Blue light for alertness while warm light conveys tranquility.

— 2700K-6500K or 2200K-5000K.
— Adjust the color temperate and brightness separately.
— Simulates warm to cool to warm transition of sunlight.



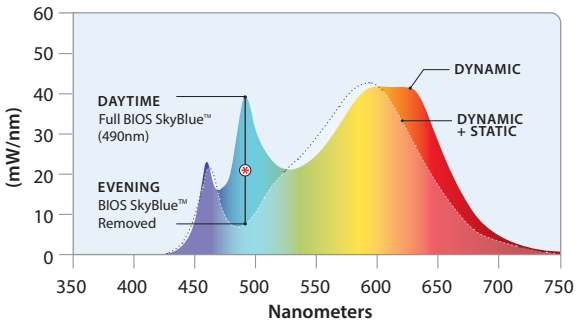


Blu Hue

bios ILLUMINATED

BluHue BIOS SkyBlue™ circadian LED lighting brings the benefits of blue skies inside. Newly discovered blue-sky receptors in our eyes drive improved daytime alertness, mood, brain function, and strengthens circadian rhythms leading to overall better health and well-being.

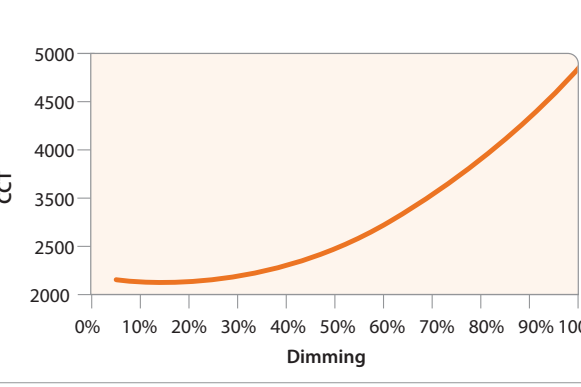
— Circadian rhythms play an integral role in physical and mental health.
— BluHue BIOS SkyBlue pinpoints peak 490nm sensitivity to provide the most benefit from an electric light source.
— At night, simply dim the lights to remove SkyBlue™ wavelengths (specify "Blu_D" to dim Cyan SkyBlue spike separately [night mode]).



Amber Hue

AmberHue is Prudential Lighting's Warm Dim offering. It transitions bright white light to warm amber light as brightness is dimmed, reflecting sunlight's transitioning from intense blue midday light to a dimmed golden hue near sunset, also reminiscent of soft glowing candlelight.

— Warm Dim 2200K-5000K.
— Color temperature warms as the luminaire is dimmed.
— Calm, relaxing mood communicated – hospitality, residential feel.



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BionicPro4 | Linear

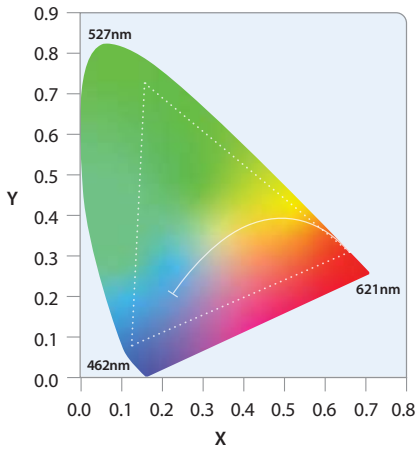
WIRING DIAGRAMS SPEC

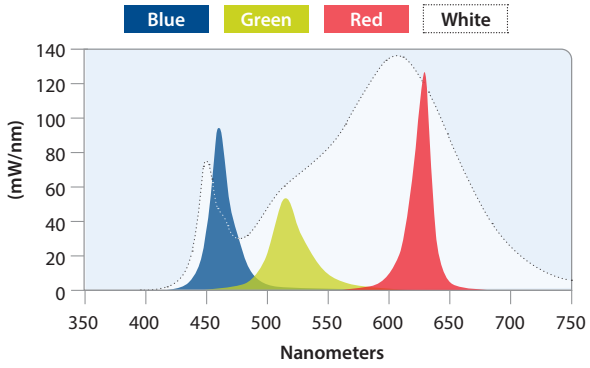
PRUDENTIAL LTG.

Chroma Hue

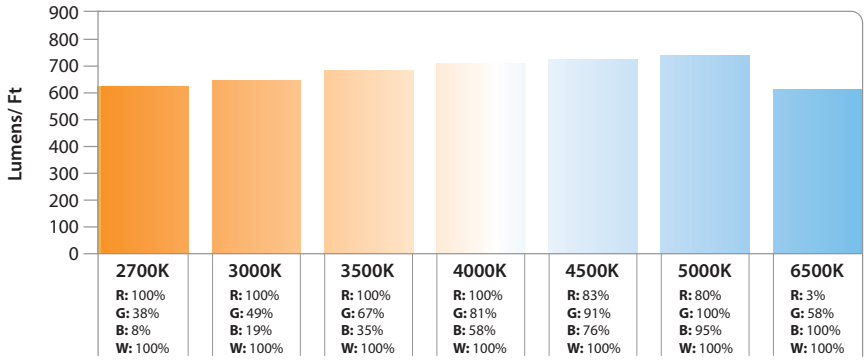
ChromaHue offers a vibrant full gamut of colors for seemingly endless architectural interior applications. Rich color-changing light offers tremendous design flexibility while white light can be achieved with the White chip, or mixing of Red, Green and Blue light. No longer just for the entertainment industry, ChromaHue can be intermixed on BionicPro luminaires for mood-creating indirect illumination combined with static white direct light.

— RGBW LED array (Red, Green, Blue, White) with full spectrum color and white light on the black body curve.
— Four-channel control, DMX drivers.
— Any color point within the triangle can be reached by setting the proper output levels for each individual red, green, blue and white channels.
— Standard DMX is one zone with one XLR drop at start, one XLR return at the end.





CONSTRUCTED WHITES



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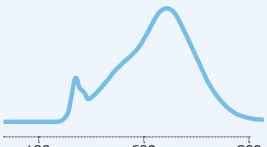
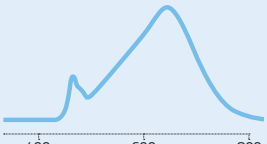
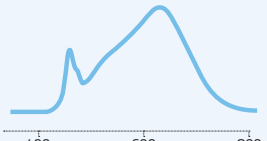
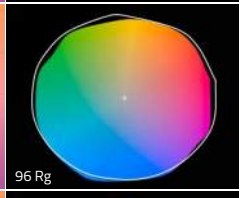
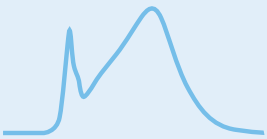
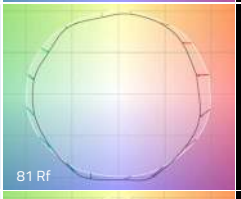
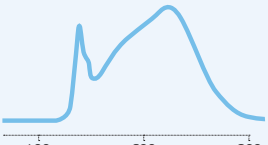
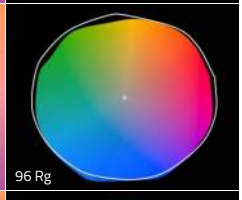
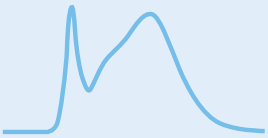
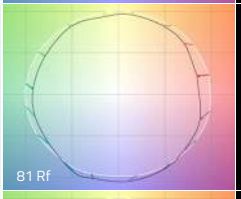
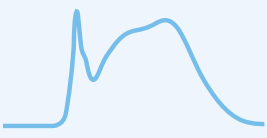
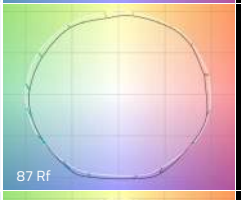
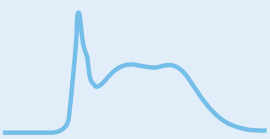
BionicPro4 | Linear

PRUDENTIAL LTG.

LM79 & TM30 DATA:

	MEASURED CCT	MEASURED LUMENS	CRI	R9	DuV	SPD	TM30 — COLOR VECTOR	TM30 — COLOR DISTORTION
LED27	2680	80%	93	58	0.001			
LED3	3042	95%	82	6	0.001			
LED3-90	3016	85%	93	61	0.000			
LED35	3482	100%	82	3	0.002			
LED35-90	3417	85%	93	67	0.000			
LED4	3952	102%	82	4	0.003			
LED4-90	3882	85%	92	67	0.003			
LED5-90	4889	85%	94	84	0.002			

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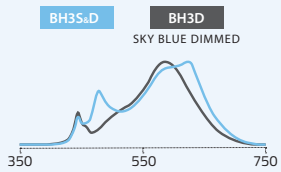
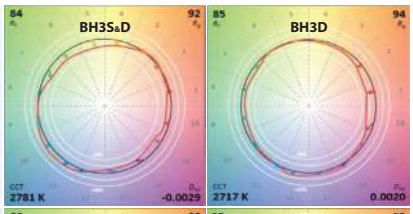
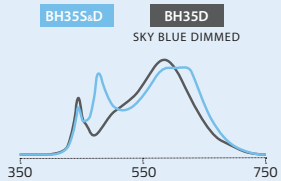
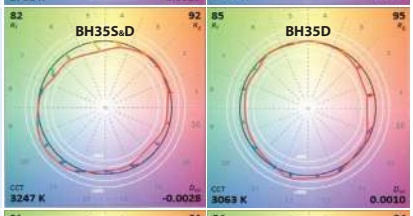
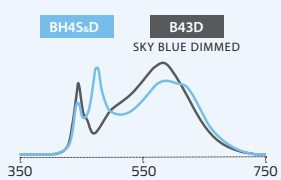
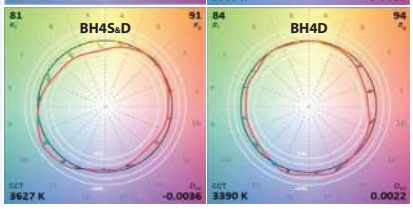
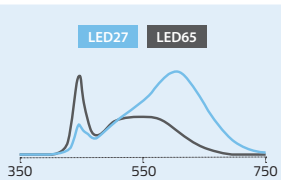
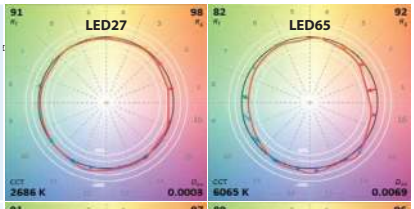
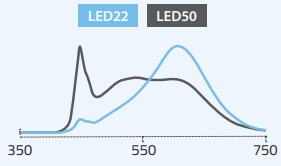
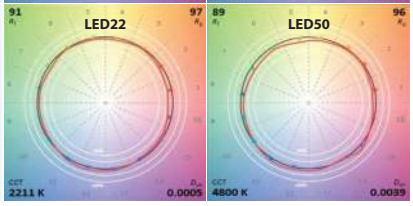
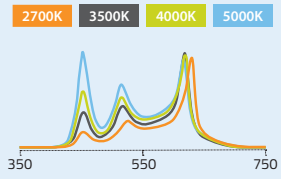
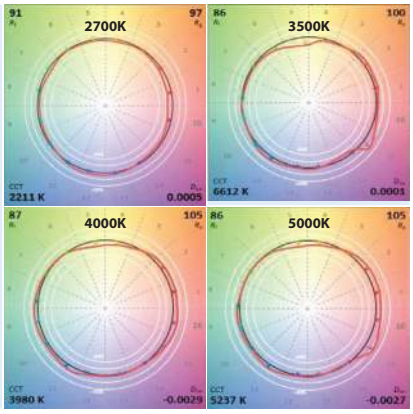
BionicPro4 | Linear

PRUDENTIAL LTG.

LM79 & TM30 DATA:

		MEASURED CCT	MEASURED LUMENS	CRI	R9	LED27	SPD	TM30 — COLOR VECTOR
BH3S&D	bios 3000K	2779	2758	87	81	0.003		
BH3D SKY BLUE DIMMED		2715	2425	82	3	0.002		
BH35S&D	bios 3500K	3245	2919	85	87	0.003		
BH35D SKY BLUE DIMMED		3061	2502	83	7	0.001		
BH4&D	bios 4000K	3624	2993	85	86	0.004		
BH4D SKY BLUE DIMMED		3388	2585	83	5	0.002		
TH	LED27	2684	2456	92	57	0.0001		
	LED65	6061	3292	82	-1	0.006		
TH2	LED22	2209	2112	92	52	0.0005		
	LED50	4796	2789	93	77	0.004		
CH	2700K	2632	2469	82	50	0.003		
	3500K	3388	2585	83	5	0.002		
	4000K	3977	2682	83	29	0.003		
	5000K	5233	2823	84	21	0.003		

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BionicPro4 | Linear

PRUDENTIAL LTG.

SENSORS

205: Wattstopper	**LVOC:** Lutron Occupancy /Daylight Sensor	**LVRF:** Lutron Vive Control Node	**NXSMP:** Hubbell Occupancy /Daylight Sensor	**ATHENA**
Low voltage PIR fixture integrated occupancy sensor.	Measures light in the space (daylighting) while detecting people moving within an area using passive infrared to determine occupancy. Controls the lights to balance the light level in the space, combining convenience, exceptional energy savings, and ease of installation.	Provides wireless control of the fixture when neither occupancy nor daylight sensing is needed.	Hubbell Integrated/embedded networked lighting control, luminaire-level lighting control, LLLC. PIR motion sensor for automatic On/Off control. Integrated daylight sensor for daylight harvesting and/or lumen maintenance. Bluetooth radio provides wireless control of luminaire. Simple plug-in connection to NX Fixture Modules. Wireless Internet.	The Athena wireless node is a radio frequency (RF) device that enables simple, digital control of individual light fixtures in an Athena control system. The small size and compatibility with a wide variety of drivers allow for seamless integration with common commercial lighting fixtures from any manufacturer. Requires drivers with auxiliary power, consult factory for lead times

NLT-AIR-rIO: Daylight+Occ	**NLT-AIR-ADCX:** Daylight+(PIR Acoustic) Occ	**NLT-WIRED-nIO:** Daylight+Occ	**NLT-WIRED-ADCX:** Daylight+(PIR Acoustic) Occ
The rIO is a fixture embedded low voltage wireless nLight AIR device capable of individual fixture control and analog or digital dimming. This smart device results in the luminaire being "nLight AIR-enabled" — making it an addressable nLight AIR device. It uses a 900MHz radio to communicate with other nLight AIR devices, such as occupancy sensors, photocells, wall switches, powerpacks and other nLight AIR-enabled lumnaires. This allows for advanced operation and design flexibility ranging from stand-alone rooms to building and campus-wide networks.	The nLight® AIR rES7 sensor is an in-fixture, low voltage, digital sensor providing embedded wireless lighting control, analog or digital dimming, occupancy detection and daylight harvesting capabilities. The rES7 is designed for mounting heights up to 20 ft in indoor luminaries. The rES7 sensor provides Passive Infrared (PIR) occupancy detection over a 15-20 ft (4.57 - 6.10 m) radial coverage pattern and photocell light level detection in one compact low profile design with optional Dual Technology, which adds Microphonics™ to PIR detection. The rES7 sensor is ideal for occupancy and daylighting control in suspended or recessed luminaries.	nLight digital nIO modules are low voltage control devices that enable digital control of LEDcode enabled eldoLED LED drivers. Through eldoLED's bi-directional 2-wire interface, these modules deliver natural, flicker-free high performance dimming while eliminating common issues related to 0-10 VDC alternatives. The modules also enable the eldoLED LED Drivers to be addressable, as well as capable of digitally communicating with other nLight controls such as occupancy sensors, photocells, and WallPods. This allows for advanced operation and design flexibility ranging from stand-alone rooms to building and campus-wide networks.	The nES7 is a small passive infrared occupancy sensor designed to be easily embedded into luminaires. This sensor provides excellent line of sight 360° PIR detection of small motion and walking motion. The nES7 is ideal for small rooms without obstructions or areas with primarily walking motion (e.g. corridors, library stacks). Additionally, an optional integrated photocell enables daylight harvesting control as well. Typically one or more nES7 sensors are paired with an nLight controller within an nLight enabled luminaire. For rooms like classrooms and private offices or any space with obstructions, the nES PDT 7 dual technology sensor is recommended.

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Bid Documents - 31 August 202
November 19, 2026
Addendum No. 6

Renovate Plant Science Building Phase 2
Cornell University, Ithaca, NY

Schuler Shook
LIGHTING DESIGN / THEATRE PLANNING / AUDIO VIDEO DESIGN

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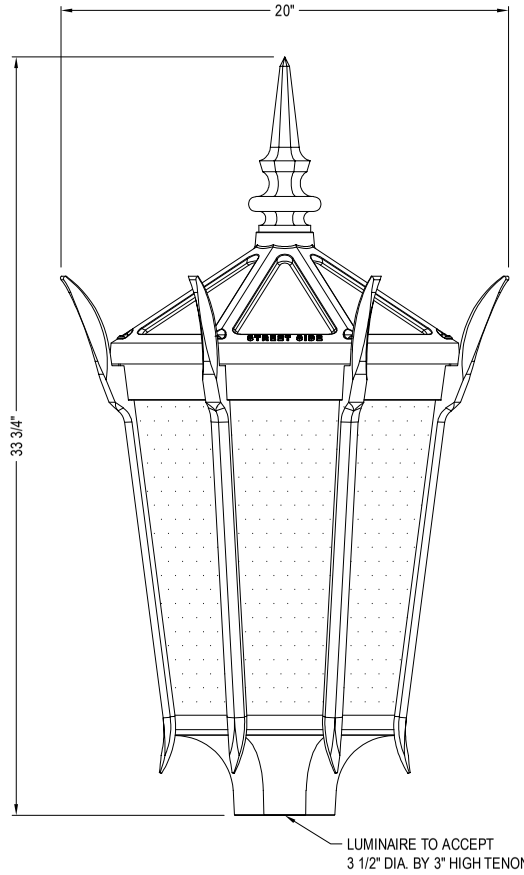

LUMINAIRE SPECIFICATIONS

STYLE:	EDGEWATER (MEDIUM)
HEIGHT:	33 3/4"
WIDTH:	20" OCTAGONAL
MATERIAL:	CAST ALUMINUM ALLOY ANSI 356 PER A.S.T.M. B26-95
PANEL:	PLEASE SELECT PANEL BELOW
FINISH:	POWDER COAT - PLEASE SPECIFY WITH RAL NUMBER
LAMPING:	PLEASE SELECT WATTAGE BELOW
VOLTAGE:	ELECTRICALLY WIRE AT 120-277 VOLTS
COLOR TEMP:	PLEASE SELECT COLOR TEMPERATURE BELOW
OPTICAL SYSTEM:	PLEASE SELECT DISTRIBUTION BELOW
SURGE:	10kV

CATALOG NO.: ALMEDM-LE___-EVX-2G2-__-__-____-FED-CU

CAT. NO.	LED WATTAGE	
LE040	40 WATTS	
LE060	60 WATTS	
LE080	80 WATTS	
LE100	100 WATTS	
OTHER WATTAGES AVAILABLE UPON REQUEST		

CAT. NO.	GLOBE MATERIAL	
YPLO	CLEAR ACRYLIC	
YSDP	SEEDED ACRYLIC	
YPBP	PEBBLED ACRYIC	
YPLF	LED GRADE FROSTED ACRYLIC	

CAT. NO.	COLOR TEMP.	
22	2200K	
27	2700K	
30	3000K	
40	4000K	
45	4500K	
OTHER COLOR TEMPERATURES AVAILABLE UPON REQUEST		

CAT. NO.	OPTICAL SYSTEM	
CR3	TYPE III	
CR4	TYPE IV	
CN5	TYPE V	
FM3	TYPE III (FROSTED)	
FM4	TYPE IV (FROSTED)	

INTEGRATED LIGHTING CONTROL PROVISIONS ARE AVAILABLE UPON REQUEST

Spring City Electrical Mfg. Co.
HALL AND MAIN STREETS - P.O. BOX 19 - SPRING CITY, PA. 19475
PHONE (610) 948-4000 - FAX (610) 948-5577 - WWW.SPRINGCITY.COM

DESCRIPTION: THE EDGEWATER (MEDIUM) LED LUMINAIRE

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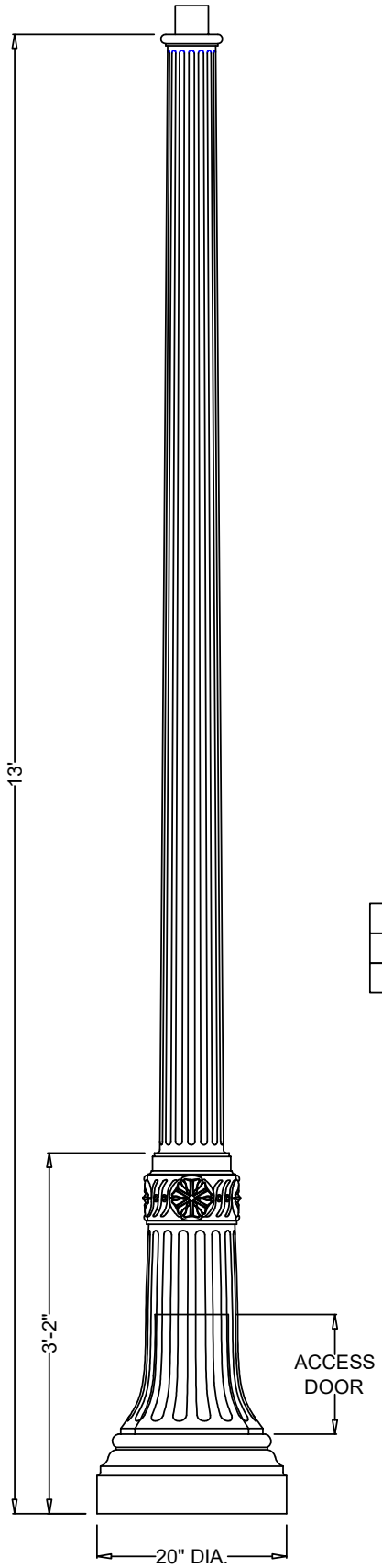


LAMP POST SPECIFICATIONS

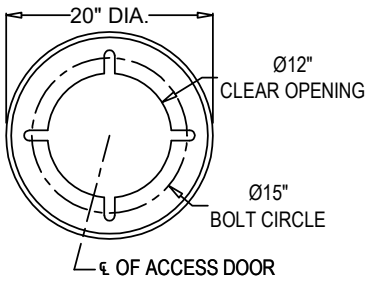
STYLE:	NORTHAMPTON
HEIGHT:	13'-0"
BASE:	20" DIAMETER
MATERIAL:	PLEASE ADVISE BELOW
FINISH:	PLEASE ADVISE BELOW
ACCESS DOOR:	LOCATED IN BASE SECURED WITH TAMPER PROOF HEX SOCKET SECURITY MACHINE SCREWS
GROUND PROVISIONS:	DRILL AND TAP INSIDE WALL OF BASE OPPOSITE ACCESS DOOR TO ACCOMMODATE A 1/4"-20 GROUND STUD (STUD SUPPLIED BY OTHERS)
ANCHOR BOLTS:	(4) 3/4" DIA. X 24" LONG + 3" HOOK (FULLY GALVANIZED WITH 1 GALVANIZED NUT AND 1 GALVANIZED WASHER PER BOLT)
BOLT PROJECTION:	3" REQUIRED
TENON:	PLEASE ADVISE BELOW

CATALOG NO.: _PSNRT-20-13.00-TN_.__/_.__-C_

	MATERIAL	CAT. NO.
	1 PIECE, CAST ALUMINUM ALLOY ANSI 356 PER A.S.T.M. B26-95	A
	1 PIECE, CAST IRON PER A.S.T.M. A48-83 CLASS 30	I
	1 PIECE, CAST DUCTILE IRON PER A536-84 GRADE 65-45-12	D

	TENON	CAT. NO.
	2 7/8" DIA. X 3" HIGH	TN2.88/3.00
	3" DIA. X 3" HIGH	TN3.00/3.00
	3 1/2" DIA. X 3" HIGH	TN3.50/3.00
	4" DIA. X 3" HIGH	TN4.00/3.00
	X.XX" DIA. X X.XX" HIGH	TNX.XX/X.XX

	FINISH	CAT. NO.
	POWDER COAT - PLEASE ADVISE RAL #	CU
	PRIME PAINT THEN FINISH PAINT SHERWIN WILLIAMS - PLEASE ADVISE COLOR	CW



BASE PLATE DETAIL

Spring City Electrical Mfg. Co.
HALL AND MAIN STREETS - P.O. BOX 19 - SPRING CITY, PA. 19475
PHONE (610) 948-4000 - FAX (610) 948-5577 - WWW.SPRINGCITY.COM

DESCRIPTION	THE NORTHAMPTON 13'-0" LAMP POST

WAC LIGHTING

Tube

Wall Mount 3000K

Fixture Type:

Catalog Number:

Project:

Location:

Model & Size	Color Temp & CRI	Watt	Lumens	Finish
WS-W2609 10" - 1 Light	3 3000K 90	16W	825	AL Brushed Aluminum
WS-W2610 10" - 2 Lights	3 3000K 90	30W	1525	BK Black BZ Bronze GH Graphite WT White

Example: **WS-W2609-AL**

DESCRIPTION

A curved contemporary look with impactful style. Perfect for illuminating the parameter of a home or creating a safe entryway to a building, the modern, minimalist Tube wall mount features a crescent profile. Crafted of aluminum with etched glass, this LED luminaire is offered in five handsome finishes and two energy-efficient LED configurations. Mounts upward or downward to suit nearly any exterior design scheme.

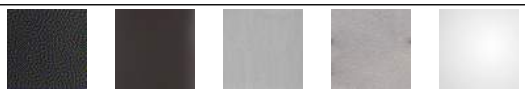
FEATURES

- 2609 Single, 2610 Double
- Driver concealed within the fixture
- 5 year warranty

SPECIFICATIONS

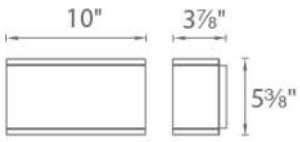
Construction	Die-cast Aluminum
Power:	16W, 30W
Input:	120-277V,50/60Hz
Dimming:	ELV: 100-10% , 0-10V: 100-5%
Light Source:	Integrated LED
Rated Life:	70,000 Hours
Mounting:	Mounts directly to junction box, Can be mounted on wall in all orientations
Finish:	Electrostatically Powder Coated: Powder Coat Graphite Graphite, Powder Coat Bronze Bronze, Black, Brushed Aluminum with Clear Powder Coat Brushed Aluminum, Powder Coat White White
Operating Temp:	-40°F to 122°F (-40°C to 50°C)
Standards:	UL, cUL, Wet Location Listed, IP65, ADA, Title 24 JA8 Compliant

FINISHES:



Black | Bronze | Brushed Aluminum | Graphite | White

LINE DRAWING



WAC Lighting retains the right to modify the design of our products at any time as part of the company's continuous improvement program. November 2026

END OF FIXTURE CUTS

Abbreviations

A	Air
A/C	Air Conditioning
A/V	Audio Visual
ABV	Above
AC/PC	Architectural Cast In Place Concrete
ACT	Accoustical Ceiling Tile
ADA	Americans with Disabilities Act
ADDNL	Additional
ADJ	Adjustable
AED	Automated External Defibrillator
AFF	Above Finished Floor
AGG	Aggregate
ALT	Alternate
ALUM	Aluminium
AP	Access Panel
APPROX	Approximate
ARA	Area of Rescue Assistance
ARCH	Architectural
ATS	Animal Transfer Station
AV	Audio Visual
AW	Automated Watering
AWS	Animal Watering System
AWSC	Animal Watering System Controller
BAS	Building Automated System
BC	Bottom of Curb
BCO	Brick Course
BD	Board
BDD	Back Draft Damper
BIT	Bituminous
BLDG	Building
BLK	Block
BLKG	Blocking
BLW	Below Countertop at Knee Space
BM	Beam
BO	Bottom of
BOC	Bottom of Concrete
BOD	Basis of Design
BOL	Bollard
BOT	Bottom
BOW	Bottom of Wall
BRKT	Bracket
BSC	Bio Safety Cabinet
BUR	Built Up Roofing
CAB	Cabinet
CABO	Council of American Building Officals
CAM	Camera
CB	Catch Basin
CEM	Cement
CFCI	Contractor Furnished & Contractor Installed
CG	Corner Guard
CHB	Chalkboard
CI	Cast Iron
CIP	Cast In Place
CJ	Control Joint
CL	Closet
CLG	Ceiling
CLM	Centerline of Mullion
CLR	Clear(ance)
CMU	Concrete Masonry Unit
CO	Convenience Outlet Receptacle
COL	Column
COMM	Command
COMP	Compressible
CONC	Concrete
CONST	Construction
CONT	Continuous
CR	Cold Rolled
CR	Card Reader
CS	Cupsink
CT	Ceramic Tile
CTR	Center
CUH	Cabinet Unit Heater
CW	Cold Water
DB	Drainboard (Interchangeable w/ DR)
DET	Detail
DF	Drinking Fountain
DIA	Diameter
DIF	Diffuser
DIM	Dimension
DN	Down
DP	Dirty Power
DW	Dishwasher
DWG	Drawing
EJ	Expansion Joint
EL	Elevation (Topographical)
ELEC	Electric(al)
ELEC PNL	Electrical Panel
ELEV	Elevator
EMERG	Emergency
ENCL	Enclosure
EO	Edge of
EOS	Edge of Slab
EP	Emergency Phone
EQ	Equal
EQUIP	Equipment
ES	Emergency Shower
ESV	Emergency Shower Valve
ETR	Existing to Remain
EW	Emergency Eyewash
EWC	Electric Water Cooler
EX/EXIS	Existing
EXH	Exhaust
EXP	Expansion
EXP	Exposed
EXT	Exterior
FB	Floor Box
FCO	Floor Clean Out
FD	Floor Drain
FDN	Foundation
FE	Fire Extinguisher
FEC	Fire Extinguisher Cabinet
FEH	Fire Extinguisher Hook
FF	Foil Faced
FH	Fume Hood
FHC	Fire Hose Cabinet
FHCE	Fume Hood Ceiling Enclosure
FIN	FINISH
FIXT	Fixture
FL	Floor
FLUOR	Fluorescent
FO	Fiber Optic
FOC	Face of Concrete
FOP	Face of Precast
FPT	Floor Poke Thru
FRM	Frame
FRT	Fire Retardant Treated
FS	Firestopping
FT	Feet
FTG	Footing
FTR	Fin Tube Radiation
FV	(Contractor to) Field Verify
FWP	Fiber Wrapped Panel
G	Gas
GA	Gauge
GALV	Galvinized

Abbreviations

GB	Grab Bar
GC	General Contractor
GFI	Ground Fault Interrupting
GFRG	Glass Fiber Reinforced Gypsum
GL	Glass
GRN	Granite
GSO	Gas Shut-Off
GV	Gas Valve
GWB	Gypsum Wall Board
GWP	Graphic Wall Paper
GYP	Gypsum
HC	Handicapped
HCP	Handicap
HCR	Hollow Core
HDW	Hardware
HE	Helium
HeR	Helium Return
HGT	Height
HM	Hollow Metal
HOR	Horizontal
HP	High Point
HR	Hour
HSO	HVAC Shut-Off
HTR	Heater
HVAC	Heating, Ventilation and Air Conditioing
HW	Hot Water
ID	Inside Diameter
IN	Inch or Inches
INCAND	Incandescent
INCL	Include (-ding)
INSUL	Insulation
JNT	Joint
JT	Joint
LAM	Laminated
LAV	Lavatory
LGMF	Light Gauge Metal Framing
LMF	Light Gauge Metal Framing (sim)
LP	Low Point
LTG	Lighting
MACH	Machine
MAX	Maximum
MB	Markerboarf
MDF	Medium Density Fiberboard
MECH	Mechanical
MEMB	Membrane
MET	Metal
MFR	Manufacturer
MIN	Minimum
MISC	Miscellaneous
MNT	Mount/Mounting
MO	Masonry Opening
MOS	Mossiac
MP	Metal Panel
MR	Moisture Resistant
MTD	Mounted
MTL	Metal
MW	Modular Wall (enclosing autoclaves, etc.)
N	Nitrogen
NA	Not Applicable
NER	National Evalution Report
NIC	Not In Contract
NO	Number
NTS	Not To Scale
O.H.	Opposite Hand
O.H.DR	Overhead Door
OBL	Oblique
OC	On Center
OD	Outside Diameter
OF	Owner Furnished
OFCI	Owner Furnished & Contractor Installed
OFO	Owner Furnished & Owner Installed
OFOI	Owner Furnished & Owner Installed
OHSG	Overhead Service Grid
OPNG	Opening
OPP	Opposite
OPPH	Opposite Hand
OVP	Overhead Video Projector
OVPS	Overhead Video Projector Support
(1)PH	Single Phase
(3) PH	Three Phase
P	Patch
PB	Pegboard
PC	Precast Concrete
PCWR	Process Chilled Water Return
PCWS	Process Chilled Water Supply
PE	Point Exhaust
PGL	Plate Glas
PL	Plate
PLAM	Plastic Laminate
PLAS	Plaster
PLWD	Plywood
PNL	Panel
PP	Pumping Port
PRS	Pressure Reducing Station
PS	Projector Screen
PT	Point
PT	Pressure Treated
PTD	Paint(ed)
PTN	Partition
PVC	Poly Vinyl Chloride
QT	Quarry Tile
QTY	Quantity
R	Riser (or) Radius
R/F	Ref. or Freezer (by owner)
RA	Return Air
RCP	Reflect Ceiling Plan
RECV	Receiving
REF	Refrigerator
REG	Register
REINF	Reinforcing/Reinforced
REQ'D	Required
REV	Revision
RM	Room
RMS	Rooms
RO	Rough Opening
RODI	Reverse Osmosis Deionized Water
RWL	Rain Water Leader
S	Sink
SC	Solid Core
SCA	Spray on Cementitious Acoustical
SD	Shading Device (SD-1: Type 1)
SECT	Section
SFRM	Spray Fire Resistant Material
SG	Special Glass
SHT	Sheet
SIM	Similar
SMRF	Seamless Mechanical Room Floor

Abbreviations

SPEC	Specifications
SQ	Square
SS	Stainless Steel
ST-1	Granite
ST-2	Limestone
STD	Standard
STL	Steel
STN	Stainless
STOR	Storage
STR	Structural
SUSP	Suspended
SV	Special Vacuum
T	Tread
TB	Tackboard
TC	Top of Curb
TD	Trench Drain
TEL	Telephone
TEMP	Tempered (or) Temporary
TERR	Terrazzo
TG	Tempered Glass
THK	Thick
TMV	Thermostatic Mixing Valve
TO	Top of
TOC	Top of Concrete
TOF	Top of Footing
TOP	Top of Parapet
TOR	Top of Rail
TOS	Top of Steel
TOT	Top of Tunnel
TOW	Top of Wall
TRANS	Transformer
TYP	Typical
U.O.N.	Unless Otherwise Noted
U.N.O.	Unless Noted Otherwise
UC	Under Counter
UL	Underwriters Laboratory
V	Vacuum
VCT	Vinyl Composition Tile
VERT	Vertical
VIF	Verify In Field
VIN	Vinyl
W/	With
W/O	Without
WD	Wood
WF	Steel Beam (Wide Flange)
WG	Wall Guard
WMS	Wire Mesh Screen
WP	Working Point
WPR	Waterproofing
WRB	Weather Resistant Barrier
WS(#)	Window Shade (and type) -
WWF	Welded Wire Fabric

GRAPHIC SYMBOLS

- Building Column Centerline
- Plan or Vertical Detail — Example: Detail 1 on Drawing A101
- Building Section — Example: Detail A on Drawing A4.1
- Wall Section — Example: Detail 2 on Drawing A5.2
- Top number indicates plan, elevation, section or detail shown directly below that plan, elevation, section or detail. Bottom number indicates the sheet number where that plan, elev., sect, or detail is drawn. Example: Detail 2 on sheet A9.4
- Room name and number shown on floor plans
- Indicates window type
- Indicates louver type keyed on elevations
- Indicates door number shown on floor plans (reference to door schedule)
- Indicates Partition Type
- Indicates Frame Type
- Interior elevation, shown on floor plans
- Spot elevation
- Drawing Revision. Revision date shown in title block
- C.J. — Indicates Control Joint
- E.J. — Indicates Expansion Joint
- S — Indicates Sealant to be applied
- R — Indicates Backer Rod to be installed
- FD — Floor Drain
- FS — Floor Sink
- MW — Mixed Water
- FEH — Fire Extinguisher Hook
- FEC — Fire Extinguisher Cabinet
- EXISTING WALL TO REMAIN
- EXISTING CASEWORK TO BE DEMOLISHED (AD-SERIES) COORDINATE WITH HM-SERIES
- EXISTING WALL TO BE DEMOLISHED (AD-SERIES)
- NEW CONSTRUCTION
- NEW PARTITION WITH SOUND INSULATION - ALSO DESIGNATED WITH "S" IN PARTITION TYPE - SEE A9.12
- 1-HR RATED FIRE BARRIER
- 2-HR RATED FIRE BARRIER (WITH OR WITHOUT DIAGONAL HATCH DESIGNATING CMU)
- OUTSIDE MAIN ARCHITECTURAL WORK AREA; SELECT SCOPE REQUIRED - SEE WORK OF ALL DISCIPLINES

GRAPHIC SYMBOLS

- Exhaust Snorkel - ceiling mts. U.N.O. see Specification
- Service Recessed in Floor
- Duplex Outlet, 110 V
- Double Duplex Outlet, 110 V
- 208 Volt Outlet, Shingle Phase
- Double Data Port and Cable TV Port and Voice Outlet
- Special Power
- Continuous Plugmold
- 2'X2' Access Panel
- Video Camera
- Lab Gas Shut -off Valve
- Wall Phone

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Bell & Spina
Building Envelope
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Syracuse, NY 13204
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T 212 439-5650

D2D Green Design
Sustainability PH2
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Holliston, MA 01746
T 508 397-8417

Ellana
Cost Consulting
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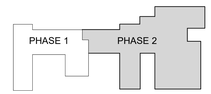
New York, NY 10004
T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS - PHASE 2

BID DOCUMENTS
Scale: 1 : 1

G0.3

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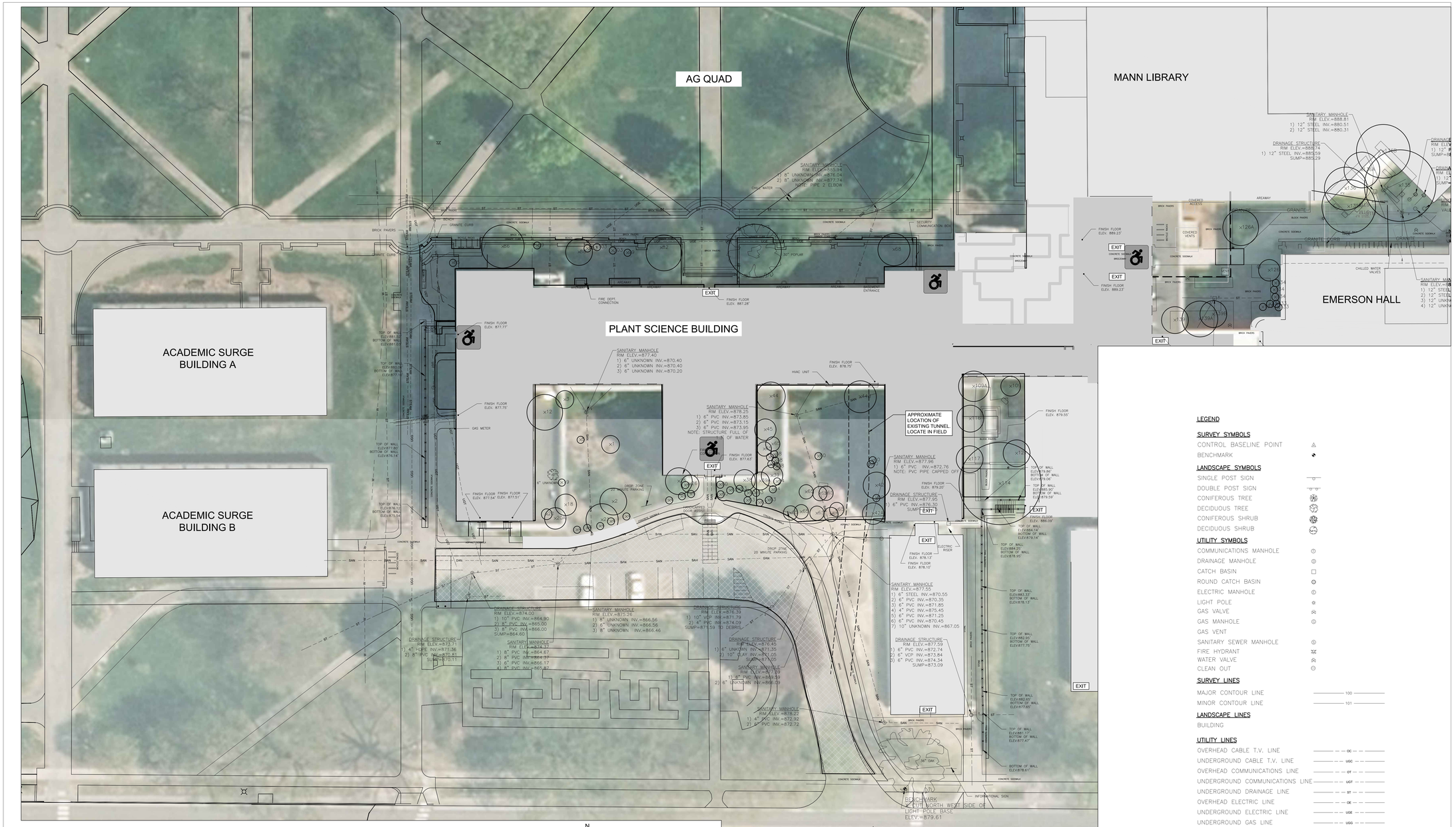

1 EXISTING CONDITIONS PLAN
Scale: 1" = 20'-0"

LEGEND

SURVEY SYMBOLS
- CONTROL BASELINE POINT
- BENCHMARK

LANDSCAPE SYMBOLS
- SINGLE POST SIGN
- DOUBLE POST SIGN
- CONIFEROUS TREE
- DECIDUOUS TREE
- CONIFEROUS SHRUB
- DECIDUOUS SHRUB

UTILITY SYMBOLS
- COMMUNICATIONS MANHOLE
- DRAINAGE MANHOLE
- CATCH BASIN
- ROUND CATCH BASIN
- ELECTRIC MANHOLE
- LIGHT POLE
- GAS VALVE
- GAS MANHOLE
- GAS VENT
- SANITARY SEWER MANHOLE
- FIRE HYDRANT
- WATER VALVE
- CLEAN OUT

SURVEY LINES
- MAJOR CONTOUR LINE — 100 —
- MINOR CONTOUR LINE — 101 —

LANDSCAPE LINES
- BUILDING

UTILITY LINES
- OVERHEAD CABLE T.V. LINE — OC —
- UNDERGROUND CABLE T.V. LINE — UGC —
- OVERHEAD COMMUNICATIONS LINE — OT —
- UNDERGROUND COMMUNICATIONS LINE — UGT —
- UNDERGROUND DRAINAGE LINE — ST —
- OVERHEAD ELECTRIC LINE — OE —
- UNDERGROUND ELECTRIC LINE — UGE —
- UNDERGROUND GAS LINE — UGG —
- UNDERGROUND SANITARY SEWER LINE — SAN —
- UNDERGROUND STEAM LINE — STEAM —
- UNDERGROUND WATER LINE — W —

NOTES:

1. MAPPING PREPARED BY RYAN BIGGS | DAVIS ENGINEERING & SURVEYING, P.C., FROM A FIELD SURVEY COMPLETED SEPTEMBER, 2021.
2. NORTH REFERENCE USED HEREON IS NAD 83 NEW YORK EAST ZONE PLANE COORDINATE SYSTEM.
3. VERTICAL REFERENCE USED HEREON IS NAVD 88.
4. UNDERGROUND UTILITIES AS SHOWN HEREON ARE FROM FIELD LOCATION AND RECORD PLANS, THEIR LOCATION IS APPROXIMATE, OTHERS MAY EXIST, AND ALL ARE SUBJECT TO VERIFICATION BY OTHERS.

MAP REFERENCES:

1. "AS-BUILT MAP, CORNELL UNIVERSITY AG QUAD, CITY OF ITHACA, TOMPKINS COUNTY, NEW YORK", AS PREPARED BY T.G. MILLER P.C., DATED JULY 7, 2018.
2. EXISTING VEGETATION CONDITIONS UPDATED BASED ON PHASE 1 CONSTRUCTION

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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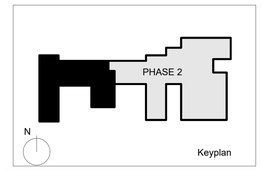
Notes:



Job Number
Drawing By
Checked By
Filename
Date August 31, 2026

Revisions

D	Addendum No.6	11/19/2026

EXISTING CONDITIONS PLAN
PHASE 2

REGISTERED LANDSCAPE ARCHITECT — KRISTINE CHIARENZA TESTA — 001474 — STATE OF NEW YORK

BID DOCUMENTS
Scale: 1" = 20'-0"

C0.1

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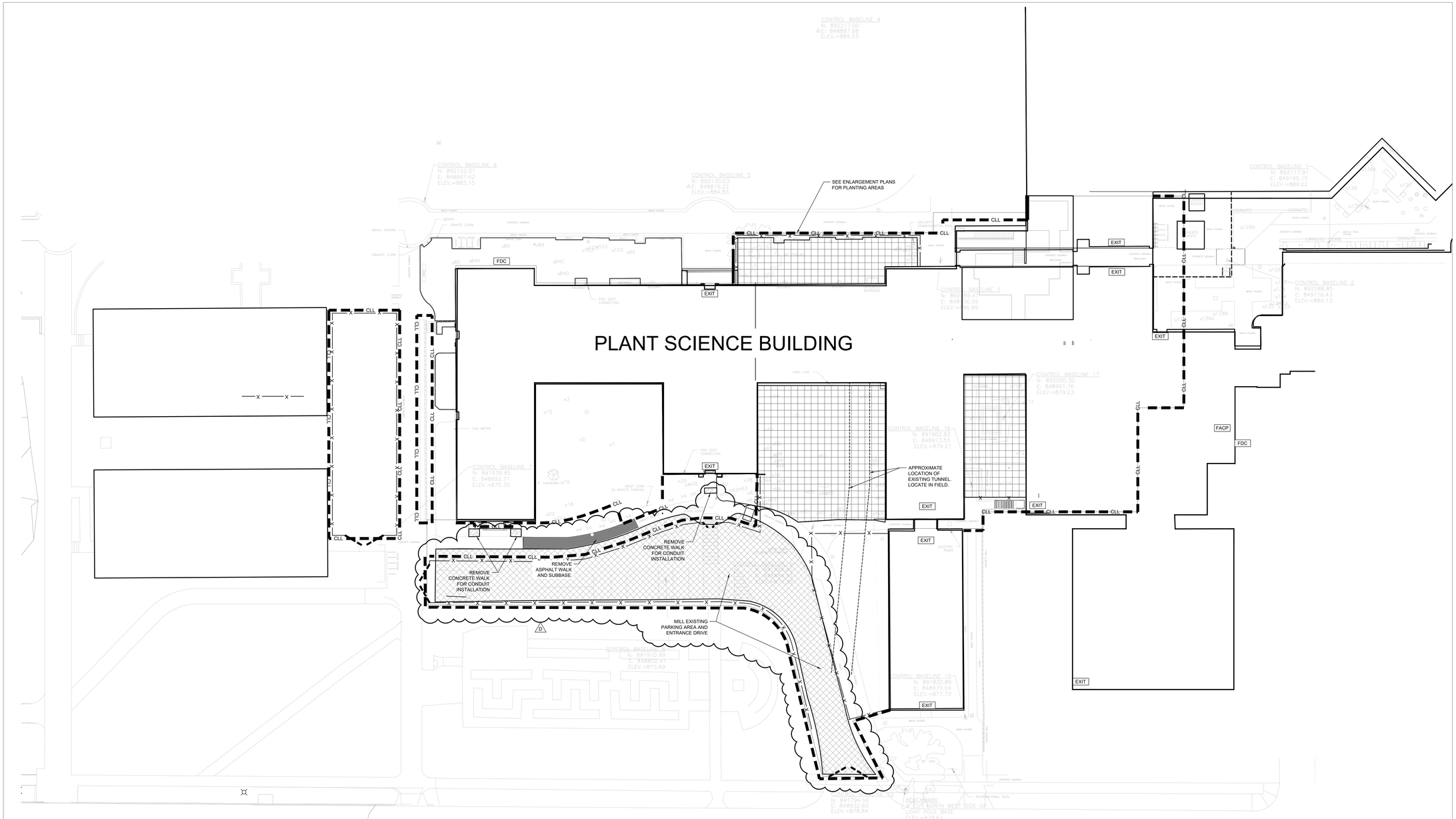

1 DEMOLITION PLAN

Scale: 1" = 20'-0"

N

20 10 0 10 20 40

GRAPHIC SCALE (IN FEET)

DEMOLITION PLAN LEGEND

ITEM	SYMBOL
CONTRACT LIMIT LINE	CLL
TEMPORARY SITE ENCLOSURE FENCE	X X
MILL EXISTING ASPHALT PAVEMENT	
REMOVE EXISTING CONCRETE PAVEMENT	
PLANTING AREA (REFERENCE DEMOLITION PLAN ENLARGEMENTS FOR RETAINAGE/PROTECTION, TRANSPLANT, OR REMOVAL)	

DEMOLITION PLAN NOTES

1. RESTORATION OF THE CONTRACTOR TRAILER AREA IS REQUIRED AT PROJECT COMPLETION.
2. LAWN RESTORATION IS DEPENDENT ON GROWING SEASON AND DATE OF PROJECT COMPLETION. SEEDING MAY WAIT UNTIL SPRING.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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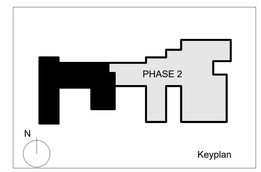

Job Number		
Drawing By	SMB	
Checked By	JCG	
Filename		
Date	August 31, 2026	
Revisions		
D	Addendum No.6	11/19/2026

DEMOLITION PLAN PHASE 2

REGISTERED LANDSCAPE ARCHITECT JAMIE CHARTERS FLYNN 001474 STATE OF NEW YORK

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Scale: 1" = 20'-0"

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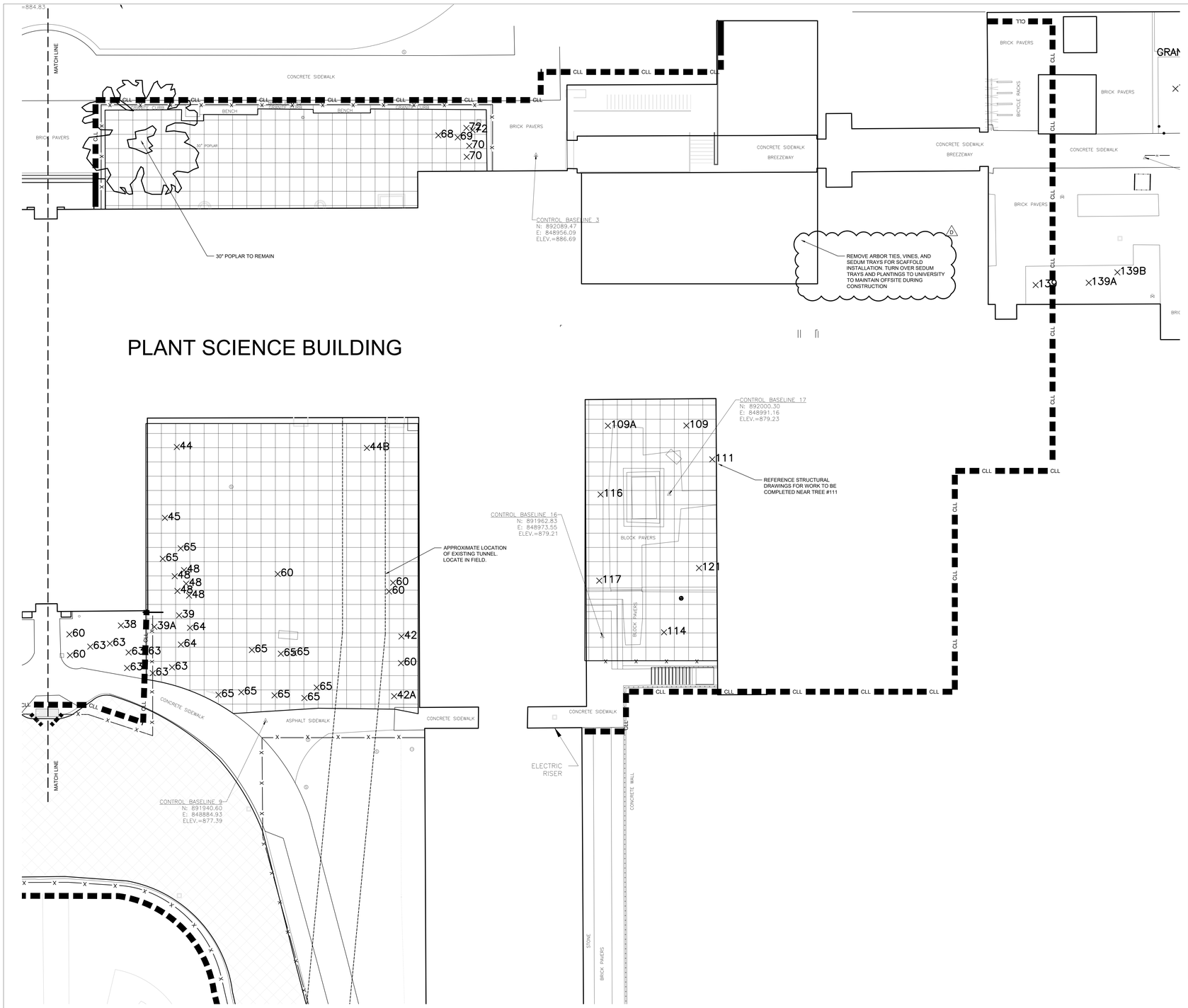

1 PLANTING DEMOLITION PLAN ENLARGEMENT - EAST COURTYARD AND ENTRY WAY
Scale: 1" = 10'-0"

N

10 0 5 10 20
GRAPHIC SCALE (IN FEET)

PLANT IDENTIFICATION LISTS

EAST COURTYARD AND ENTRY WAY				
PLANT ID#	SPECIES	RETAIN / PROTECT / TRANSPLANT / REMOVE	# OF PLANTS	DIAMETER OF TREE DRIP LINE
39	MAGNOLIA ACUMINATA	RETAIN / PROTECT	1	12
39A	MAGNOLIA ACUMINATA	RETAIN / PROTECT	1	10
40	MAGNOLIA KOBUS STELLATA X LILLIFLORA	REMOVE	1	10
40A	MAGNOLIA KOBUS STELLATA X LILLIFLORA	REMOVE	1	8
40B	MAGNOLIA KOBUS STELLATA X LILLIFLORA	REMOVE	1	4
40C	MAGNOLIA KOBUS STELLATA X LILLIFLORA	REMOVE	1	10
40D	MAGNOLIA KOBUS STELLATA X LILLIFLORA	REMOVE	1	6
40E	MAGNOLIA KOBUS STELLATA X LILLIFLORA	REMOVE	1	6
40F	MAGNOLIA KOBUS STELLATA X LILLIFLORA	REMOVE	1	8
42	PINUS FLEXILIS	RETAIN / PROTECT	1	15
42A	PINUS FLEXILIS	RETAIN / PROTECT	1	12
43	PAULOWNIA TOMENTOSA	REMOVE	3	
44	MAGNOLIA GRANDIFLORA 'EDITH BOGUE'	RETAIN / PROTECT	1	16
44B	MAGNOLIA GRANDIFLORA 'EDITH BOGUE'	RETAIN / PROTECT	1	18
45	CHAMAECYPARIS OBTUSA	RETAIN / PROTECT	1	12
45A	CHAMAECYPARIS OBTUSA	RETAIN / PROTECT	1	4
46	HYDRANGEA PANICULATA	TRANSPLANT BY OTHERS	4	
47	HYDRANGEA MACROPHYLLA	TRANSPLANT BY OTHERS	3	
48	HYDRANGEA QUERCIFOLIA	RETAIN / PROTECT	5	
49	DEUTZIA SCABRA	TRANSPLANT BY OTHERS	2	
50	VIBURNUM X VANHOUTEI	TRANSPLANT BY OTHERS	3	6
50A	VIBURNUM X VANHOUTEI	TRANSPLANT BY OTHERS	1	6
51	VIBURNUM X MEDIA	TRANSPLANT BY OTHERS	10	
53	DEUTZIA GRACILIS	REMOVE	1	
54	QUERCUS X 'REGAL PRINCE'	TRANSPLANT BY OTHERS	1	10
54A	QUERCUS X 'REGAL PRINCE'	TRANSPLANT BY OTHERS	1	DEAD
54B	QUERCUS X 'REGAL PRINCE'	TRANSPLANT BY OTHERS	1	12
55	QUERCUS X 'CRIMSON SPIRE'	TRANSPLANT BY OTHERS	1	10
56	LARIX DECIDUA	REMOVE	2	
57	BERBERIS THUNBERGII 'CONCORDE'	TRANSPLANT BY OTHERS	4	
58	LESPEDEZA BICOLOR	REMOVE	1	
59	PENNISETUM ALOPECUROIDES 'HAMLIN'	REMOVE	2	
60	COTINUS COGGYGRIA	RETAIN / PROTECT	4	
61	CERCIDIPYLLUM JAPONICUM 'RED FOX'	TRANSPLANT BY OTHERS	1	6
61A	CERCIDIPYLLUM JAPONICUM 'RED FOX'	TRANSPLANT BY OTHERS	1	12
62	QUERCUS MICHAUXII	TRANSPLANT BY OTHERS	1	
63	JUNIPERUS VIRGINIANA 'GREY OWL'	RETAIN / PROTECT	3	
64	LABURNUM WATERERI	RETAIN / PROTECT	2	
65	BUXUS SEMPERVIREN 'CASTLE WALL'	RETAIN / PROTECT	10	

QUAD SIDE OF PLANT SCIENCE (EAST SIDE)				
PLANT ID#	SPECIES	RETAIN / PROTECT / TRANSPLANT / REMOVE	# OF PLANTS	DIAMETER OF TREE DRIP LINE
68	ACER CARPINIFOLIUM	RETAIN / PROTECT	1	18
69	KERRIA JAPONICA	TRANSPLANT BY OTHERS	2	
70	HYDRANGEA ARBORESCENS	TRANSPLANT BY OTHERS	2	
72	HYDRANGEA QUERCIFOLIA	TRANSPLANT BY OTHERS	9	

MANN COURTYARD				
PLANT ID#	SPECIES	RETAIN / PROTECT / TRANSPLANT / REMOVE	# OF PLANTS	DIAMETER OF TREE DRIP LINE
139	ACER PENSYLVANICA 'WHITE TIGRESS'	RETAIN / PROTECT	1	15

HIDDEN GARDEN WITH LARGE ARBOR AND POND EAST OF PLANT SCIENCE				
PLANT ID#	SPECIES	RETAIN / PROTECT / TRANSPLANT / REMOVE	# OF PLANTS	DIAMETER OF TREE DRIP LINE
109	MAGNOLIA GRANDIFLORA	RETAIN / PROTECT	1	11
109A	MAGNOLIA GRANDIFLORA	RETAIN / PROTECT	1	17
110	JUNIPERUS SQUAMATA	REMOVE	1	7
111	ALBIZZIA JULIBRISSEN	RETAIN / PROTECT	1	40
112	COTINUS COGGYGRIA	TRANSPLANT BY OTHERS	4	
114	ULMUS 'VANGUARD'	RETAIN / PROTECT	1	45
116	ACER PALMATUM	RETAIN / PROTECT	1	15
117	PRUNUS LAUROCERASUS	RETAIN / PROTECT	1	
118	CARAGANA ARBORESCENS 'WALKERI'	TRANSPLANT BY OTHERS	1	
119	SPIRAEA JAPONICA	TRANSPLANT BY OTHERS	3	
120	HYDRANGEA MACROPHYLLA	TRANSPLANT BY OTHERS	4	
121	CRYPTOMERIA JAPONICA	RETAIN / PROTECT	1	15
122	CHAMAECYPARIS OBTUSA 'NANA'	TRANSPLANT BY OTHERS	1	
124	PERENNIALS: RODGERSIA, AESCULIFOLIA, ANEMONE HUPEHENSIS, ACANTHUS SPINOSUS, HOSTA SPP., CERATOSTIGMA PLUMBAGINOIDES	TRANSPLANT BY OTHERS	10	
125	ILEX SPP	REMOVE	1	

DEMOLITION PLAN NOTES

1. ALL WORK ASSOCIATED WITH PLANTINGS SHALL BE STRICTLY COORDINATED WITH OWNER'S REPRESENTATIVE AND CAMPUS PRIOR TO COMMENCING WORK.
2. REFERENCE DETAILS ON SHEET C6.1 FOR PLANT MATERIAL PROTECTION.
3. ALL TRANSPLANTING SCOPE HAS BEEN COMPLETED BY THE CAMPUS AND SHALL NOT BE INCLUDED IN CONTRACTOR'S PROJECT SCOPE.
4. WHERE THERE IS A CONFLICT BETWEEN QUANTITIES SHOWN ON THE PLANS AND IN THE SCHEDULE, UTILIZE THE LARGER QUANTITY.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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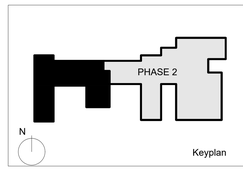
Notes:



Job Number
Drawing By
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Filename
Date August 31, 2026

Revisions
D Addendum No.6 11/19/2026

DEMOLITION PLAN ENLARGEMENTS PHASE 2

REGISTERED LANDSCAPE ARCHITECT DAVID CHARLES ELLENZWEIG 001474 STATE OF NEW YORK

BID DOCUMENTS
Scale: 1" = 10'-0"

C0.3

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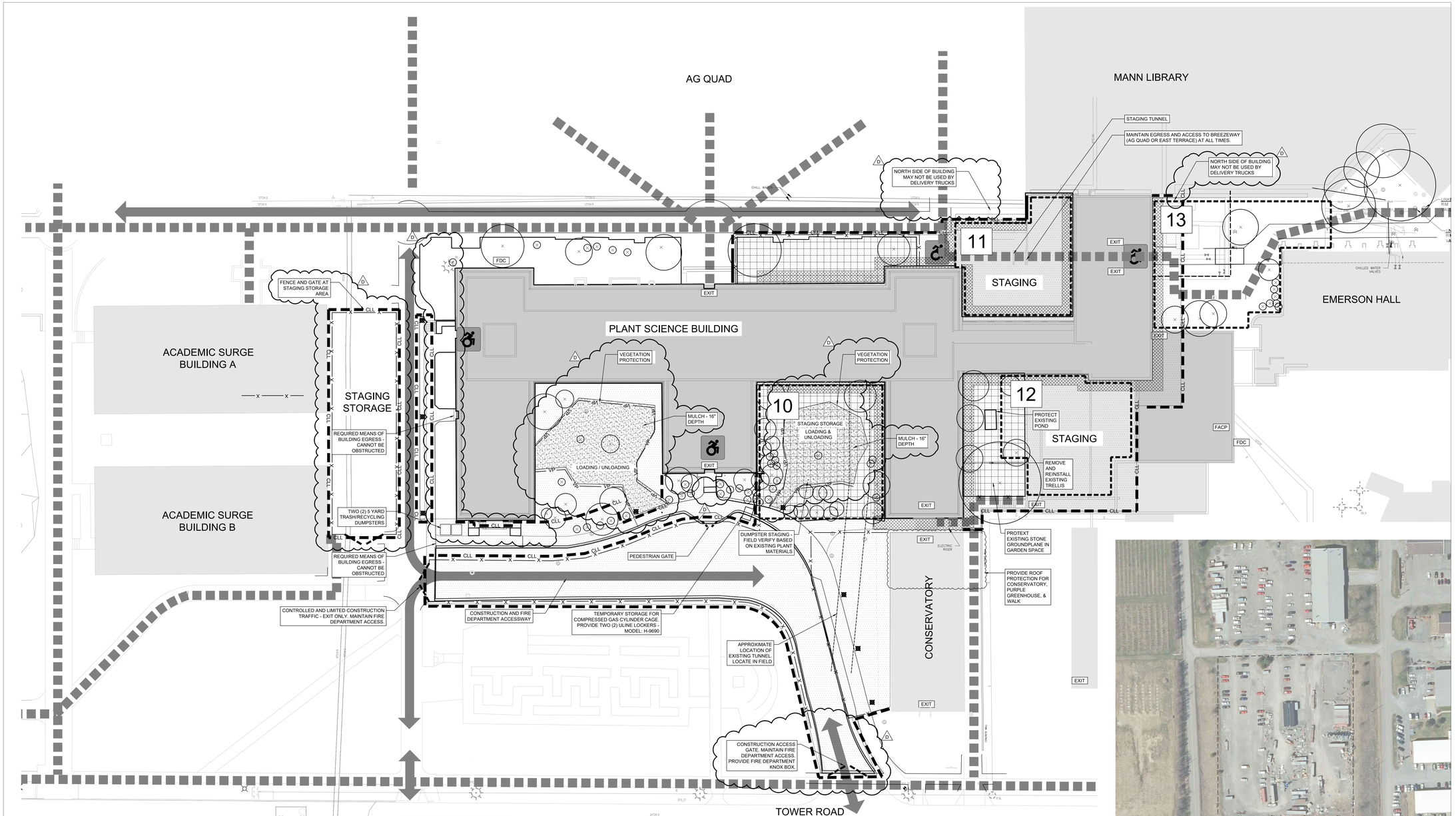

1 CONSTRUCTION STAGING PLAN

Scale: 1" = 20'-0"

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20 10 0 10 20 40

GRAPHIC SCALE (IN FEET)

KEY FACTORS AND STAGING PLAN GOALS

1. MAINTAIN ACCESS TO PARTIALLY OCCUPIED BUILDING.
2. PRIORITIZE LIFE SAFETY OF OCCUPANTS, PEDESTRIANS AND CONTRACTORS.
3. MAINTAIN TWO MEANS OF EXITING THE BUILDING FOR OCCUPANTS AND CONTRACTORS AT ALL TIMES.
4. MAINTAIN FIRE DEPARTMENT ACCESS AROUND THE BUILDING AT ALL TIMES.
5. PROVIDE SAFE CONSTRUCTION ACCESS, DELIVERY AND STAGING.
6. COORDINATE SCAFFOLDING FOR PARAPET, CORNICE, FACADE AND WINDOW REPAIR/REPLACEMENT.
7. RELOCATE AND/OR PROTECT PLANTINGS PER PLANS.
8. MAINTAIN PEDESTRIAN ACCESS ROUTES. COORDINATE ANY CLOSURES WITH OWNER'S REPRESENTATIVE TWO WEEKS IN ADVANCE.
9. COORDINATE SCAFFOLDING AND TREE PROTECTION INTERACTION WITH CAMPUS
10. ANY CRANE ACTIVITY IN THIS AREA WILL NEED TO TAKE INTO ACCOUNT THE UTILITY TUNNEL BELOW, AND PROTECT THE TUNNEL ACCORDINGLY. COORDINATE WITH CORNELL FOR EXISTING CONDITIONS INFORMATION.
11. THIS AREA HAS BUILT SPACE BELOW. COORDINATE WITH CORNELL FOR EXISTING CONDITIONS INFORMATION.
12. THIS AREA HAS BUILT SPACE BELOW. COORDINATE WITH CORNELL FOR EXISTING CONDITIONS INFORMATION.
13. THIS AREA HAS BUILT SPACE BELOW. COORDINATE WITH CORNELL FOR EXISTING CONDITIONS INFORMATION. △
14. COORDINATE WITH THE UNIVERSITY REGARDING OVERALL LANDSCAPE MAINTENANCE ACCESS TO THE EXISTING PLANT BED WEST OF THE CONSERVATORY.
15. COORDINATE WITH CORNELL FACILITIES PERSONNEL, CORNELL ENVIRONMENTAL HEALTH & SAFETY, AND LOCAL AHJ FOR IMPAIRMENTS TO EGRESS, CIRCULATION, AND ACCESSIBILITY TO SURROUNDING BUILDINGS AND THROUGH BREEZEWAY.

CONSTRUCTION STAGING LEGEND

CLL	CONTRACT LIMIT LINE		CONSTRCUTION AND FIRE DEPARTMENT ACCESSWAY
	CONSTRUCTION TRAFFIC AREA		
	PHASE 2 WORK AREA		6'-0" SCAFFOLD ON MUD SILLS
X X	TEMPORARY SITE ENCLOSURE FENCE	EXIT	BUILDING EXIT
VP VP	VEGETATION PROTECTION ZONE FENCE	FACP	FIRE ALARM CONTROL PANEL
		FDC	FIRE DEPARTMENT CONNECTION
	PEDESTRIAN ACCESS ROUTE		MULCH - 16" DEPTH

2 EXISTING PHASE 1 CONSTRUCTION STAGING PLAN - PALM ROAD

Scale: 1" = 100'

N

100 0 50 100 200

GRAPHIC SCALE (IN FEET)

PALM ROAD STAGING AREA NOTES

1. PARKING MAY BE MADE AVAILABLE FOR STAGING AT PALM ROAD OR OTHER PRE-DETERMINED AREA FOR THE DURATION OF THE PROJECT.
2. ALL VEHICLES AT PALM ROAD MUST BE REGISTERED WITH TRANSPORTATION SERVICES. DUE TO ONGOING WORK AT THE PALM ROAD LOT, PARKING MAY BE LIMITED.
3. IF STAGING SPACE IS NEEDED, A REQUEST SHOULD BE SUBMITTED TO THE CORNELL PROJECT MANAGER (DAVIES ORINDA, DOO4@CORNELL.EDU).
4. THE CONTRACTOR WILL BE RESPONSIBLE FOR SECURING AND MAINTAINING THE DESIGNATED AREA.
5. ALL CONTRACTOR TRAILERS OR STORAGE CONTAINERS LOCATED IN THE PALM ROAD STAGING AREA WILL NEED TO FILE FOR A BUILDING PERMIT WITH THE TOWN OF ITHACA.
6. IF THE TRAILER/CONTAINER IS THERE LONGER THAN 180 DAYS, THE TRAILER/CONTAINER WILL NEED TO MEET THE CODE REQUIREMENTS OF A PERMANENT STRUCTURE. IN SHORT, THE TRAILER/CONTAINER WILL NEED A MEANS OF EGRESS (THAT CAN BE OPERATED FROM THE INSIDE) AND A FIRE EXTINGUISHER.
7. THE CONTRACTOR WILL NEED TO FILE FOR A DEMOLITION PERMIT WHEN THE TRAILER/CONTAINER IS REMOVED.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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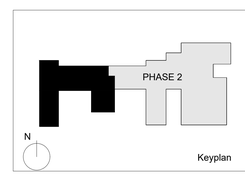
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Hollilston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Job Number
Drawing By SM
Checked By SB
Filename
Date August 31, 2026

Revisions

D	Addendum No.6	11/19/2026

CONSTRUCTION STAGING PLAN PHASE 2

REGISTERED LANDSCAPE ARCHITECT STEVEN MICHAEL BRANCH 001474 STATE OF NEW YORK

BID DOCUMENTS
Scale: AS NOTED

C1.1

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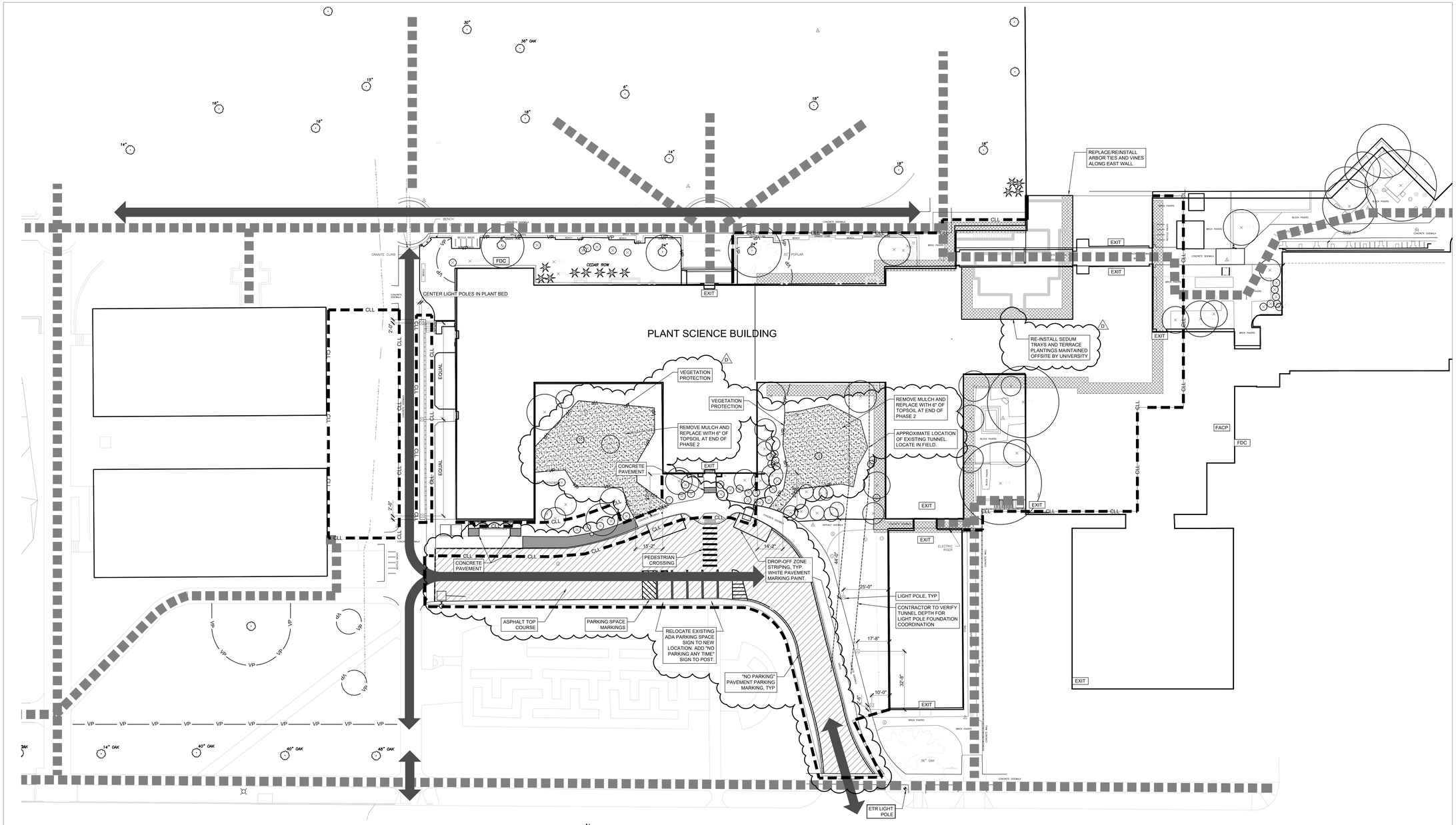


1 LAYOUT & MATERIALS PLAN

Scale: 1" = 20'-0"

N

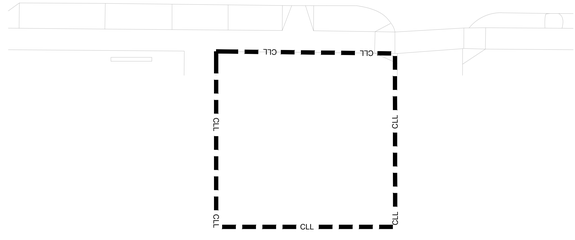
20 10 0 10 20 40

GRAPHIC SCALE (IN FEET)

SITE LEGEND	
ITEM	SYMBOL
CONTRACT LIMIT LINE	CLL
TEMPORARY SITE ENCLOSURE FENCE	X X
VEGETATION PROTECTION ZONE FENCING	VP VP
CONCRETE PAVEMENT	
ASPHALT TOP COURSE	
PARKING SPACE MARKINGS	

LAYOUT AND MATERIALS PLAN NOTES

1. ALL MULCH (INCLUDING PHASE 1 AREAS) TO BE REMOVED AND REPLACED WITH 6" OF TOPSOIL IN ALL LANDSCAPE AREAS AT END OF PHASE 2.
2. PROVIDE ALL VEGETATION PROTECTION AND REMOVE AT AT END OF PHASE 2.
3. NO NEW PLANTINGS ARE PART OF PHASE 2 SCOPE.



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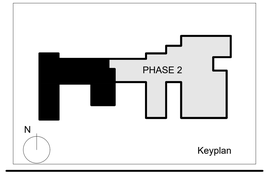

Job Number		
Drawing By	SMB	
Checked By	JCG	
Filename		
Date	August 31, 2026	
Revisions		
D	Addendum No.6	11/19/2026

LAYOUT & MATERIALS PLAN PHASE 2

REGISTERED LANDSCAPE ARCHITECT JOANNE CHIARENZA FERRO 001474 STATE OF NEW YORK

BID DOCUMENTS
Scale: 1" = 20'-0"

C2.1

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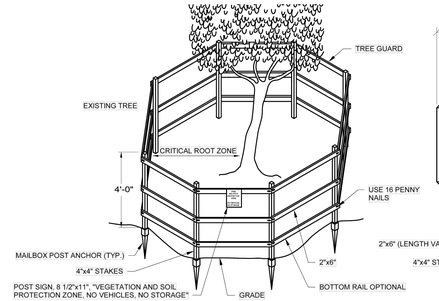
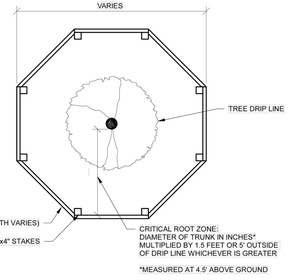
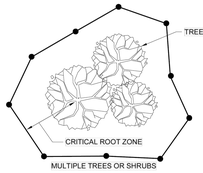
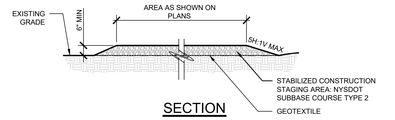






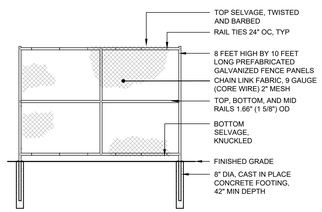
NOTES:
1.0 CONTACT DIG SAFELY NEW YORK (DIAL 811) PRIOR TO INSTALLING PROTECTIVE FENCING.
2.0 PROTECTION ZONE FENCING SHALL BE ERECTED AT THE EDGE OF THE CRITICAL ROOT ZONE OR BEYOND PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY.
3.0 THE PROTECTED CRITICAL ROOT ZONE OF EACH TREE SHALL EXTEND FROM THE TRUNK A MINIMUM DISTANCE OF THE DIAMETER OF TRUNK IN INCHES (MEASURED AT 4.5' ABOVE GROUND) MULTIPLIED BY 1.5' OR 5' OUTSIDE OF DRIP LINE, WHICHEVER IS GREATER.
4.0 WOOD FENCE SHALL BE MINIMUM 4' HIGH ON ALL SIDES.
5.0 FENCE SHALL BE SUPPORTED BY VERTICAL POSTS WITH MANUFACTURED MAIL BOX POST ANCHORS.
6.0 NO VEHICULAR TRAFFIC, STOCKPILING OF MATERIALS OR STORAGE OF EQUIPMENT SHALL BE ALLOWED WITHIN THE FENCING. FENCING SHALL NOT BE MOVED OR REMOVED UNLESS APPROVED BY THE PROJECT MANAGER.
7.0 FENCING SIGNAGE AS DETAILED MUST BE POSTED IN A VISUALLY PROMINENT LOCATION.
8.0 MULTIPLE TREE FENCE LAYOUT PREFERRED OVER FENCING EACH TREE INDIVIDUALLY.

1 PLANT MATERIAL PROTECTION ZONE FENCING
Scale: NTS — CORNELL UNIVERSITY DETAIL



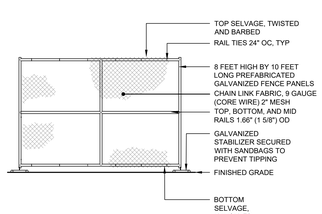
SECTION

2 STABILIZED CONSTRUCTION STAGING AREA
Scale: NTS



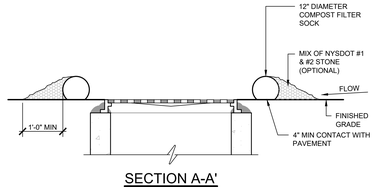
NOTES:
1. UTILIZE CONCRETE FOOTING POST FENCING IN GREEN SPACE.
2. COVER ALL FENCE FABRIC WITH BLACK CLOSED MESH WOVEN POLYPROPYLENE WITH 95% BLOCKAGE AND FINISHED WITH BINDING AND GROMMETS.

3 TEMPORARY SITE ENCLOSURE FENCE
Scale: NTS — WITH CONCRETE FOOTING

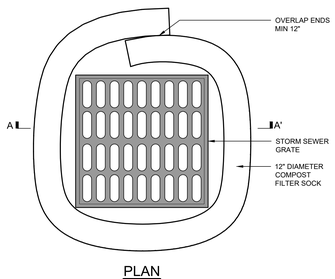


NOTES:
1. UTILIZE PLATFORM BASE POST FENCING ON PAVED SURFACES.
2. COVER ALL FENCE FABRIC WITH BLACK CLOSED MESH WOVEN POLYPROPYLENE WITH 95% BLOCKAGE AND FINISHED WITH BINDING AND GROMMETS.

4 TEMPORARY SITE ENCLOSURE FENCE
Scale: NTS — WITH SURFACE STABILIZER

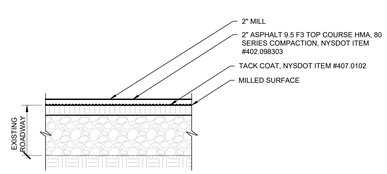


SECTION A-A'

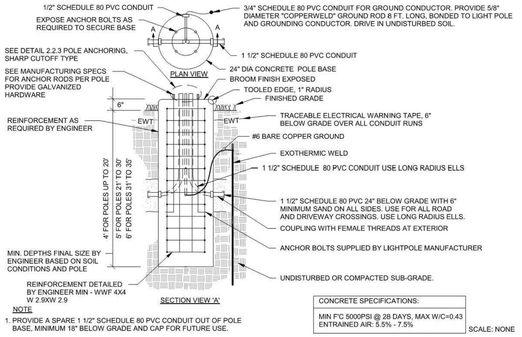


PLAN

5 INLET PROTECTION
Scale: NTS — TEMPORARY



6 ASPHALT PAVEMENT MILL & OVERLAY
Scale: NTS

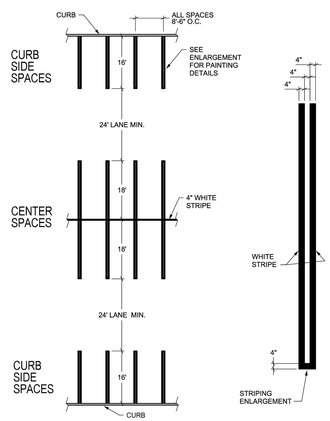


NOTE
1. PROVIDE A SPARE 1 1/2" SCHEDULE 80 PVC CONDUIT OUT OF POLE BASE, MINIMUM 18" BELOW GRADE AND CAP FOR FUTURE USE.

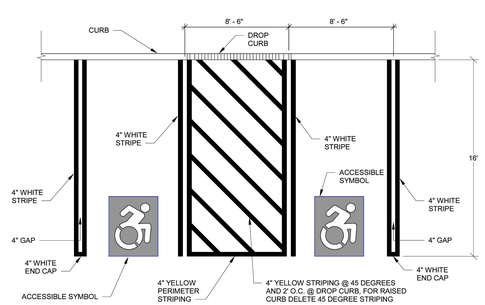
CONCRETE SPECIFICATIONS:
MIN F'C 5000PSI @ 28 DAYS, MAX W/C=0.43 ENTRAINED AIR: 5.5% - 7.5%

SCALE: NONE

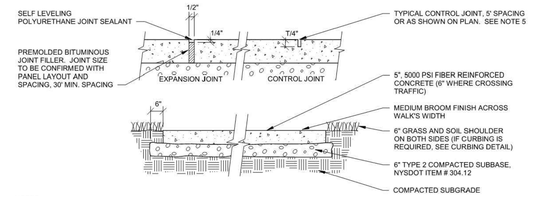
7 PRECAST CONCRTE POLE BASE
Scale: NTS — CORNELL UNIVERSITY DETAIL



8 PARKING SPACES
Scale: NTS — CORNELL UNIVERSITY DETAIL

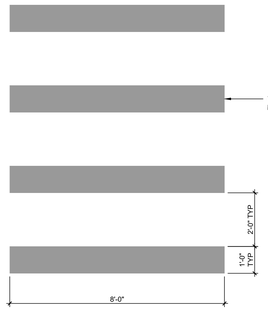


9 ADA ACCESSIBLE STANDARD PARKING SPACES
Scale: NTS — CORNELL UNIVERSITY DETAIL



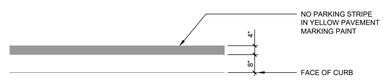
NOTES:
1.0 1/4" PER FOOT SLOPE MINIMUM FOR DRAINAGE.
2.0 CONCRETE SHALL HAVE 5000 PSI COMPRESSIVE STRENGTH AT 28 DAYS, 6% AIR ENTRAINMENT (+/-1%), MAXIMUM W/C = 0.40. USE OF PLASTICIZERS AND RETARDERS IS PERMITTED TO MEET PLACEMENT AND QUALITY REQ. DEPENDENT UPON WEATHER CONDITIONS.
3.0 USE VIBRATORY SCREED DURING PLACEMENT IN CONFORMANCE WITH ACI 309, LATEST EDITION.
4.0 AFTER SURFACE SHEEN IS GONE, THE CONCRETE SURFACE SHALL BE CURED BY KEEPING CONCRETE CONTINUOUSLY WET FOR 7 DAYS MINIMUM.
5.0 JOINT PATTERN AS PER PLAN OR PER DIRECTION OF ENGINEER. CONTROL JOINTS TO BE SAWCUT TO 1/4 OF SLAB THICKNESS. CONTRACTOR TO SUBMIT JOINT PLAN FOR ENGINEER'S APPROVAL.
6.0 SEAL ALL EXPOSED CONCRETE WITH PENETRATING SEALER AT COMPLETION OF WET CURE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7.0 USE MACRO FIBER REINFORCING EQUIVILANT TO W2.9, 6X6, MIN #4/ CY.

10 CONCRETE PAVEMENT
Scale: NTS — CORNELL UNIVERSITY DETAIL



PLAN

11 PEDESTRIAN CROSSING
Scale: NTS



PLAN

12 NO PARKING PAVEMENT MARKING
Scale: NTS

MUTCD R 7-1

ADD SIGN TO EXISTING RELOCATED POST, BELOW EXISTING SIGNS, USING (2) 3/8" NON-CORROSIVE MACHINE BOLTS W/ WASHERS

13 NO PARKING ANY TIME SIGN
Scale: NTS

D

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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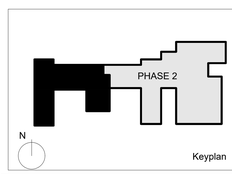

Job Number		
Drawing By	EDR	
Checked By	EDR	
Filename		
Date	August 31, 2026	
Revisions		
D	Addendum No.6	11/19/2026

DETAILS

REGISTERED LANDSCAPE ARCHITECT ERIC D. RUTENBERG 001474 STATE OF NEW YORK

BID DOCUMENTS
Scale: NA

C6.1

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ABBREVIATED ASBESTOS ABATEMENT NOTES

- AA-1 PIPE INSULATION
- AA-2 LAB BENCHTOPS
- AA-3 FIRE DOORS
- AA-4 FLOORING AND MASTIC
- AA-5 CAULK AT CHIMNEY CAP
- AA-6 WALL-MOUNTED BOARDS & MASTIC
- AA-7 ELEVATOR BRAKE SHOES
- AA-8 FLOOR TILE MASTIC
- AA-9 TRANSITE CEILING PANELS
- AA-10 WINDOW, DOOR, AND LOUVER FRAME CAULK
- AA-11 ROOF FLASHING VAPOR BARRIER
- AA-12 ROOF PATCHING TAR
- AA-13 ELEVATOR DOORS
- AA-14 EXTERIOR CONTROL JOINT CAULK
- AA-15 TAR ASSOCIATED WITH COLD ROOM WALLS AND CEILINGS
- AA-16 FLANGE GASKETS
- AA-17 TRANSITE FUME HOODS
- AA-18 TRANSITE PANELS IN FUME HOOD CABINETS

THE FOLLOWING KEYNOTES ARE APPLICABLE TO THE ENTIRE PROJECT AREA: ENV-1, ENV-2, ENV-3, ENV-4, ENV-5, ENV-6, ENV-8, ENV-9, L-1 AND L-2.

(NOTE THAT ENV-8 FUME HOODS ARE DETAILED BUT REMAINING DUCT EXHAUST SYSTEM IS NOT SHOWN)

THE FOLLOWING ENVIRONMENTAL KEYNOTE IS APPLICABLE TO SPECIFIC AREAS AS INDICATED: ENV-7.

ABBREVIATED LEAD REMOVAL NOTES

- L-1 LEAD PAINT ON STRUCTURAL STEEL FOR WELDING
- L-2 LEAD PAINT ON METAL COMPONENTS TO FACILITATE DEMOLITION
- L-3 LEAD PAINT ON METAL LINTELS SCHEDULED TO REMAIN
- L-4 ELEMENTAL LEAD ROOF VENT CAPS
- L-5 METAL LINTELS SCHEDULED FOR REMOVAL
- L-6 LEAD PAINT ON DOORS AND FRAMES SCHEDULED TO REMAIN

ABBREVIATED ENVIRONMENTAL REMOVAL NOTES

- ENV-1 SANITARY/ACID WASTE PIPING ASSOCIATED WITH LAB SINKS AND FUME HOODS
- ENV-2 ABANDONED ACID WASTE PIPING THROUGHOUT PROJECT LIMITS
- ENV-3 LIGHT BALLASTS
- ENV-4 MERCURY-CONTAINING GAGUES, THERMOMETERS, THERMOSTATS, ETC.
- ENV-5 LAMPS SCHEDULED FOR DEMOLITION
- ENV-6 OZONE DEPLETING SUBSTANCES
- ENV-7 ABANDONED ACID WASTE NEUTRALIZATION TANKS
- ENV-8 FUME HOOD EXHAUST SYSTEM COMPONENTS
- ENV-9 MERCURY CONTAMINATED LAB CASEWORK

REFER TO SHEET HM0.0 FOR DETAILED NOTES AND ADDITIONAL INFORMATION.

KEY

(2 LAYERS) = TWO LAYERS OF ACM FLOOR TILE AND MASTIC

(CARPET) = CARPET ON TOP OF ACM FLOOR TILE AND/OR MASTIC

(SHEET) = SHEET FLOORING ON TOP OF ACM FLOORING AND/OR MASTIC

(VINYL) = VINYL PLANK FLOORING ON TOP OF ACM FLOORING AND/OR MASTIC

FH = FUME HOOD WITH EXHAUST DUCTWORK

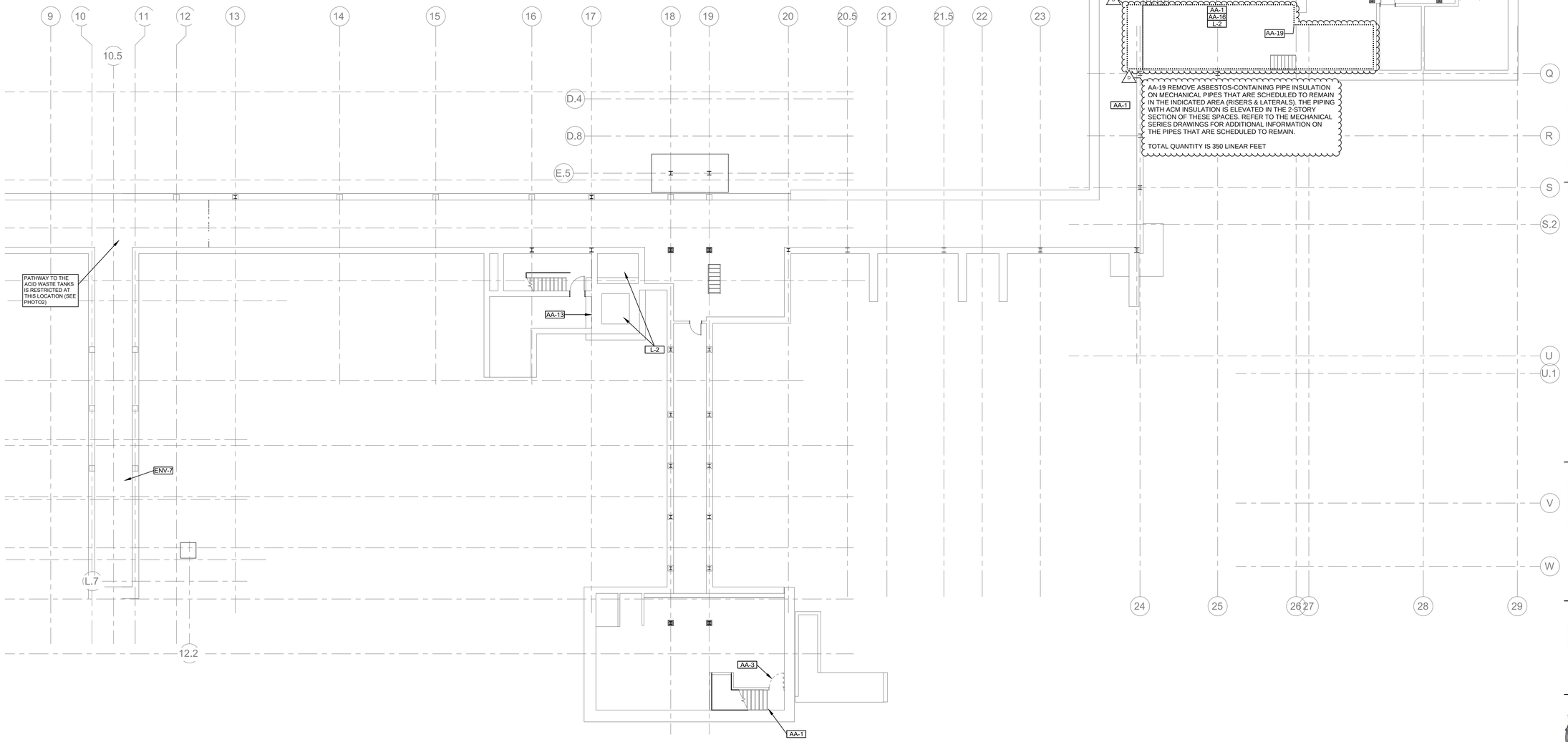
= NOT IN SCOPE

PHOTO 1:

VIEW OF ABANDONED ACID WASTE TANKS SCHEDULED FOR REMEDIATION. (SEE ENV-7)

PHOTO 2:

VIEW OF THE RESTRICTED PATHWAY TO THE TUNNEL SECTION WITH THE ACID WASTE TANKS.



1 TUNNEL FLOOR HAZARDOUS MATERIALS REMOVAL PLAN - PHASE 2

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

N

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

CornellCALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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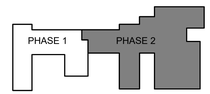
Notes:



Keyplan

Job Number	31909.00
Drawing By	NAK
Checked By	BC
Filename	
Date	August 31, 2026

Revisions

D	Addendum #6	11/19/2026

TUNNEL FLOOR HAZARDOUS MATERIALS REMOVAL - PHASE 2

BID DOCUMENTS
Scale: As indicated

STATE OF NEW YORK · KEVIN P. JAMIN · 082957 · LICENSED PROFESSIONAL ENGINEER

HM1.U

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E:\2025\25035.01\Cad\Cover\25035.01-HM1.U - HAZ FLR REMOVAL PH2.dwg, 11/19/2026 8:34:39 AM, NICOLA KACZMAN

ABBREVIATED ASBESTOS ABATEMENT NOTES

- AA-1 PIPE INSULATION
- AA-2 LAB BENCHTOPS
- AA-3 FIRE DOORS
- AA-4 FLOORING AND MASTIC
- AA-5 CAULK AT CHIMNEY CAP
- AA-6 WALL-MOUNTED BOARDS & MASTIC
- AA-7 ELEVATOR BRAKE SHOES
- AA-8 FLOOR TILE MASTIC
- AA-9 TRANSITE CEILING PANELS
- AA-10 WINDOW, DOOR, AND LOUVER FRAME CAULK
- AA-11 ROOF FLASHING VAPOR BARRIER
- AA-12 ROOF PATCHING TAR
- AA-13 ELEVATOR DOORS
- AA-14 EXTERIOR CONTROL JOINT CAULK
- AA-15 TAR ASSOCIATED WITH COLD ROOM WALLS AND CEILINGS
- AA-16 FLANGE GASKETS
- AA-17 TRANSITE FUME HOODS
- AA-18 TRANSITE PANELS IN FUME HOOD CABINETS

THE FOLLOWING KEYNOTES ARE APPLICABLE TO THE ENTIRE PROJECT AREA: ENV-1, ENV-2, ENV-3, ENV-4, ENV-5, ENV-6, ENV-8, ENV-9, L-1 AND L-2.

(NOTE THAT ENV-8 FUME HOODS ARE DETAILED BUT REMAINING DUCT EXHAUST SYSTEM IS NOT SHOWN)

THE FOLLOWING ENVIRONMENTAL KEYNOTE IS APPLICABLE TO SPECIFIC AREAS AS INDICATED: ENV-7.

ABBREVIATED LEAD REMOVAL NOTES

- L-1 LEAD PAINT ON STRUCTURAL STEEL FOR WELDING
- L-2 LEAD PAINT ON METAL COMPONENTS TO FACILITATE DEMOLITION
- L-3 LEAD PAINT ON METAL LINTELS SCHEDULED TO REMAIN
- L-4 ELEMENTAL LEAD ROOF VENT CAPS
- L-5 METAL LINTELS SCHEDULED FOR REMOVAL
- L-6 LEAD PAINT ON DOORS AND FRAMES SCHEDULED TO REMAIN

ABBREVIENVIRONMENTAL REMOVAL NOTES

- ENV-1 SANITARY/ACID WASTE PIPING ASSOCIATED WITH LAB SINKS AND FUME HOODS
- ENV-2 ABANDONED ACID WASTE PIPING THROUGHOUT PROJECT LIMITS
- ENV-3 LIGHT BALLASTS
- ENV-4 MERCURY-CONTAINING GAGUES, THERMOMETERS, THERMOSTATS, ETC.
- ENV-5 LAMPS SCHEDULED FOR DEMOLITION
- ENV-6 OZONE DEPLETING SUBSTANCES
- ENV-7 ABANDONED ACID WASTE NEUTRALIZATION TANKS
- ENV-8 FUME HOOD EXHAUST SYSTEM COMPONENTS
- ENV-9 MERCURY CONTAMINATED LAB CASEWORK

REFER TO SHEET HM0.0 FOR DETAILED NOTES AND ADDITIONAL INFORMATION.

KEY

(2 LAYERS) = TWO LAYERS OF ACM FLOOR TILE AND MASTIC

(CARPET) = CARPET ON TOP OF ACM FLOOR TILE AND/OR MASTIC

(SHEET) = SHEET FLOORING ON TOP OF ACM FLOORING AND/OR MASTIC

(VINYL) = VINYL PLANK FLOORING ON TOP OF ACM FLOORING AND/OR MASTIC

FH = FUME HOOD WITH EXHAUST DUCTWORK

= NOT IN SCOPE

PHOTO 1:

VIEW OF ASBESTOS-CONTAINING TAR VAPOR BARRIER BEHIND COOLER WALLS AND CEILINGS (SEE AA-15 AND PHOTO 2).

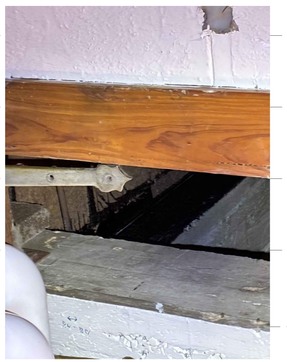

PHOTO 2:

ADDITIONAL VIEW OF ASBESTOS-CONTAINING TAR VAPOR BARRIER BEHIND COOLER WALLS AND CEILINGS (SEE AA-15 AND PHOTO 1).

AA-19 REMOVE ASBESTOS-CONTAINING PIPE INSULATION ON MECHANICAL PIPES THAT ARE SCHEDULED TO REMAIN IN THE INDICATED AREA (RISERS & LATERALS). THE PIPING WITH ACM INSULATION IS ELEVATED IN THE 2-STORY SECTION OF THESE SPACES. REFER TO THE MECHANICAL SERIES DRAWINGS FOR ADDITIONAL INFORMATION ON THE PIPES THAT ARE SCHEDULED TO REMAIN.

TOTAL QUANTITY IS 350 LINEAR FEET

1 GROUND FLOOR HAZARDOUS MATERIALS REMOVAL PLAN - PHASE 2

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

N

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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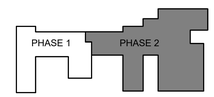

Keyplan

Job Number	31909.00
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Checked By	BC
Filename	
Date	August 31, 2026

Revisions

D	Addendum #6	11/19/2026

GROUND FLOOR HAZARDOUS MATERIALS REMOVAL PLAN - PHASE 2

STATE OF NEW YORK · KEVIN P. RYAN · 082957 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

HM1.0

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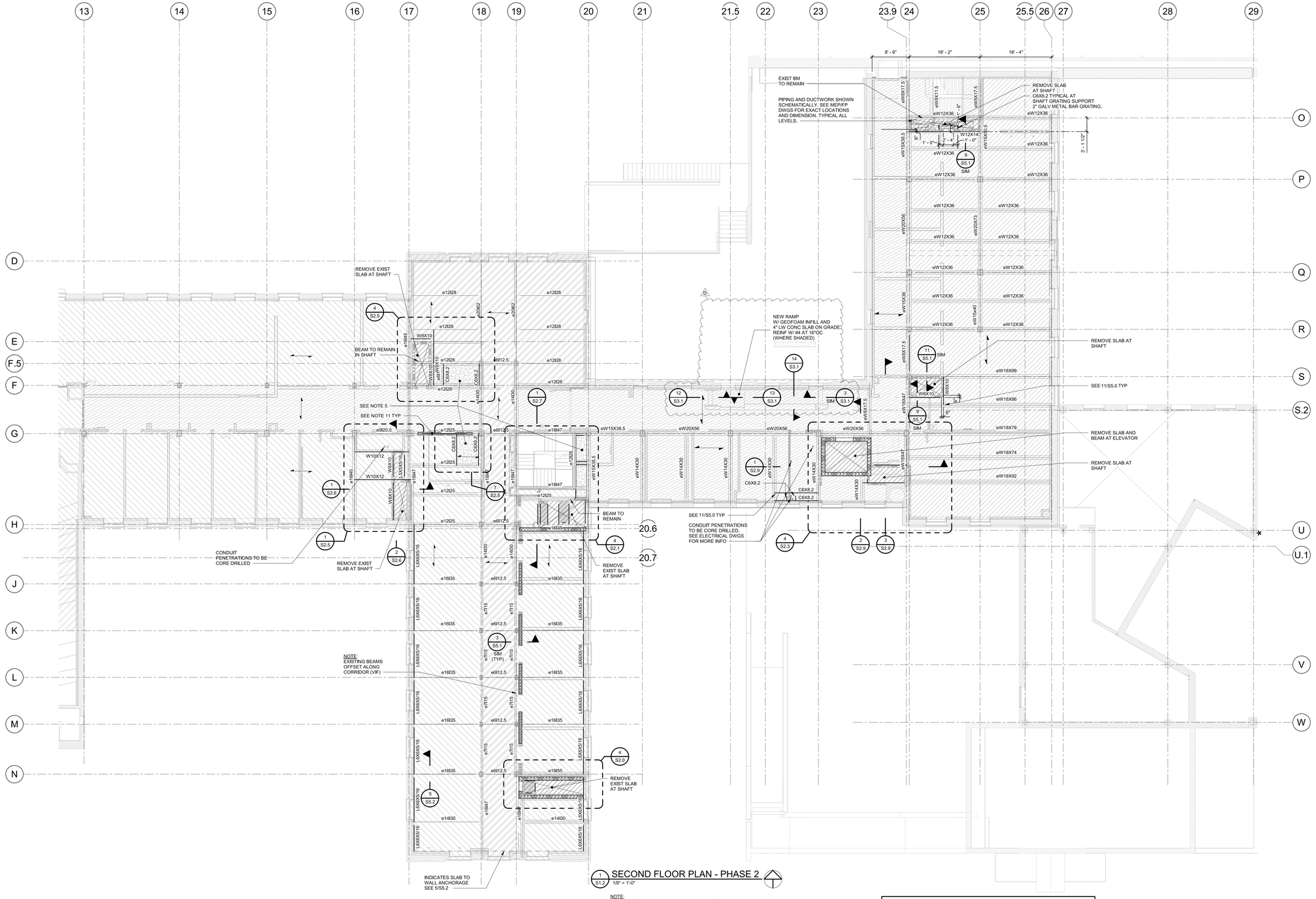

1 S1.2 **SECOND FLOOR PLAN - PHASE 2**
1/8" = 1'-0"

NOTE:
T/CONCRETE (90'Z'-0"±), TYPICAL UNLESS NOTED OTHERWISE.

FLOOR FRAMING PLAN NOTES:

1. T/STEEL ELEVATION (-3 1/2") BELOW T/EXISTING CONCRETE SLAB, TYPICAL UNLESS NOTED OTHERWISE.
2. EQUALLY SPACE FLOOR BEAMS UNLESS NOTED OTHERWISE.
3. COORDINATE FLOOR OPENING SIZE AND LOCATIONS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS. SEE 1/S5.0 AND 2/S5.0.
4. COORDINATE MEP SLAB CORE LOCATIONS TO AVOID EXISTING STEEL FRAMING. DO NOT DAMAGE EXISTING STEEL FRAMING.
5. - INDICATES 6 1/2" (TOTAL THICKNESS) LIGHT WEIGHT CONCRETE SLAB ON 3" X 18 GA GALVANIZED COMPOSITE METAL DECK, REINFORCE WITH #4 AT 16"OC EACH WAY. T/CONCRETE INFILL TO MATCH T/EXISTING SLAB.
6. SEE 2/S5.0 FOR OPENINGS THROUGH EXISTING SLABS.
7. SEE 3/S5.0 FOR INFILL OF EXISTING SLAB OPENINGS. ALL ABANDONED EXISTING SLAB OPENINGS ARE TO BE INFILLED TYPICAL.
8. SEE 6/S5.0 FOR COLUMN REINFORCING SCHEDULE.
9. SEE 7/S5.0 FOR CONNECTIONS TO EXISTING FRAMING.
10. SEE S0.1 FOR ADDITIONAL NOTES.
11. - INDICATES BEAM REINF, SEE S/S5.0.
12. CG TO COORD LEAD PAINT REMOVAL AT ALL ATTACHMENTS OF NEW STEEL TO EXIST STEEL, AT ALL LEVELS.

ALL EXISTING FRAMING NOT SHOWN. SLABS ARE SUPPORTED BY CONCRETE ENCASED STEEL BEAMS. PATCH EXISTING CONCRETE ENCASEMENT WHERE DAMAGED. ASSUME 75 SF OF CONCRETE ENCASEMENT PATCHING AT THIS LEVEL FOR ESTIMATING PURPOSES ONLY. CONTRACTOR TO VERIFY IN FIELD.

SEE PLAN DETAILS AND SECTIONS FOR REQUIRED STRUCTURE PRIOR TO PERFORMING REMOVALS

EXISTING SLAB KEY PLAN			
#	THICKNESS	HATCHING	TYPE
a1	4 1/2"±		SOLID
a2	5 1/2"±		SOLID
a3	6"±		SOLID
a4	6 1/2"±		SOLID
a5	8"±		SOLID
a0	8"±	NO PATTERN	SOG

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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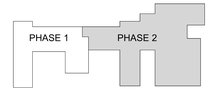
Notes:



Keyplan

Job Number	31909.00
Drawing By	RMS
Checked By	JLD
Filename	
Date	August 31, 2026

Revisions

C	Addendum 4	11/12/2026
D	Addendum 6	11/19/2026

STRUCTURAL-SECOND FLOOR PLAN - PHASE 2

EXPIRATION DATE: SEPTEMBER 30, 2027
CERTIFICATE OF AUTHORIZATION #: 0023272

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S1.2

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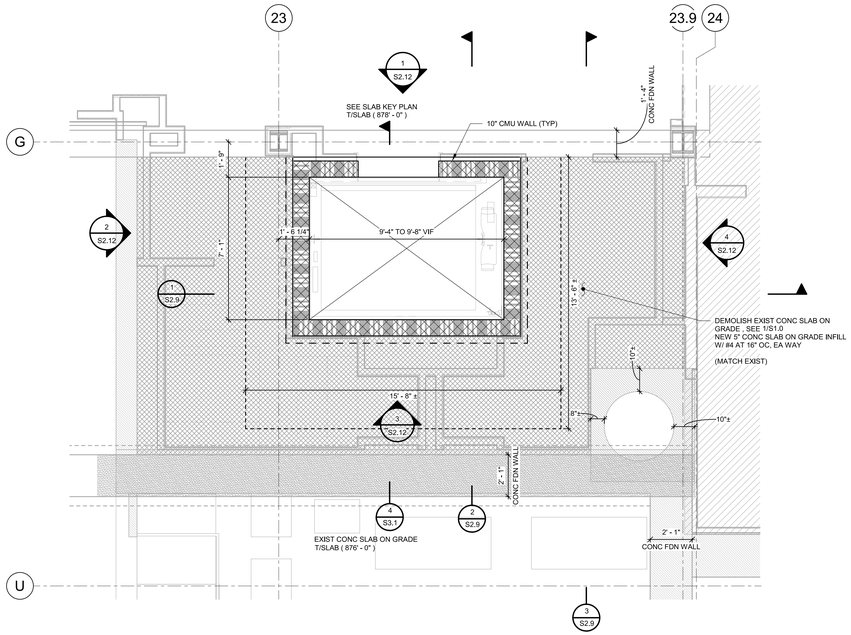
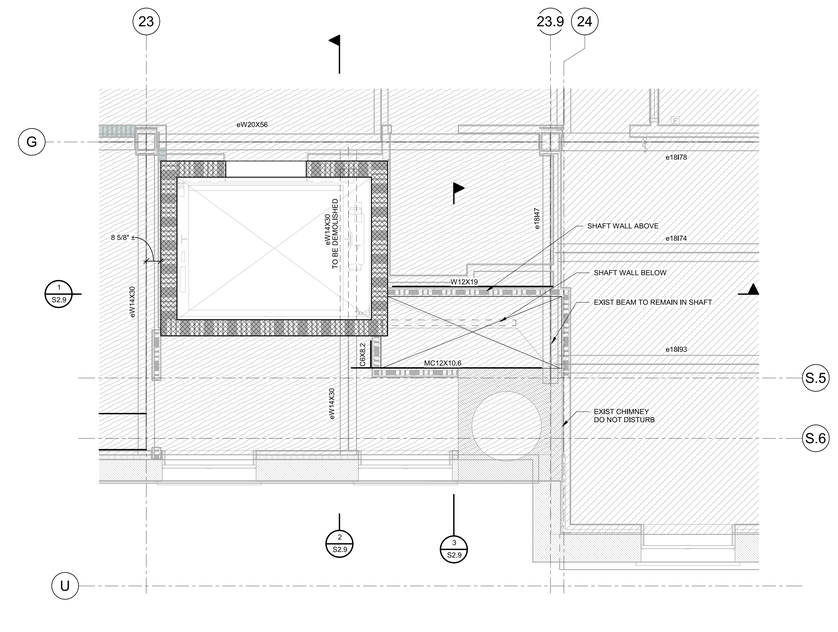
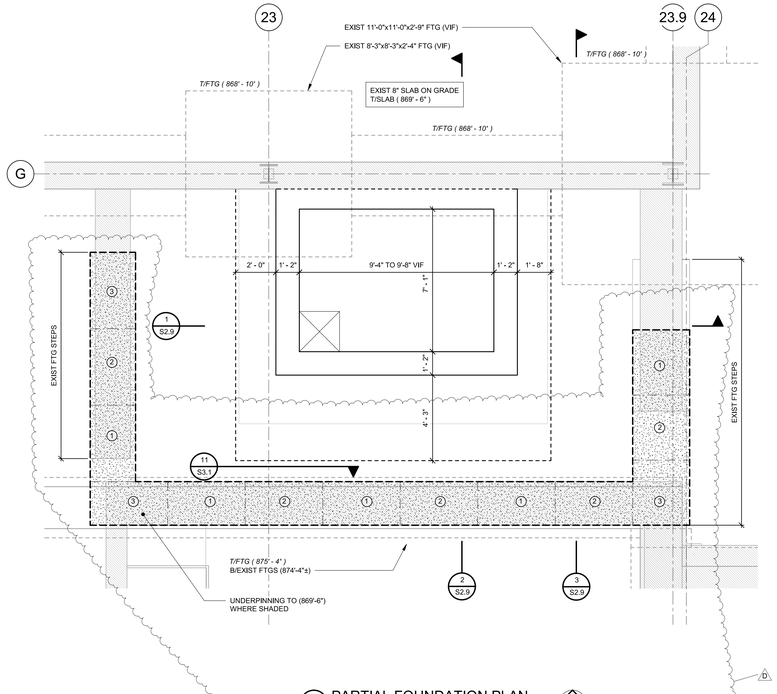


2 S2.3 PARTIAL GROUND FLOOR PLAN
3/8" = 1'-0"



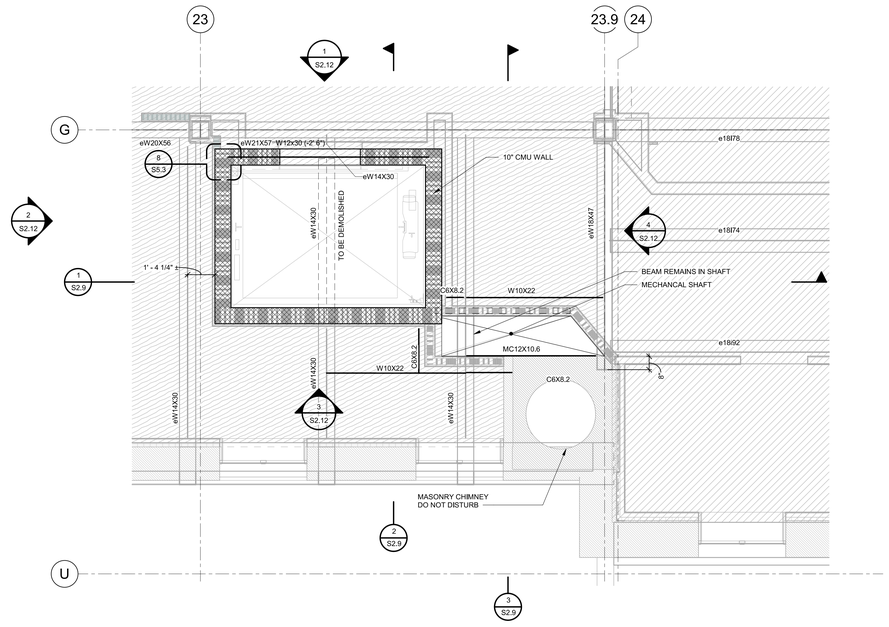
4 S2.3 PARTIAL SECOND FLOOR PLAN
3/8" = 1'-0"

NOTE:
T/EXIST CONC (902'-0").



1 S2.3 PARTIAL FOUNDATION PLAN
3/8" = 1'-0"

NOTES:
1. BOTTOM OF UNDERPINNING CONCRETE TO MATCH BOTTOM OF NEW ELEVATOR FOOTING.
2. f'c FOR UNDERPINNING CONCRETE SHALL BE 4,000 PSI.
3. VERIFY SIZES OF EXISTING FOOTINGS AND WALLS.
4. EXCAVATE AND INSTALL UNDERPINNING CONCRETE IN LENGTHS NO GREATER THAN 4'-0". EXCAVATION PROCEDURES SHALL BE ACCEPTED BY THE PROJECT GEOTECHNICAL ENGINEER.
5. CIRCLED NUMBER INDICATES SEQUENCE OF UNDERPINNING INSTALLATION. BEGIN WITH SEQUENCE 1 AND PROCEED IN NUMERICAL ORDER TO SEQUENCE 3.
6. INSTALL NON-SHRINK GROUT BETWEEN THE BOTTOM OF EXISTING FOOTING AND THE UNDERPINNING CONCRETE (FULL BEARING AREA) FOR EACH SEQUENCE AFTER UNDERPINNING CONCRETE HAS CURED FOR A MINIMUM OF 24 HOURS.
7. AFTER GROUTING ALLOW EACH SECTION OF THE SEQUENCE TO CURE FOR AN ADDITIONAL 24 HOURS BEFORE EXCAVATING FOR SUBSEQUENT UNDERPINNING SEQUENCES.



3 S2.3 PARTIAL FIRST FLOOR PLAN
3/8" = 1'-0"

NOTE:
T/EXIST CONC (889'-6").

CONSTRUCT ALL CMU SHAFT WALLS TIGHT TO UNDERSIDE OF EXISTING STRUCTURE PRIOR TO SAWCUTTING AND REMOVING EXISTING SLABS AND BEAMS

EXISTING SLAB KEY PLAN			
#	THICKNESS	HATCHING	TYPE
a1	4 1/2"±		SOLID
a2	5 1/2"±		SOLID
a3	6"±		SOLID
a4	6 1/2"±		SOLID
a5	8"±		SOLID
a0	8"±	NO PATTERN	SOG

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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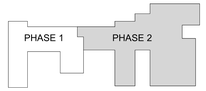

Keyplan

Job Number	31909.00
Drawing By	RMS
Checked By	JLD
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Date	August 31, 2026

Revisions

D	Addendum 6	11/19/2026

ENLARGED SHAFT PLANS - PHASE 2

STATE OF NEW YORK
JOHN L. DAVIS
087374
LICENSED ARCHITECT
EXPIRATION DATE: SEPTEMBER 30, 2027
CERTIFICATE OF AUTHORIZATION #: 0023272

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S2.3

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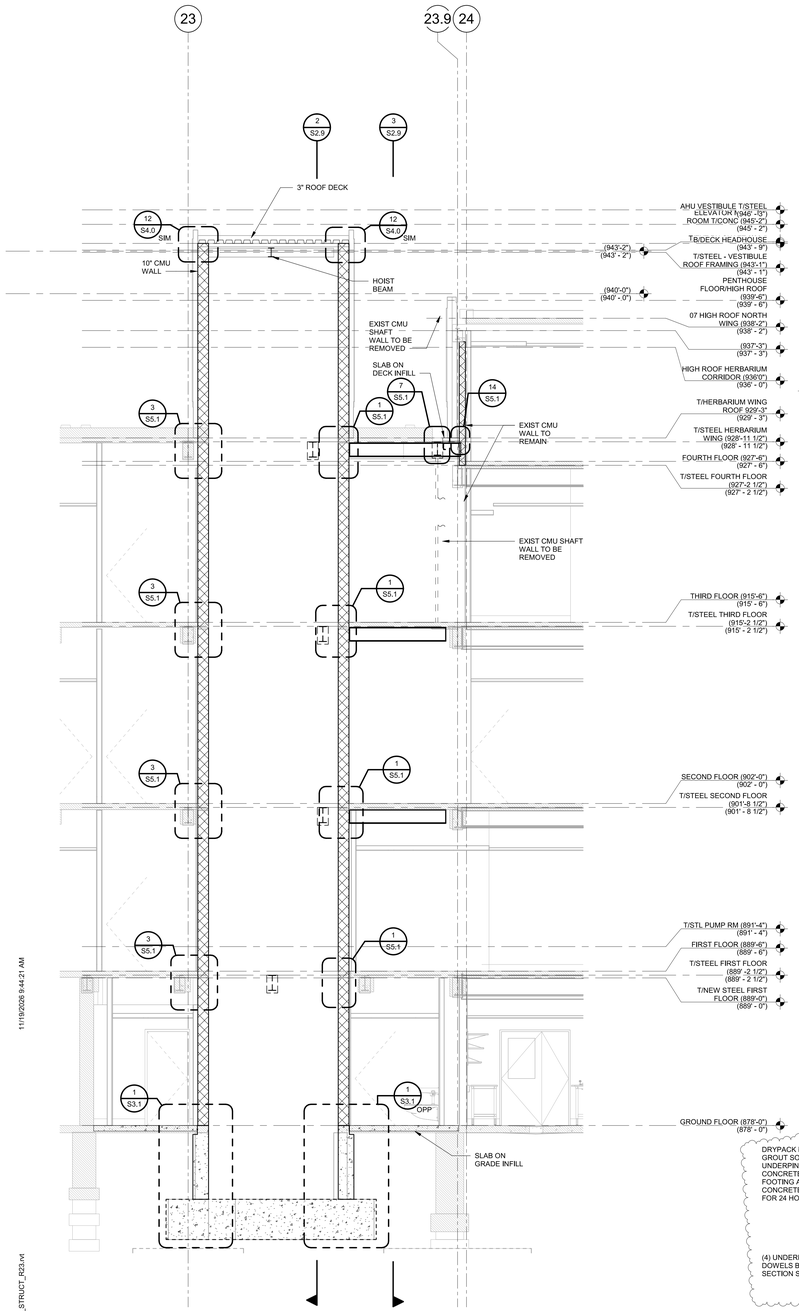
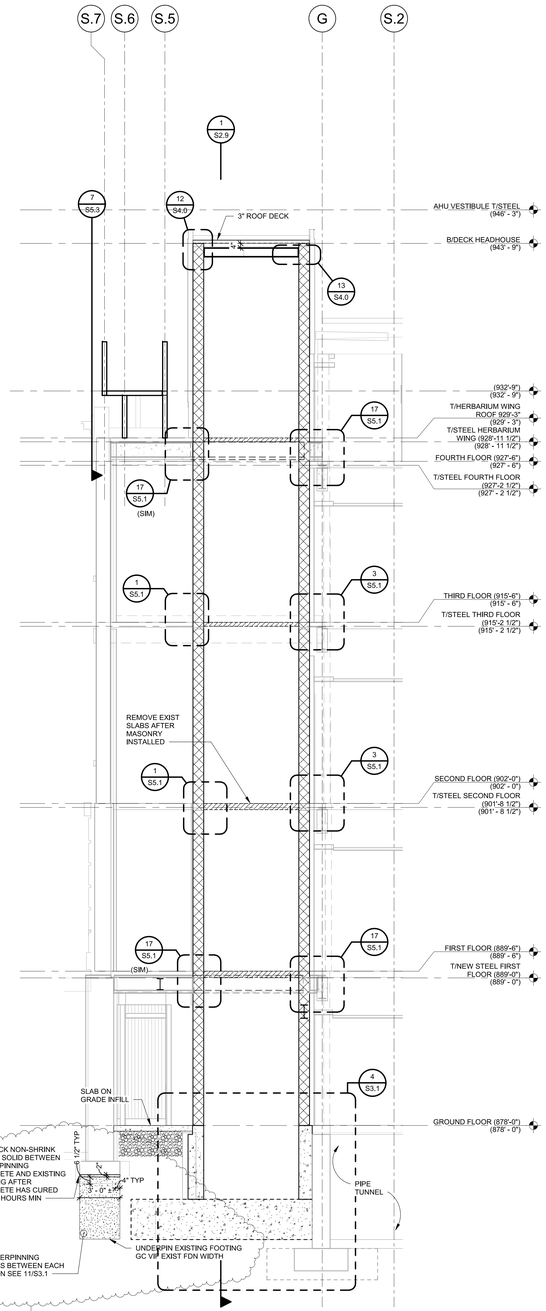
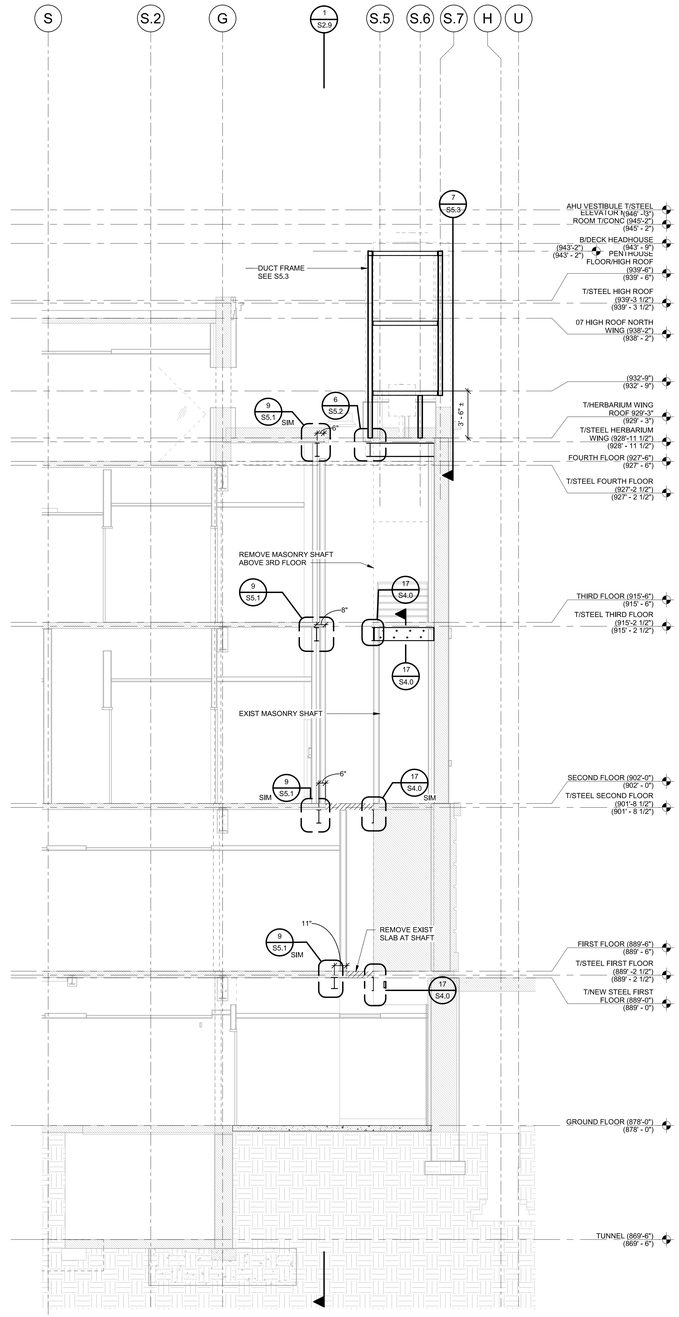


1 S2.9 SECTION
1/4" = 1'-0"



2 S2.9 SECTION
1/4" = 1'-0"



3 S2.9 SECTION
1/4" = 1'-0"

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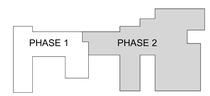

Keyplan

Job Number	31909.00
Drawing By	RMS
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Date	August 31, 2026

Revisions

D	Addendum 6	11/19/2026

ENLARGED SHAFT SECTIONS - PHASE 2

STATE OF NEW YORK
LICENSED PROFESSIONAL ENGINEER

EXPIRATION DATE: SEPTEMBER 30, 2027
CERTIFICATE OF AUTHORIZATION #: 0023272

BID DOCUMENTS
Scale: 1/4" = 1'-0"

S2.9

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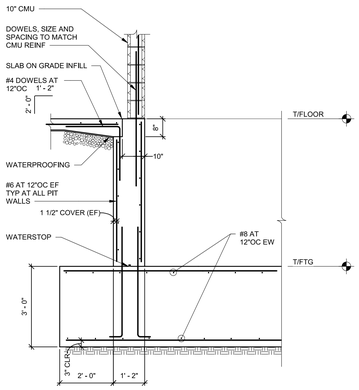
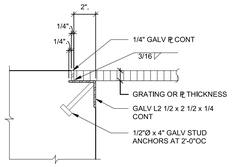
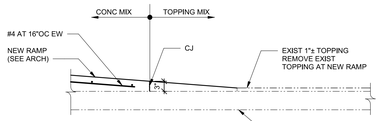


NOTE:
PIT LADDER AND RAIL BRACING BEAM NOT SHOWN.

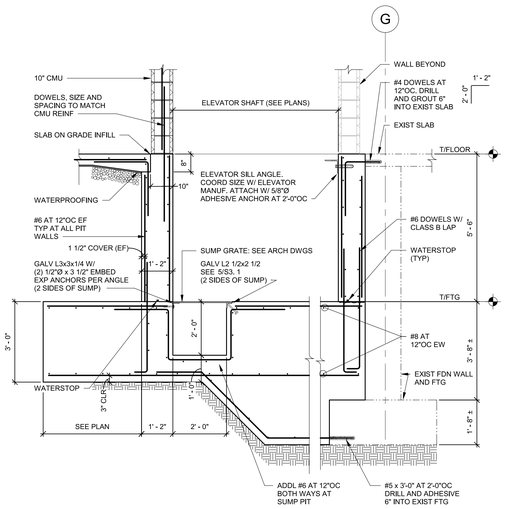
1 S3.1 ELEVATOR PIT SECTION
1/2" = 1'-0"



2 S3.1 TYPICAL EDGE ANGLE FOR PLATE OR GRATING COVER
NOT TO SCALE

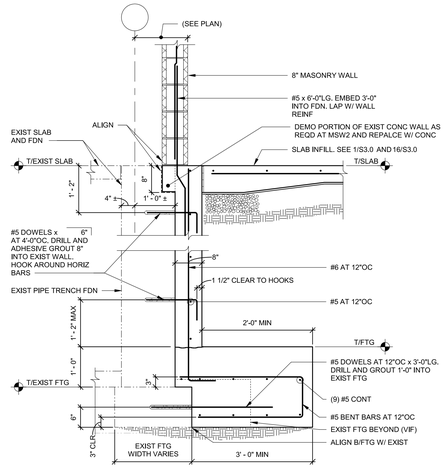


3 S3.1 SECTION
SCALE: 3/4" = 1'-0"



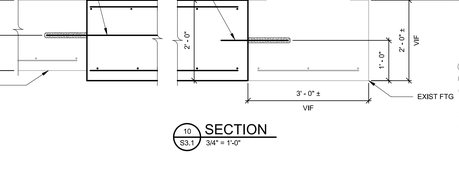
4 S3.1 ELEVATOR PIT SECTION
1/2" = 1'-0"

NOTE:
PIT LADDER AND RAIL BRACING BEAM NOT SHOWN.

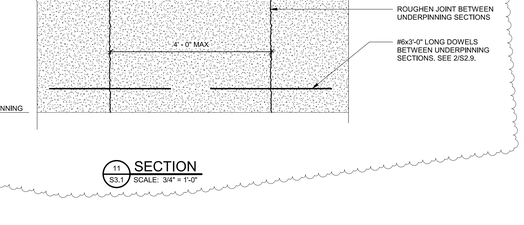


NOTE:
EXISTING FOOTING CONDITIONS MAY VARY AT DIFFERENT LOCATIONS. VERIFY IN FIELD.

5 S3.1 SECTION
3/4" = 1'-0"

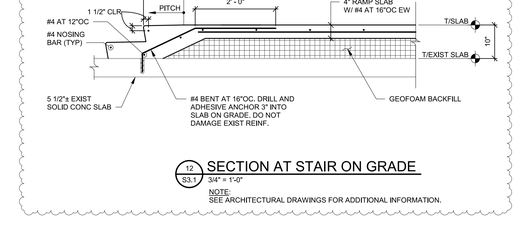


6 S3.1 SECTION AT INTERIOR FOOTING
3/4" = 1'-0"



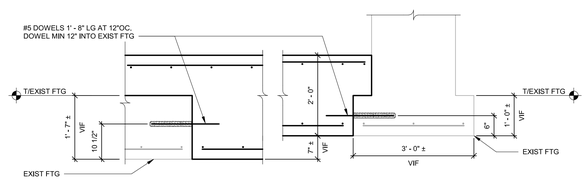
7 S3.1 SECTION AT FOUNDATION WALL
3/4" = 1'-0"

NOTE:
FOR CONNECTION TO EXIST FTG SEE 9/S3.1

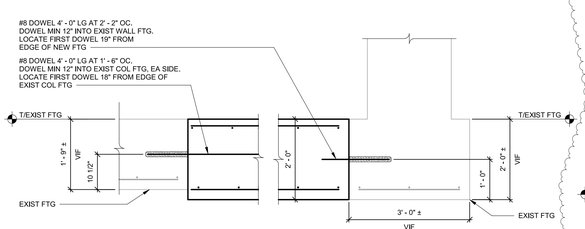


8 S3.1 SECTION
3/4" = 1'-0"

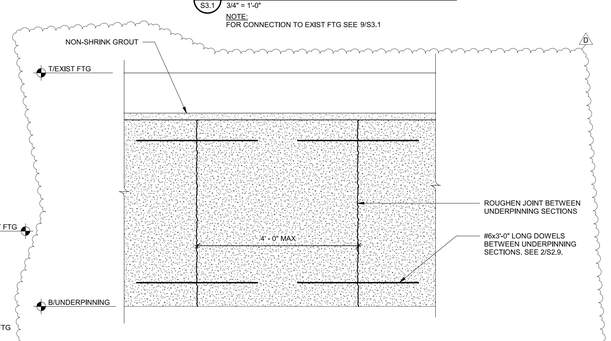
NOTE:
FOR CONNECTION TO EXIST FTG SEE 10/S3.1



9 S3.1 SECTION
SCALE: 3/4" = 1'-0"



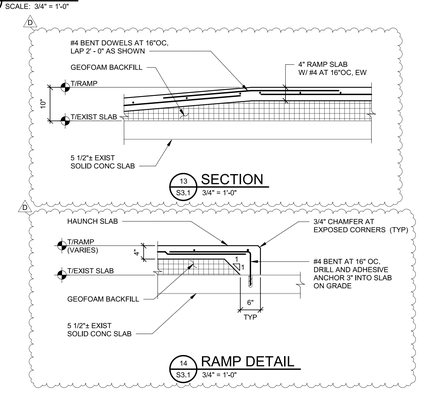
10 S3.1 SECTION
3/4" = 1'-0"



11 S3.1 SECTION
SCALE: 3/4" = 1'-0"

12 S3.1 SECTION AT STAIR ON GRADE
3/4" = 1'-0"

NOTE:
SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.



RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
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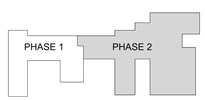
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	RMS
Checked By	JLD
Filename	
Date	August 31, 2026

Revisions

D	Addendum 6	11/19/2026

FOUNDATION DETAILS - PHASE 2

BID DOCUMENTS
Scale: As indicated

EXPIRATION DATE: SEPTEMBER 30, 2027
CERTIFICATE OF AUTHORIZATION #: 0023272

S3.1

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DEMOLITION GENERAL NOTES

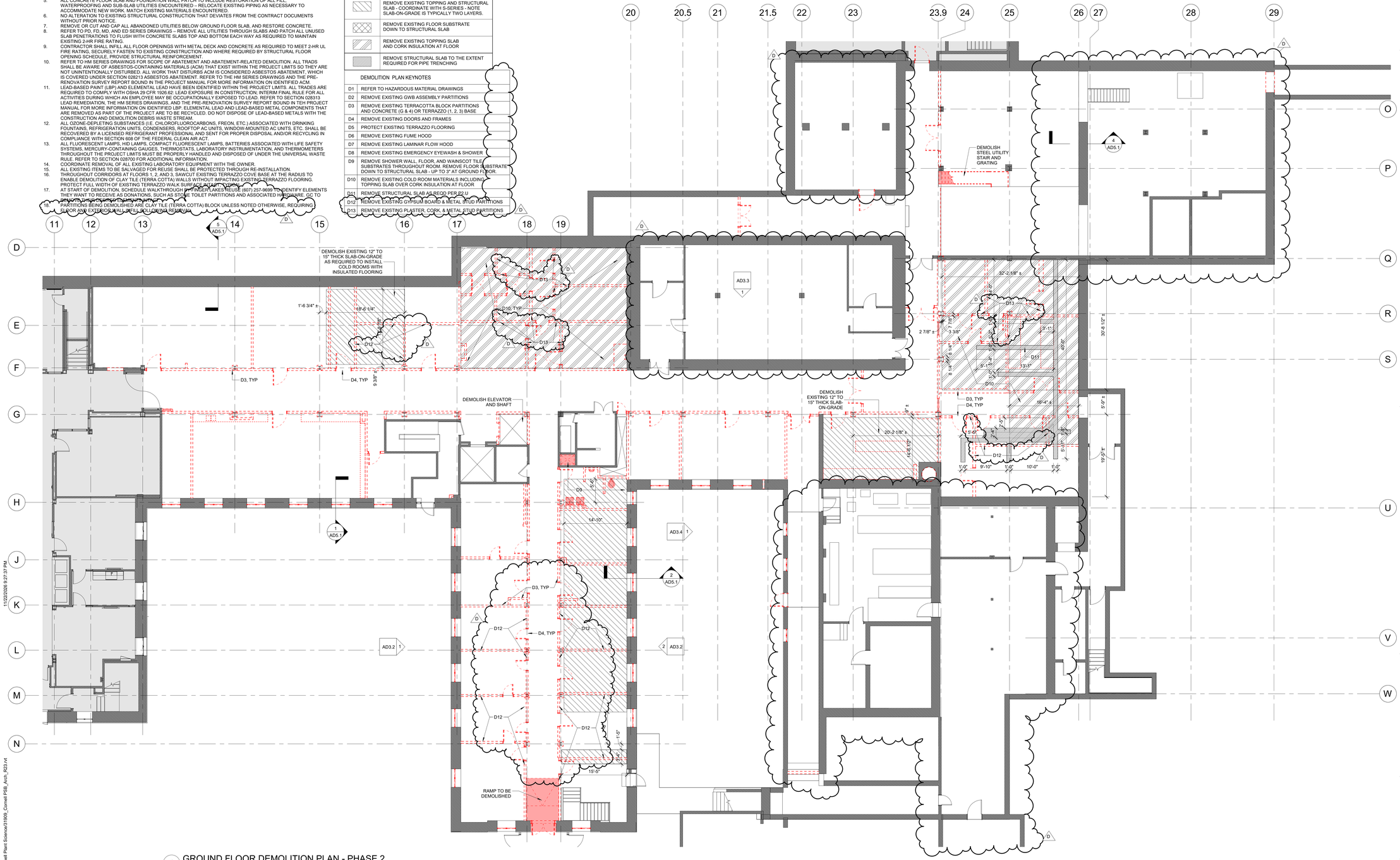
1. CONTRACTORS SHALL FIELD VERIFY EXISTING CONDITIONS AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE WORK.
2. UNLESS NOTED OTHERWISE, INTENT IS FULL ABATEMENT AND GUT DEMOLITION IN AREAS OF WORK.
3. ALL EXISTING CONSTRUCTION AND FINISHES NOTED TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION. PATCH AS REQUIRED FOR LIKE NEW CONDITION. REFER TO AD AND A SERIES DRAWINGS.
4. CONTRACTORS ARE RESPONSIBLE FOR CLEAN TRANSITIONS / CONNECTIONS AT ALL LOCATIONS.
5. ALL CONCRETE FLOOR SLAB AND FOUNDATION WALL PATCH TO INCLUDE RESTORATION OF ALL FILL, WATERPROOFING AND SUB-SLAB UTILITIES ENCOUNTERED – RELOCATE EXISTING PIPING AS NECESSARY TO ACCOMMODATE NEW WORK. MATCH EXISTING MATERIALS ENCOUNTERED.
6. NO ALTERATION TO EXISTING STRUCTURAL CONSTRUCTION THAT DEVIATES FROM THE CONTRACT DOCUMENTS WITHOUT PRIOR NOTICE.
7. REMOVE OR CUT AND CAP ALL ABANDONED UTILITIES BELOW GROUND FLOOR SLAB, AND RESTORE CONCRETE.
8. REFER TO PD, FD, MD, AND ED SERIES DRAWINGS – REMOVE ALL UTILITIES THROUGH SLABS AND PATCH ALL UNUSED SLAB PENETRATIONS TO FLUSH WITH CONCRETE SLABS TOP AND BOTTOM EACH WAY AS REQUIRED TO MAINTAIN EXISTING 2-HR FIRE RATING.
9. CONTRACTOR SHALL INFILL ALL FLOOR OPENINGS WITH METAL DECK AND CONCRETE AS REQUIRED TO MEET 2-HR UL FIRE RATING, SECURELY FASTEN TO EXISTING CONSTRUCTION AND WHERE REQUIRED BY STRUCTURAL FLOOR OPENING SCHEDULE, PROVIDE STRUCTURAL REINFORCEMENT.
10. REFER TO HM SERIES DRAWINGS FOR SCOPE OF ABATEMENT AND ABATEMENT-RELATED DEMOLITION. ALL TRADS SHALL BE AWARE OF ASBESTOS-CONTAINING MATERIALS (ACM) THAT EXIST WITHIN THE PROJECT LIMITS SO THEY ARE NOT UNINTENTIONALLY DISTURBED. ALL WORK THAT DISTURBS ACM IS CONSIDERED ASBESTOS ABATEMENT, WHICH IS COVERED UNDER SECTION 028213 ASBESTOS ABATEMENT. REFER TO THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED ACM.
11. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62 - LEAD EXPOSURE IN CONSTRUCTION. INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS, AND THE PRE-RENOVATION SURVEY REPORT BOUND IN TEH PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.
12. ALL OZONE-DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON, ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC, SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.
13. ALL FLUORESCENT LAMPS, HID LAMPS, COMPACT FLUORESCENT LAMPS, BATTERIES ASSOCIATED WITH LIFE SAFETY SYSTEMS, MERCURY-CONTAINING GAUGES, THERMOSTATS, LABORATORY INSTRUMENTATION, AND THERMOMETERS THROUGHOUT THE PROJECT LIMITS MUST BE PROPERLY HANDLED AND DISPOSED OF UNDER THE UNIVERSAL WASTE RULE. REFER TO SECTION 028700 FOR ADDITIONAL INFORMATION.
14. COORDINATE REMOVAL OF ALL EXISTING LABORATORY EQUIPMENT WITH THE OWNER.
15. ALL EXISTING ITEMS TO BE SALVAGED FOR REUSE SHALL BE PROTECTED THROUGH RE-INSTALLATION.
16. THROUGHOUT CORRIDORS AT FLOORS 1, 2, AND 3, SAWCUT EXISTING TERRAZZO COVE BASE AT THE RADIUS TO ENABLE DEMOLITION OF CLAY TILE (TERRA COTTA) WALLS WITHOUT IMPACTING EXISTING TERRAZZO FLOORING. PROTECT FULL WIDTH OF EXISTING TERRAZZO WALK SURFACE AT ANY OPENING.
17. AT START OF DEMOLITION, SCHEDULE WALKTHROUGH WITH OWEN LAKES REUSE (607) 257-0609 TO IDENTIFY ELEMENTS THEY WANT TO RECEIVE AS DONATIONS, SUCH AS STONE TOILET PARTITIONS AND ASSOCIATED HARDWARE. GC TO PROTECT DESIGNATED ITEMS FOR REMOVAL.
18. PARTITIONS BEING DEMOLISHED ARE CLAY TILE (TERRA COTTA) BLOCK UNLESS NOTED OTHERWISE, REQUIRING FLOOR AND EXTERIOR WALL REPAIR FOLLOWING REMOVAL.

GRAPHIC SYMBOL REMOVAL LEGEND

SYMBOL	DESCRIPTION
	REMOVE EXISTING TOPPING AND STRUCTURAL SLAB - COORDINATE WITH S-SERIES - NOTE SLAB-ON-GRADE IS TYPICALLY TWO LAYERS.
	REMOVE EXISTING FLOOR SUBSTRATE DOWN TO STRUCTURAL SLAB
	REMOVE EXISTING TOPPING SLAB AND CORK INSULATION AT FLOOR
	REMOVE STRUCTURAL SLAB TO THE EXTENT REQUIRED FOR PIPE TRENCHING

DEMOLITION PLAN KEYNOTES

D1	REFER TO HAZARDOUS MATERIAL DRAWINGS
D2	REMOVE EXISTING GWB ASSEMBLY PARTITIONS
D3	REMOVE EXISTING TERRACOTTA BLOCK PARTITIONS AND CONCRETE (G & 4) OR TERRAZZO (1, 2, 3) BASE
D4	REMOVE EXISTING DOORS AND FRAMES
D5	PROTECT EXISTING TERRAZZO FLOORING
D6	REMOVE EXISTING FUME HOOD
D7	REMOVE EXISTING LAMINAR FLOW HOOD
D8	REMOVE EXISTING EMERGENCY EYEWASH & SHOWER
D9	REMOVE SHOWER WALL, FLOOR, AND WAINSCOT TILE SUBSTRATES THROUGHOUT ROOM. REMOVE FLOOR SUBSTRATE DOWN TO STRUCTURAL SLAB - UP TO 3" AT GROUND FLOOR.
D10	REMOVE EXISTING COLD ROOM MATERIALS INCLUDING TOPPING SLAB OVER CORK INSULATION AT FLOOR
D11	REMOVE STRUCTURAL SLAB AS REQD PER P2.U
D12	REMOVE EXISTING GYPSUM BOARD & METAL STUD PARTITIONS
D13	REMOVE EXISTING PLASTER, CORK, & METAL STUD PARTITIONS



1 GROUND FLOOR DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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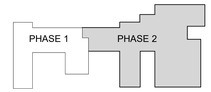
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

GROUND FLOOR DEMOLITION PLAN - PHASE 2

REGISTERED ARCHITECT JAMES VINCENT ELLENZWEIG 022901-1 STATE OF NEW YORK

BID DOCUMENTS
Scale: As indicated

AD1.0

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DEMOLITION GENERAL NOTES

1. CONTRACTORS SHALL FIELD VERIFY EXISTING CONDITIONS AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE WORK.
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17. AT START OF DEMOLITION, SCHEDULE WALKTHROUGH WITH OWNER (JAMES REUSE (607) 257-0609) TO IDENTIFY ELEMENTS THEY WANT TO RECEIVE AS DONATIONS, SUCH AS STONE TOILET PARTITIONS AND ASSOCIATED HARDWARE. GC TO PROTECT DESIGNATED ITEMS UNTIL REMOVED.
18. PARTITIONS BEING DEMOLISHED ARE CLAY TILE (TERRA COTTA) BLOCK UNLESS NOTED OTHERWISE, REQUIRING FLOOR AND EXTERIOR WALL INFILL FOLLOWING REMOVAL.

GRAPHIC SYMBOL REMOVAL LEGEND

SYMBOL	DESCRIPTION
	REMOVE EXISTING TOPPING AND STRUCTURAL SLAB - COORDINATE WITH S-SERIES - NOTE SLAB-ON-GRADE IS TYPICALLY TWO LAYERS.
	REMOVE EXISTING FLOOR SUBSTRATE DOWN TO STRUCTURAL SLAB
	REMOVE EXISTING TOPPING SLAB AND CORK INSULATION AT FLOOR
	REMOVE STRUCTURAL SLAB TO THE EXTENT REQUIRED FOR PIPE TRENCHING

DEMOLITION PLAN KEYNOTES

D1	REFER TO HAZARDOUS MATERIAL DRAWINGS
D2	REMOVE EXISTING GWB ASSEMBLY PARTITIONS
D3	REMOVE EXISTING TERRACOTTA BLOCK PARTITIONS AND CONCRETE (G & 4) OR TERRAZZO (1, 2, 3) BASE
D4	REMOVE EXISTING DOORS AND FRAMES
D5	PROTECT EXISTING TERRAZZO FLOORING
D6	REMOVE EXISTING FUME HOOD
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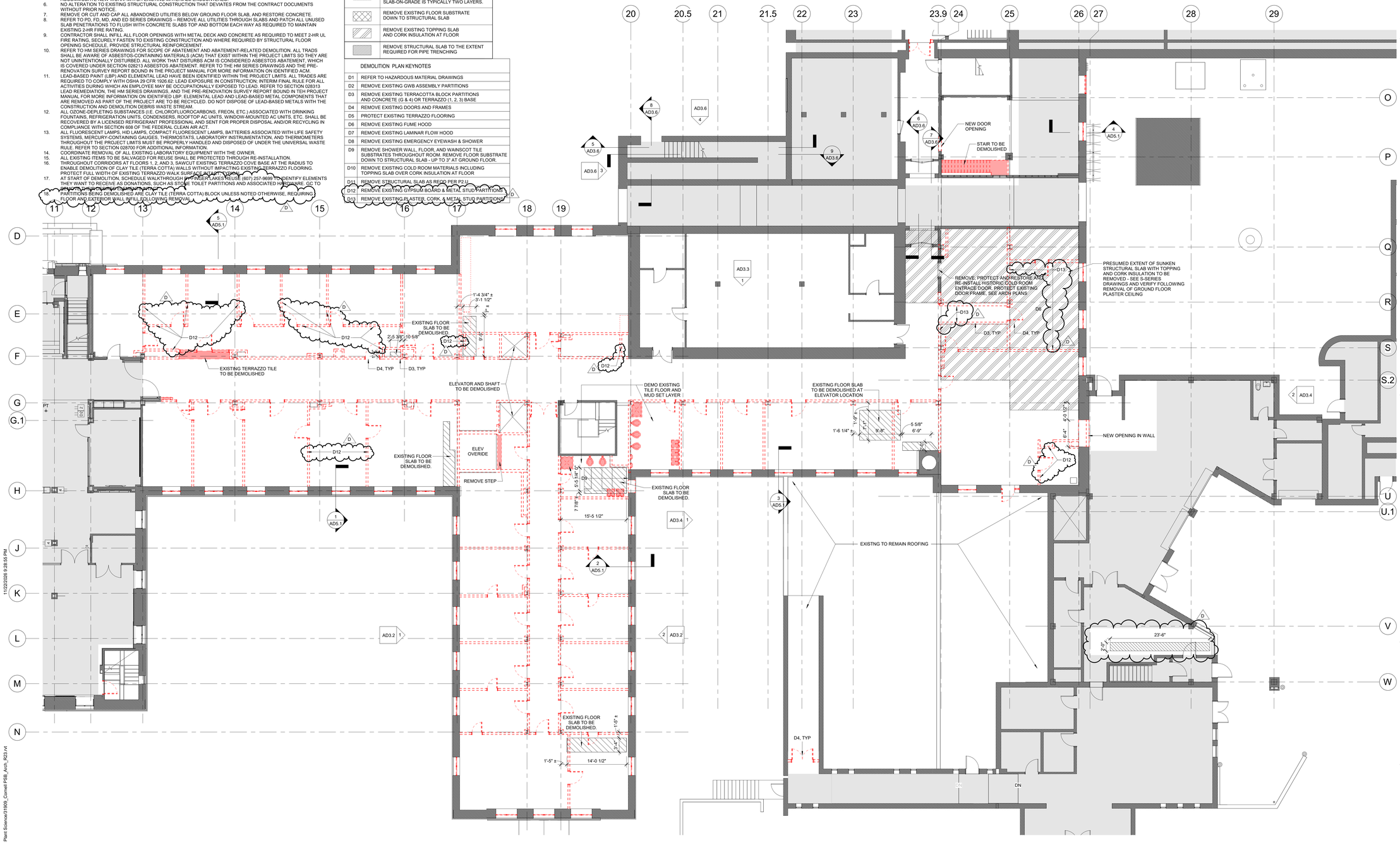
D11	REMOVE STRUCTURAL SLAB AS REQD PER P2.0
D12	REMOVE EXISTING GYPSUM BOARD & METAL STUD PARTITIONS
D13	REMOVE EXISTING PLASTER, CORK, & METAL STUD PARTITIONS



1 FIRST FLOOR DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
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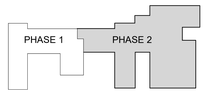
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

FIRST FLOOR DEMOLITION PLAN - PHASE 2

REGISTERED ARCHITECT ROBERT W. BIGGS 022901 STATE OF NEW YORK

BID DOCUMENTS
Scale: As indicated

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DEMOLITION GENERAL NOTES

1. CONTRACTORS SHALL FIELD VERIFY EXISTING CONDITIONS AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE WORK.
2. UNLESS NOTED OTHERWISE, INTENT IS FULL ABATEMENT AND GUT DEMOLITION IN AREAS OF WORK.
3. ALL EXISTING CONSTRUCTION AND FINISHES NOTED TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION. PATCH AS REQUIRED FOR LIKE NEW CONDITION. REFER TO AD AND A SERIES DRAWINGS.
4. CONTRACTORS ARE RESPONSIBLE FOR CLEAN TRANSITIONS / CONNECTIONS AT ALL LOCATIONS.
5. ALL CONCRETE FLOOR SLAB AND FOUNDATION WALL PATCH TO INCLUDE RESTORATION OF ALL FILL, WATERPROOFING AND SUB-SLAB UTILITIES ENCOUNTERED – RELOCATE EXISTING PIPING AS NECESSARY TO ACCOMMODATE NEW WORK. MATCH EXISTING MATERIALS ENCOUNTERED.
6. NO ALTERATION TO EXISTING STRUCTURAL CONSTRUCTION THAT DEVIATES FROM THE CONTRACT DOCUMENTS WITHOUT PRIOR NOTICE.
7. REMOVE OR CUT AND CAP ALL ABANDONED UTILITIES BELOW GROUND FLOOR SLAB, AND RESTORE CONCRETE.
8. REFER TO PD, FD, MD, AND ED SERIES DRAWINGS – REMOVE ALL UTILITIES THROUGH SLABS AND PATCH ALL UNUSED SLAB PENETRATIONS TO FLUSH WITH CONCRETE SLABS TOP AND BOTTOM EACH WAY AS REQUIRED TO MAINTAIN EXISTING 2-HR FIRE RATING.
9. CONTRACTOR SHALL INFILL ALL FLOOR OPENINGS WITH METAL DECK AND CONCRETE AS REQUIRED TO MEET 2-HR UL FIRE RATING, SECURELY FASTEN TO EXISTING CONSTRUCTION AND WHERE REQUIRED BY STRUCTURAL FLOOR OPENING SCHEDULE. PROVIDE STRUCTURAL REINFORCEMENT.
10. REFER TO HM SERIES DRAWINGS FOR SCOPE OF ABATEMENT AND ABATEMENT-RELATED DEMOLITION. ALL TRADS SHALL BE AWARE OF ASBESTOS-CONTAINING MATERIALS (ACM) THAT EXIST WITHIN THE PROJECT LIMITS SO THEY ARE NOT UNINTENTIONALLY DISTURBED. ALL WORK THAT DISTURBS ACM IS CONSIDERED ASBESTOS ABATEMENT, WHICH IS COVERED UNDER SECTION 028213 ASBESTOS ABATEMENT. REFER TO THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED ACM.
11. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION. INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS, AND THE PRE-RENOVATION SURVEY REPORT BOUND IN TEH PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.
12. ALL OZONE-DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON, ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.
13. ALL FLUORESCENT LAMPS, HID LAMPS, COMPACT FLUORESCENT LAMPS, BATTERIES ASSOCIATED WITH LIFE SAFETY SYSTEMS, MERCURY-CONTAINING GAUGES, THERMOSTATS, LABORATORY INSTRUMENTATION, AND THERMOMETERS THROUGHOUT THE PROJECT LIMITS MUST BE PROPERLY HANDLED AND DISPOSED OF UNDER THE UNIVERSAL WASTE RULE. REFER TO SECTION 028700 FOR ADDITIONAL INFORMATION.
14. COORDINATE REMOVAL OF ALL EXISTING LABORATORY EQUIPMENT WITH THE OWNER.
15. ALL EXISTING ITEMS TO BE SALVAGED FOR REUSE SHALL BE PROTECTED THROUGH RE-INSTALLATION.
16. THROUGHOUT CORRIDORS AT FLOORS 1, 2, AND 3, SAWCUT EXISTING TERRAZZO COVE BASE AT THE RADIUS TO ENABLE DEMOLITION OF CLAY TILE (TERRA COTTA) WALLS WITHOUT IMPACTING EXISTING TERRAZZO FLOORING. PROTECT FULL WIDTH OF EXISTING TERRAZZO WALK SURFACE AT ALL TIMES.
17. AT START OF DEMOLITION, SCHEDULE WALKTHROUGH WITH OWNER/LAKES REUSE (607) 257-0690 TO IDENTIFY ELEMENTS THEY WANT TO RECEIVE AS DONATIONS, SUCH AS STONE TOILET PARTITIONS AND ASSOCIATED HARDWARE. GC TO ENSURE CONSTRUCTION DEBRIS DOES NOT CONTAMINATE DONATED ITEMS.
18. PARTITIONS BEING DEMOLISHED ARE CLAY TILE (TERRA COTTA) BLOCK UNLESS NOTED OTHERWISE, REQUIRING FLOOR AND EXTERIOR WALL DRILL FOLLOWING REMOVAL.

GRAPHIC SYMBOL REMOVAL LEGEND

SYMBOL	DESCRIPTION
	REMOVE EXISTING TOPPING AND STRUCTURAL SLAB - COORDINATE WITH S-SERIES - NOTE SLAB-ON-GRADE IS TYPICALLY TWO LAYERS.
	REMOVE EXISTING FLOOR SUBSTRATE DOWN TO STRUCTURAL SLAB
	REMOVE EXISTING TOPPING SLAB AND CORK INSULATION AT FLOOR
	REMOVE STRUCTURAL SLAB TO THE EXTENT REQUIRED FOR PIPE TRENCHING

DEMOLITION PLAN KEYNOTES	
D1	REFER TO HAZARDOUS MATERIAL DRAWINGS
D2	REMOVE EXISTING GWB ASSEMBLY PARTITIONS
D3	REMOVE EXISTING TERRACOTTA BLOCK PARTITIONS AND CONCRETE (G & 4) OR TERRAZZO (1, 2, 3) BASE
D4	REMOVE EXISTING DOORS AND FRAMES
D5	PROTECT EXISTING TERRAZZO FLOORING
D6	REMOVE EXISTING FUME HOOD
D7	REMOVE EXISTING LAMINAR FLOW HOOD
D8	REMOVE EXISTING EMERGENCY EYEWASH & SHOWER
D9	REMOVE SHOWER WALL, FLOOR, AND WAINSCOT TILE SUBSTRATES THROUGHOUT ROOM. REMOVE FLOOR SUBSTRATE DOWN TO STRUCTURAL SLAB - UP TO 3" AT GROUND FLOOR.
D10	REMOVE EXISTING COLD ROOM MATERIALS INCLUDING TOPPING SLAB OVER CORK INSULATION AT FLOOR
D11	REMOVE STRUCTURAL SLAB AS REQD PER P2.U
D12	REMOVE EXISTING GYPSUM BOARD & METAL STUD PARTITIONS
D13	REMOVE EXISTING PLASTER, CORK, & METAL STUD PARTITIONS

1 SECOND FLOOR DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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Notes:

PHASE 1 PHASE 2

Keyplan

Job Number	31909.00
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Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

SECOND FLOOR DEMOLITION PLAN - PHASE 2

REGISTERED ARCHITECT JOHN VINCENT RIGGS 022901 STATE OF NEW YORK

BID DOCUMENTS
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DEMOLITION GENERAL NOTES

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17. AT START OF DEMOLITION, SCHEDULE WALKTHROUGH WITH OWNER (LAKES RELISE (607) 257-0609) TO IDENTIFY ELEMENTS THEY WANT TO RECEIVE AS DONATIONS, SUCH AS STONE TOILET PARTITIONS AND ASSOCIATED HARDWARE. GC TO ARRANGE TRANSPORTATION AS REQUIRED.
18. PARTITIONS BEING DEMOLISHED ARE CLAY TILE (TERRA COTTA) BLOCK UNLESS NOTED OTHERWISE, REQUIRING FLOOR AND EXTERIOR WALL DEBRIS FOLLOWING REMOVAL.

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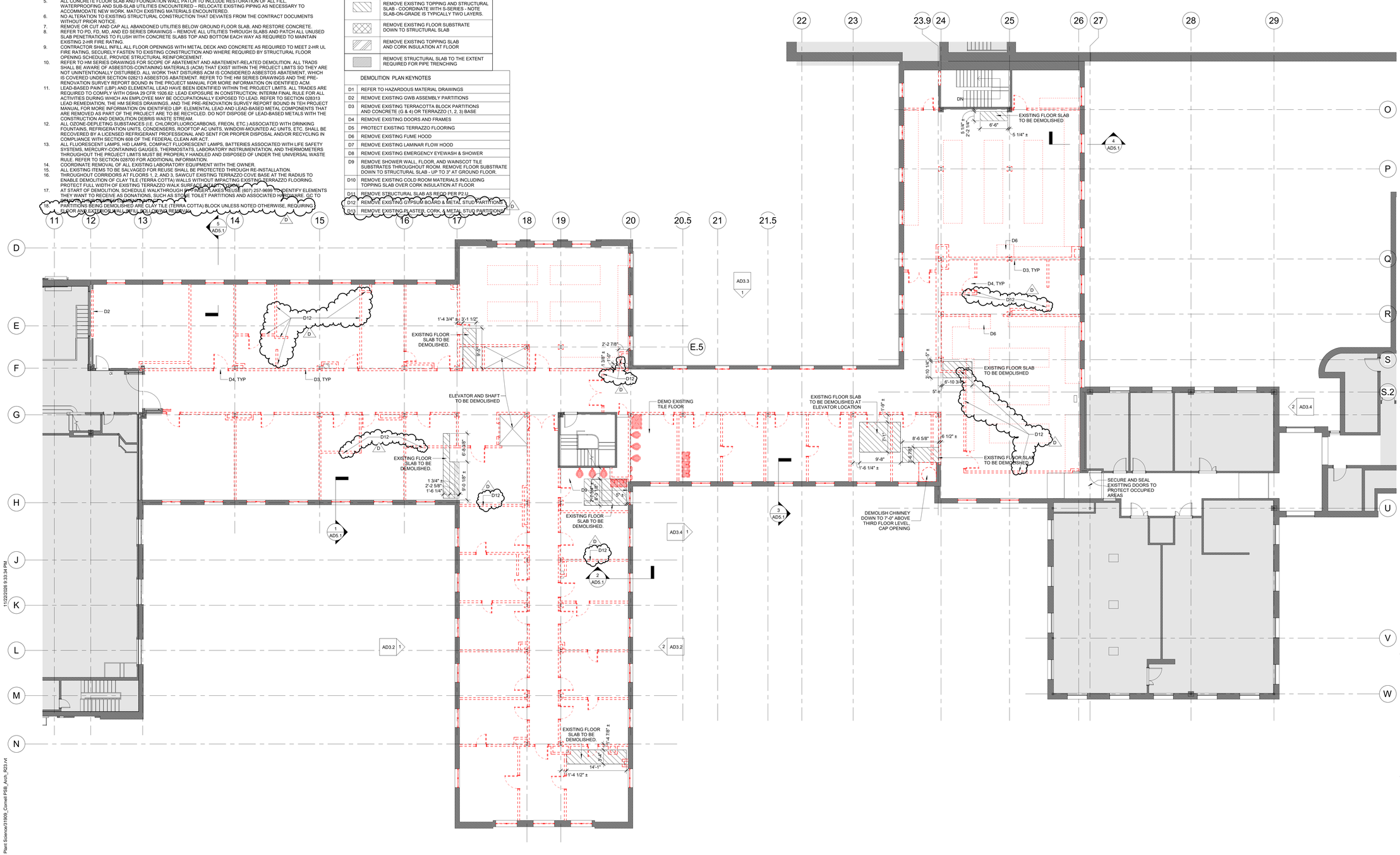

1 THIRD FLOOR DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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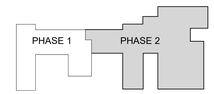
Notes:



Keyplan

Job Number	31909.00
Drawing By	Author
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Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

THIRD FLOOR DEMOLITION PLAN - PHASE 2

REGISTERED ARCHITECT JAMES ROBERT BIGGS 022901-1 STATE OF NEW YORK

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Scale: As indicated

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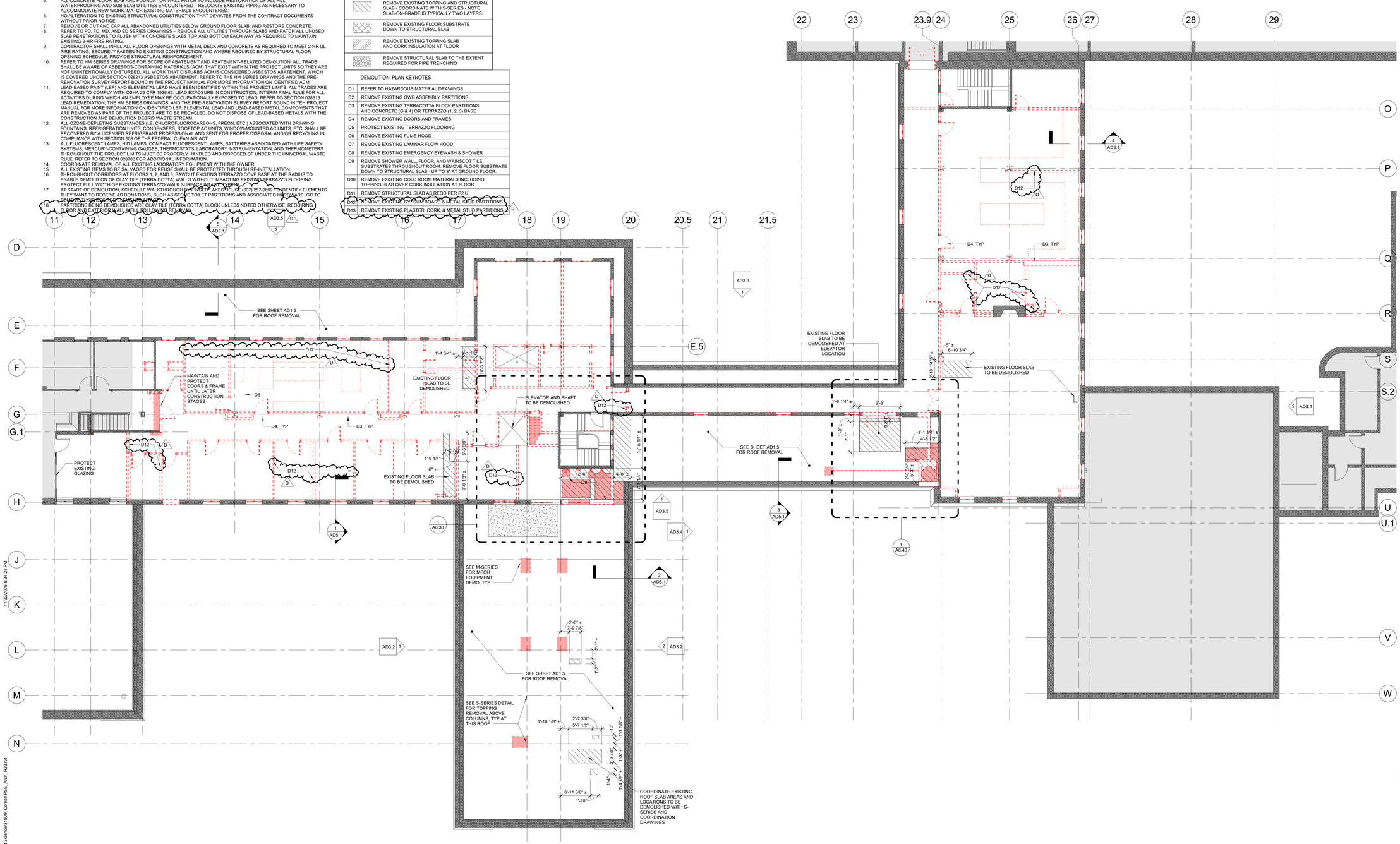
D8	REMOVE EXISTING EMERGENCY EYEWASH & SHOWER
D9	REMOVE SHOWER WALL, FLOOR, AND WAINSCOT TILE SUBSTRATES THROUGHOUT ROOM. REMOVE FLOOR SUBSTRATE DOWN TO STRUCTURAL SLAB - UP TO 3" AT GROUND FLOOR.
D10	REMOVE EXISTING COLD ROOM MATERIALS INCLUDING TOPPING SLAB OVER CORK INSULATION AT FLOOR
D11	REMOVE STRUCTURAL SLAB AS REQD PER P2.U
D12	REMOVE EXISTING GYPSUM BOARD & METAL STUD PARTITIONS
D13	REMOVE EXISTING PLASTER, CORK, & METAL STUD PARTITIONS



1 FOURTH FLOOR DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

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Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
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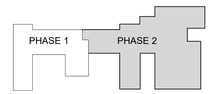
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

FOURTH FLOOR DEMOLITION PLAN - PHASE 2

REGISTERED ARCHITECT JAMES VINCENT ELLENZWEIG 022901-1 STATE OF NEW YORK

BID DOCUMENTS
Scale: As indicated

AD1.4

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DEMOLITION RCP KEYNOTES

D1 DEMOLISH EXISTING ACOUSTICAL CEILING TILE SYSTEM. REMOVE ALL ABANDONED CABLING AND OTHER NONWORKING MECHANICAL AND ELECTRICAL ITEMS. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

D2 DEMOLISH EXISTING PLASTER CEILING. (ASSUME ARCHED AT CORRIDORS WHERE INDICATED WITH BELOW HATCH)

D3 DEMOLISH EXISTING CORNICE.

D4 DEMOLISH EXISTING SLOPED CONC SLAB.

D5 DEMOLISH ALL EXISTING WINDOW TREATMENTS INCLUDING, BUT NOT LIMITED TO, SHADES, BLINDS, AND LOUVERS.

D6 DEMOLISH EXISTING WALL. REFER TO DEMO FLOOR PLANS FOR SCOPE OF WORK.

D7 DEMOLISH EXISTING WINDOW & FRAME. REFER TO DEMO ELEVATIONS FOR SCOPE OF WORK.

D8 SALVAGE PENDANT LIGHT FIXTURE FOR RESTORATION AND REUSE IN SAME LOCATION.

D9 PRESERVE EXISTING PLASTER CORNICE TO REMAIN.

D10 RESTORE 4 EXISTING LIGHT FIXTURES.

D11 PROTECT EXISTING DOORS TO REMAIN.

D12 REMOVE AND REPLACE CEILING AS REQUIRED TO INSTALL NEW FIRE PROTECTION SYSTEM.

D13 CONTRACTOR TO COORDINATE INSTALLATION OF TEMPORARY HEAT DETECTORS WITH DEMOLITION WORK. TEMPORARY HEAT DETECTORS ARE TO BE INSTALLED ABOVE EXISTING CEILING FINISHES, INCLUDING EXISTING ARCHED PLASTER CEILINGS, PRIOR TO THE START OF GENERAL DEMOLITION. TEMPORARY HEAT DETECTORS ARE TO REMAIN ACTIVE UNTIL NEW FACP IS FULLY OPERATIONAL. REFER TO ELECTRICAL AND FIRE ALARM PHASING.

D14 REMOVE EXISTING ACOUSTIC CEILING TILE SYSTEM AS REQUIRED TO INSTALL NEW WORK. SALVAGE AND STORE ACOUSTIC CEILING TILE SYSTEM. REINSTALL SALVAGED ACOUSTIC CEILING TILE SYSTEM UPON COMPLETION OF NEW WORK. CONTRACTOR TO REPLACE ALL DAMAGED CEILING COMPONENTS AS REQUIRED WITH NEW TO MATCH EXISTING. PROTECT EXISTING FINISHES DURING WORK.

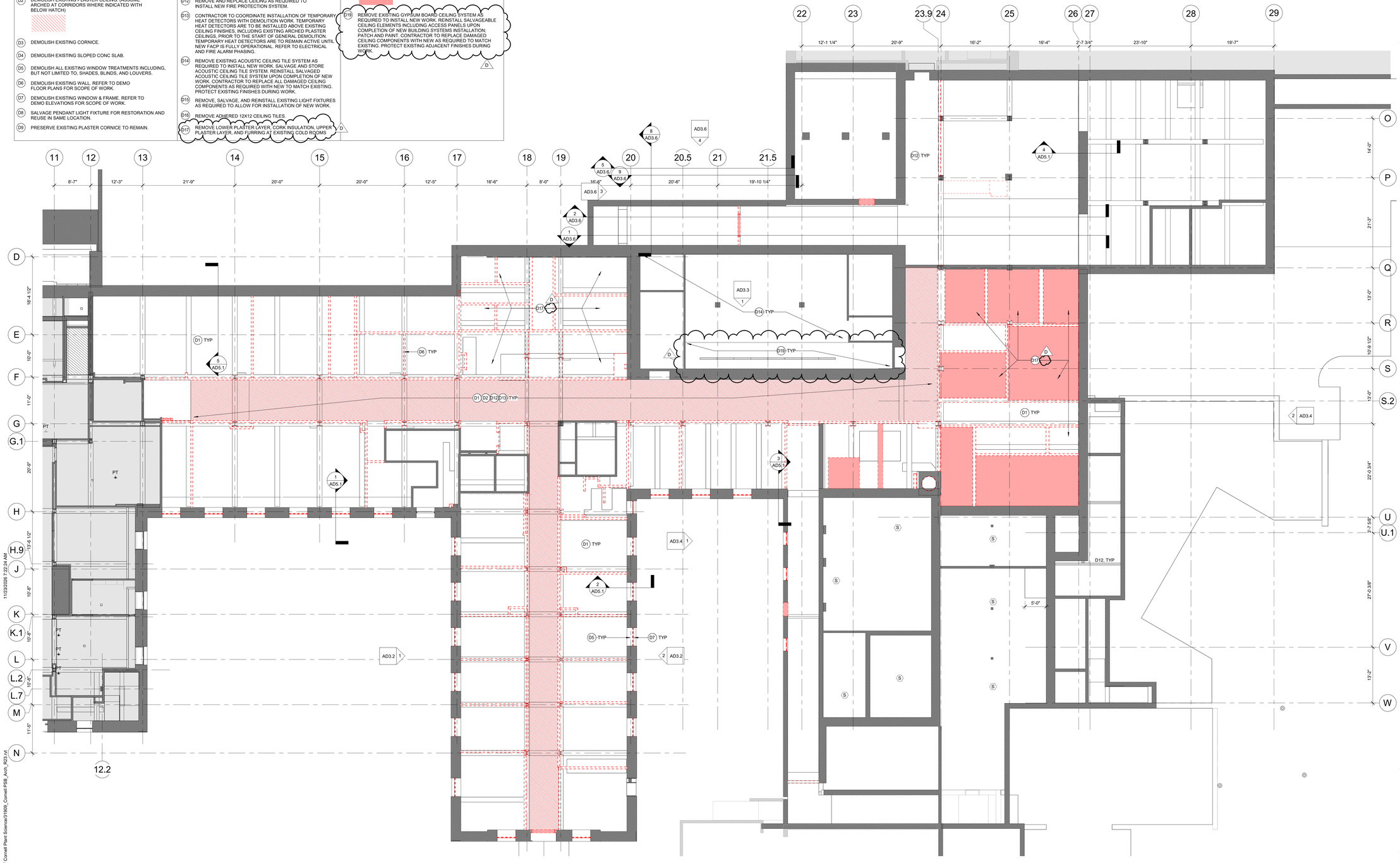
D15 REMOVE, SALVAGE, AND REINSTALL EXISTING LIGHT FIXTURES AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW WORK.

D16 REMOVE ADHERED 12X12 CEILING TILES.

D17 REMOVE LOWER PLASTER LAYER, CORK INSULATION, UPPER PLASTER LAYER, AND FURRING AT EXISTING COLD ROOMS

D18 DEMO PLASTER CEILING AND PARGE EXPOSED FACE OF EXTERIOR WALL ABOVE WHERE BELOW HATCH USED:

D19 REMOVE EXISTING GYPSUM BOARD CEILING SYSTEM AS REQUIRED TO INSTALL NEW WORK. REINSTALL SALVAGEABLE CEILING ELEMENTS INCLUDING ACCESS PANELS UPON COMPLETION OF NEW BUILDING SYSTEMS INSTALLATION; PATCH AND PAINT. CONTRACTOR TO REPLACE DAMAGED CEILING COMPONENTS WITH NEW AS REQUIRED TO MATCH EXISTING. PROTECT EXISTING ADJACENT FINISHES DURING WORK.



1 GROUND FLOOR REFLECTED CEILING DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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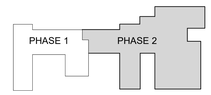

Keyplan

Job Number	31909.00
Drawing By	Author
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Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

GROUND FLOOR REFLECTED CEILING DEMOLITION PLAN - PHASE 2

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AD2.0

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DEMOLITION RCP KEYNOTES

- D1 DEMOLISH EXISTING ACOUSTICAL CEILING TILE SYSTEM. REMOVE ALL ABANDONED CABLING AND OTHER NONWORKING MECHANICAL AND ELECTRICAL ITEMS. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- D2 DEMOLISH EXISTING PLASTER CEILING. (ASSUME ARCHED AT CORRIDORS WHERE INDICATED WITH BELOW HATCH)
- D3 DEMOLISH EXISTING CORNICE.
- D4 DEMOLISH EXISTING SLOPED CONC SLAB.
- D5 DEMOLISH ALL EXISTING WINDOW TREATMENTS INCLUDING, BUT NOT LIMITED TO, SHADES, BLINDS, AND LOUVERS.
- D6 DEMOLISH EXISTING WALL. REFER TO DEMO FLOOR PLANS FOR SCOPE OF WORK.
- D7 DEMOLISH EXISTING WINDOW & FRAME. REFER TO DEMO ELEVATIONS FOR SCOPE OF WORK.
- D8 SALVAGE PENDANT LIGHT FIXTURE FOR RESTORATION AND REUSE IN SAME LOCATION.
- D9 PRESERVE EXISTING PLASTER CORNICE TO REMAIN.
- D10 RESTORE 4 EXISTING LIGHT FIXTURES.
- D11 PROTECT EXISTING DOORS TO REMAIN.
- D12 REMOVE AND REPLACE CEILING AS REQUIRED TO INSTALL NEW FIRE PROTECTION SYSTEM.
- D13 CONTRACTOR TO COORDINATE INSTALLATION OF TEMPORARY HEAT DETECTORS WITH DEMOLITION WORK. TEMPORARY HEAT DETECTORS ARE TO BE INSTALLED ABOVE EXISTING CEILING FINISHES, INCLUDING EXISTING ARCHED PLASTER CEILINGS, PRIOR TO THE START OF GENERAL DEMOLITION. TEMPORARY HEAT DETECTORS ARE TO REMAIN ACTIVE UNTIL NEW FACP IS FULLY OPERATIONAL. REFER TO ELECTRICAL AND FIRE ALARM PHASING.
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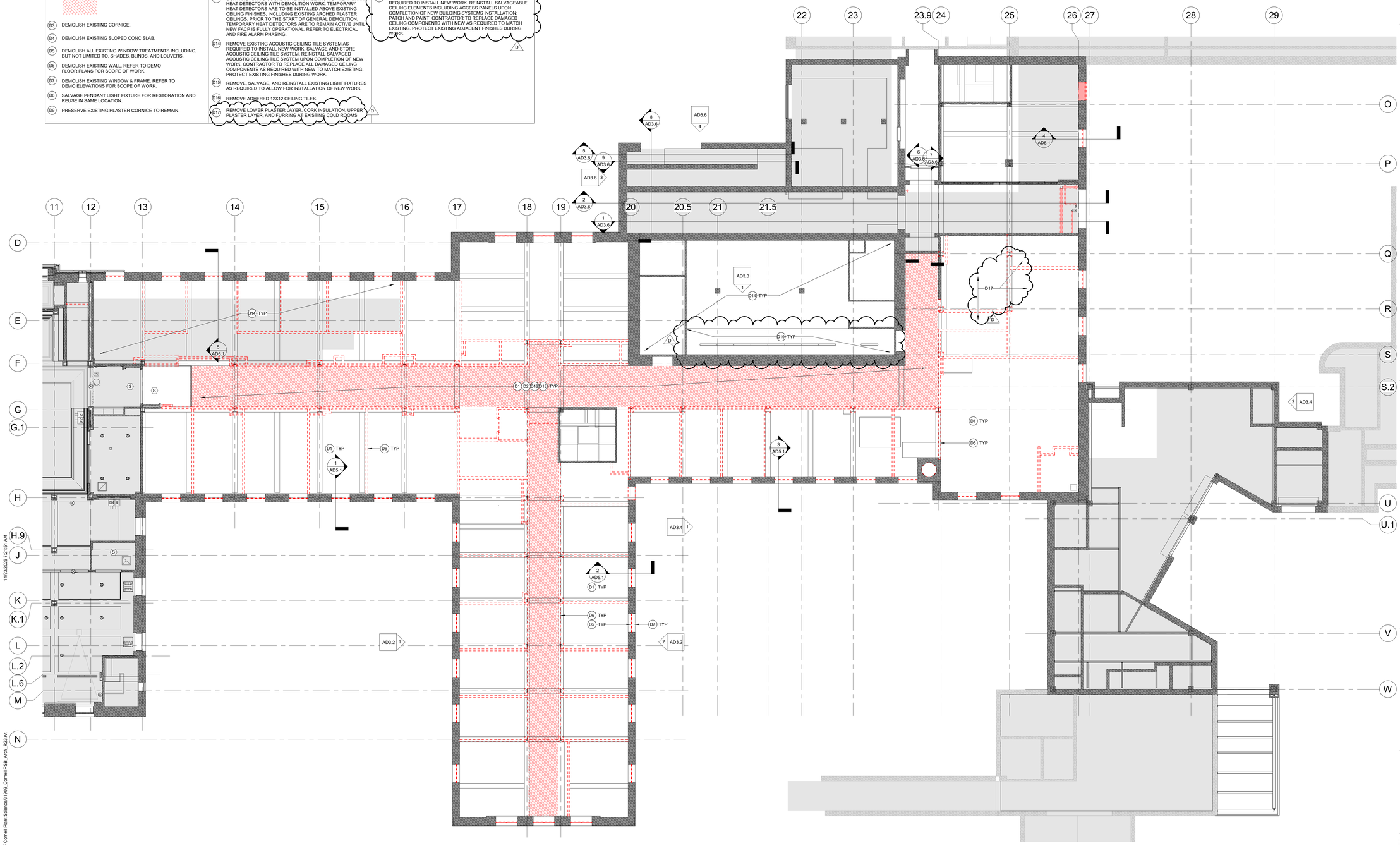

1 FIRST FLOOR REFLECTED CEILING DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

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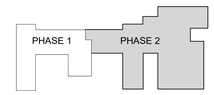

Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

FIRST FLOOR REFLECTED CEILING DEMOLITION PLAN - PHASE 2

BID DOCUMENTS
Scale: As indicated

AD2.1

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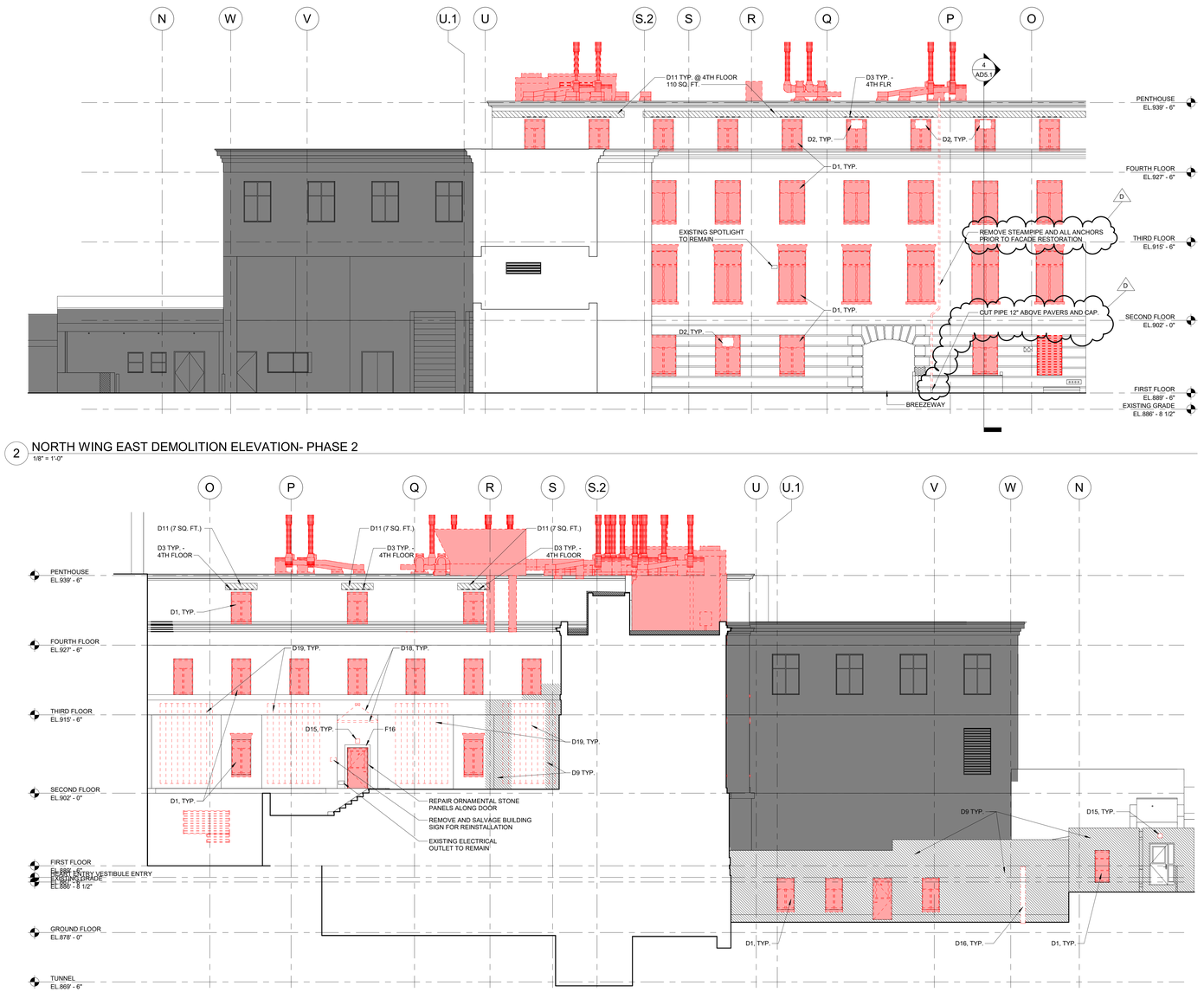
GENERAL ELEVATION REMOVAL NOTES
(APPLIES TO ALL EXTERIOR ELEVATION REMOVAL SHEETS):

GENERAL ELEVATION REMOVAL NOTES (APPLIES TO ALL EXTERIOR ELEVATION REMOVAL SHEETS):
1. TYPICAL, REMOVE ELEMENTS COMPLETELY INCLUDING ACCESSORY MATERIALS, ANCHORS, CLIPS, SEALANTS.
2. COORDINATE REMOVALS WITH HAZARDOUS MATERIAL H-SERIES DRAWINGS AND SPECIFICATIONS.
3. PROTECT EXISTING ELEMENTS TO REMAIN DURING THE WORK.
4. SEQUENCE REMOVALS WITH INSTALLATION OF TEMPORARY AND PERMANENT WORK AS REQUIRED TO MAINTAIN WEATHER TIGHTNESS OF EXISTING BUILDING
5. EXTENT OF IVY REMOVALS IS BASED OFF OF SURVEY FROM OCTOBER 2022

DEMOLITION ELEVATION KEYNOTES	
D1	REMOVE EXISTING WINDOW & FRAME
D2	REMOVE EXISTING A/C UNIT AND STEEL SUPPORT BAR AND ANCHORS, TYPICAL
D3	REMOVE EXISTING STEEL LINTEL
D4	REMOVE EXISTING ABANDONED MASONRY CHIMNEY
D5	REMOVE EXISTING SKYLIGHT
D6	REMOVE EXISTING STEEL BARSTOCK
D7	REMOVE EXISTING LOUVER
D8	REMOVE EXISTING STONE SILL
D9	REMOVE EXISTING VINES
D10	REMOVE EXISTING DOOR & FRAME
D11	REMOVE SECTION OF EXISTING BRICK, SEE SHEET A6.1 AND STRUCTURAL DRAWINGS
D12	REMOVE ALL WIRED GLASS AND SELECT METAL PANELS FROM ORIGINAL METAL STOREFRONT
D13	REMOVE LITE FROM ALUMINUM WINDOW
D14	REMOVE CORROSION AND LOOSE COATING AT BOTH SIDES OF METAL STOREFRONT AND AT METAL PANELS TO REMAIN.
D15	REMOVE EXISTING LIGHT FIXTURE, BRACKET AND ANCHORS
D16	REMOVE AND REINSTALL TRELLIS
D17	REMOVE MASONRY CHIMNEY
D18	REMOVE AND REINSTALL CANOPY
D19	REMOVE AND REINSTALL LATTICE

HATCH REMOVAL LEGEND	
	IVY REMOVAL
	EXISTING N.I.C.
	EXISTING BRICK MASONRY (RUNNING AND FLEMISH BOND, TYP.)
	LIMESTONE OR GRANITE



2 NORTH WING EAST DEMOLITION ELEVATION- PHASE 2

1/8" = 1'-0"

1 NORTH WING WEST DEMOLITION ELEVATION - PHASE 2

1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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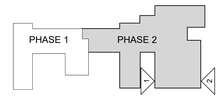
Notes:



Keyplan

Job Number 31909.00
Drawing By TJG
Checked By DKA
Filename
Date August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

NORTH WING WEST AND EAST DEMOLITION ELEVATIONS - PHASE 2

BID DOCUMENTS
Scale: As indicated

REGISTERED ARCHITECT DOUGLAS K. ARMA 032685 STATE OF NEW YORK

REGISTRATION EXPIRES: 08/31/2028

AD3.4

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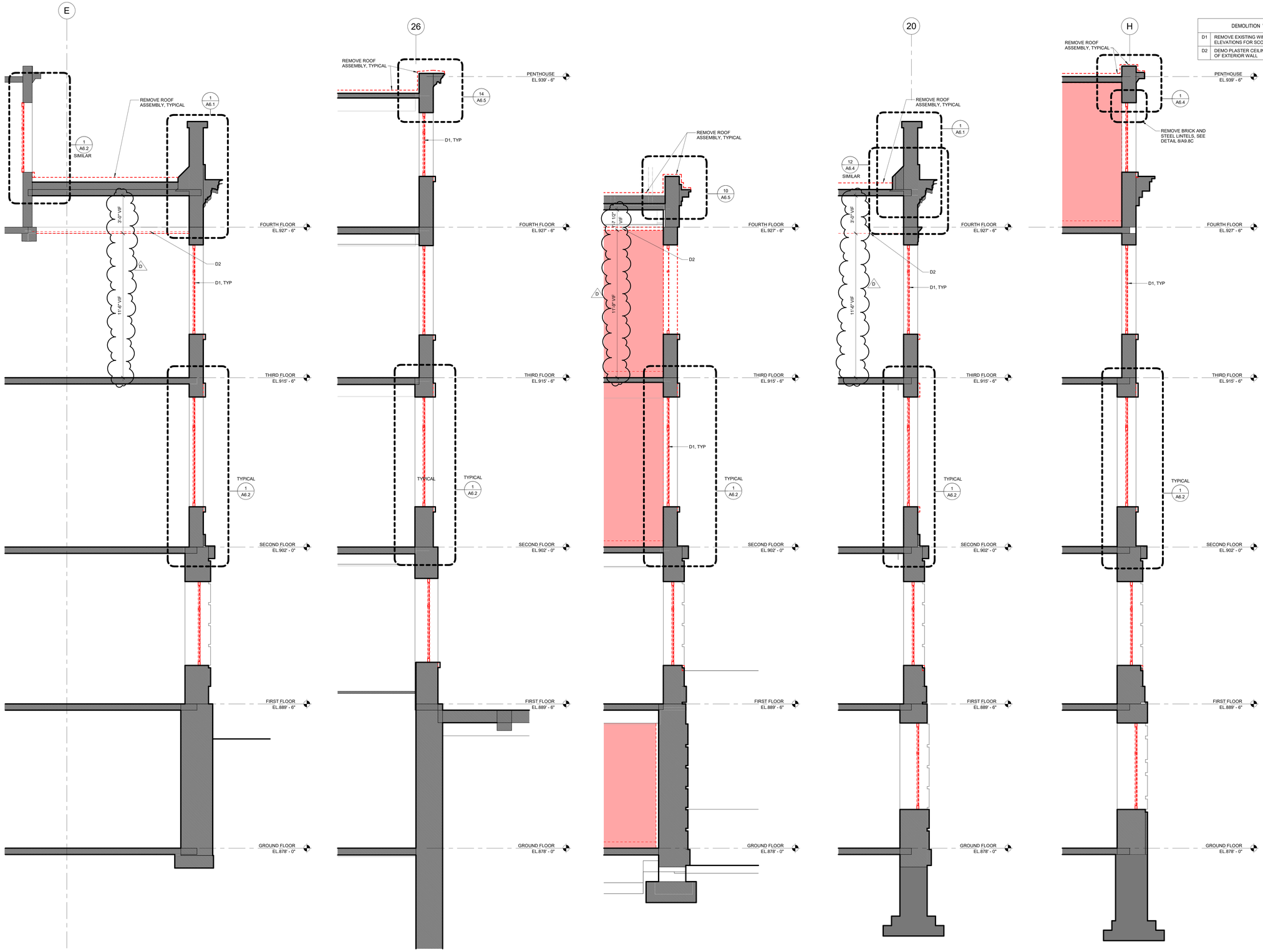

5 MAIN WING - NORTH WALL DEMO
3/8" = 1'-0"

4 HERBARIUM WING - EAST WALL DEMO
3/8" = 1'-0"

3 HERBARIUM WING - SOUTH WALL DEMO
3/8" = 1'-0"

2 EAST WING - EAST WALL DEMO
3/8" = 1'-0"

1 MAIN WING - SOUTH WALL DEMO
3/8" = 1'-0"

DEMOLITION WALL SECTION KEYNOTES	
D1	REMOVE EXISTING WINDOW & FRAME. REFER TO DEMO ELEVATIONS FOR SCOPE OF WORK.
D2	DEMO PLASTER CEILING AND PARGE EXPOSED FACE OF EXTERIOR WALL

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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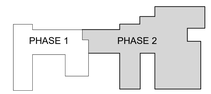

Keyplan

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DEMOLITION WALL SECTIONS

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REGISTERED ARCHITECT DOUGLAS R. ARDINI 032609 STATE OF NEW YORK

REGISTRATION EXPIRES: 08/31/2028

AD5.1

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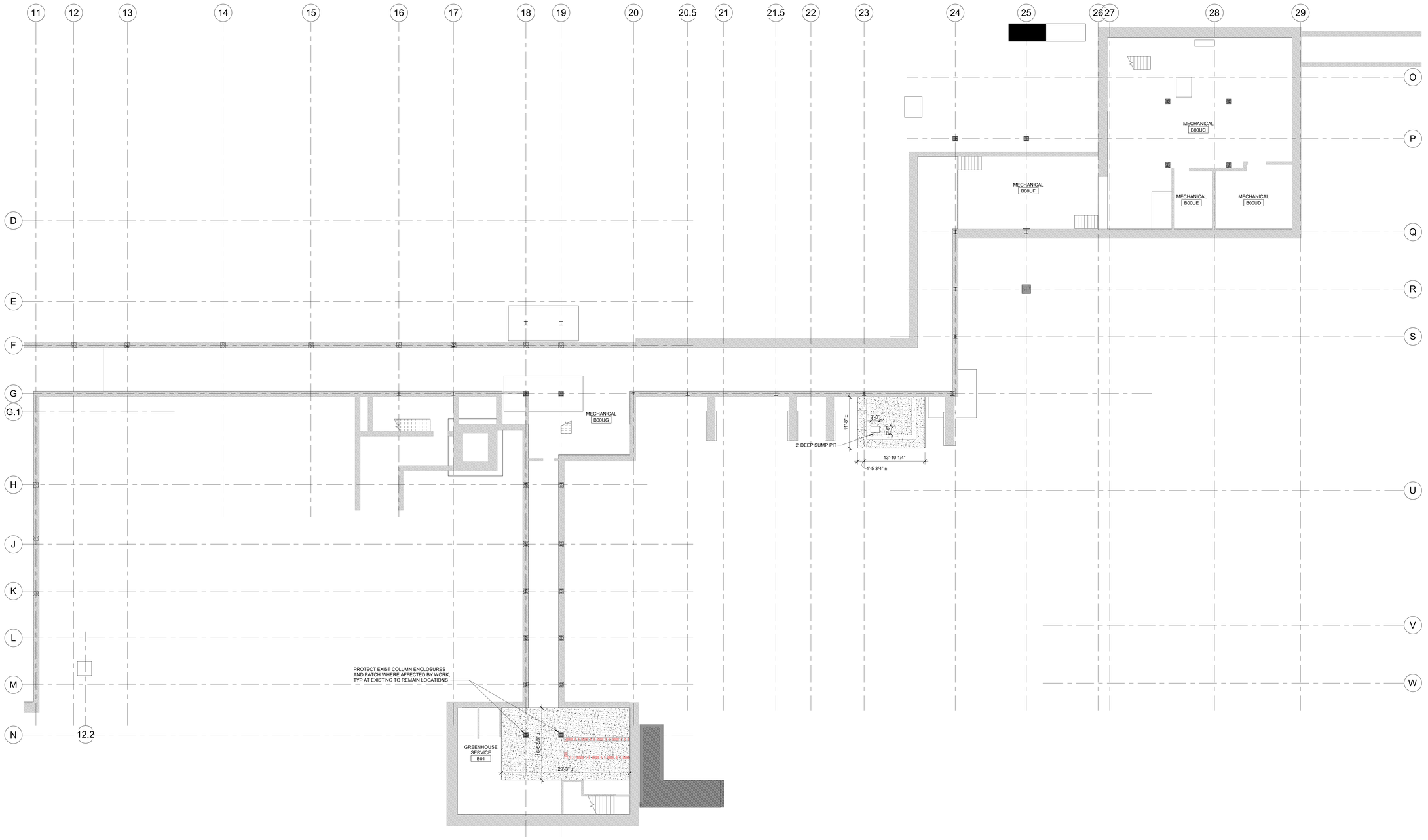

1 TUNNEL - CONC. WORK - PHASE 2
1/8" = 1'-0"

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Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

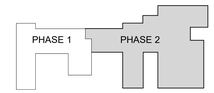
Notes:

PROVIDE FIRE-RATED CONSTRUCTION AS INDICATED INCLUDING
FLOOR SLAB: 2-HR;
ROOF SLAB: 1-HR;
COLUMN ENCLOSURE: 2-HR;
VERTICAL SHAFT ENCLOSURES: 2-HR

COLUMN CALLOUTS IN THE A0-SERIES INDICATE THE FIRE RATED ENCLOSURES ONLY. GC TO FIELD VERIFY STEEL DIMENSIONS TO CONFIRM APPLICABLE DETAIL. REFER TO A1-SERIES FOR DIMENSIONS AND CALLOUTS TO ADDITIONAL COLUMN DETAILS RELATING TO FINISH CONDITIONS.

PROTECT EXISTING BEAM AND COLUMN ENCLOSURES TO REMAIN

CONCRETE SLAB INFILL - COORDINATE WITH S-SERIES



Keyplan

Job Number	31909.00
Drawing By	AT
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Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

TUNNEL - CONC. WORK - PHASE 2

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Scale: As indicated

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11 12 13 14 15 16 17 18 19 20 20.5 21 21.5 22 23 24 25 26 27 28 29
8'-7" 12'-3" 21'-9" 20'-0" 20'-0" 12'-5" 16'-6" 8'-0" 16'-6" 20'-6" 19'-10 1/4" 12'-1 1/4" 20'-9" 16'-2" 16'-4" 2'-7 3/4" 23'-10" 19'-7"
D E F G G.1 H H.9 J K K.1 L L.2 L.7 M N
18'-4 1/2" 10'-0" 11'-0" 20'-9" 15'-6 1/2" 10'-8" 10'-8" 6'-11 1/2" 3'-8 1/2" 11'-5"
O P Q R S S.2 U U.1 V W
14'-0" 21'-3" 15'-0" 10'-9 1/2" 13'-0" 25'-0 3/4" 7'-7 5/8" 27'-0 3/8" 13'-2"
LAB SUPPORT GENERAL EQUIPMENT G40
FLEX LAB SUPPORT G38
FLEX LAB SUPPORT G36
SUPPORT G34
FREEZER FARM G32
COLD ROOM G30
COLD ROOM G28
FREEZER FARM G26
SHARED INSTRUMENTATION SUPPORT ROOM G14
EXIST TO REMAIN
1'-6 3/4" ±
18'-6 1/4"
38'-11"
2'-6 3/4"
CORRIDOR-EAST G0043
9 1/8"
3 / A11.00
4 / A11.00
6'-8 1/2" +/-
FACULTY OFFICE G37
FACULTY OFFICE G35
FACULTY OFFICE G33
FACULTY OFFICE G31
FACULTY OFFICE G29
FACULTY OFFICE G27
EXIST TUNNEL STAIR G0005
T/D G25
WELL/ TUNNEL ELEVATOR G0072
TUNNEL ELEVATOR MACHINE ROOM G0082
7'-1 3/4" +/-
STAIR 5 G0003
2'-3" +/-
3'-3 3/4"
CYL. STOR G13
SHAFT
11'-11"
16'-2 5/8"
EQUIPMENT G15
MICROSCOPY G17
PCR G19
FLEXIBLE G21
CHEMISTRY G23
7'-6 1/8"
5 / A11.00
CORRIDOR G0051
CULTIVABLE CROP PRODUCTION LAB G20
SHAFT
VESTIBULE G0052
STAIR G0004
10'-7 1/4" +/-
6'-0" +/- 5% SLOPE MAX
ALIGN
+6"
EXIST MECHANICAL G0080
EXIST SUPPORT G08B
EXIST SUPPORT G08A
EXIST. WET TEACHING LAB G08
EXIST. EQUIP G08C
EXIST TO REMAIN
EXIST MECHANICAL G0069
EXIST MECHANICAL G0068
EXTEND STEP
2'-2" +/-
16'-4" ±
CUSTODIAL SUPPLY EXIST TO REMAIN G0037
12'-7 3/8" +/-
16'-0 7/8" +/-
FIELD WORK ROOM G04
SOIL AND SAMPLE PREP G02
FIELD WORK SUITE CORRIDOR G0041
32'-5" +/-
6'-8 1/2"
CORRIDOR-NORTH WING G0042
3/A11.00 TYP UNO
WRITE-UP SPACE G0081
MECH. CORRIDOR G0050
HC GN. TOILET / SHOWER ROOM G0021
EAST ELEVATOR G0071
GN TOILET / SHOWER ROOM G0020
CLEAN PLANT AND SOIL GRINDING ROOM G05
MESSY PLANT GRINDING ROOM G03
MESSY SOIL GRINDING ROOM G01
6'-0 1/4"
8'-2"
16'-7 3/4" +/-
EXIST. LOADING DOCK ELEVATOR G0070
EXIST. CORRIDOR G0040
23.9
EXIST. MAIN ELECTRICAL G0063
EXIST MECHANICAL G0064
EXIST. MAIN ELECTRICAL G0062
BUILDING STORAGE G0066
BUILDING STORAGE G0065
MECHANICAL G0060
EXIST. STAIR G0001
EXIST. ELEV MECH RM G0061
EXIST TO REMAIN
EXTEND STEP
2'-2" +/-
16'-4" ±
EXIST TO REMAIN
EXIST MECHANICAL G0068
EXIST TO REMAIN
EXIST TO REMAIN
EXIST MECHANICAL G0069
EXIST TO REMAIN
EXIST TO REMAIN
EXIST. WET TEACHING LAB G08
EXIST. EQUIP G08C
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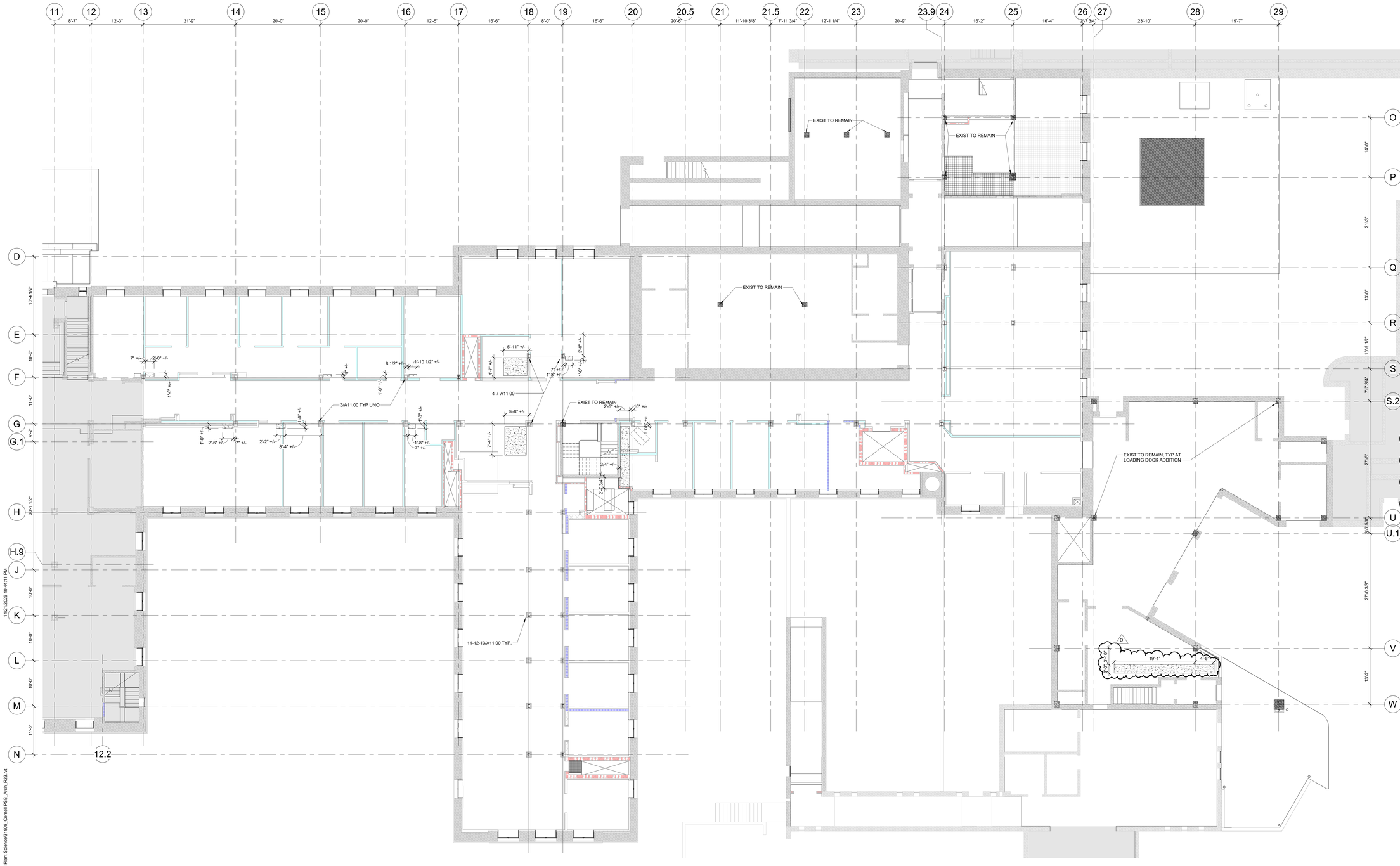

1 FIRST FLOOR - COLUMN ENCL CONC. WORK - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

PROVIDE FIRE-RATED CONSTRUCTION AS INDICATED INCLUDING
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COLUMN ENCLOSURE: 2-HR;
VERTICAL SHAFT ENCLOSURES: 2-HR

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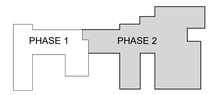
PROTECT EXISTING BEAM AND COLUMN ENCLOSURES TO REMAIN

CONCRETE SLAB INFILL - COORDINATE WITH S-SERIES



Keyplan

Job Number	31909.00
Drawing By	Author
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Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

FIRST FLOOR COL. ENCLOSURES AND CONC. WORK - PHASE 2

REGISTERED ARCHITECT ROBERT BENJAMIN ELLENZWEIG 022901-1 STATE OF NEW YORK

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A0.1

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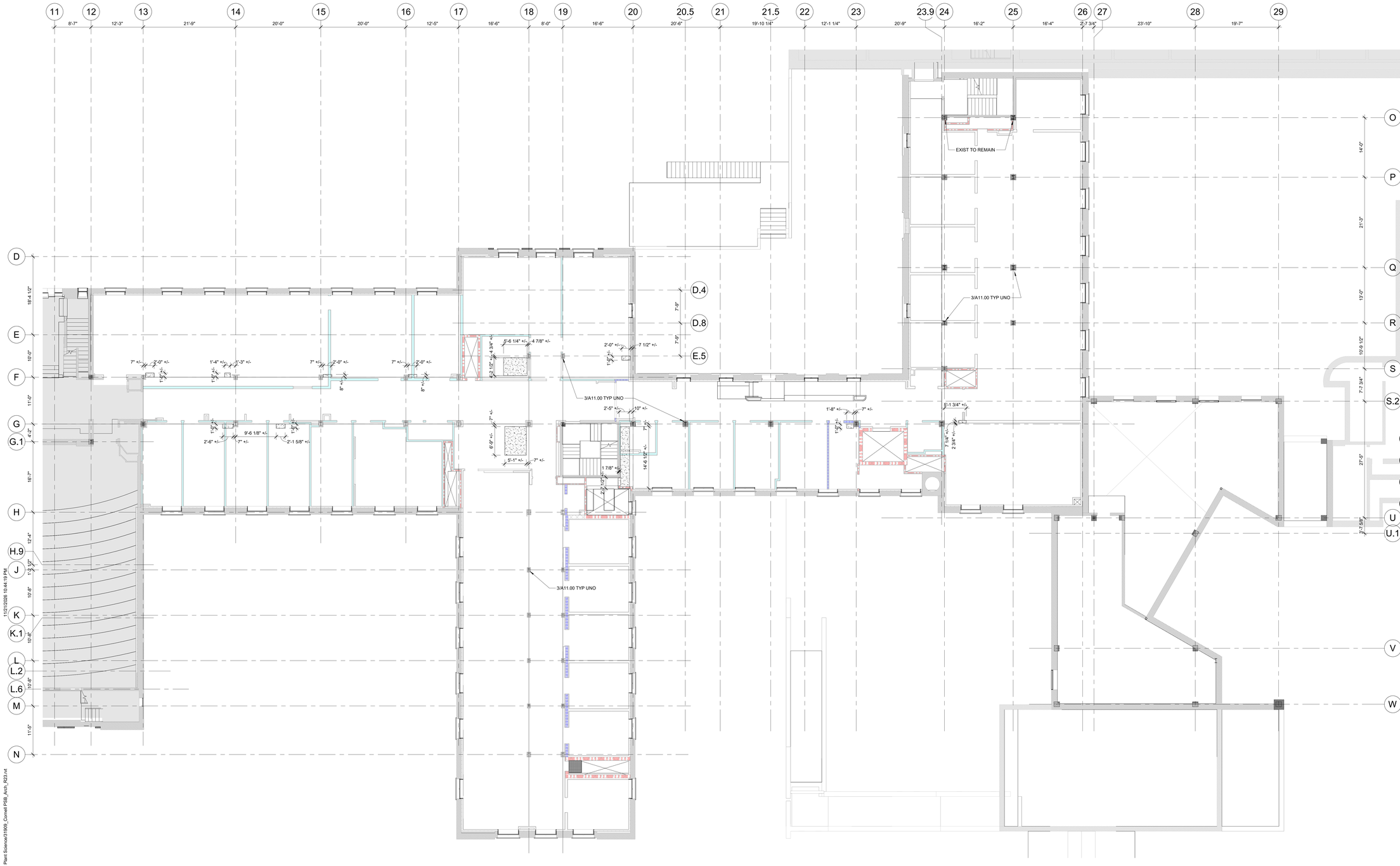

1 SECOND FLOOR - COLUMN ENCL CONC. WORK - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

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ROOF SLAB: 1-HR;
COLUMN ENCLOSURE: 2-HR;
VERTICAL SHAFT ENCLOSURES: 2-HR

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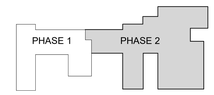
PROTECT EXISTING BEAM AND COLUMN ENCLOSURES TO REMAIN

CONCRETE SLAB INFILL - COORDINATE WITH S-SERIES



Keyplan

Job Number	31909.00
Drawing By	Author
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Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

SECOND FLOOR COL. ENCLOSURES AND CONC. WORK - PHASE 2

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REGISTERED ARCHITECT JAMES VINCENT RENNA 022901-1 STATE OF NEW YORK

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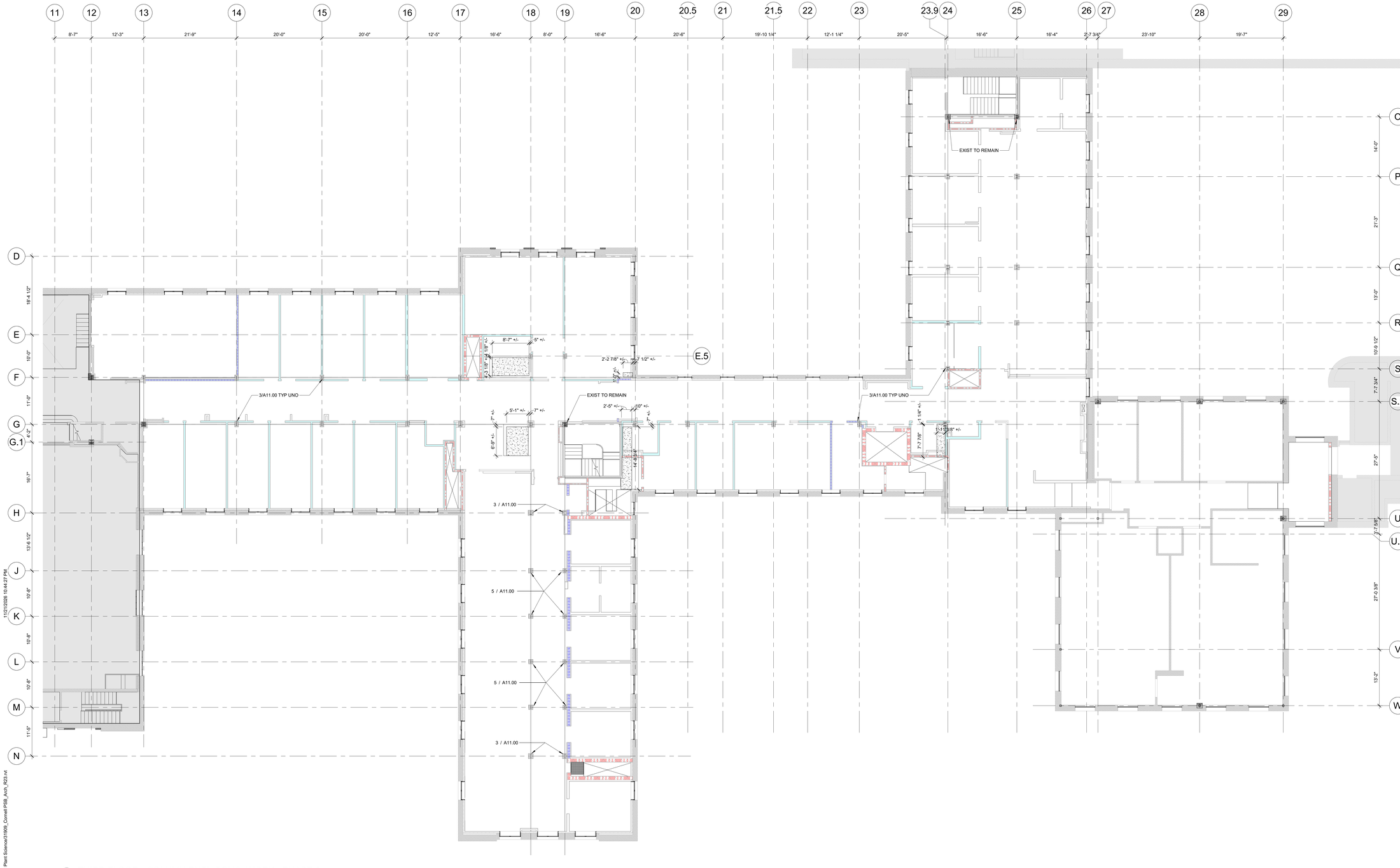

1 THIRD FLOOR - COLUMN ENCL CONC. WORK - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

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COLUMN ENCLOSURE: 2-HR;
VERTICAL SHAFT ENCLOSURES: 2-HR

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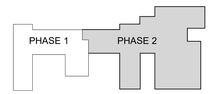
PROTECT EXISTING BEAM AND COLUMN ENCLOSURES TO REMAIN

CONCRETE SLAB INFILL - COORDINATE WITH S-SERIES

D



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Revisions

D	ADDENDUM 6	11/19/2026

THIRD FLOOR COL. ENCLOSURES AND CONC. WORK - PHASE 2

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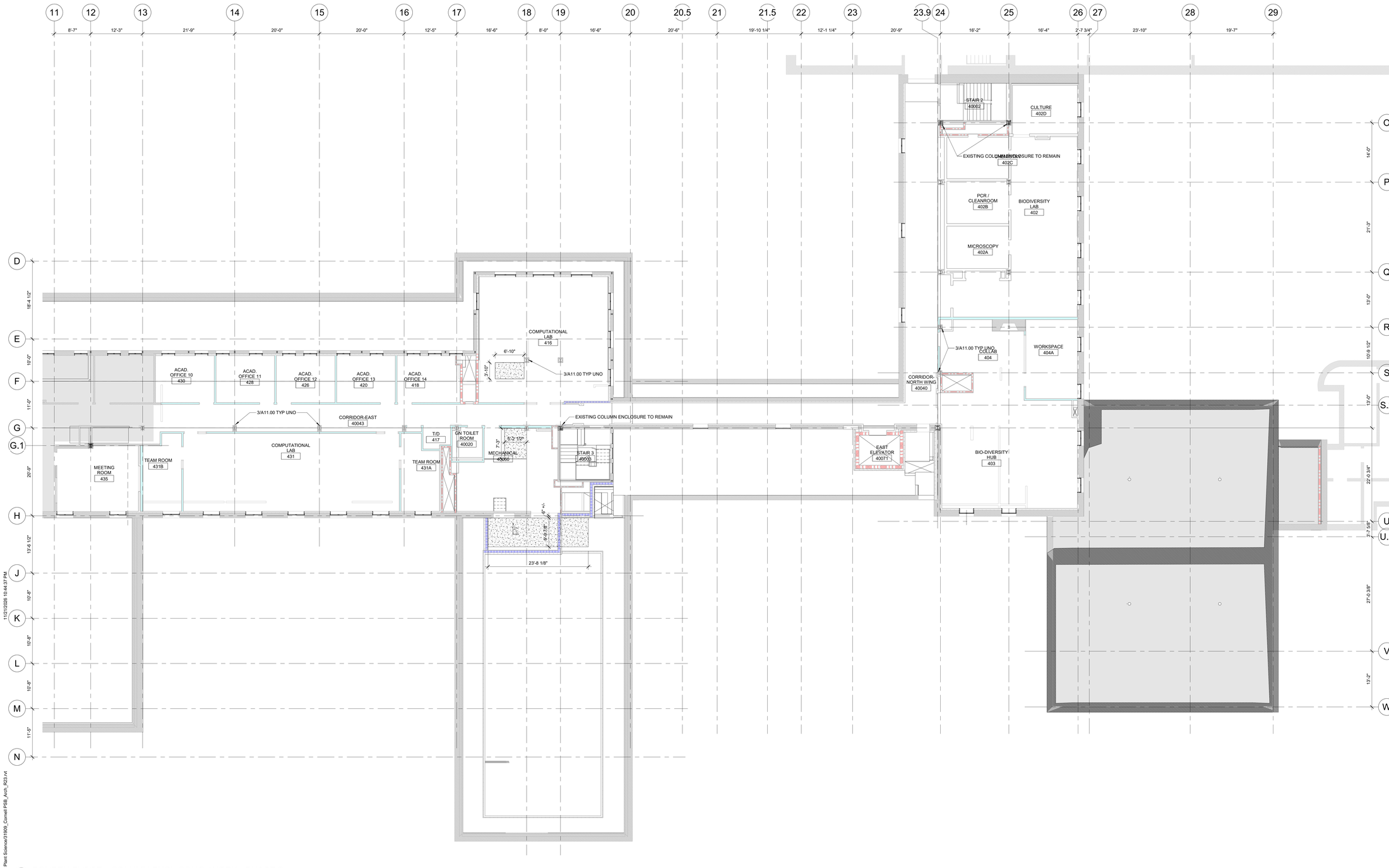

1 FOURTH FLOOR - COLUMN ENCL CONC. WORK - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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Notes:

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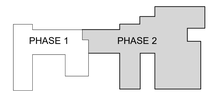
PROTECT EXISTING BEAM AND COLUMN ENCLOSURES TO REMAIN

CONCRETE SLAB INFILL - COORDINATE WITH S-SERIES



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Job Number	31909.00
Drawing By	Author
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Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

FOURTH FLOOR COL. ENCLOSURES AND CONC. WORK - PHASE 2

REGISTERED ARCHITECT JAMES VINCENT RUSSO 022901-1 STATE OF NEW YORK

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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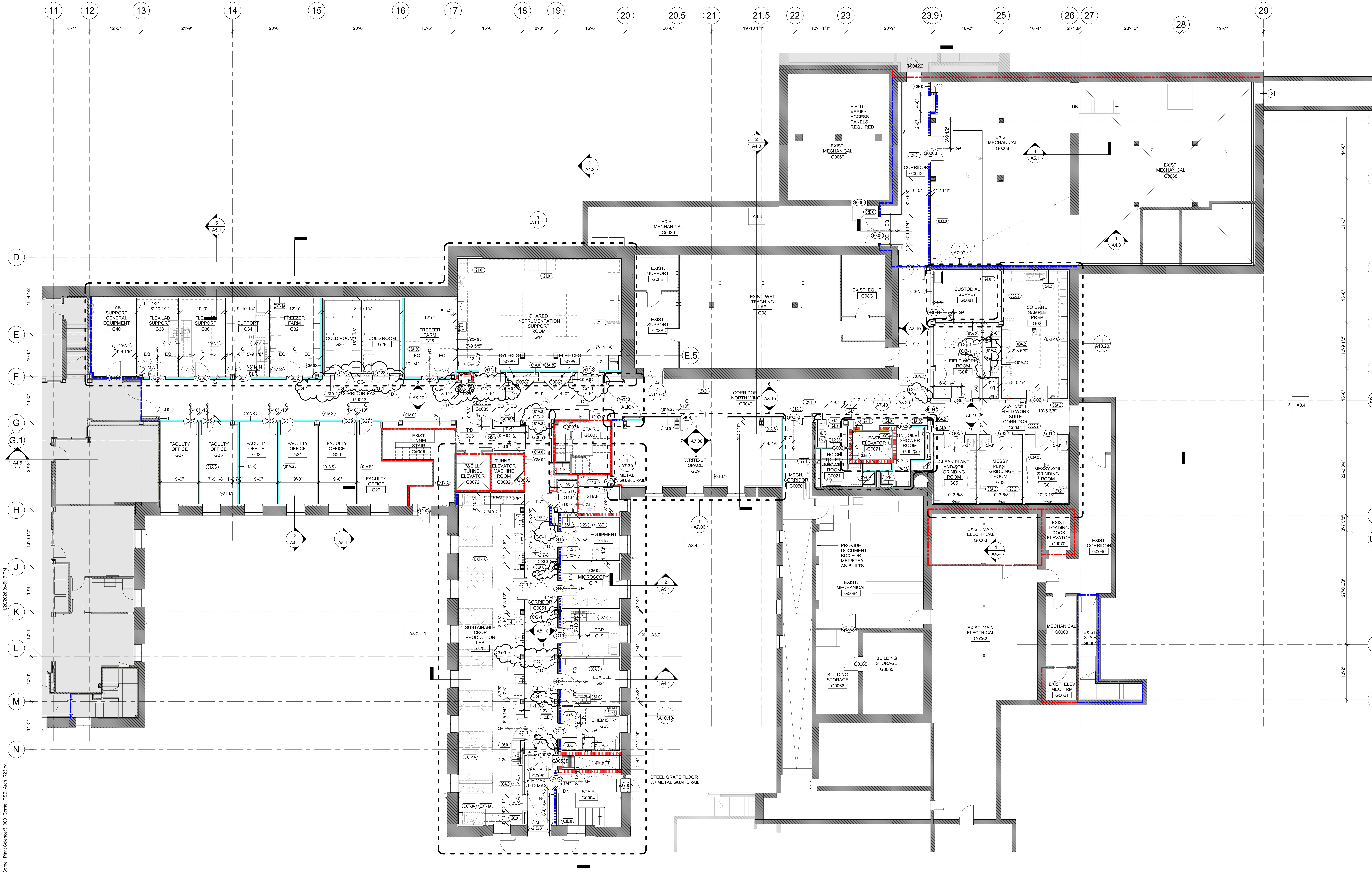
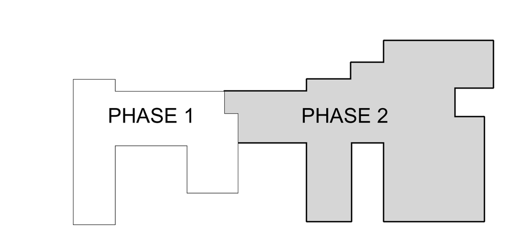
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

GENERAL NOTE:
GC TO COORDINATE WORK OF ALL TRADES, INCLUDING CONCRETE PATCHING AND FIRESTOPPING AS REQUIRED TO MAINTAIN EXISTING AND NEW FIRE RATINGS OF SLABS, WALLS, STRUCTURAL STEEL, AND SHAFTS WHERE AFFECTED BY SCOPE OF WORK, AND AT NON-RATED PARTITIONS, TO SEPARATE SPACES ACOUSTICALLY.



1 GROUND FLOOR PLAN - PHASE 2
1/8" = 1'-0"



Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

C	ADDENDUM 4	11/12/2026
D	ADDENDUM 6	11/19/2026

GROUND FLOOR PLAN - PHASE 2

REGISTERED ARCHITECT JAMES VINCENT BLOUNT 022901-1 STATE OF NEW YORK

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Scale: As indicated

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

GENERAL NOTE:
GC TO COORDINATE WORK OF ALL TRADES, INCLUDING CONCRETE PATCHING AND FIRESTOPPING AS REQUIRED TO MAINTAIN EXISTING AND NEW FIRE RATINGS OF SLABS, WALLS, STRUCTURAL STEEL, AND SHAFTS WHERE AFFECTED BY SCOPE OF WORK, AND AT NON-RATED PARTITIONS, TO SEPARATE SPACES ACOUSTICALLY.

PHASE 1 PHASE 2

Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

FIRST FLOOR PLAN - PHASE 2

BID DOCUMENTS
Scale: As indicated

REGISTERED ARCHITECT JAMES VINCENT RUSSO 022901-1 STATE OF NEW YORK

A1.1

1 FIRST FLOOR PLAN - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
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Notes:

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PHASE 1 PHASE 2

Keyplan

Job Number	31909.00
Drawing By	BF
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Filename	
Date	August 31, 2026

Revisions

C	ADDENDUM 4	11/12/2026
D	ADDENDUM 6	11/19/2026

SECOND FLOOR PLAN - PHASE 2

BID DOCUMENTS
Scale: As indicated

REGISTERED ARCHITECT JAMES VINCENT RUSSO 022901-1 STATE OF NEW YORK

A1.2

1 SECOND FLOOR PLAN - PHASE 2
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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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Notes:

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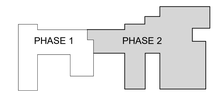

Keyplan

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Revisions

C	ADDENDUM 4	11/12/2026
D	ADDENDUM 6	11/19/2026

THIRD FLOOR PLAN - PHASE 2

BID DOCUMENTS
Scale: As indicated

REGISTERED ARCHITECT BRIAN FRANCIS BIGGS 022901-1 STATE OF NEW YORK

A1.3

1 THIRD FLOOR PLAN - PHASE 2
1/8" = 1'-0"

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GENERAL DESIGN NOTES:

1. EXPOSED MATERIALS THAT WERE ANTICIPATED TO BE WITHIN THE SCOPE OF THIS PROJECT AT THE TIME OF DESIGN HAVE BEEN TESTED FOR ASBESTOS AND LEAD PAINT CONTENT. SEE THE HAZARDOUS MATERIAL SURVEY REPORT APPENDED TO THE PROJECT MANUAL FOR A LIST OF TESTED MATERIALS AND THEIR RESULTS.
2. THE SCOPE OF WORK GENERALLY INCLUDES THE FOLLOWING:
   - COMPLETE REMOVAL AND REPLACEMENT OF THE EXISTING ROOF ASSEMBLY DOWN TO THE CONCRETE ROOF DECK AND ASSOCIATED ROOF FLASHINGS.
   - INSTALLATION OF ROOF ACCESSORIES, RAILINGS, & LADDERS.
   - REMOVAL OF OBSOLETE CHILLER UNIT AND ASSOCIATED STRUCTURAL STEEL
   - REPLACEMENT AND RECONFIGURATION OF ASSOCIATED ROOFTOP MECHANICAL, ELECTRICAL AND PLUMBING, NEW ROOF DRAIN & ASSOCIATED INTERIOR STORM PIPING
   - RELATED BUILDING/ OCCUPANT PROTECTION AND SITE RESTORATION
   - LIMESTONE PANEL CLEANING
3. THE ROOFING SYSTEMS AND FLASHINGS SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH FM GLOBAL STANDARDS TO ACHIEVE A 1-90 RATING (ZONE 1) UNLESS NOTED OTHERWISE. REFER TO THE PROJECT SPECIFICATIONS. PROVIDE WIND ENHANCEMENTS FOR ZONES 2 AND 3 PER FM GLOBAL.
   - CONTRACTOR WILL PERFORM BONDED UPLIFT TESTING TO CONFIRM EXISTING VAPOR RETARDER IS SUITABLE TO REMAIN IN LIEU OF REMOVALS, UPON APPROVAL FROM ARCHITECT.
4. IN ADDITION TO CONCRETE TOPPING REPAIRS REQUIRED BY NEW WORK, REPAIR 15% OF THE REMAINING DECK WHERE UNSOUND OR INADEQUATELY SLOPED TO AN AVERAGE DEPTH OF 1 1/2".
5. THE ROOFING AND ARCHITECTURAL SHEET METAL DETAILING INTENT IS TO MATCH THE APPEARANCE AND SIGHTLINES OF PHASE 1 AS DETERMINED BY THE ARCHITECT. MATCH SIZES AND PROFILES TO CREATE A UNIFORM APPEARANCE.

GENERAL ROOFING NOTES:

1. DIMENSIONS GIVEN ARE FOR REFERENCE ONLY. FIELD VERIFYING THE EXISTING BUILDING EXTENT AND MEASUREMENTS IS SOLELY THE CONTRACTOR'S RESPONSIBILITY.
2. SECTIONS AND DETAILS ARE CONTINUOUS UNLESS NOTED OTHERWISE.
3. THE CONTACT DOCUMENTS CONSIST OF THE SPECIFICATIONS AND DRAWINGS AND TOGETHER DESCRIBE THE WORK OF THIS PROJECT. THE CONTRACTOR SHALL READ THE SPECIFICATIONS AND BECOME FAMILIAR WITH THE DRAWINGS BEFORE THE START OF WORK. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY CONFLICTS IN THE CONTRACT DOCUMENTS OR REQUIRED DEVIATIONS REQUIRED BY FIELD CONDITIONS BEFORE THE START OF WORK.
4. EXPOSED MATERIALS, VISIBLE WITHOUT DESTRUCTIVE SAMPLING, THAT WERE ANTICIPATED TO BE WITHIN THE SCOPE OF THIS PROJECT AT THE TIME OF DESIGN HAVE BEEN TESTED FOR ASBESTOS, LEAD PAINT AND PCB CONTENT. SEE THE HAZARDOUS MATERIALS SURVEY REPORT APPENDED TO THE PROJECT MANUAL FOR A LISTING OF TESTED MATERIALS AND THEIR RESULTS.
5. ANY ROOF PENETRATIONS OR EQUIPMENT REMOVED SHALL RECEIVE LIGHTWEIGHT CONCRETE FILL. CONTRACTOR TO INCLUDE 1000 SQ.FT. OF LIGHT WEIGHT CONCRETE REPAIR.
6. ROOF PENETRATIONS ARE TO BE FLASHED, WHETHER SHOWN OR NOT; ITEMS SHOWN ARE IN THEIR GENERAL LOCATIONS.
7. PROVIDE A CONTINUOUS HEMMED EDGE ON THE BOTTOM OF EXPOSED THREE-PIECE COUNTERFLASHING PIECES.
8. ALL ROOF PENETRATIONS TO BE FLASHED WITH -OR AS SHOWN ON DRAWINGS
9. PRIOR TO PROVIDING SUBMITTALS PACKAGES, THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND CONFIRM THAT DETAILS AS SHOWN WILL INTERFACE WITH FIELD CONDITIONS. NOTIFY THE ARCHITECT OF KNOWN DISCREPANCIES.
10. PROVIDE FULL SPOT ELEVATIONS OF EXISTING STRUCTURAL DECK AND SLOPES PRIOR TO FINALIZING INSULATION/TAPER DRAWINGS. REFER TO SPEC 070150 FOR REQUIREMENTS.
11. WATER DAMAGE NOTE:
    KEEP THE BUILDING DRY DURING ROOFING OPERATIONS, ANY WATER OR DEBRIS ENTERING THE BUILDING CAUSED BY REROOFING WORK SHALL BE CLEANED UP BY THE CONTRACTOR, ANY DAMAGE TO THE BUILDING OR ITS CONTENTS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER. IF WORK AFFECTS THE INTERIOR OF THE BUILDING, PRECAUTIONS SHALL BE TAKEN TO PROTECT THE BUILDING AND IT'S CONTENTS.
12. PROVIDE TRAFFIC / WALKWAY PADS. PROVIDE TRAFFIC / WALKWAY PADS AT ROOF ACCESS POINTS, TOP & BOTTOM OF LADDERS, AT DOORS, AND AROUND POWERED ROOFTOP EQUIPMENT.
13. EXISTING MECHANICAL EQUIPMENT
    A. REMOVE EXISTING MECHANICAL EQUIPMENT AS REQUIRED FOR INSTALLATION OF NEW ROOF SYSTEM & TO ACHIEVE SPECIFIED CLEARANCES, ie; RAISE PER DETAILS AND EXTEND DUCTWORK, IF REQUIRED. DISCONNECT ANY POWER OR PNEUMATIC CONNECTIONS, RECONNECT THE SAME USING ADDITIONAL MATERIAL AS NECESSARY TO REINSTALL. COORDINATE ELECTRIC, GAS, HVAC, etc. TEMPORARY SHUTDOWNS WITH THE OWNER. PAINT NON-ALUMINUM/COPPER UNITS AND STEEL SUPPORT STRUCTURES WITH PRIMER AND 2 FINISH COATS OF ENAMEL PAINT. IDENTIFY UNITS (STENCIL) PER OWNER'S IDENTIFICATION SCHEDULE. ALL MECHANICAL EQUIPMENT IS EXISTING UNLESS NOTED OTHERWISE.
    B. COORDINATE UTILITY OR MECHANICAL UNIT TEMPORARY SHUTDOWNS WITH OWNER.
14. ELECTRICAL
    A. REINSTALL SALVAGED FIRE ALARM LOCATED ON SMOKE HATCH CURB. EXTEND CONDUIT AND WIRING AS REQUIRED TO ENSURE CONTINUED OPERATION AFTER COMPLETION OF THE WORK. PRE AND POST TEST FIRE ALARM SYSTEM. COORDINATE TESTING WITH OWNER.
    B. INCIDENTAL ELECTRICAL WORK SHALL BE PERFORMED BY A QUALIFIED ELECTRICIAN PER NEC CODE
15. INSULATION
    A. INSTALL INSULATION. STAGGER JOINTS BETWEEN INSULATION LAYERS.
16. ROOF DRAINS
    A. AT COMPLETION OF ROOFING OPERATIONS CLEAN ROOF DRAINS FROM ROOF TO VERTICAL LEADER INSIDE BUILDING. CONTRACTOR SHALL TEST ROOF DRAIN FLOW UPON COMPLETION OF CONSTRUCTION AT CONTRACTOR'S EXPENSE
17. WOOD
    A. ONLY WOOD OR PLYWOOD INSTALLED IN IMMEDIATE CONTACT WITH MASONRY OR CONCRETE IS TO BE PRESERVATIVE TREATED UNLESS NOTED OTHERWISE.
    B. IF WOOD DIMENSIONS ARE NOT GIVEN, STACKED WOOD HEIGHT, 3 BOARDS OR LESS, ARE 2x4 MINIMUM. HIGHER LIFTS OF WOOD ARE TO BE 2x6 MINIMUM.
    C. ALL WOOD TO BE ANCHORED AS SPECIFIED, OR SHOWN. GENERALLY, FASTENER SPACING, RING SHANK NAILS OR SCREWS, NOT MORE THAN 12" O.C. AND ANCHOR BOLTS -3/8" O.D. MIN., NOT MORE THAN 36" O.C. AND FROM ENDS OF BOARDS - 9" MAXIMUM.
18. FASTENERS
    A. UNLESS OTHERWISE NOTED ALL FASTENERS TO BE NON-RUSTING TYPE (HOT DIPPED GALVANIZED, STAINLESS STEEL). ALL FASTENERS IN PRESSURE-TREATED WOOD ARE TO BE OF STAINLESS STEEL, TYPE A304 OR A316 ONLY.
    B. ALL NAILS SHALL BE SPIRAL OR RING-SHANKED
    C. POP-RIVETS ARE NOT PERMITTED.
    D. FASTENERS IN METAL FLASHINGS - TO BE COMPATIBLE WITH METAL USED; FASTENERS OF STAINLESS STEEL UNLESS NOTED OTHERWISE. FASTENER SPACING, SCREWS, NOT MORE THAN 9" O.C., NAILS USED FOR CLEATING - 3" O.C. UNLESS NOTED OTHERWISE FROM ENDS OF UNITS - 3" MAXIMUM
19. MISCELLANEOUS:
    A. METAL COPING OR FASCIA ENDLAPS, FOLDS, OR SEAMS ARE TO BE FULLY BEDDED WITH SEALANT BETWEEN PIECES OF METAL.

NEW ROOF SYSTEM "R" VALUES:

ROOF ASSEMBLY - TYPE A (FULLY ADHERED)
(PANELS 001, 003, 004, 007, 008, 009, 010)

	R-VALUE
• OUTSIDE AIR FILM	0.17
• 2 PLY MODIFIED BITUMEN ROOF MEMBRANE*	0.34
• 1/2" COVERBOARD	0.56
• FLAT STOCK POLYISOCYANURATE INSULATION. MIN. 6 1/2" AT DRAIN SUMP CRICKETS WHERE INDICATED	33.00 CI*
• TORCH GRADE VAPOR RETARDER	0.12
• EXISTING SLOPED LIGHTWEIGHT CONCRETE FILL #3"-6" THICKNESS	-
• EXISTING STRUCTURAL CONCRETE ROOF DECK	-

TOTAL R-VALUE: 34.69

*CI: CONTINUOUS INSULATION VALUE MEETS OR EXCEEDS THE PRESCRIPTIVE REQUIREMENT OF THE 2025 NYS ENERGY CONSERVATION CONSTRUCTION CODE, (2025 NYS ASHRAE 90.1), BASED ON ASHRAE 90.1-2022.

*WHERE SHOWN ON THE ROOF PLAN, INSTALL LIQUID RESIN CAP MEMBRANE

ROOF ASSEMBLY - TYPE B (FULLY ADHERED)
(PANELS 003.1, 007.1 & 007.2)

	R-VALUE
• OUTSIDE AIR FILM	0.17
• 2 PLY MODIFIED BITUMEN ROOF MEMBRANE*	0.34
• 1/2" COVERBOARD	0.56
• FLAT STOCK POLYISOCYANURATE INSULATION. MIN. 6 1/2" AT DRAIN SUMP CRICKETS WHERE INDICATED	33.00 CI*
• TORCH GRADE VAPOR RETARDER	0.12
• 1/2" THERMAL BARRIER BOARD, MECHANICALLY FASTENED	0.54
• 1 1/2" METAL ROOF DECK (SLOPED)	-

TOTAL R-VALUE: 35.25

*CI: CONTINUOUS INSULATION VALUE MEETS OR EXCEEDS THE PRESCRIPTIVE REQUIREMENT OF THE 2025 NYS ENERGY CONSERVATION CONSTRUCTION CODE, (2025 NYS ASHRAE 90.1), BASED ON ASHRAE 90.1-2022.

GRAPHIC SYMBOL LEGEND

SYMBOL	DESCRIPTION
### XXX'-XX"	ROOF AREA DESIGNATION AND ELEVATION
	NOT IN CONTRACT
	PRECAST CONCRETE SPLASH BLOCK
	CRICKET
SRD RD	ROOF DRAIN AND SECONDARY ROOF DRAIN SUMP
RD	ROOF DRAIN SUMP
	FLEXIBLE WALKWAY PAD OR ROLL (TYPE 2)
	RUBBER ROOF WALKWAY PAD (TYPE 2) ON SACRIFICIAL SLIP SHEETS.
S	EXISTING ROOF DECK SLOPE
X" 12" S	TAPERED INSULATION ROOF SLOPE
	LIGHT WEIGHT DECK INFILL. SEE STRUCTURAL DRAWINGS FOR INFILL OF STRUCTURAL SLAB.
	LIQUID RESIN CAP MEMBRANE
	STRUCTURAL SLAB INFILL, SEE STRUCTURAL DRAWINGS

RD= ROOF DRAIN
SRD= SECONDARY ROOF DRAIN
H.P.= HIGH POINT
L.P.= LOW POINT
E.J.= EXPANSION JOINT

1 ROOF PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
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Keyplan

Job Number	31909.00
Drawing By	BF
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Date	August 31, 2026

Revisions

B	ADDENDUM 3	11/3/2026
D	ADDENDUM 6	11/19/2026

ROOF PLAN - PHASE 2

REGISTERED ARCHITECT DOUGLAS K. KIRKER 032669 STATE OF NEW YORK
REGISTRATION EXPIRES: 08/31/2028

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Scale: As indicated

A1.5

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REFLECTED CEILING PLAN LEGEND

CEILING TYPES

- ACT-1 2'x4' TEGULAR, 9/16" GRID WITH 1/4" REVEAL, TYP.
- ACT-2 ACOUSTIC PANEL
- GYPSUM BOARD, PTD
- COLD RM CEILING BY COLD RM MFR
- ACT-3 2'x4' MR FOR HIGH HUMIDITY 9/16" GRID WITH 1/4" REVEAL
- ACT-4 PERFORATED METAL, TORSION SPRING
- EXPOSED UNDERSIDE OF SLAB, PLASTER AND/OR BEAMS, PTD

LIGHT FIXTURES, SEE ELECT.

- RECESSED CAN
- RECESSED DOWNLIGHT
- 1'x4' LINEAR BOX
- 2'x2' TROFFER
- 2'x4' TROFFER
- RECESSED LINEAR
- SUSPENDED LINEAR
- SURFACE MOUNTED
- EXIT SIGN (FILL INDICATES FACE)

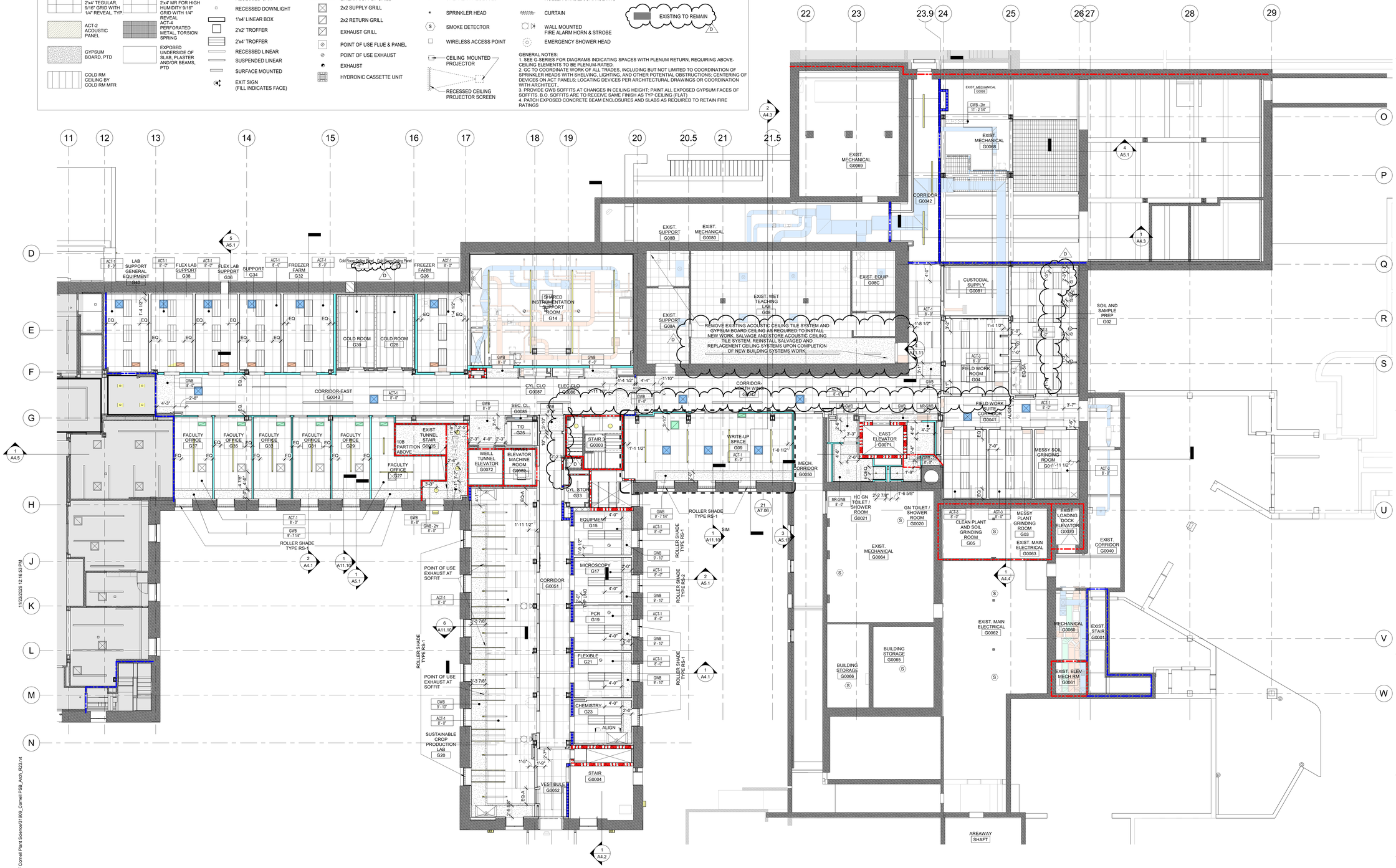
MECHANICAL ITEMS, SEE MECH.

- LINEAR SUPPLY GRILL
- 2x2 SUPPLY GRILL
- 2x2 RETURN GRILL
- EXHAUST GRILL
- POINT OF USE FLUE & PANEL
- POINT OF USE EXHAUST
- EXHAUST
- HYDRONIC CASSETTE UNIT

MISC. ITEMS

- SPEAKER - RECESSED
- SPRINKLER HEAD
- SMOKE DETECTOR
- WIRELESS ACCESS POINT
- CEILING MOUNTED PROJECTOR
- RECESSED CEILING PROJECTOR SCREEN
- ROLLER SHADE, SURFACE MTD
- CURTAIN
- WALL MOUNTED FIRE ALARM HORN & STROBE
- EMERGENCY SHOWER HEAD
- SECURITY CAMERA
- EXISTING TO REMAIN

GENERAL NOTES:
1. SEE G-SERIES FOR DIAGRAMS INDICATING SPACES WITH PLENUM RETURN, REQUIRING ABOVE-CEILING ELEMENTS TO BE PLENUM-RATED.
2. GC TO COORDINATE WORK OF ALL TRADES, INCLUDING BUT NOT LIMITED TO COORDINATION OF SPRINKLER HEADS WITH SHELVING, LIGHTING, AND OTHER POTENTIAL OBSTRUCTIONS; CENTERING OF DEVICES ON ACT PANELS; LOCATING DEVICES PER ARCHITECTURAL DRAWINGS OR COORDINATION WITH ARCHITECT.
3. PROVIDE GWB SOFFITS AT CHANGES IN CEILING HEIGHT; PAINT ALL EXPOSED GYPSUM FACES OF SOFFITS. B.O. SOFFITS ARE TO RECEIVE SAME FINISH AS TYP CEILING (FLAT)
4. PATCH EXPOSED CONCRETE BEAM ENCLOSURES AND SLABS AS REQUIRED TO RETAIN FIRE RATINGS



1 GROUND FLOOR REFLECTED CEILING PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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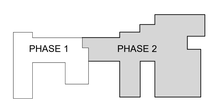

Keyplan

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Revisions

D	ADDENDUM 6	11/19/2026

GROUND FLOOR REFLECTED CEILING PLAN - PHASE 2

REGISTERED ARCHITECT JAMES VINCENT RUSSO 022901 STATE OF NEW YORK

BID DOCUMENTS
Scale: 1/8" = 1'-0"

A2.0

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REFLECTED CEILING PLAN LEGEND

CEILING TYPES

- ACT-1 2'x4' TEGULAR, 9/16" GRID WITH 1/4" REVEAL, TYP.
- ACT-2 ACOUSTIC PANEL
- GYPSUM BOARD, PTD
- COLD RM CEILING BY COLD RM MFR
- ACT-3 2'x4' MR FOR HIGH HUMIDITY 9/16" GRID WITH 1/4" REVEAL
- ACT-4 PERFORATED METAL, TORSION SPRING
- EXPOSED UNDERSIDE OF SLAB, PLASTER AND/OR BEAMS, PTD

LIGHT FIXTURES, SEE ELECT.

- RECESSED CAN
- RECESSED DOWNLIGHT
- 1'x4' LINEAR BOX
- 2'x2' TROFFER
- 2'x4' TROFFER
- RECESSED LINEAR
- SUSPENDED LINEAR
- SURFACE MOUNTED
- EXIT SIGN (FILL INDICATES FACE)

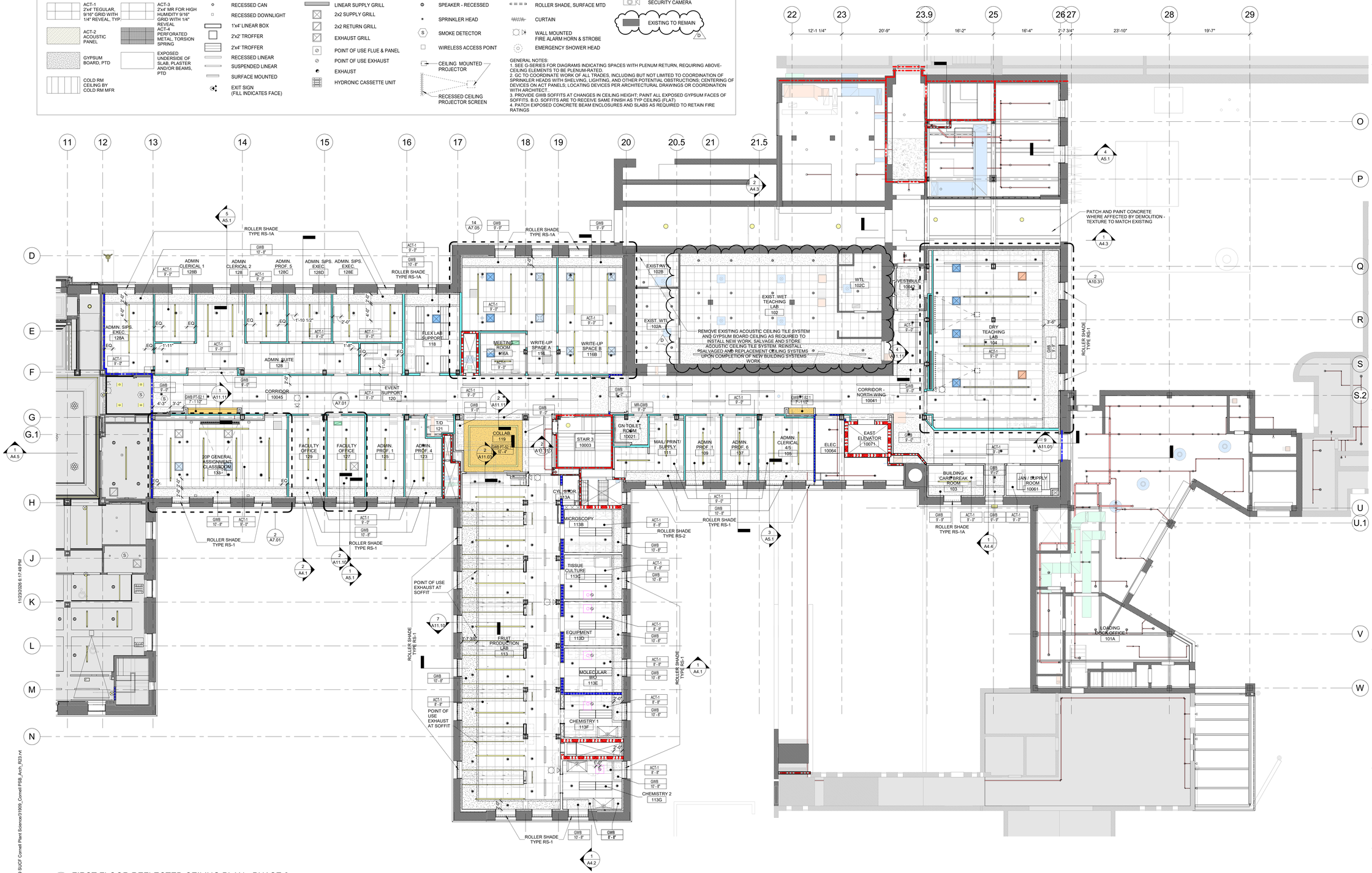
MECHANICAL ITEMS, SEE MECH.

- LINEAR SUPPLY GRILL
- 2x2 SUPPLY GRILL
- 2x2 RETURN GRILL
- EXHAUST GRILL
- POINT OF USE FLUE & PANEL
- POINT OF USE EXHAUST
- EXHAUST
- HYDRONIC CASSETTE UNIT

MISC. ITEMS

- SPEAKER - RECESSED
- SPRINKLER HEAD
- SMOKE DETECTOR
- WIRELESS ACCESS POINT
- CEILING MOUNTED PROJECTOR
- RECESSED CEILING PROJECTOR SCREEN
- ROLLER SHADE, SURFACE MTD
- CURTAIN
- WALL MOUNTED FIRE ALARM HORN & STROBE
- EMERGENCY SHOWER HEAD
- SECURITY CAMERA
- EXISTING TO REMAIN

GENERAL NOTES:
1. SEE G-SERIES FOR DIAGRAMS INDICATING SPACES WITH PLENUM RETURN, REQUIRING ABOVE-CEILING ELEMENTS TO BE PLENUM-RATED.
2. GC TO COORDINATE WORK OF ALL TRADES, INCLUDING BUT NOT LIMITED TO COORDINATION OF SPRINKLER HEADS WITH SHELVING, LIGHTING, AND OTHER POTENTIAL OBSTRUCTIONS; CENTERING OF DEVICES ON ACT PANELS; LOCATING DEVICES PER ARCHITECTURAL DRAWINGS OR COORDINATION WITH ARCHITECT.
3. PROVIDE GWB SOFFITS AT CHANGES IN CEILING HEIGHT; PAINT ALL EXPOSED GYPSUM FACES OF SOFFITS. B.O. SOFFITS ARE TO RECEIVE SAME FINISH AS TYP CEILING (FLAT)
4. PATCH EXPOSED CONCRETE BEAM ENCLOSURES AND SLABS AS REQUIRED TO RETAIN FIRE RATINGS



1 FIRST FLOOR REFLECTED CEILING PLAN - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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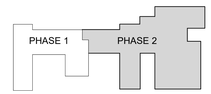
Notes:



Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

FIRST FLOOR REFLECTED CEILING PLAN - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

A2.1

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REFLECTED CEILING PLAN LEGEND

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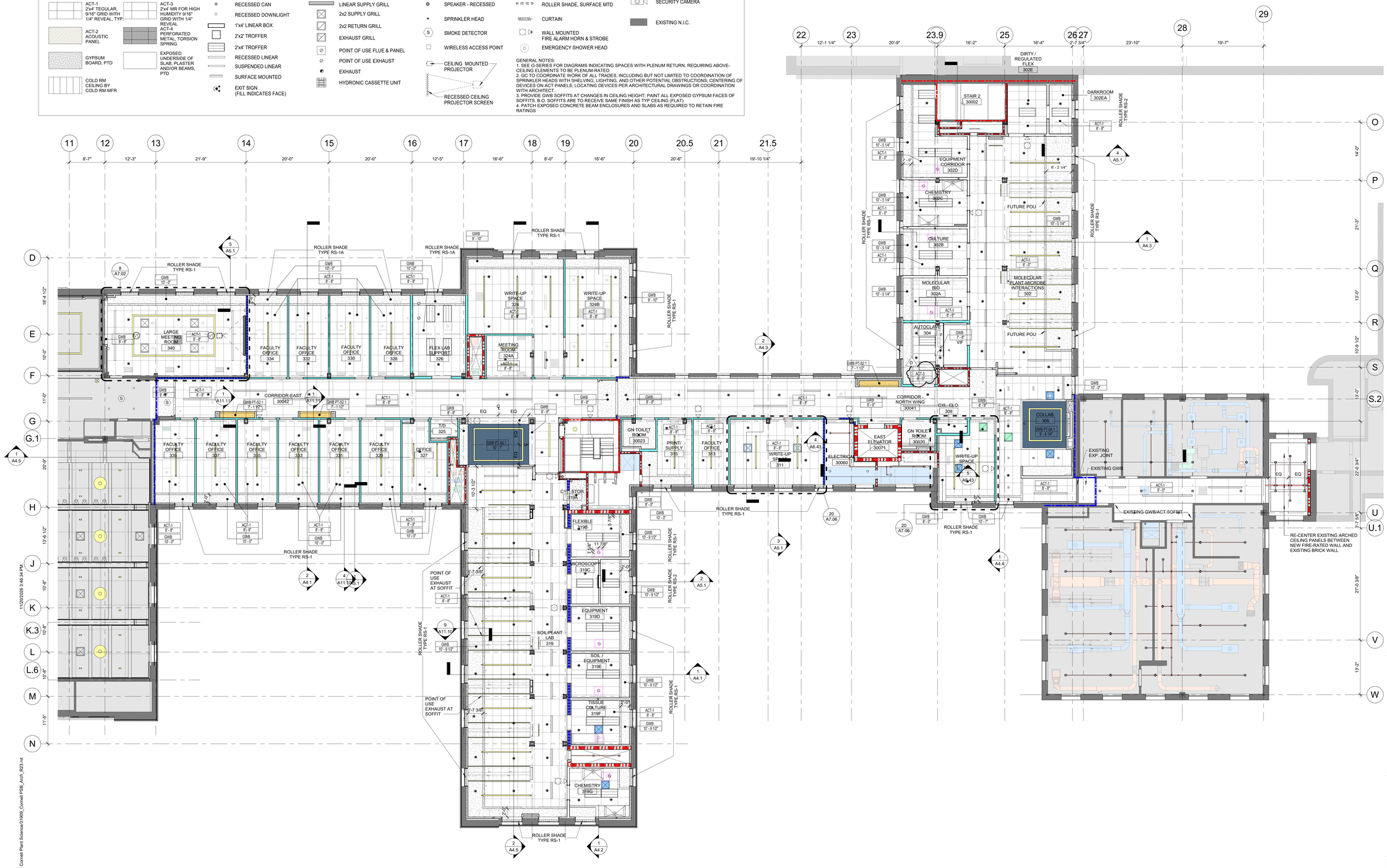

1 THIRD FLOOR REFLECTED CEILING PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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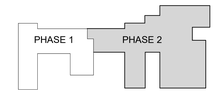

Keyplan

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Revisions

D	ADDENDUM 6	11/19/2026

THIRD FLOOR REFLECTED CEILING PLAN - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

REGISTERED ARCHITECT JAMES VINCENT RENZ 022901-1 STATE OF NEW YORK

A2.3

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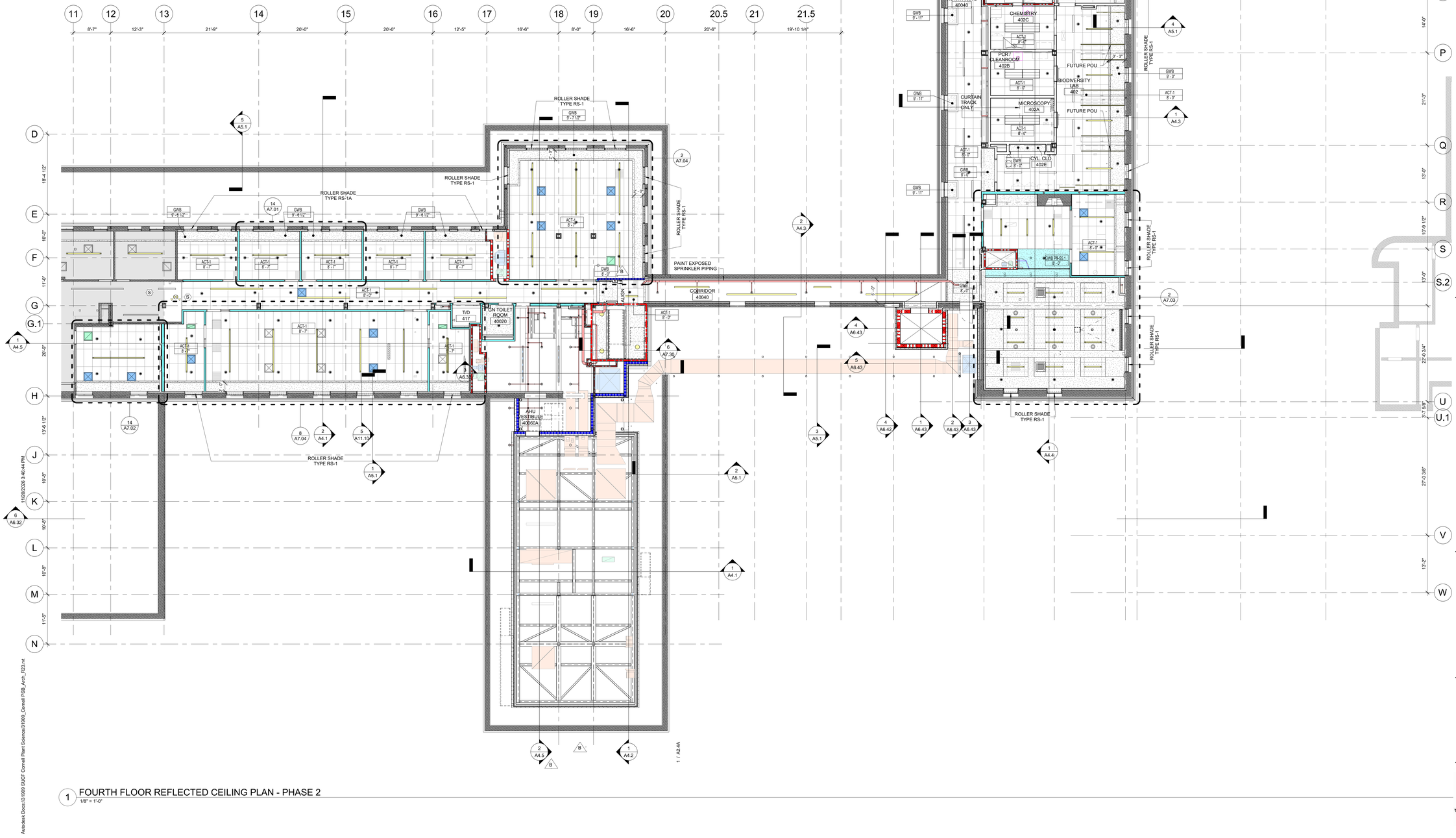

1 FOURTH FLOOR REFLECTED CEILING PLAN - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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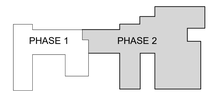

Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

A	ADDENDUM 3	11/3/2026
B		

FOURTH FLOOR REFLECTED CEILING PLAN - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

REGISTERED ARCHITECT JAMES VINCENT ELLENZWEIG 022901 STATE OF NEW YORK

A2.4

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TYPICAL MASONRY CLEANING NOTES (APPLIES TO ALL EXTERIOR ELEVATION SHEETS):

TYPICAL MASONRY CLEANING NOTES (APPLIES TO ALL EXTERIOR ELEVATION SHEETS):

1. MICRO ABRASIVE CLEANING REFER TO MASONRY CLEANING SPEC..

2. DEMONSTRATE CLEANING METHODS THROUGH IN PLACE MOCKUPS. CONDUCT CLEANING MOCKUPS OF 2'X2' AREAS FOR EACH TYPE OF SURFACE FOR REVIEW AND APPROVAL BY THE CAMPUS AND THE ARCHITECT PRIOR TO PROCEEDING. REDO MOCKUPS TO ACHIEVE THE APPROVED APPEARANCE AS DIRECTED BY THE ARCHITECT. SUBMIT A FORMAL RECORD OF THE MOCKUP WITH A WRITTEN DESCRIPTION.

3. THE INTENT IS TO REMOVE AS MUCH OF THE ENVIRONMENTAL STAINING AND COPPER STAINING FROM THE BRICK, STONE AND LIMESTONE SURFACES WITHOUT ADVERSELY AFFECTING THE STONE OR CAUSING DAMAGE.

4. CONDUCT CLEANING BEFORE INSTALLATION OF NEW ROOF SYSTEMS BUT AFTER REMOVAL OF METAL FLASHINGS CONCEALING PORTIONS OF THE STONE. REMOVE EQUIPMENT AND ANCHORS MOUNTED TO THE LIMESTONE (AND PATCH HOLES) WHERE SCHEDULED IN THE CONTRACT DOCUMENTS PRIOR TO THE CLEANING. PROTECT THE ROOF, WALL AREAS AND ADJACENT HVAC EQUIPMENT FROM DAMAGE.

5. CAPTURE THE CLEANING WATER USED IN THE CLEANING AND DISPOSE OF IN 55 GALLON DRUMS OR SIMILAR.

6. AVOID DAMAGE TO EXISTING BEDDING MORTARS AND SEALANT JOINTS. REPLACE IN-KIND IF DAMAGED.

7. CLEAN ALL SURFACES THAT WILL BE EXPOSED UPON COMPLETION OF ALL THE WORK. IN ADDITION, EXTEND CLEANING ONTO SURFACES THAT WILL BE CONCEALED UPON COMPLETION AS REQUIRED TO ACHIEVE PROPER CLEANING OF EXPOSED SURFACES.

TYPICAL ADDITIONAL MASONRY SCOPE NOTES (APPLIES TO ALL EXTERIOR ELEVATION SHEETS):

1. IN ADDITION TO REPOINTING AREAS AND QUANTITIES INDICATED ON THE EXTERIOR ELEVATION DRAWINGS, PROVIDE AN ADDITIONAL 1,500 SF OF BRICK MASONRY REPOINTING. FINAL LOCATIONS AND AREAS TO BE DETERMINED BY THE ARCHITECT BASED ON FIELD CONDITIONS.

2. IN ADDITION TO THE BRICK REPLACEMENT (FACE BRICK) AREAS AND QUANTITES INDICATED ON THE EXTERIOR ELEVATION DRAWINGS, PROVIDE AN ADDITIONAL 500 SF OF FLEMISH BOND BRICK REPLACEMENT. FINAL LOCATIONS AND AREAS TO BE DETERMINED BY THE ARCHITECT BASED ON FIELD CONDITIONS.

3. IN ADDITION TO THE LIMESTONE/ NATURAL STONE REPAIR AREAS AND QUANTITIES INDICATED ON THE EXTERIOR ELEVATIONS, PROVIDE AN ADDITIONAL 50 LF OF STONE CRACK REPAIR. FINAL LOCATIONS AND AREAS TO BE DETERMINED BY THE ARCHITECT BASED ON FIELD CONDITIONS.

4. REPAIR 4TH FLOOR AND PENTHOUSE EXTERIOR STUCCO FINISHES PER SPEC 09 25 33, TYPICAL. BID TO INCLUDE 500 LF OF STUCCO CRACK REPAIRS, 12" WIDE , 1 INCH DEEP. REVIEW FINAL LOCATIONS AND QUANTITIES WITH THE ARCHITECT.

5. FOR THE ADDITIONAL BID QUANTITIES SHOWN ABOVE INSPECT THE ENTIRE SURFACE WHERE ADDITIONAL WORK MAY BE NEEDED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE, MARK OUT AREAS WHERE ADDITIONAL WORK IS NEEDED, AND SUBMIT MARKED UP ELEVATIONS SHOWING ACTUAL LOCATIONS AND QUANTITIES NEEDED. SEE SECTION 4.02 OF THE AGREEMENT FOR ADJUSTMENTS DUE TO ACTUAL QUANTITIES REQUIRED.

6. ASSUME 15% OF REPOINTING TO BE DEEP REPOINTING WHERE UNSOUND MORTAR IS FOUND DEEPER THAN STANDARD REPOINTING DETAIL. DEEP REPOINTING AREAS TO BE RANDOMLY DISTRIBUTED THROUGHOUT WORK AREAS OF REPOINTING. SEE DETAIL 8/A6.1

BUILDING FACADE & ELEVATION KEY NOTES (ALL ELEVATIONS)

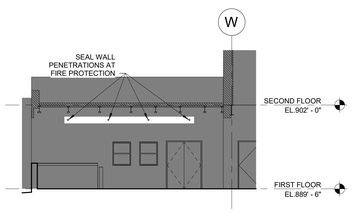
		REF. DETAIL/SHEET
F1	REPOINT BRICK MASONRY	2, 4, 7, & 8A / A6.1
F2	CLEAN BRICK MASONRY	-
F3	CLEAN LIMESTONE/STONE	4 & 6 / A6.1
F3.1	REPOINT LIMESTONE JOINTS	9 & 10 / A6.1
F3.2	REPOINT GRANITE BASE	8A / A6.1
F4	REPLACE BRICK MASONRY TYPE I BRICK UNLESS NOTED OTHERWISE	4 & 6 / A6.1
F5	SAW CUT NEW CONTROL JOINTS (C.J.) IN PARAPET AND PROVIDE BACKER ROD AND SEALANT	4 & 8E / A6.1
F6	APPLY BREATHABLE SILOXANE SEALER OVER BRICK AND LIMESTONE MASONRY SUBSTRATE	-
F7	REPAIR LIMESTONE CRACKS/STONE CRACKS	11 / A6.1
F8	NEW BACKER ROD AND SEALANT AND WEATHER CAP LEAD TEE, TYPICAL ALL LIMESTONE HEAD JOINTS	9 / A6.1
F9	NEW BACKER ROD AND SEALANT IN PARAPET LIMESTONE CAP STONES PRIOR TO COPING INSTALLATION	7 & 10 / A6.1
F10	REPLACE BRICK MASONRY, MULTIPLE WYTHES.	6 / A6.1 & 6 / A6.2
F11	REPLACE GALVANIZED PAINTED STEEL LINTEL. TYPE AS INDICATED ON ELEVATIONS.	6 / A6.2

BUILDING FACADE & ELEVATION KEY NOTES (ALL ELEVATIONS)

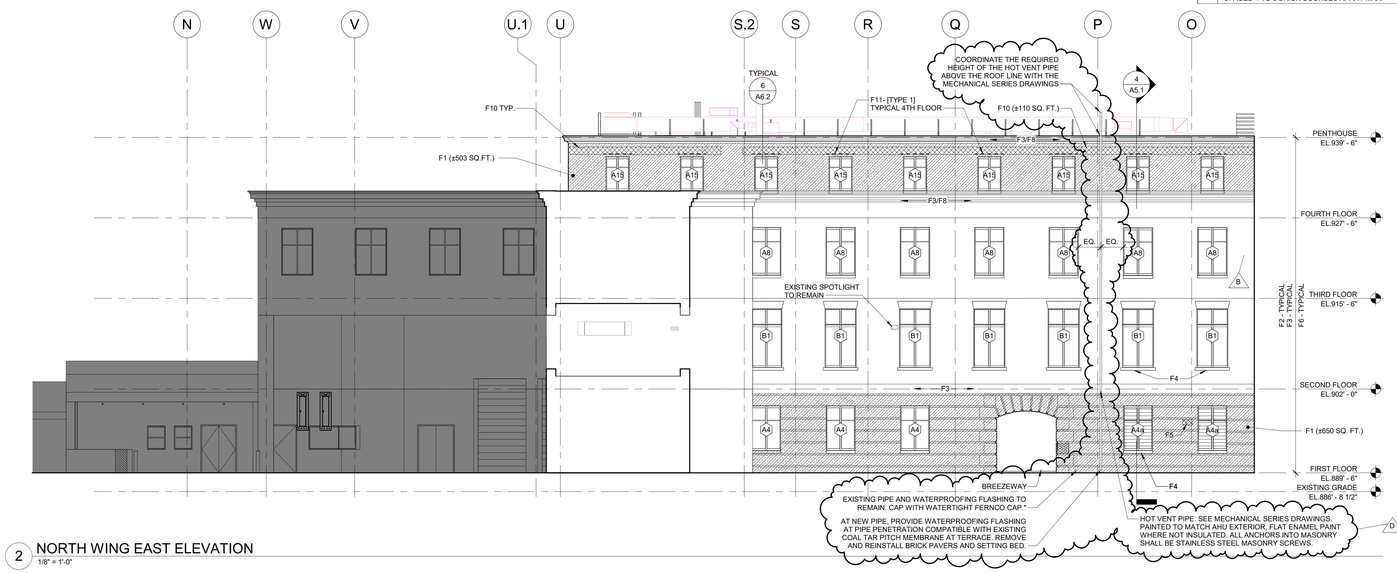
		REF. DETAIL/SHEET
F12	OBSCURE GLASS TYPE IGU-B IN THIS UNIT	NOT USED
F13	RAISE WINDOW SILLS FOR NEW ROOF ASSEMBLY	5 & 6 / A6.2
F14	METAL RAINSCREEN WALL PANEL	3 & 7 / A6.1
F15	LIMESTONE DUTCHMAN REPAIR	-
F16	REINSTALL LATTICE/TRELLIS SYSTEM	-
F17	REMOVE AND RESET LOOSE LIMESTONE AND REPAINT. REPLACE BOTTOM STONES TO MATCH +/- 24" TALL	-
F18	NEW WALL MOUNTED LIGHT FIXTURES. REFER TO ELECTRICAL DRAWINGS	E-SERIES
F19	PREP, PRIME AND PAINT EXISTING IRON ORNAMENTAL BALCONY RAILING	-
F20	PREP PRIME AND PAINT IRON WINDOW BARS/ TURN BUCKLE	-
F21	HAND WASH DECORATIVE MARBLE PANEL	-
F22	APPLY BREATHABLE STUCCO COATING OVER EXISTING STUCCO	-
F23	PATCH AND REPAIR STUCCO CRACKING/SPALLS	-
F24	CMU INFILL AND NEW MATCHING BRICK WYTHE TOOTH INTO COURSING AND MATCH FLEMISH BOND.	4 / A6.1
F25	S.S. HORIZONTAL JOINT REINFORCING SET IN BED JOINTS, SPACED 4 TO 6 BRICK COURSES APART MAX.	8B / A6.1

HATCH LEGEND

	BRICK REPLACEMENT (TOOTH IN UNLESS NOTED OTHERWISE)
	BRICK/LIMESTONE REPOINTING
	EXISTING N.I.C.
	STUCCO COATING
	LIMESTONE REPAIR
	EXISTING BRICK MASONRY (RUNNING AND FLEMISH BOND, TYP.)
	LIMESTONE OR GRANITE
	METAL PANEL
	GRANITE REPOINTING



3 SOUTH WING EAST ELEVATION
1/8" = 1'-0"



2 NORTH WING EAST ELEVATION
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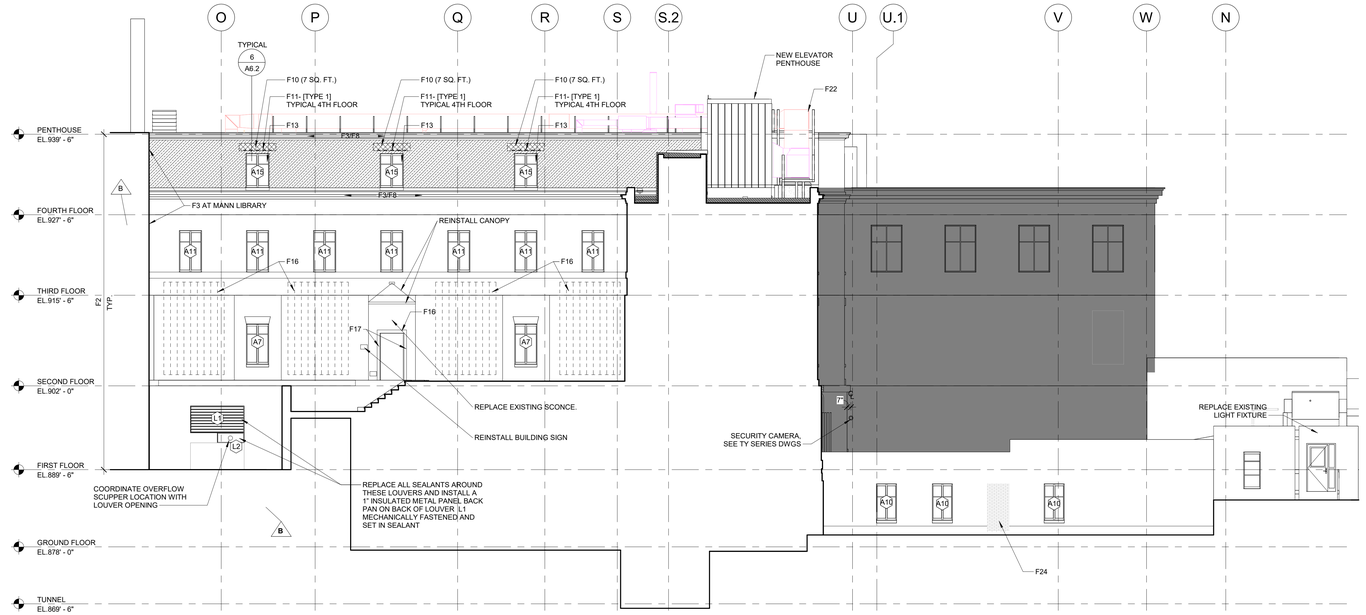

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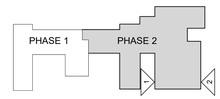
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By DJS
Checked By DKA
Filename
Date August 31, 2026

Revisions

B	ADDENDUM 3	11/3/2026
D	ADDENDUM 6	11/19/2026

NORTH WING WEST AND EAST ELEVATIONS - PHASE 2

REGISTRATION EXPIRES: 08/31/2028

BID DOCUMENTS
Scale: As indicated

A3.4

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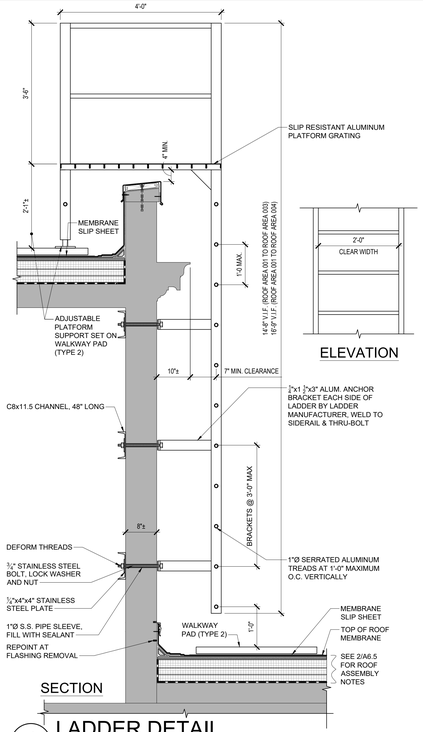
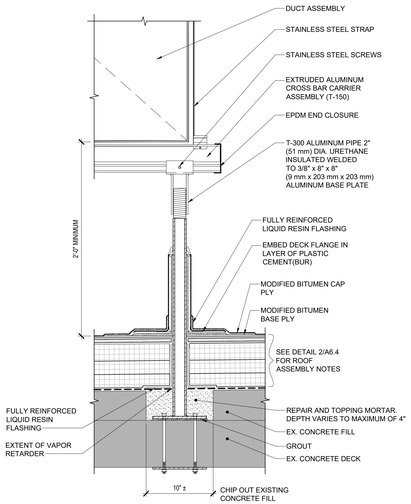


1 LADDER DETAIL

¾" = 1'-0"

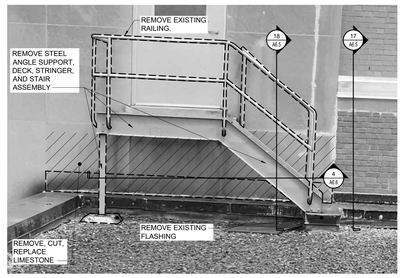
NOTE: PROVIDE DELEGATED DESIGN FOR ALL ROOF-MOUNTED FRAMES AND SUPPORTS.



2 DUCT SUPPORT DETAIL

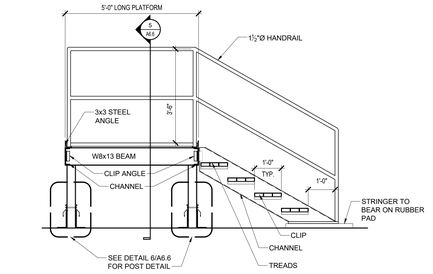
1½" = 1'-0"

REMOVE ENTIRE STAIR ASSEMBLY DURING MASONRY AND STONE WORK. REPLACE WITH NEW ASSEMBLY - SEE DETAILS 4, 5, & 6/A6.6.



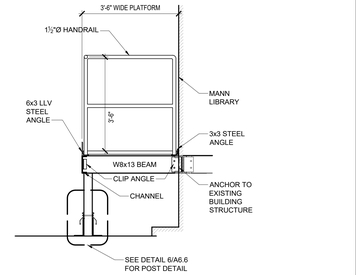
3 STAIR ASSEMBLY REMOVAL DETAIL

1½" = 1'-0"



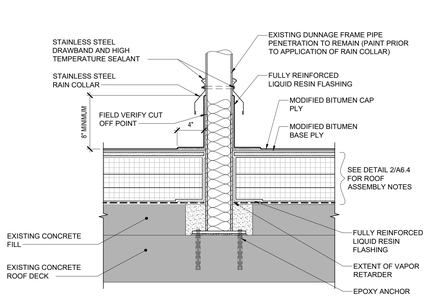
4 STAIR ASSEMBLY: EAST/WEST SECTION

½" = 1'-0"



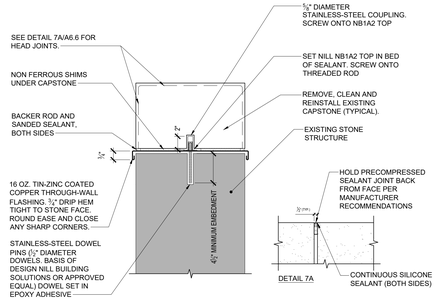
5 STAIR ASSEMBLY: NORTH/SOUTH SECTION

½" = 1'-0"



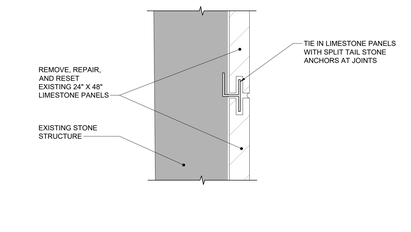
6 STAIR SUPPORT POST DETAIL

1½" = 1'-0"



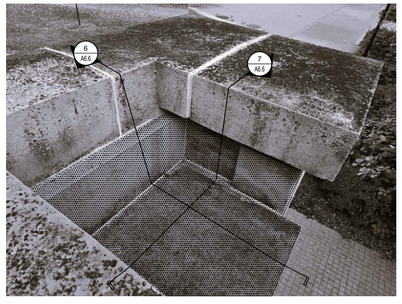
7 RESETTING STONE RAILING CAP DETAIL

1½" = 1'-0"



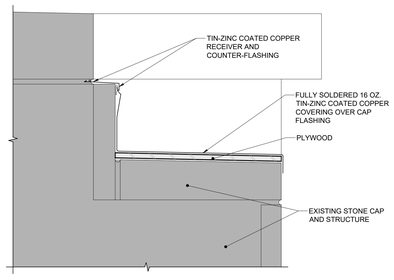
8 LIMESTONE REPAIR DETAIL

1½" = 1'-0"



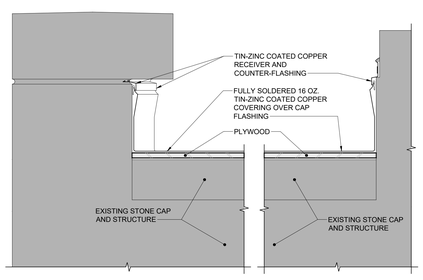
9 TERRACE PIER CAP DETAIL

1½" = 1'-0"



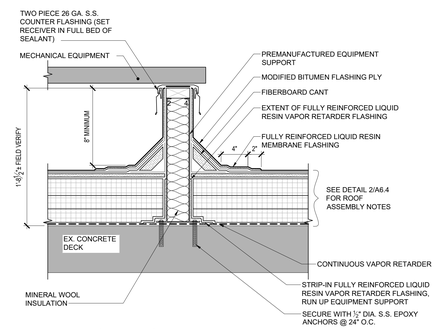
10 PIER CAP: EAST/WEST SECTION

1½" = 1'-0"



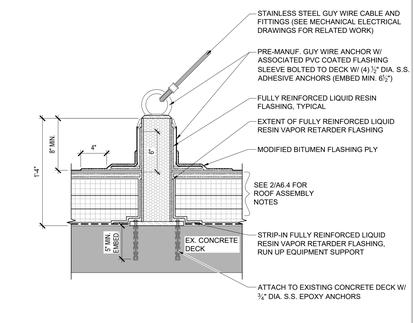
11 PIER CAP: NORTH/SOUTH SECTION

1½" = 1'-0"



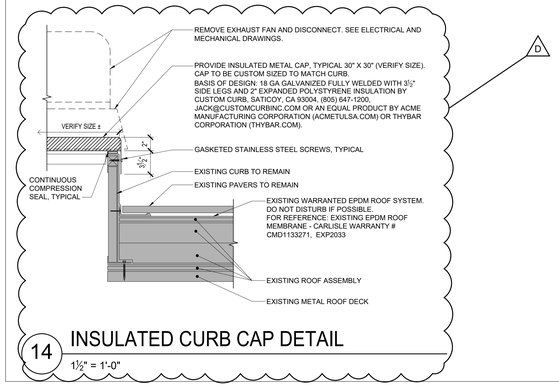
12 TYPICAL EQUIPMENT RAIL DETAIL

1½" = 1'-0"



13 TYPICAL GUY WIRE ANCHOR DETAIL

1½" = 1'-0"



14 INSULATED CURB CAP DETAIL

1½" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

236 Tower Road
Ithaca, NY 14853

SUCF Project No. 161026-00

CornellCALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
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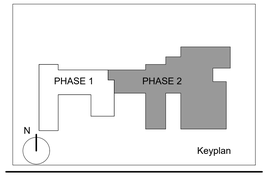
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212 971-0936

Notes:



Job Number 31909.00
Drawing By TJG
Checked By DKA
Filename
Date August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

ROOF DETAILS - PHASE 2

REGISTERED ARCHITECT DOUGLAS K. ANDERSON 032689 STATE OF NEW YORK

REGISTRATION EXPIRES: 08/31/2028

BID DOCUMENTS
Scale: As indicated

A6.6

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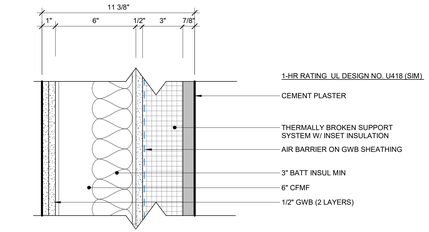
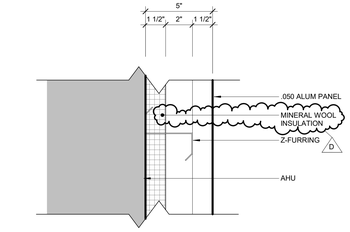
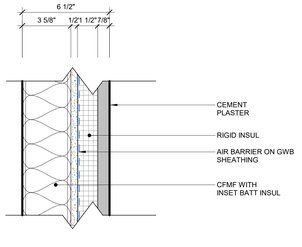


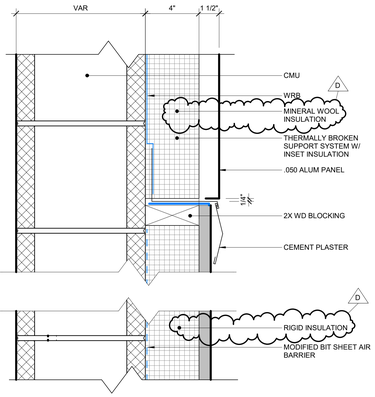
7 EXTERIOR WALL - S04
3" = 1'-0"



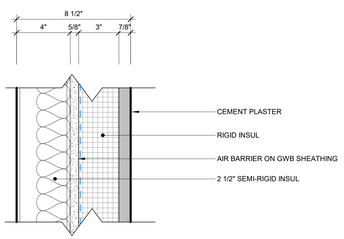
3 EXTERIOR WALL - ACM03
3" = 1'-0"



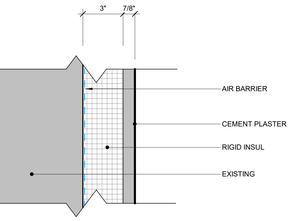
6 EXTERIOR WALL - S03
3" = 1'-0"



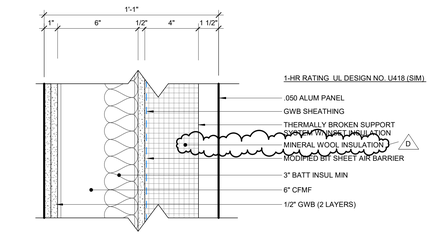
2 EXTERIOR WALL - ACM02
3" = 1'-0"



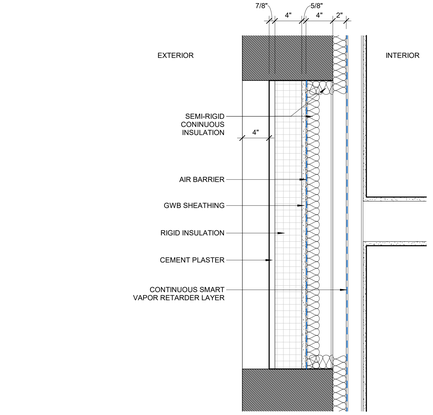
5 EXTERIOR WALL - S02
3" = 1'-0"



4 EXTERIOR WALL - S01
3" = 1'-0"



1 EXTERIOR WALL - ACM01
3" = 1'-0"



8 EXTERIOR WALL DETAIL AT INFILL DOOR OPENING
1 1/2" = 1'-0"

LOUVER SCHEDULE			
MARK	DIMENSIONS	BASIS OF DESIGN	NOTES
L1	48"x12"	CONSTRUCTION SPECIALTIES A2097	PROVIDE WITH GLAZING FRAME
L2	58"x42"	CONSTRUCTION SPECIALTIES A2097	
L3	48"x72"	CONSTRUCTION SPECIALTIES A2097	
L4	48"x72"	CONSTRUCTION SPECIALTIES A2097	
L5	48"x96"	CONSTRUCTION SPECIALTIES A2097	PROVIDE WITH GLAZING FRAME

D

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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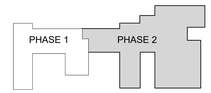
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By TM
Checked By JI
Filename
Date August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

NEW EXTERIOR WALL TYPES AND LOUVER SCHEDULE

BID DOCUMENTS
Scale: As indicated

A6.21

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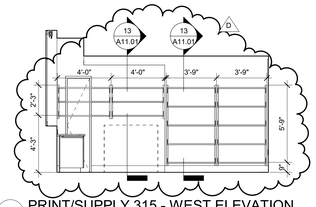
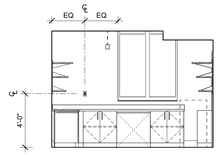
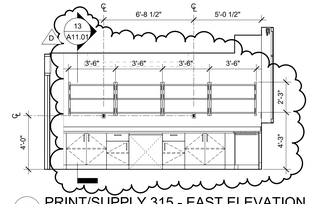


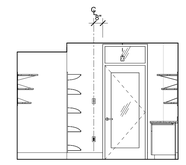
22 PRINT/SUPPLY 315 - WEST ELEVATION
1/4" = 1'-0"



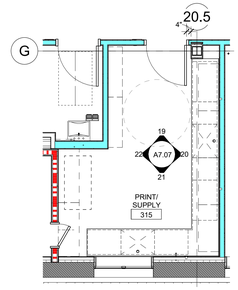
21 PRINT/SUPPLY 315 - SOUTH ELEVATION
1/4" = 1'-0"



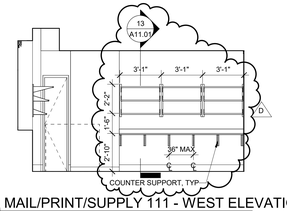
20 PRINT/SUPPLY 315 - EAST ELEVATION
1/4" = 1'-0"



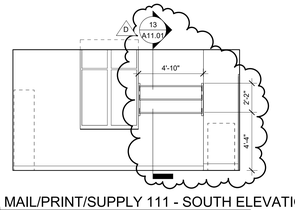
19 PRINT/SUPPLY 315 - NORTH ELEVATION
1/4" = 1'-0"



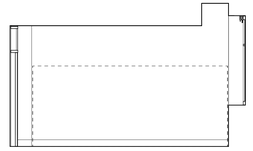
5 THIRD FLOOR PRINT/SUPPLY 315 - FLOOR PLAN
1/4" = 1'-0"



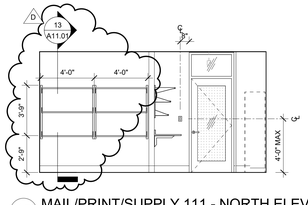
18 MAIL/PRINT/SUPPLY 111 - WEST ELEVATION
1/4" = 1'-0"



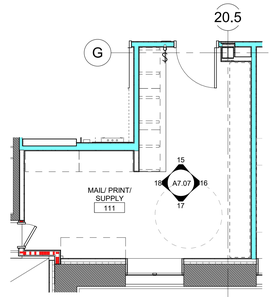
17 MAIL/PRINT/SUPPLY 111 - SOUTH ELEVATION
1/4" = 1'-0"



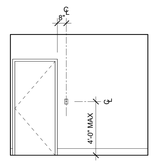
16 MAIL/ PRINT/SUPPLY 111 - EAST ELEVATION
1/4" = 1'-0"



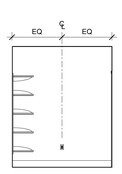
15 MAIL/PRINT/SUPPLY 111 - NORTH ELEVATION
1/4" = 1'-0"



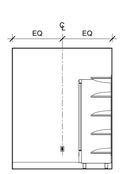
4 FIRST FLOOR MAIL/ PRINT / SUPPLY 111 - FLOOR PLAN
1/4" = 1'-0"



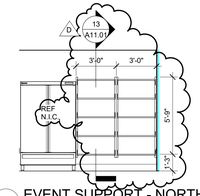
14 EVENT SUPPORT - SOUTH ELEV
1/4" = 1'-0"



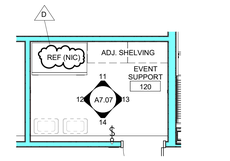
13 EVENT SUPPORT - EAST ELEV
1/4" = 1'-0"



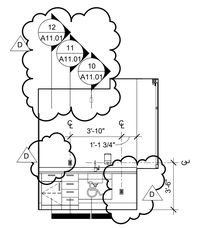
12 EVENT SUPPORT - WEST ELEV
1/4" = 1'-0"



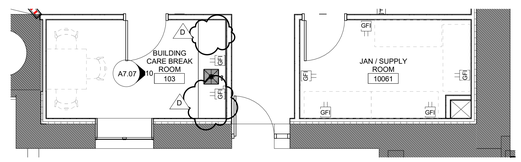
11 EVENT SUPPORT - NORTH ELEV
1/4" = 1'-0"



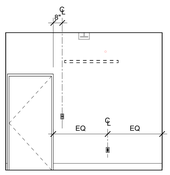
3 FIRST FLOOR EVENT SUPPORT 120 - FLOOR PLAN
1/4" = 1'-0"



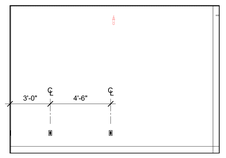
10 BUILDING CARE BREAK ROOM 103 - EAST ELEVATION
1/4" = 1'-0"



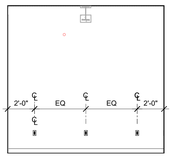
2 FIRST FLOOR - BUILDING CARE BREAK ROOM 103 / JAN SUPPLY ROOM 10061 - FLOOR PLAN
1/4" = 1'-0"



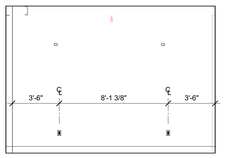
9 CUSTODIAL SUPPLY G0081 - WEST ELEVATION
1/4" = 1'-0"



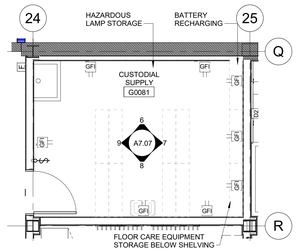
8 CUSTODIAL SUPPLY G0081 - SOUTH ELEVATION
1/4" = 1'-0"



7 CUSTODIAL SUPPLY G0081 - EAST ELEVATION
1/4" = 1'-0"



6 CUSTODIAL SUPPLY G0081 - NORTH ELEVATION
1/4" = 1'-0"



1 GROUND FLOOR CUSTODIAL SUPPLY G0081 - FLOOR PLAN
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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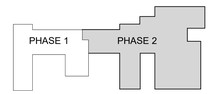
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

ENLARGED PLANS AND VIEWS - SUPPORT SPACES

BID DOCUMENTS
Scale: 1/4" = 1'-0"

A7.07

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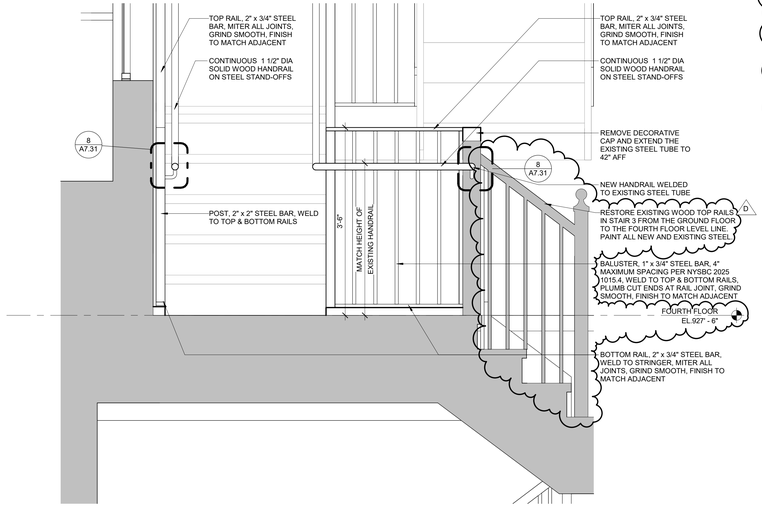
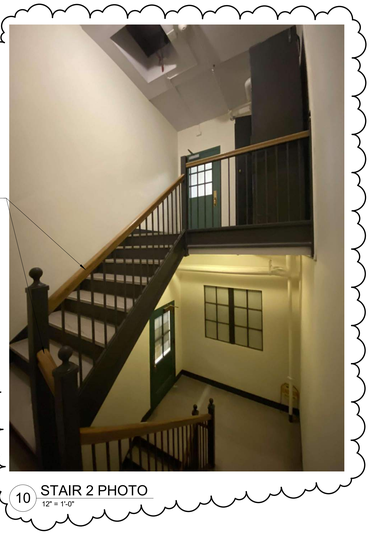
11/20/2026 8:47:27 PM

Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt

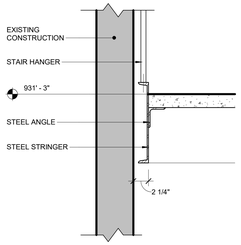


9 EAST STAIR - ROOF ACCESS LOOKING NORTH
1" = 1'-0"

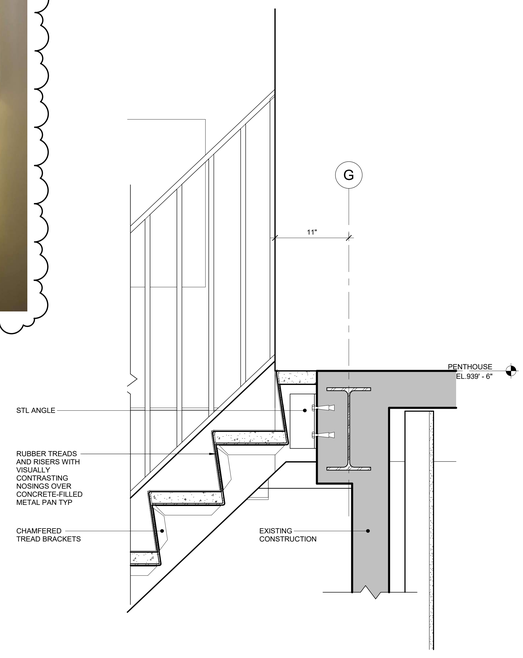


D STAIRS 2 AND 3: RESTORE EXISTING WOOD TOP RAILS. PAINT WALLS, OPENING FRAMES, DOORS, EXPOSED PIPING, AND ALL EXISTING STEEL.

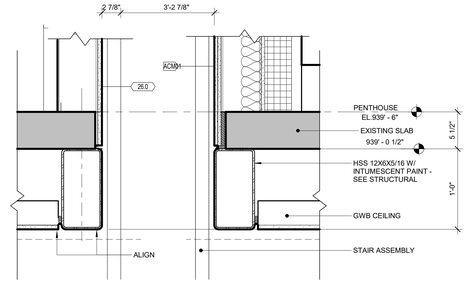
10 STAIR 2 PHOTO
1/2" = 1'-0"



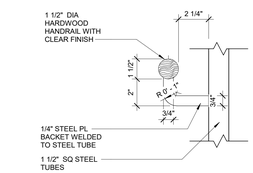
6 EAST STAIR - MID-LANDING AT HANGER
1 1/2" = 1'-0"



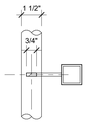
4 EAST STAIR - LANDING AT PENTHOUSE
1 1/2" = 1'-0"



2 EAST STAIR - PENTHOUSE SLAB
1 1/2" = 1'-0"

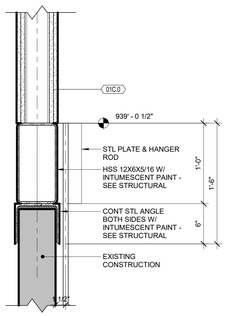


A SECTION @ HANDRAIL SUPPORT

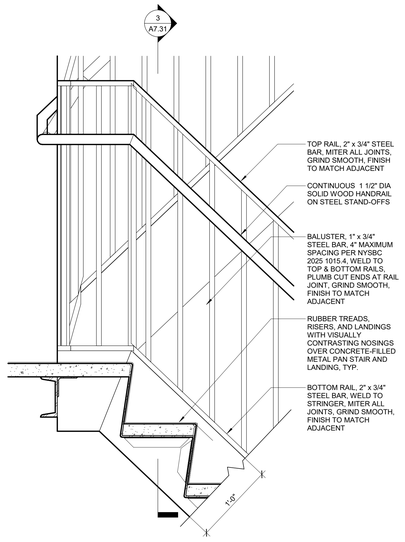


B SECTION @ HANDRAIL SUPPORT

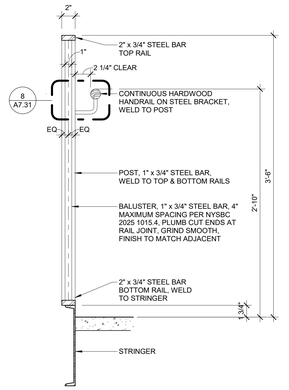
8 EAST STAIR - HANDRAIL DETAILS
3" = 1'-0"



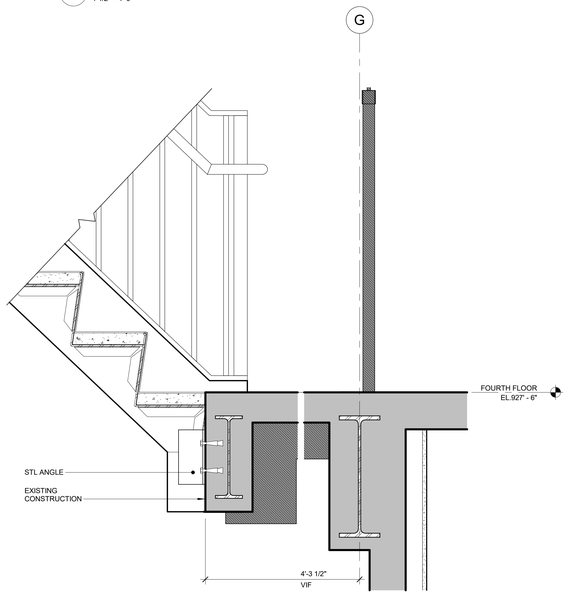
7 EAST STAIR - STAIR HANGER
1 1/2" = 1'-0"



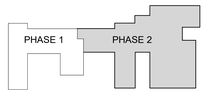
5 EAST STAIR - MID-LANDING
1 1/2" = 1'-0"



3 EAST STAIR - TYPICAL RAIL
1 1/2" = 1'-0"



1 EAST STAIR - LANDING AT FOURTH FLOOR LANDING
1 1/2" = 1'-0"



Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

EAST STAIR - DETAILS

BID DOCUMENTS
Scale: As indicated

A7.31

REGISTERED ARCHITECT VINCENT J. ROSSI 022901 STATE OF NEW YORK

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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Notes:

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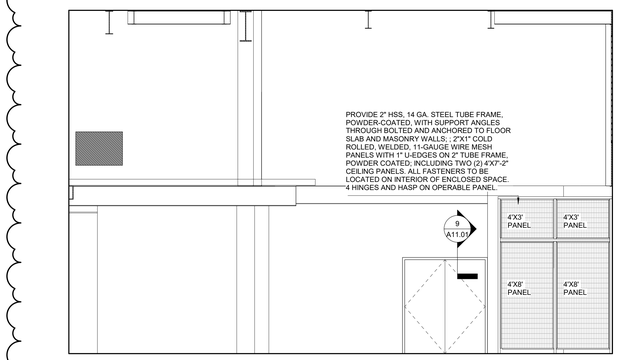
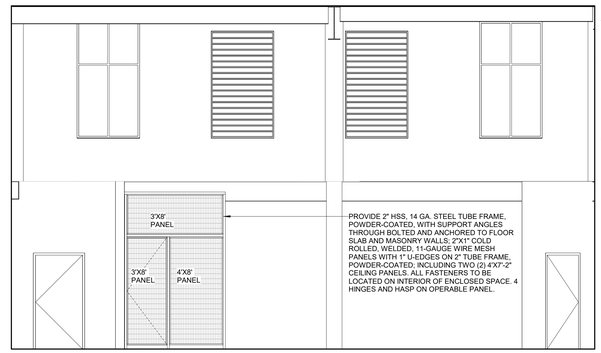
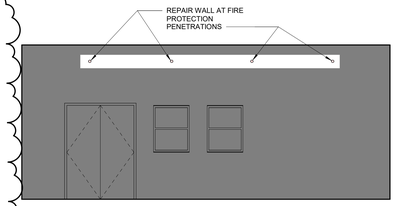


12 LOADING DOCK - WEST ELEVATION
1/4" = 1'-0"

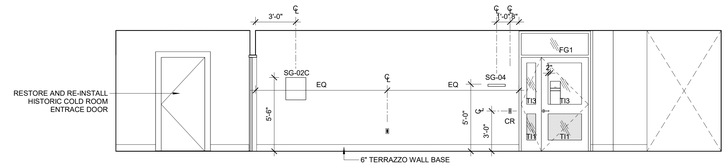


11 LOADING DOCK - NORTH ELEVATION
1/4" = 1'-0"

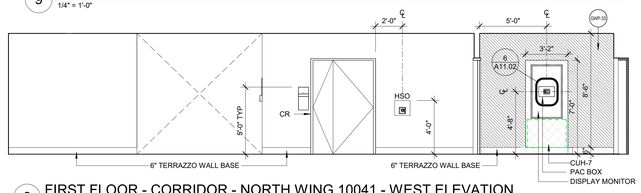


10 HEAD HOUSE EAST ELEVATION
1/4" = 1'-0"

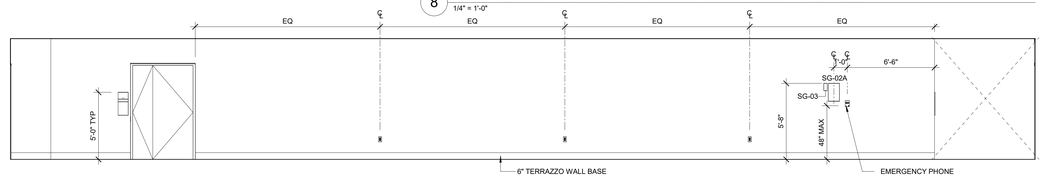
D



9 FIRST FLOOR - CORRIDOR - NORTH WING 10041 - EAST ELEVATION
1/4" = 1'-0"

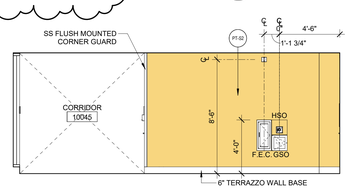


8 FIRST FLOOR - CORRIDOR - NORTH WING 10041 - WEST ELEVATION
1/4" = 1'-0"

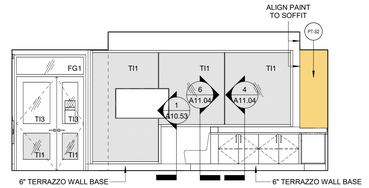


7 FIRST FLOOR - CORRIDOR - NORTH WING 10041 - NORTH ELEVATION
1/4" = 1'-0"

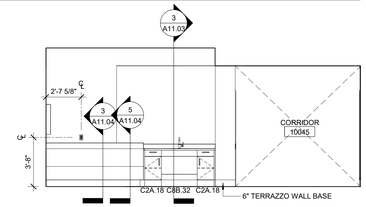
6 FIRST FLOOR - CORRIDOR - NORTH WING 10041 - SOUTH ELEVATION
1/4" = 1'-0"



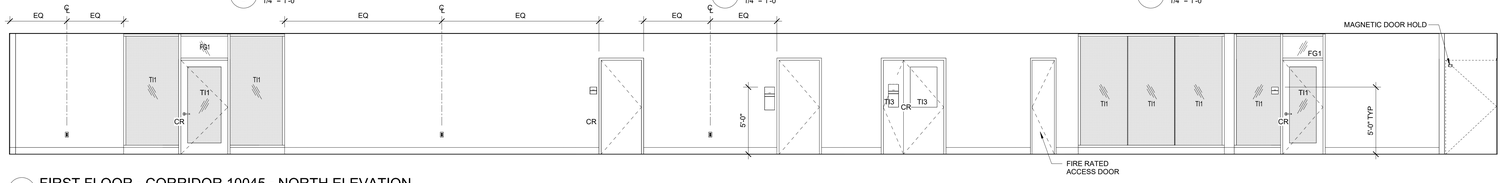
5 FIRST FLOOR - COLLAB 119 - EAST ELEVATION
1/4" = 1'-0"



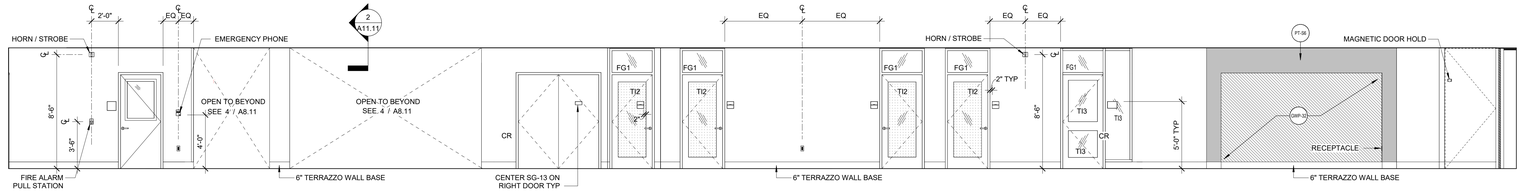
4 FIRST FLOOR - COLLAB 119 - SOUTH ELEVATION
1/4" = 1'-0"



3 FIRST FLOOR - COLLAB 119 - WEST ELEVATION
1/4" = 1'-0"



2 FIRST FLOOR - CORRIDOR 10045 - NORTH ELEVATION
1/4" = 1'-0"



1 FIRST FLOOR - CORRIDOR 10045 - SOUTH ELEVATION
1/4" = 1'-0"

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Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

INTERIOR GLAZING TYPES

CLEAR **CG1:** *1/4" CLEAR TEMPERED SAFETY GLASS (GROUND FL EAST-WEST CORRIDOR LABS)*

CLEAR **FG1:** 1/4" CLEAR FLOAT GLASS (TRANSOMS)

GRADIENT **TI1:** 1/4" CLEAR LAMINATED GRADIENT INTERLAYER (LAB ENTRY)

FROSTED **TI2:** 3/8" CLEAR LAMINATED TRANSLUCENT INTERLAYER (OFFICE)

TI3: 1/4" CLEAR LAMINATED - CLEAR INTERLAYER

FR: FIRE-RATED GLAZING (RATED DOOR)

M: 1/4" TEMPERED FRAMELESS MIRROR GLAZING (TOILET RMS)

WALL PAINT LEGEND

	PT-F1	ACCENT PAINT COLOR (EGGSHELL) - OLIVE GREEN
	PT-F4	ACCENT PAINT COLOR (EGGSHELL) - ORANGE
	PT-S1	ACCENT PAINT COLOR (EGGSHELL) LIGHT GREEN
	PT-S2	ACCENT PAINT COLOR (EGGSHELL) - YELLOW
	PT-S3	ACCENT PAINT COLOR (EGGSHELL) - ROSE
	PT-S4	ACCENT PAINT COLOR (EGGSHELL) - BLUE
	PT-S5	ACCENT PAINT COLOR (EGGSHELL) - AQUA
	PT-S6	ACCENT PAINT COLOR (EGGSHELL) - GRAY
	GWP-##	GRAPHIC WALLPAPER

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

INTERIOR ELEVATIONS - FIRST FLOOR - PHASE 2

BID DOCUMENTS
Scale: As indicated

A8.11

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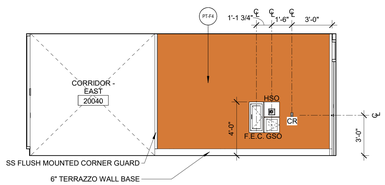
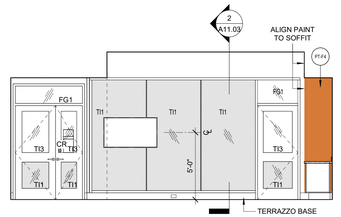
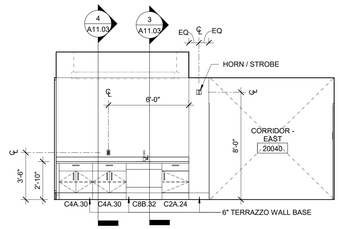


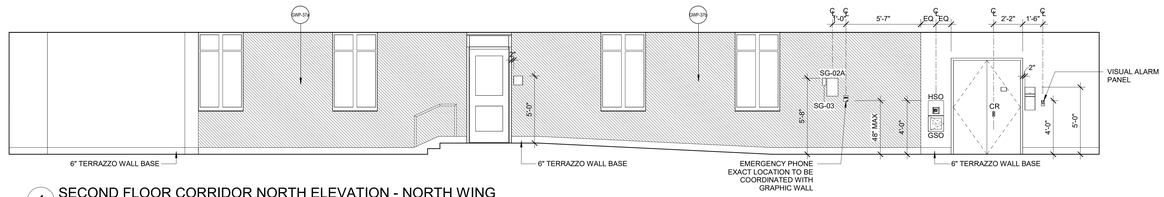
8 SECOND FLOOR - COLLAB 221 - EAST ELEVATION
1/4" = 1'-0"



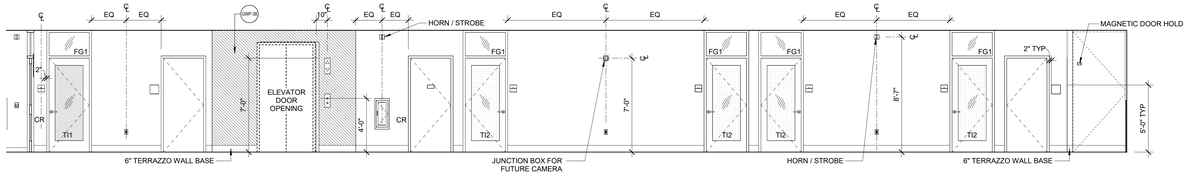
7 SECOND FLOOR - COLLAB 221 - SOUTH ELEVATION
1/4" = 1'-0"



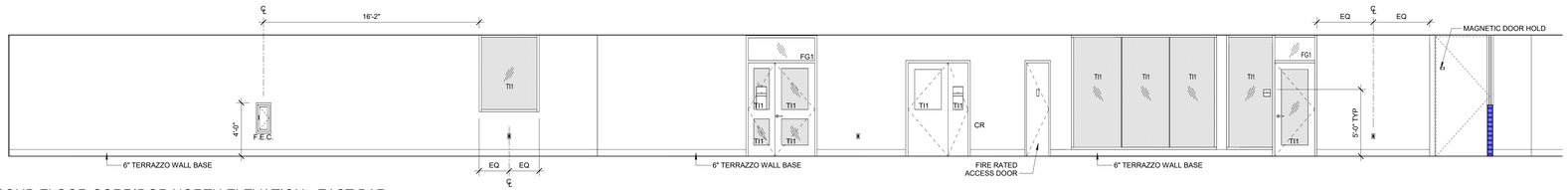
6 SECOND FLOOR - COLLAB 221 - WEST ELEVATION
1/4" = 1'-0"



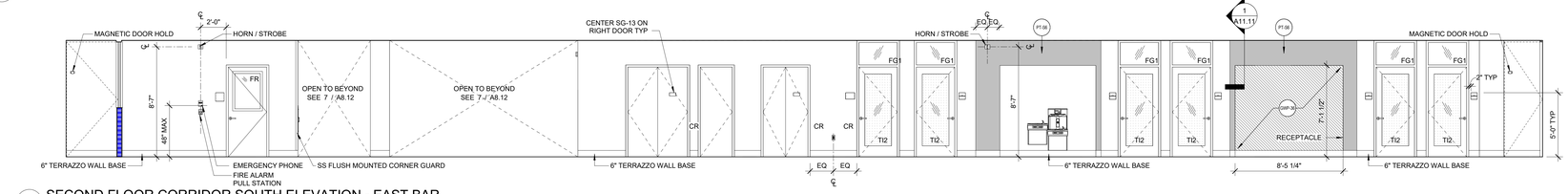
4 SECOND FLOOR CORRIDOR NORTH ELEVATION - NORTH WING
1/4" = 1'-0"



3 SECOND FLOOR CORRIDOR SOUTH ELEVATION - NORTH WING
1/4" = 1'-0"



2 SECOND FLOOR CORRIDOR NORTH ELEVATION - EAST BAR
1/4" = 1'-0"



1 SECOND FLOOR CORRIDOR SOUTH ELEVATION - EAST BAR
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
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Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

INTERIOR GLAZING TYPES

CLEAR **CG1:** *1/4" CLEAR TEMPERED SAFETY GLASS (GROUND FL EAST-WEST CORRIDOR LABS)*
FG1: 1/4" CLEAR FLOAT GLASS (TRANSOMS)
GRADIENT **TI1:** 1/4" CLEAR LAMINATED GRADIENT INTERLAYER (LAB ENTRY)
FROSTED **TI2:** 3/8" CLEAR LAMINATED TRANSLUCENT INTERLAYER (OFFICE)
TI3: 1/4" CLEAR LAMINATED - CLEAR INTERLAYER
FR: FIRE-RATED GLAZING (RATED DOOR)
M: 1/4" TEMPERED FRAMELESS MIRROR GLAZING (TOILET RMS)

WALL PAINT LEGEND

PT-F1	ACCENT PAINT COLOR (EGGSHELL) - OLIVE GREEN
PT-F4	ACCENT PAINT COLOR (EGGSHELL) - ORANGE
PT-S1	ACCENT PAINT COLOR (EGGSHELL) LIGHT GREEN
PT-S2	ACCENT PAINT COLOR (EGGSHELL) - YELLOW
PT-S3	ACCENT PAINT COLOR (EGGSHELL) - ROSE
PT-S4	ACCENT PAINT COLOR (EGGSHELL) - BLUE
PT-S5	ACCENT PAINT COLOR (EGGSHELL) - AQUA
PT-S6	ACCENT PAINT COLOR (EGGSHELL) - GRAY
GWP-##	GRAPHIC WALLPAPER

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

INTERIOR ELEVATIONS - SECOND FLOOR - PHASE 2

BID DOCUMENTS
Scale: As indicated

A8.12

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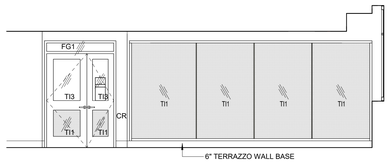
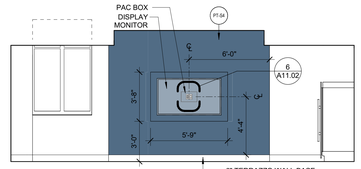
Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt



10 THIRD FLOOR - COLLAB 305 - NORTH ELEVATION
1/4" = 1'-0"



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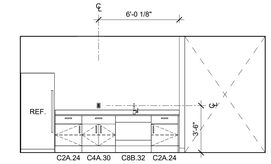
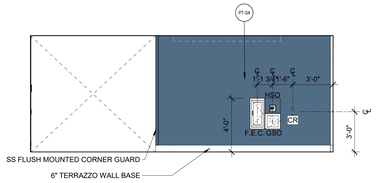
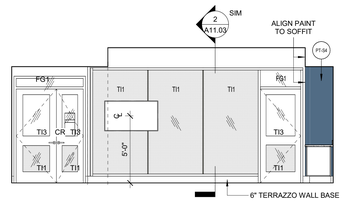
1/4" = 1'-0"



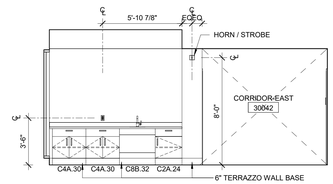
8 THIRD FLOOR - COLLAB 305 - SOUTH ELEVATION
1/4" = 1'-0"



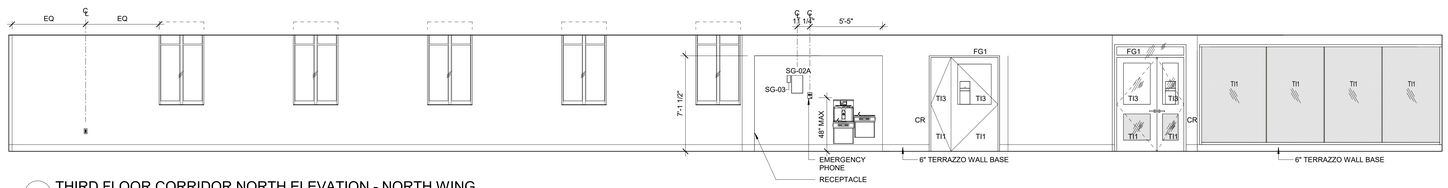
7 THIRD FLOOR - COLLAB 323 - EAST ELEVATION
1/4" = 1'-0"



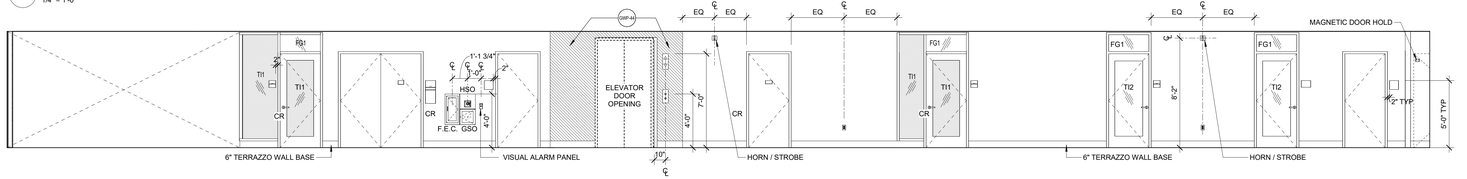
6 THIRD FLOOR - COLLAB 323 - SOUTH ELEVATION
1/4" = 1'-0"



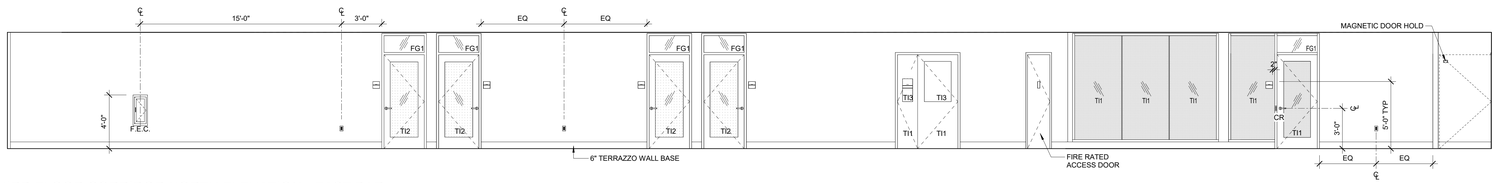
5 THIRD FLOOR - COLLAB 323 - WEST ELEVATION
1/4" = 1'-0"



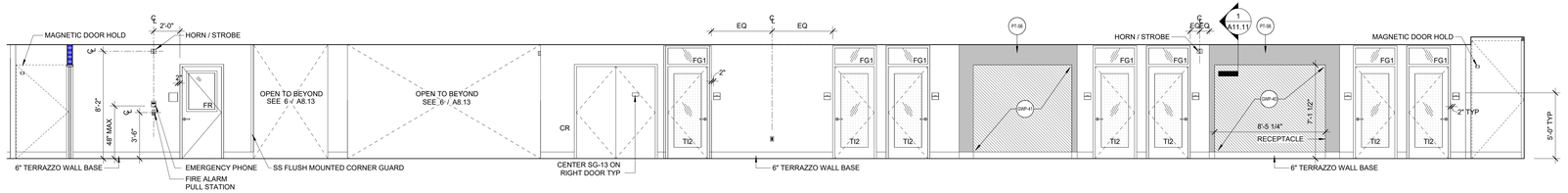
4 THIRD FLOOR CORRIDOR NORTH ELEVATION - NORTH WING
1/4" = 1'-0"



3 THIRD FLOOR CORRIDOR SOUTH ELEVATION - NORTH WING
1/4" = 1'-0"



2 THIRD FLOOR CORRIDOR NORTH ELEVATION - EAST BAR
1/4" = 1'-0"



1 THIRD FLOOR CORRIDOR SOUTH ELEVATION - EAST BAR
1/4" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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PT-S6	ACCENT PAINT COLOR (EGGSHELL) - GRAY
GWP-##	GRAPHIC WALLPAPER

PHASE 1 PHASE 2

Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

INTERIOR ELEVATIONS - THIRD FLOOR - PHASE 2

BID DOCUMENTS
Scale: As indicated

REGISTERED ARCHITECT JAMES VINCENT RESNY 022901 STATE OF NEW YORK

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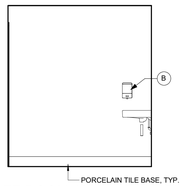
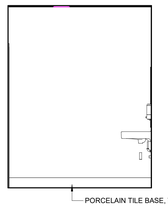
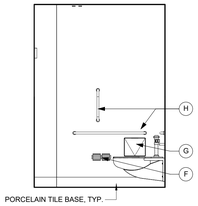


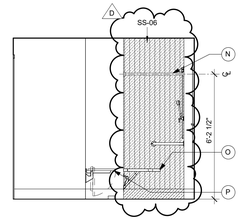
25 GN TOILET ROOM 40020 - EAST ELEV
3/8" = 1'-0"



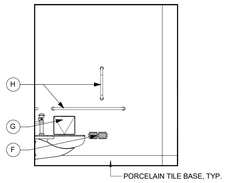
21 GN TOILET ROOM 10021, 20023, 30023 - EAST ELEV
3/8" = 1'-0"



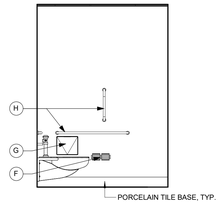
17 GN TOILET ROOM 20020, 30020 - EAST ELEV
3/8" = 1'-0"



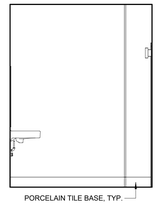
13 HC GN TOILET / SHOWER ROOM G0021 - EAST ELEV
3/8" = 1'-0"



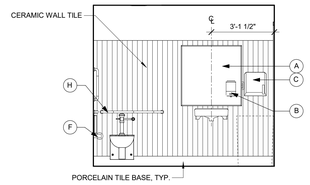
24 GN TOILET ROOM 40020 - WEST ELEV
3/8" = 1'-0"



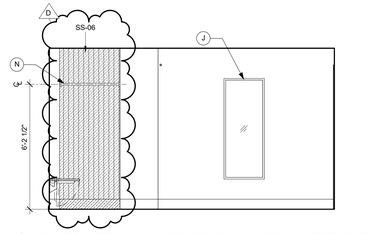
20 GN TOILET ROOM 10021, 20023, 30023 - WEST ELEV
3/8" = 1'-0"



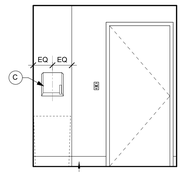
16 GN TOILET ROOM 20020, 30020 - WEST ELEV
3/8" = 1'-0"



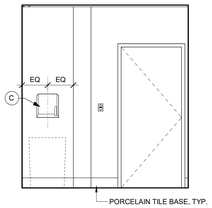
12 HC GN TOILET / SHOWER ROOM G0021 - WEST ELEV
3/8" = 1'-0"



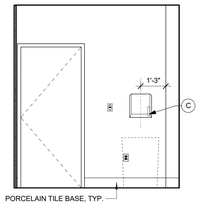
9 GN TOILET / SHOWER ROOM G0020 - WEST ELEV
3/8" = 1'-0"



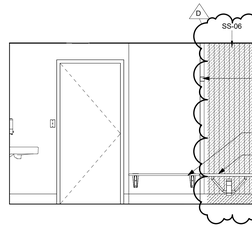
23 GN TOILET ROOM 40020 - NORTH ELEV
3/8" = 1'-0"



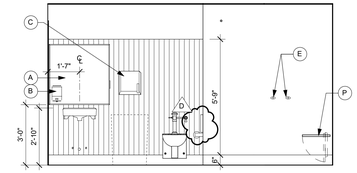
19 GN TOILET ROOM 10021, 20023, 30023 - NORTH ELEV
3/8" = 1'-0"



15 GN TOILET ROOM 20020, 30020 - NORTH ELEV
3/8" = 1'-0"



11 HC GN TOILET / SHOWER ROOM G0021 - NORTH ELEV
3/8" = 1'-0"



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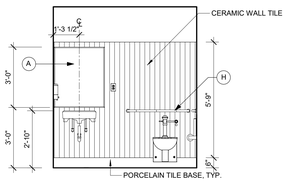

22 GN TOILET ROOM 40020 - SOUTH ELEV
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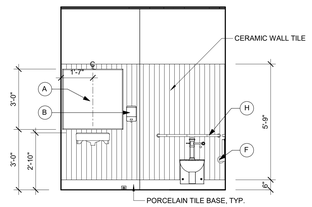
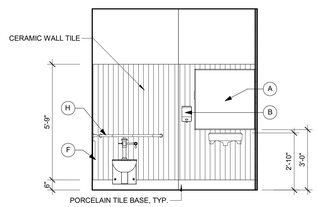
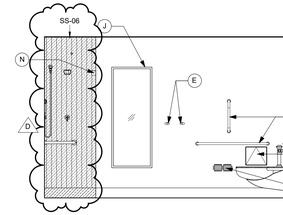


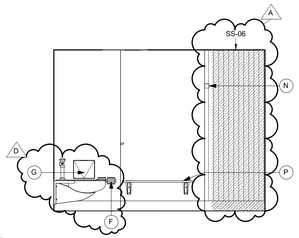
18 GN TOILET ROOM 10021, 20023, 30023 - SOUTH ELEV
3/8" = 1'-0"



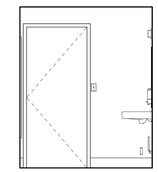
14 GN TOILET ROOM 20020, 30020 - SOUTH ELEV
3/8" = 1'-0"



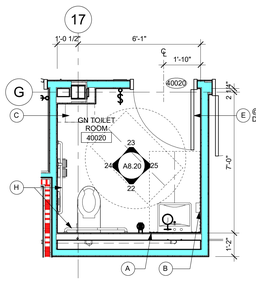
10 HC GN TOILET / SHOWER ROOM G0021 - SOUTH ELEV
3/8" = 1'-0"



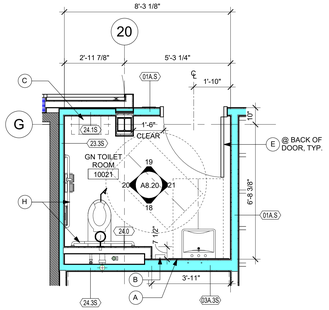
7 GN TOILET / SHOWER ROOM G0020 - SOUTH ELEV
3/8" = 1'-0"



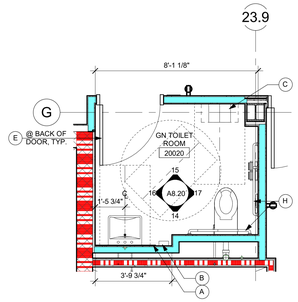
6 G0020 - NORTH ELEV
3/8" = 1'-0"



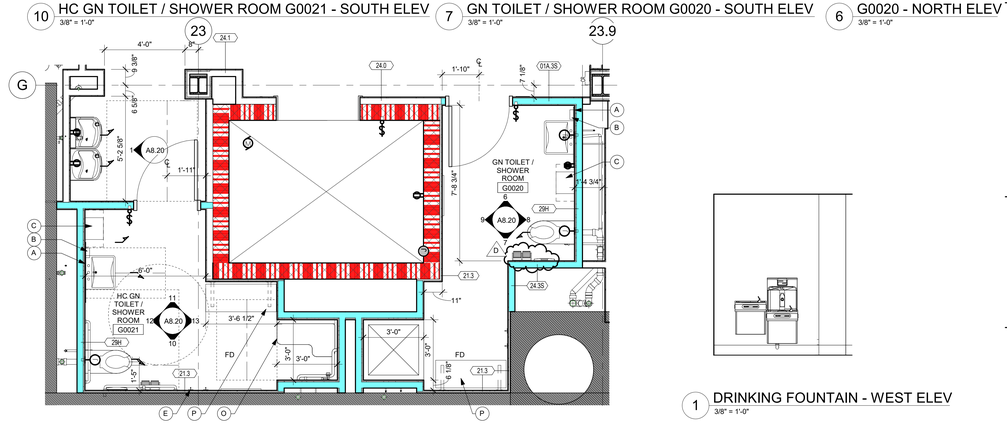
5 GN TOILET ROOM 40020
3/8" = 1'-0"



4 GN TOILET ROOM 10021, 20023, 30023
3/8" = 1'-0"



3 GM TOILET ROOM 20020, 30020
3/8" = 1'-0"



2 GN TOILET / SHOWER ROOMS G0020, G0021
3/8" = 1'-0"

1 DRINKING FOUNTAIN - WEST ELEV
3/8" = 1'-0"

TOILET ACCESSORIES SCHEDULE:

A	36" TALL TEMPERED GLASS MIRROR	J	24" WIDE FULL-LENGTH TEMPERED GLASS MIRROR
B	OFCI - SURFACE MOUNTED SOAP DISPENSER	L	STAINLESS STEEL FULLY-RECESSED MOUNTED SANITARY NAPKIN DISPENSER
C	OFCI - SURFACE-MOUNTED 8" ROLL PAPER TOWEL DISPENSER	M	30" FULL-LENGTH TEMPERED GLASS MIRROR
D	OFOI - WASTE RECEPTACLE	N	SHOWER CURTAIN ROD
E	COAT HOOK	O	FOLDABLE SHOWER SEAT
F	OFCI - SURFACE MOUNTED TOILET TISSUE DISPENSER	P	FOLDABLE BENCH
G	SURFACE MOUNTED SANITARY NAPKIN DISPOSAL	NOTE: ALL TOILET ACCESSORIES CFCI UNLESS NOTED OTHERWISE.	
H	ADA VERTICAL AND DUAL HORIZONTAL STAINLESS STEEL GRAB BARS	PROVIDE BLOCKING FOR GRAB BARS AND ACCESSORIES PER MANUFACTURERS' RECOMMENDATIONS AND CODE REQUIREMENTS.	

NOTE: REFER TO G1.2 FOR MOUNTING LOCATIONS FOR TOILET ACCESSORIES.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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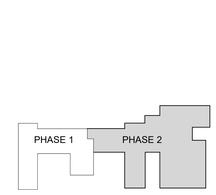
Notes:



Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	AT / SM
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

GENDER NEUTRAL RESTROOMS & SHOWER ROOM

BID DOCUMENTS
Scale: As indicated

A8.20

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FINISH LEGEND

CPT-01	CARPET TILE BOD: MANNINGTON:	TZ-01A	EPOXY THINSET TERRAZZO MATCH EXISTING GREEN
CPT-02	CARPET TILE BOD: MANNINGTON:	TZ-01B	EPOXY THINSET TERRAZZO MATCH EXISTING BEIGE/LIGHT GREEN
CPT-03	ENTRY MAT SYSTEM	CT-01	2" HEXAGON PORCELAIN FLOOR TILE
SC-01	CONC-S: SEALED CONCRETE, MAINTENANCE	RT-01	RESILIENT TILE BOD: FORBO: MODULAR - 3136 CONCRETE
SC-02	CONC-S: SEALED CONCRETE, FIELD WORK LAB	RT-02	RESILIENT TILE BOD: FORBO: MODULAR - 3216 MORAINE
RS-01	RESILIENT SHEET LINOLEUM FLOORING BOD: FORBO: 3428 SPLASH - SEASHELL	RST-01	RESILIENT STAIR TREADS AND RISERS BOD: TARKETT BAMBOO WITH VISUALLY CONTRASTING NOSING STRIP
RS-02	RESILIENT SHEET LINOLEUM FLOORING BOD: FORBO: 5801 TERRA - RIVERBANK	RB-01A RB-01B RB-02 RB-05 RB-06 TB-01	4" RUBBER COVE BASE - "SLATE" 4" RUBBER STRAIGHT BASE - "SLATE" AT CARPET 4" RUBBER STRAIGHT BASE - "PEBBLE" 4" RUBBER STRAIGHT BASE - "GREY WG" 6" RUBBER BASE - "GREEN SMOKE" 6" TERRAZZO BASE, TO MATCH TZ01A
RS-03	RESILIENT SHEET LINOLEUM FLOORING BOD: FORBO: TERRA - ALPINE MIST		
RS-05	RUBBER SHEET FLOORING BOD: NORA SATURA VULPECULA		
RS-06	RESILIENT SHEET BOD: ALTRO WALKWAY 20, COLOR TBD		

AREA OF ADDITIONAL THICKNESS OF HYDRAULIC CEMENT UNDERLAYMENT IS REQUIRED FOR FLOOR LEVELING OF EXISTING CONCRETE SLABS. REFER TO SHEET NOTE 1 / A9.05, DIVISION 03 SPECIFICATIONS, AND DIVISION 09 SPECIFICATIONS FOR FLOOR FLATNESS REQUIREMENTS FOR ALL FLOOR FINISHES.

GENERAL NOTES:
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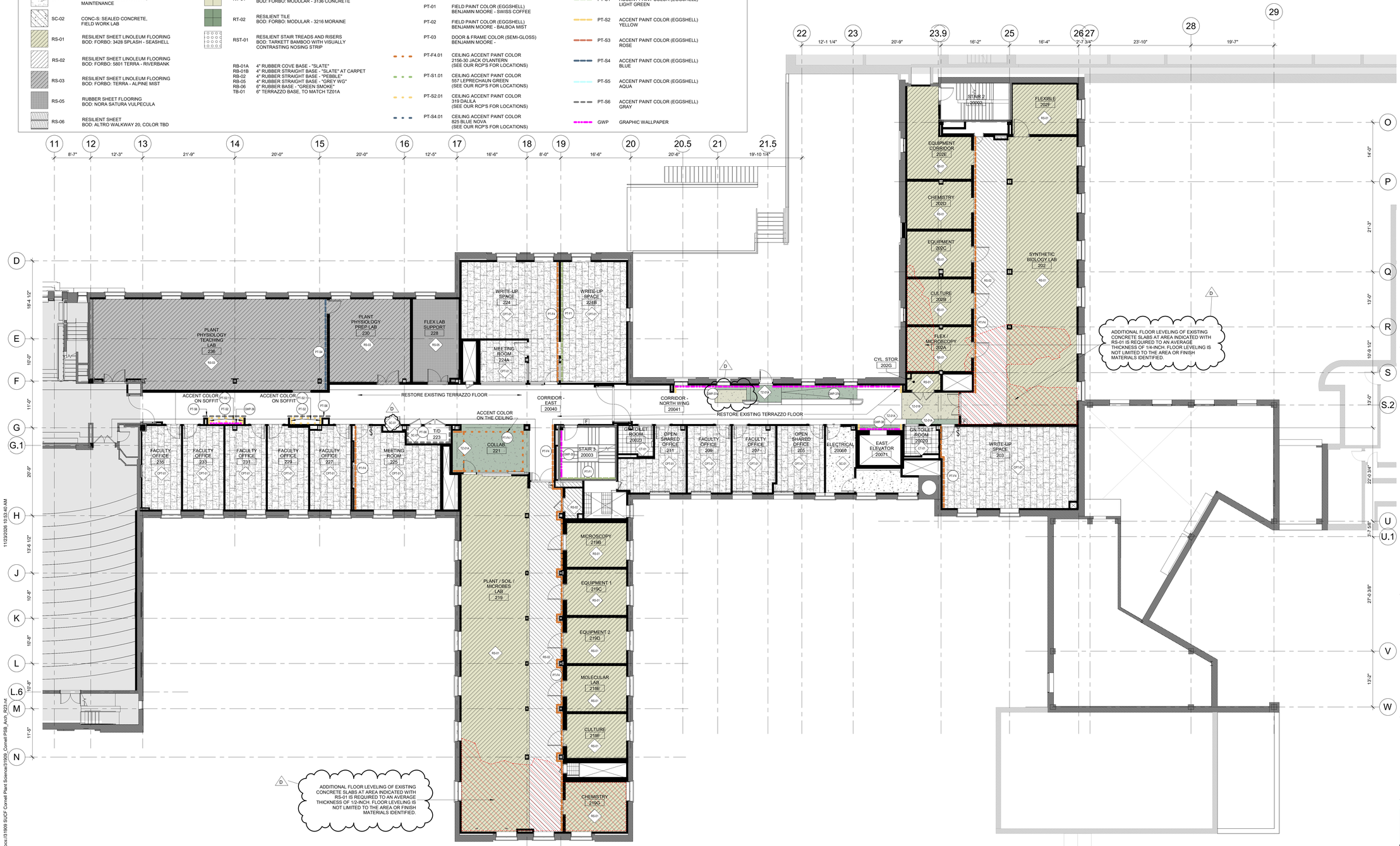
3. PROVIDE PRECAST TERRAZZO THRESHOLDS ALONG CORRIDORS WITH TERRAZZO FLOORING.

PT-01	FIELD PAINT COLOR (EGGSHELL) BENJAMIN MOORE - SWISS COFFEE	PT-F1	ACCENT PAINT COLOR (EGGSHELL) OLIVE GREEN
PT-02	FIELD PAINT COLOR (EGGSHELL) BENJAMIN MOORE - BALBOA MIST	PT-F4	ACCENT PAINT COLOR (EGGSHELL) ORANGE
PT-03	DOOR & FRAME COLOR (SEMI-GLOSS) BENJAMIN MOORE -	PT-S1	ACCENT PAINT COLOR (EGGSHELL) LIGHT GREEN
PT-F4.01	CEILING ACCENT PAINT COLOR 2156-30 JACK O'LANTERN (SEE OUR RCP'S FOR LOCATIONS)	PT-S2	ACCENT PAINT COLOR (EGGSHELL) YELLOW
PT-S1.01	CEILING ACCENT PAINT COLOR 557 LEPRECHAUN GREEN (SEE OUR RCP'S FOR LOCATIONS)	PT-S3	ACCENT PAINT COLOR (EGGSHELL) ROSE
PT-S2.01	CEILING ACCENT PAINT COLOR 319 DALILA (SEE OUR RCP'S FOR LOCATIONS)	PT-S4	ACCENT PAINT COLOR (EGGSHELL) BLUE
PT-S4.01	CEILING ACCENT PAINT COLOR 825 BLUE NOVA (SEE OUR RCP'S FOR LOCATIONS)	PT-S5	ACCENT PAINT COLOR (EGGSHELL) AQUA
		PT-S6	ACCENT PAINT COLOR (EGGSHELL) GRAY
		GWP	GRAPHIC WALLPAPER



1 SECOND FLOOR FINISHES PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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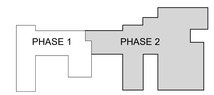
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

SECOND FLOOR FINISH PLAN - PHASE 2

REGISTERED ARCHITECT JAMES VINCENT ELLENZWEIG 022901 STATE OF NEW YORK

BID DOCUMENTS
Scale: 1/8" = 1'-0"

A9.02

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FINISH LEGEND

CPT-01	CARPET TILE BOD: MANNINGTON:	
CPT-02	CARPET TILE BOD: MANNINGTON:	
CPT-03	ENTRY MAT SYSTEM	
SC-01	CONC-S: SEALED CONCRETE, MAINTENANCE	
SC-02	CONC-S: SEALED CONCRETE, FIELD WORK LAB	
RS-01	RESILIENT SHEET LINOLEUM FLOORING BOD: FORBO: 3428 SPLASH - SEASHELL	
RS-02	RESILIENT SHEET LINOLEUM FLOORING BOD: FORBO: 5801 TERRA - RIVERBANK	
RS-03	RESILIENT SHEET LINOLEUM FLOORING BOD: FORBO: TERRA - ALPINE MIST	
RS-05	RUBBER SHEET FLOORING BOD: NORA SATURA VULPECULA	
RS-06	RESILIENT SHEET BOD: ALTRO WALKWAY 20, COLOR TBD	
TZ-01A	EPOXY THINSET TERRAZZO MATCH EXISTING GREEN	
TZ-01B	EPOXY THINSET TERRAZZO MATCH EXISTING BEIGE/LIGHT GREEN	
CT-01	2" HEXAGON PORCELAIN FLOOR TILE	
RT-01	RESILIENT TILE BOD: FORBO: MODULAR - 3136 CONCRETE	
RT-02	RESILIENT TILE BOD: FORBO: MODULAR - 3216 MORAINE	
RST-01	RESILIENT STAIR TREADS AND RISERS BOD: TARKETT BAMBOO WITH VISUALLY CONTRASTING NOSING STRIP	
RB-01A	4" RUBBER COVE BASE - "SLATE"	
RB-01B	4" RUBBER STRAIGHT BASE - "SLATE" AT CARPET	
RB-02	4" RUBBER STRAIGHT BASE - "PEBBLE"	
RB-05	4" RUBBER STRAIGHT BASE - "GREY WG"	
RB-06	6" RUBBER BASE - "GREEN SMOKE"	
TB-01	6" TERRAZZO BASE, TO MATCH TZ01A	

AREA OF ADDITIONAL THICKNESS OF HYDRAULIC CEMENT UNDERLAYMENT IS REQUIRED FOR FLOOR LEVELING OF EXISTING CONCRETE SLABS. REFER TO SHEET NOTE 1 / A9.05, DIVISION 03 SPECIFICATIONS, AND DIVISION 09 SPECIFICATIONS FOR FLOOR FLATNESS REQUIREMENTS FOR ALL FLOOR FINISHES.

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PT-S1.01	CEILING ACCENT PAINT COLOR 557 LEPRECHAUN GREEN (SEE OUR RCP'S FOR LOCATIONS)
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PT-S4.01	CEILING ACCENT PAINT COLOR 825 BLUE NOVA (SEE OUR RCP'S FOR LOCATIONS)
PT-F1	ACCENT PAINT COLOR (EGGSHELL) OLIVE GREEN
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GWP	GRAPHIC WALLPAPER

1 THIRD FLOOR FINISHES PLAN - PHASE 2
1/8" = 1'-0"

Keyplan

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Notes:

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

THIRD FLOOR FINISH PLAN - PHASE 2

REGISTERED ARCHITECT JAMES VINCENT RUSSO 022901-1 STATE OF NEW YORK

BID DOCUMENTS
Scale: 1/8" = 1'-0"

A9.03

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FINISH LEGEND

CPT-01	CARPET TILE BOD: MANNINGTON:	TZ-01A	EPOXY THINSET TERRAZZO MATCH EXISTING GREEN
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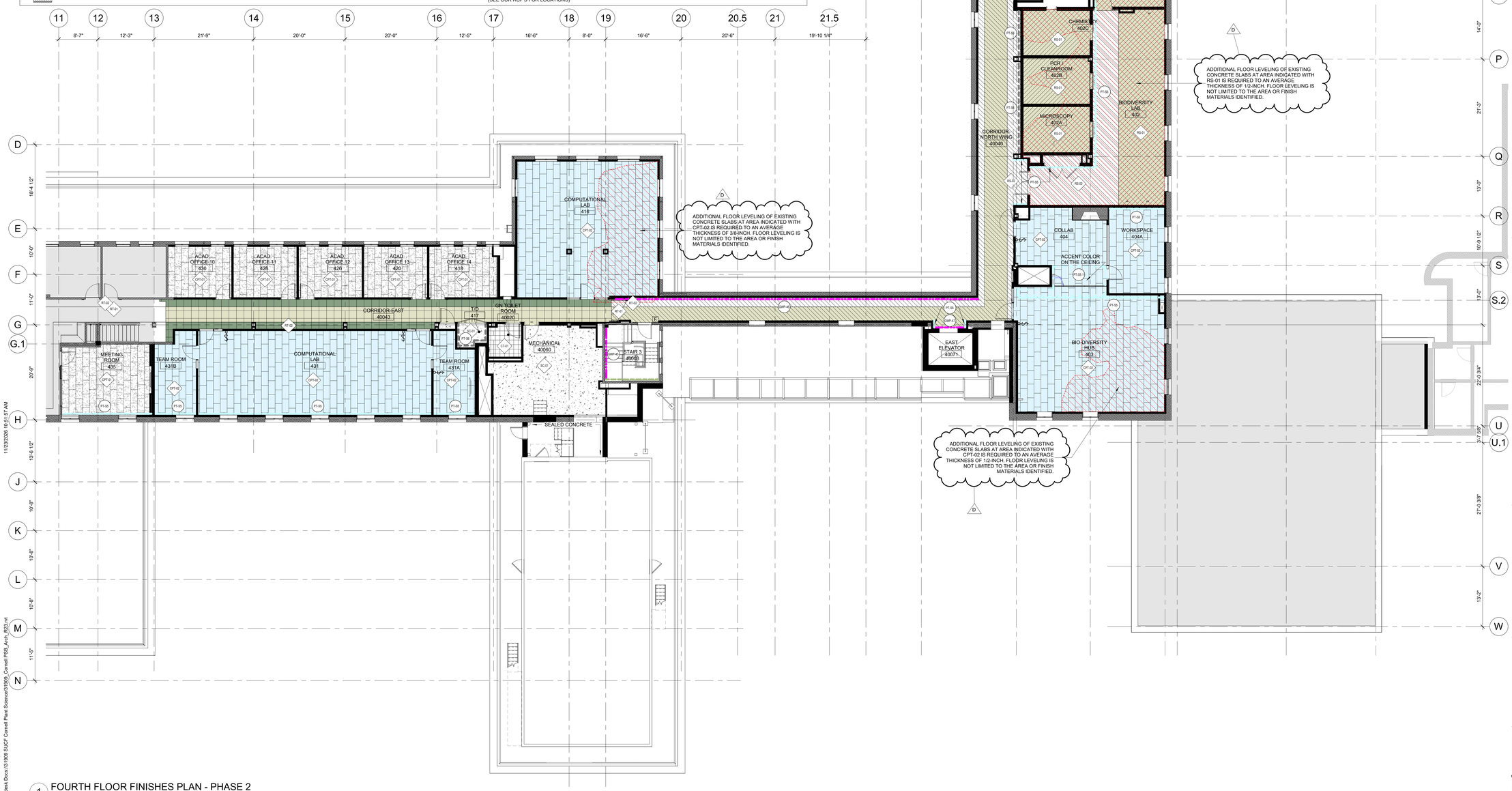

1 FOURTH FLOOR FINISHES PLAN - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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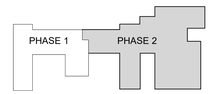
Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

FOURTH FLOOR FINISH PLAN - PHASE 2

REGISTERED ARCHITECT JAMES VINCENT RUGGIERO 022901 STATE OF NEW YORK

BID DOCUMENTS
Scale: 1/8" = 1'-0"

A9.04

2024 Ellenzweig ©

WINDOW TREATMENT LEGEND

MARK	MANUFACTURER	TYPE	SHADE CLOTH	COMMENTS
ROLLER SHADE TYPE RS-1	DRAPER	MANUALLY-OPERATED ROLLER SHADE	FABRIC - 1%	PG2 ALMOND with fascia, typ except at recessed details
ROLLER SHADE TYPE RS-1A	MECHOSHADE	MANUALLY-OPERATED ROLLER SHADE	FABRIC - 3%	PG2 ALMOND with fascia, typ except at recessed details
ROLLER SHADE TYPE RS-2	MECHOSHADE	MANUALLY-OPERATED ROLLER SHADE	FABRIC - 0%	07500 R40 PORCELAIN w/blackout accessories
ROLLER SHADE TYPE RS-3	MECHOSHADE	MOTORIZED ELECTRIC ROLLER SHADE	FABRIC - 0%	07500 R40 PORCELAIN w/blackout accessories

WALL FINISHES

B.O.D. MANUFACTURER	CODE IN PROJECT	PRODUCT CODE	PRODUCT NAME	COMMENTS
BENJAMIN MOORE	PT-F1	543	WOODLAND HILLS	
BENJAMIN MOORE	PT-F4	CSP-1110 14	CARROTS	
BENJAMIN MOORE	PT-S1	426	FRESH GRASS	
BENJAMIN MOORE	PT-S2	298	BROADWAY LIGHTS	
BENJAMIN MOORE	PT-S3	023	RICH CORAL	
BENJAMIN MOORE	PT-S4	CC 840	BLUE HERON	
BENJAMIN MOORE	PT-01	OC-45	SWISS COFFEE	
BENJAMIN MOORE	PT-02	1549	BALBOA MIST	
DALTILE	WT-01	X735	ALMOND	
BENJAMIN MOORE	PT-03	HC-170	STONINGTON GRAY	
BENJAMIN MOORE	PT-S5	CUSTOM	TO MATCH HERMAN MILLER AQUA SKY 4T	

FLOORING LEGEND

B.O.D. MANUFACTURER	CODE IN PROJECT	PRODUCT CODE	PRODUCT NAME	COMMENTS
MANNINGTON	CPT-01	33253	SWELL - EVENTIDE - BILLOW	
MANNINGTON	CPT-02	43262	HIGHTIDE - UNCHARTED	
FORBO	RS-01	3428	SPLASH - SEASHELL	
FORBO	RS-02	5801	TERRA - RIVER BANK	
FORBO	RS-03	5802	TERRA - ALPINE MIST	
FORBO	RT-01	3136	MODULAR - CONCRETE	
FORBO	RT-02	3216	MODULAR - MORAINE	
DALTILE	CT-01	D335	ALMOND	NOT USED
TOMKT	CO-01	TMU51	TERRA - ASH	
NORA	RS-05	5106	SATURA - VULPECULA	
ALTRO	RS-06	VMI2020P	WALKWAY 20 - RODEO	
TARKETT	RST-01		STAIR TREADS/RISERS - PEBBLE	TEXTURE: BAMBOO; CONTRAST NOSING...
MATTER SURFACES	CPT-03	ARRIVAL COLLECTION	ULTRA ENTRY GRAY BASE NY CHARCOAL SPLASH	FRAME: GRAY TO MATCH BASE
MATTER SURFACES	CPT-04	ARRIVAL COLLECTION	ULTRA ENTRY GRAY BASE NY STERLING SPLASH	FRAME: GRAY TO MATCH BASE

BASE LEGEND

B.O.D. MANUFACTURER	CODE IN PROJECT	PRODUCT CODE	PRODUCT NAME	FLOORING	HEIGHT
ROPPE	RB-01	175	Slate	UNCHARTED; ALPINE MIST; 4TH FL MORAINE	6"
TARKETT	RB-02	32	Pebble	SATURA; VULPECULA; PEBBLE	4"
ROPPE	RB-03	649	Sweet Basil	T3623 GREEN LEAF	6"
ROPPE	RB-04	624	Chameleon	TERRA ASH	6"
JOHNSONITE	RB-05	48	Grey WG	BILLOW	4"
TARKETT	RB-06	VM4	Green Smoke	RIVER BANK	4"

CEILING LEGEND

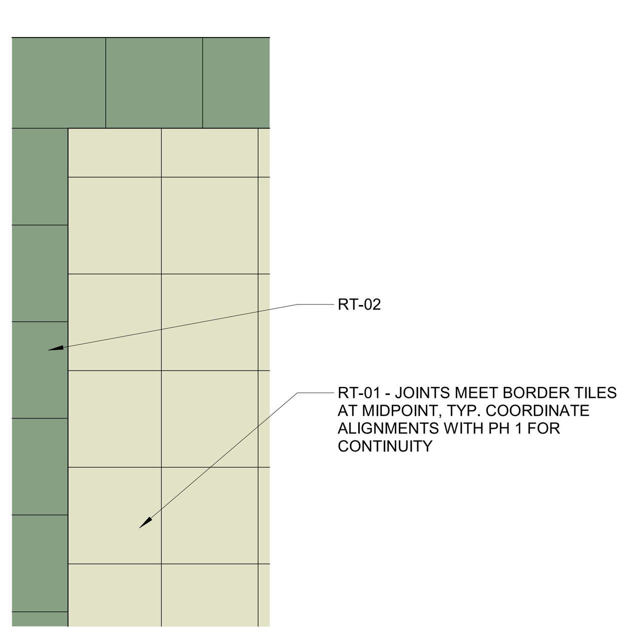
B.O.D. MANUFACTURER	CODE IN PROJECT	PRODUCT CODE	PRODUCT NAME	COMMENTS
USG	ACT-1		MARS CLIMAPLUS HIGH NRC 89500	24"X48"
CONWED	ACT-2		ACCESS CEILING/CEILING PANEL	48"X48" (NOT USED)
USG	ACT-3	56645	RADAR CERAMIC PERFORATED PANELS	24"X48"
USG	ACT-4		CELEBRATION TORSION SPRING PANEL	PERFORATION PATTERN CD06310
BENJAMIN MOORE	PT-04		Oxford White 869	TYPICAL CEILING PAINT
BENJAMIN MOORE	PT-F4.1	2156-30	Jack O'Lantern	
BENJAMIN MOORE	PT-S1.1	557	Leprechaun Green	
BENJAMIN MOORE	PT-S2.1	319	Dalila	
BENJAMIN MOORE	PT-S4.1	825	Blue Nova	

PHENOLIC PANEL & SOLID SURFACE

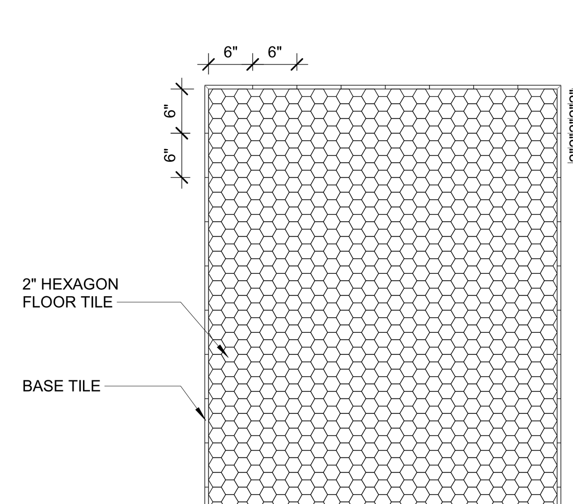
B.O.D. MANUFACTURER	CODE IN PROJECT	PRODUCT CODE	PRODUCT NAME	COMMENTS
TRESPA	PH-01		TOPLAB PLUS ALIGN	
DURCON	SS-01		Dark Khaki	See 12 35 53 for dual color metal box.
DURCON	SS-02		Tan	See 12 35 53 for metal box.
CORIAN	SS-03		Elegant Gray	Toilet Rms: Lav countertops, window stool caps
CORIAN	SS-04		Concrete	Window stool caps, typ.
CORIAN	SS-05		Serene Sage	Countertops (pantry, kitchenette, break room, foyer)
SWANSTONE	SS-06		SMOOTH FINISH - COLOR TBD	96"H, cementboard backup

SPECIALITY MATERIALS

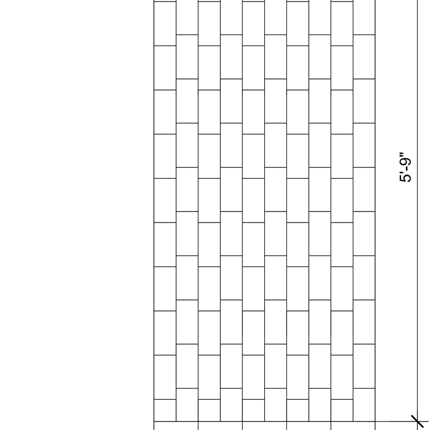
B.O.D. MANUFACTURER	CODE IN PROJECT	PRODUCT CODE	PRODUCT NAME	COMMENTS
KOROSEAL DIGITAL LAB			OPTION e	GRAPHIC WALLPAPER ON LEVEL 5 FINISH GWB
FORBO		2206	OYSTER SHELL	TACKBOARD (NOT USED)
CARNEGIE		6603 | 34	DASH	TEXTILE AT ACOUSTIC WALL PANELS
CONSTRUCTION SPECIALTIES	CG-1	CO-8		SURFACE-MOUNTED CORNER GUARD
IPC DOOR AND WALL	CG-2	SSCG-FM		FLUSH-MOUNTED CORNER GUARD



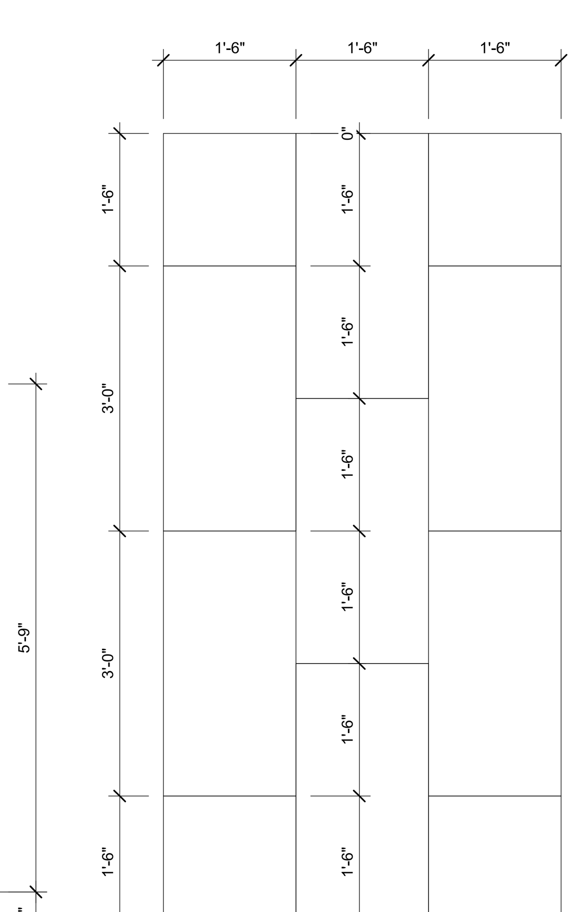
R GROUND FLOOR TRANSITION DETAIL
1/2" = 1'-0"



E CT-01
3/4" = 1'-0"



F WT-01
3/4" = 1'-0"



H CPT-01 / CPT-02
3/4" = 1'-0"

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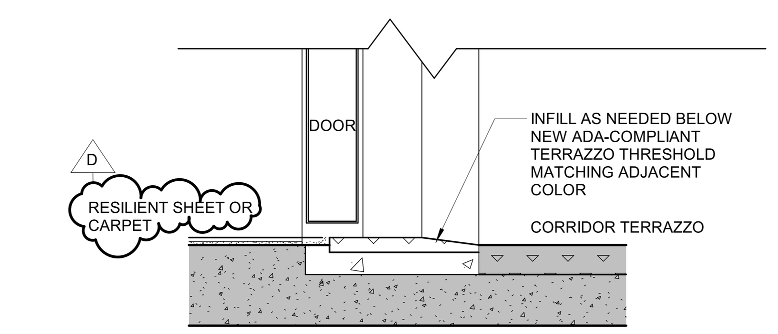
Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt

ROOM FINISH SCHEDULE - PHASE 2

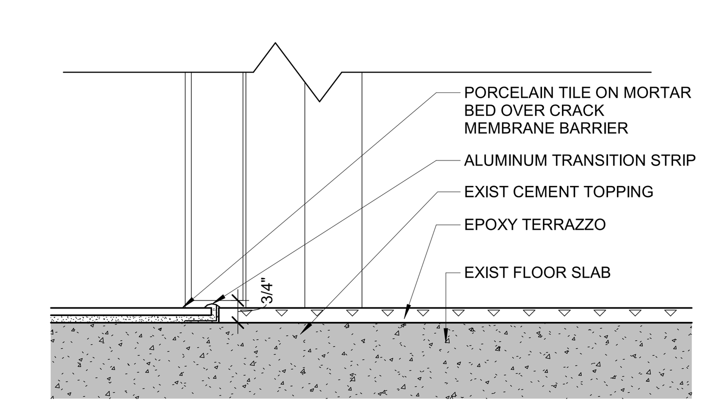
ROOM No.	ROOM NAME	FLOOR	BASE	WALL FINISH NORTH	WALL FINISH SOUTH	WALL FINISH WEST	WALL FINISH EAST	CEILING FINISH
GROUND FLOOR								
G01	MESSY SOIL GRINDING ROOM	SC-02	RB-01A	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	ACT-3
G02	SOIL AND SAMPLE PREP	SC-02	RB-01A	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	ACT-3
G03	MESSY PLANT GRINDING ROOM	SC-02	RB-01A	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	ACT-3
G04	FIELD WORK ROOM	SC-02	RB-01A	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	ACT-3
G0004	STAIR	ABRASIVE STRIP/EPOXY	PTD STL					GWB
G05	CLEAN PLANT AND SOIL GRINDING ROOM	SC-02	RB-01A	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	ACT-3
G0005	EXIST TUNNEL STAIR	N/A	RB-05	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	GWB
G09	WRITE-UP SPACE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S1 GWB	ACT-1
G13	CYL. STOR	RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	OPEN TO STRUCTURE
G14	SHARED INSTRUMENTATION SUPPORT ROOM	RS-01	RB-01A	PT-S1 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	DRYFALL
G15	EQUIPMENT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G17	MICROSCOPY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G19	PCR	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G20	SUSTAINABLE CROP PRODUCTION LAB	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S1 GWB	ACT-1/PT-04 GWB
G21	FLEXIBLE	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G23	CHEMISTRY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G25	T/D	SC-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT EXIST STRUCTURE
G26	FREEZER FARM	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	BY MFR
G27	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G28	COLD ROOM	RS-06	INTEGRAL	BY MFR	BY MFR	BY MFR	BY MFR	BY MFR
G29	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G30	COLD ROOM	RS-06	INTEGRAL	BY MFR	BY MFR	BY MFR	BY MFR	BY MFR
G31	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G32	FREEZER FARM	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
G33	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G34	SUPPORT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-3
G35	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G36	FLEX LAB SUPPORT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
G37	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1/PT-04 GWB
G38	FLEX LAB SUPPORT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
G40	LAB SUPPORT GENERAL EQUIPMENT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
G0003	STAIR 3	RS-05	RB-02	PT-01 EXIST	PT-F1 EXIST	GWP-27	PT-01 EXIST	N A
G0003A	STAIR 2	EXIST.	EXIST.	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	PT EXIST
G0020	GN TOILET / SHOWER ROOM	CT-01	CT	PT-02 MR GWB	PT-02 MR GWB	PT-02 MR GWB	WT-01/PT-02	PT-04 MR-GWB
G0021	HC GN TOILET / SHOWER ROOM	CT-01	CT	PT-02 MR GWB	PT-02 MR GWB	WT-01/PT-02	PT-02 MR GWB	PT-04 MR-GWB
G0041	FIELD WORK SUITE CORRIDOR	SC-02	RB-01A	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	ACT-1
G0042	CORRIDOR- NORTH WING	RS-01 / RS-02	RB-01A	PT-01 EXIST GWB	PT-01 EXIST	PT-01 GWB	PT-01 GWB	ACT-1
G0042	CORRIDOR	RS-01 / RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT EXIST STRUCTURE
G0043	CORRIDOR-EAST	RS-01 / RS-02	RB-01A	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	PT-AR-GWB	ACT-1
G0051	CORRIDOR	RS-01 / RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S1 GWB	ACT-1
G0052	VESTIBULE	CPT-04	RB-01A	PT-01 GWB	PT-01 GWB	GWP-28	PT-S1 GWB	ACT-1
G0060	MECHANICAL	SC-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT EXIST STRUCTURE
G0065	BUILDING STORAGE	SC-01	RB-01A	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	PT EXIST STRUCTURE
G0066	BUILDING STORAGE	SC-01	RB-01A	PT-01 GWB	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	PT EXIST STRUCTURE
G0071	EAST ELEVATOR	RS-05 ON FR PLY	BY MFR	BY MFR	BY MFR	BY MFR	BY MFR	BY MFR
G0081	CUSTODIAL SUPPLY	RS-01	RB-01A	PT-01 GWB	PT-01 CMU	PT-01 CMU	PT-01 CMU	ACT-1
G0086	ELEC CLO	CONC-S	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	OPEN TO STRUCTURE
G0087	CYL. CLO	RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	OPEN TO STRUCTURE
FIRST FLOOR								
103	BUILDING CARE BREAK ROOM	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
104	DRY TEACHING LAB	RS-03	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S4 GWB	ACT-1
105	ADMIN. CLERICAL 4/5	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
107	ADMIN. PROF. 6	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
109	ADMIN PROF. 1	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
111	MAIL/ PRINT/ SUPPLY	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
113	FRUIT PRODUCTION LAB	RS-01 / RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S2 GWB	ACT-1
113A	CYL. STOR.	RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT GWB
113B	MICROSCOPY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
113C	TISSUE CULTURE	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
113D	EQUIPMENT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
113E	MOLECULAR BIO	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
113F	CHEMISTRY 1	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
113G	CHEMISTRY 2	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
116	WRITE-UP SPACE A	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S2 GWB	ACT-1
116A	MEETING ROOM	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
116B	WRITE-UP SPACE B	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-F1 GWB	PT-01 GWB	ACT-1
118	FLEX LAB SUPPORT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
119	COLLAB.	TZ-01A	TB-01	N A	GL.	PT-01 GWB	PT-S2 GWB	PT-S2.1 GWB
120	EVENT SUPPORT	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
121	T/D	SC-01	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	OPEN TO STRUCTURE
123	ADMIN. PROF. 4	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
125	ADMIN. PROF. 1	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
127	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
128	ADMIN CLERICAL 2	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
128	ADMIN. SUITE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
128A	ADMIN. SIPS. EXEC.	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
128B	ADMIN CLERICAL 1	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
128C	ADMIN. PROF. 5	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
128D	ADMIN. SIPS. EXEC.	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
128E	ADMIN. SIPS. EXEC.	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
129	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
133	20P GENERAL ASSIGNMENT CLASSROOM	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S4 GWB	ACT-1
10002	STAIR 2	EXIST	PT EXIST STL	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	N A
10003	STAIR 3	EXIST	PT EXIST STL	PT-01 EXIST	PT-F1 EXIST	GWP-31	PT-01 EXIST	N A
10021	GN TOILET ROOM	CT-01	CT	PT-02 MR GWB	WT-01/PT-02	PT-02 MR GWB	PT-02 MR GWB	MR-GWB
10041	CORRIDOR - NORTH WING	RESTORE/NEW TERR	TB-01	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	ACT-1
10042	VESTIBULE	RESTORE TERR	TB-01	PT-01 GWB	PT-01 GWB	GWP-34	PT-01 GWB	ACT-1
10044	CORRIDOR - NORTH WING-2	RESTORE TERR	EXIST.	PT EXIST	PT EXIST	PT EXIST	PT EXIST	EXIST.
10045	CORRIDOR	RESTORE TERR	TB-01	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	ACT-1
10061	JAN / SUPPLY ROOM	RS-05	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
10064	ELEC	SC-01	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
SECOND FLOOR								
202	SYNTHETIC BIOLOGY LAB	RS-01 / RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-F4 GWB	PT-01 GWB	ACT-1
202A	FLEX / MICROSCOPY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
202B	CULTURE	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
202C	EQUIPMENT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
202D	CHEMISTRY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
202E	EQUIPMENT CORRIDOR	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
202F	FLEXIBLE	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
202G	CYL. STOR.	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT GWB
203	WRITE-UP SPACE	CPT-01	RB-01B	PT-01 GWB	PT-01 GWB	PT-F4 GWB	PT-01 GWB	ACT-1
205	OPEN SHARED OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
207	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
209	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
211	OPEN SHARED OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
219	PLANT / SOIL / MICROBES LAB	RS-01 / RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-F4 GWB	ACT-1
219A	CYL. STOR.	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT GWB
219B	MICROSCOPY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
219C	EQUIPMENT 1	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
219D	EQUIPMENT 2	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
219E	MOLECULAR LAB	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
219F	CULTURE	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
219G	CHEMISTRY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
221	COLLAB.	TZ-01A	TB-01	N A	GL.	PT-F4 GWB	PT-01 GWB	PT-F4.1 GWB
223	T/D	SC-01	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	OPEN TO STRUCTURE
224	WRITE-UP SPACE	CPT-01	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-F4 GWB	ACT-1
224A	MEETING ROOM	CPT-01	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
224B	WRITE-UP SPACE	CPT-01	RB-01B	PT-01 GWB	PT-01 GWB	PT-F1 GWB	PT-01 GWB	ACT-1
225	MEETING ROOM	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-F4 GWB	PT-01 GWB	ACT-1
227	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
228	FLEX LAB SUPPORT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
229	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
230	PLANT PHYSIOLOGY PREP LAB	RS-03	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
231	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
233	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
235	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
236	PLANT PHYSIOLOGY TEACHING LAB	RS-03	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S4 GWB	ACT-1
20002	STAIR 2	EXIST	PT EXIST STL	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	N A
20003	STAIR 3	EXIST	PT EXIST STL	PT-01 EXIST	PT-F1 GWB	GWP-35	PT-01 EXIST	N A
20020	GN TOILET ROOM	CT-01	CT-01	PT-02 MR GWB	WT-01/PT-02	PT-02 MR GWB	PT-02 MR GWB	MR-GWB
20023	GN TOILET ROOM	CT-01	CT-01	PT-02 MR GWB	WT-01/PT-02	PT-02 MR GWB	PT-02 MR GWB	MR-GWB
20040	CORRIDOR - EAST	RESTORE/NEW TERR	TB-01	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	ACT-1
20041	CORRIDOR - NORTH WING	RESTORE/NEW TERR	TB-01	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	ACT-1
20060	ELECTRICAL	SC-01	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1

ROOM FINISH SCHEDULE - PHASE 2

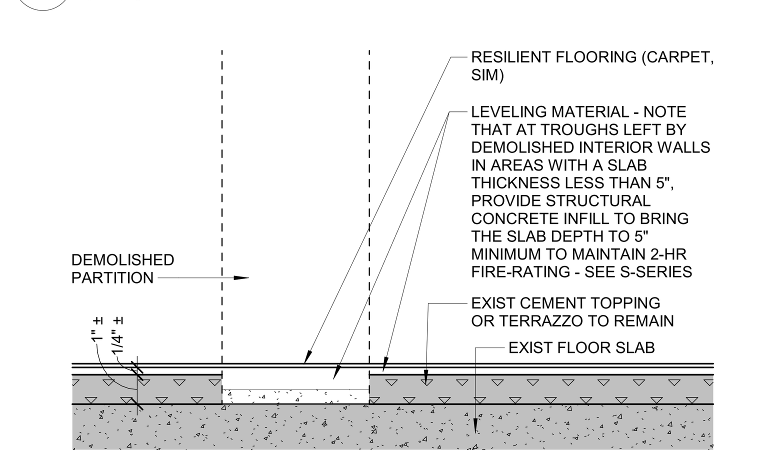
ROOM No.	ROOM NAME	FLOOR	BASE	WALL FINISH NORTH	WALL FINISH SOUTH	WALL FINISH WEST	WALL FINISH EAST	CEILING FINISH
THIRD FLOOR								
302EA	DARKROOM	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
302	MOLECULAR PLANT-MICROBE INTERACTIONS	RS-01 / RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
302A	MOLECULAR BIO	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
302B	CULTURE	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
302C	CHEMISTRY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
302D	EQUIPMENT CORRIDOR	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
302E	DIRTY / REGULATED FLEX	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
304	AUTOCLAVE	RS-05	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
304A	AUTOCLAVE SERVICE	RS-05	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
305	COLLAB.	TZ-01A	TERR	GL.	PT-01 GWB	N A	PT-S4 GWB	ACT-1/PT-S4.1 GWB
307	WRITE-UP SPACE	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
309	CYL. CLO.	RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT GWB
311	WRITE-UP SPACE	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
313	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
315	PRINT/ SUPPLY	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
319	SOIL/PLANT LAB	RS-01 / RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S4 GWB	ACT-1
319A	CYL. STOR.	RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT GWB
319B	FLEXIBLE	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
319C	MICROSCOPY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
319CA	MICROSCOPY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
319D	EQUIPMENT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
319E	SOIL / EQUIPMENT	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
319F	TISSUE CULTURE	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
319G	CHEMISTRY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
323	COLLAB.	TZ-01A	TERR	N A	GL.	PT-01 GWB	PT-S4 GWB	PT-S4.1 GWB
324	WRITE-UP SPACE	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S4 GWB	ACT-1
324A	MEETING ROOM	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
324B	WRITE-UP SPACE	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-F1 GWB	PT-01 GWB	ACT-1
325	T/D	SC-01	N A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	OPEN TO STRUCTURE
326	FLEX LAB SUPPORT	RS-03	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
327	OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
328	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
329	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
330	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
331	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
332	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
333	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
334	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
335	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
337	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
339	FACULTY OFFICE	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
340	LARGE MEETING ROOM	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-F1 GWB	ACT-1
30002	STAIR 2	EXIST	PT EXIST STL	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	N A
30003	STAIR 3	EXIST	PT EXIST STL	PT-01 EXIST	PT-F1 EXIST	GWP-36	PT-01 EXIST	N A
30020	GN TOILET ROOM	CT-01	CT	PT-02 MR GWB	WT-01/PT-02	PT-02 MR GWB	PT-02 MR GWB	PT-04 MR-GWB
30023	GN TOILET ROOM	CT-01	CT	PT-02 MR GWB	WT-01/PT-02	PT-02 MR GWB	PT-02 MR GWB	PT-04 MR-GWB
30040	CORRIDOR ANNEX	TZ-01A+B		PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	SALVAGE EXIST ACT
30041	CORRIDOR - NORTH WING	TZ-01A+B / RESTORE TERR	TB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	ACT-1
30042	CORRIDOR-EAST	RESTORE TERR	TB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	ACT-1
30060	ELECTRICAL	SC-01	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	OPEN TO STRUCTURE
FOURTH FLOOR								
40060A	AHU VESTIBULE							
402	BIODIVERSITY LAB	RS-01 / RS-02	RB-01A	PT-01 GWB	PT-01 GWB	PT-S5 GWB	PT-01 GWB	ACT-1
402A	MICROSCOPY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
402B	PCR / CLEANROOM	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
402C	CHEMISTRY	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
402D	CULTURE	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-S5 GWB	PT-01 GWB	ACT-1
402E	CYL. CLO.	RS-01	RB-01A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
403	BIO-DIVERSITY HUB	CPT-02	RB-01B	PT-S5 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
404	COLLAB	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
404A	WORKSPACE	CPT-02	RB-01B	PT-S5 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
416	COMPUTATIONAL LAB	CPT-02	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-S5 GWB	ACT-1
417	T/D	SC-01	N A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT EXIST STRUCTURE
418	ACAD. OFFICE 14	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
420	ACAD. OFFICE 13	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
426	ACAD. OFFICE 12	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
428	ACAD. OFFICE 11	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
430	ACAD. OFFICE 10	CPT-01	RB-05	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	ACT-1
431	COMPUTATIONAL LAB	CPT-01	RB-05	PT-01 GWB	PT-S5 GWB	PT-01 GWB	PT-01 GWB	ACT-1
431A	TEAM ROOM	CPT-01	RB-05	PT-01 GWB	PT-S5 GWB	PT-01 GWB	PT-01 GWB	ACT-1
431B	TEAM ROOM	CPT-01	RB-05	PT-01 GWB	PT-S5 GWB	PT-01 GWB	PT-01 GWB	ACT-1
435	MEETING ROOM	CPT-01	RB-01B/WD	PT-01 GWB	PT-S5 GWB	PT-01 GWB	PT-01 GWB	ACT-1
40002	STAIR 2	CLEAN EXIST	PT EXIST STL	PT-01 EXIST	PT EXIST	PT-01 EXIST	PT-01 EXIST	PT GWB
40003	STAIR 3	CLEAN EXIST	PT EXIST STL	PT-01 EXIST	PT-01 EXIST	PT-01 EXIST	PT EXIST	PT EXIST
40020	GN TOILET ROOM	CT-01	CT	PT-MR-GWB	WT-01/PT-02	PT-MR-GWB	PT-MR-GWB	ACT-1
40040	CORRIDOR- NORTH WING	RS-01 / RS-02	RB-01A	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	ACT-1
40040	CORRIDOR	RS-01 / RS-02	RB-01A	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT EXIST S AND EXPOS'D PIPE
40043	CORRIDOR-EAST	RT-01 / RT-02	RB-01A	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	PT-01 AR-GWB	ACT-1
40060	MECHANICAL	SC-01	N A	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	OPEN TO STRUCTURE
40061	SEC. CL	SC-01	RB-01B	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	OPEN TO STRUCTURE
PENTHOUSE								
50003	STAIR 3	RST-01	RB-02	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT-01 GWB	PT GWB
PH002	BDA CLOSET	SC-01	RB-02	PT-02 MR GWB	PT-02 MR GWB	PT-02 MR GWB	PT-02 MR GWB	PT-MR-GWB
PH001	EAST PENTHOUSE	SC-01	RB-02	PT-02 MR GWB	PT-02 MR GWB	PT-02 MR GWB	PT-02 MR GWB	PT-MR-GWB



3 FLR TRANS - EXIST TERR TO RESILIENT/CARPET
3" = 1'-0"



2 FLR TRANS - EPOXY TERR TO PORCELAIN
3" = 1'-0"



1 SECTION DETAIL - TYP FLOOR LEVELING
3" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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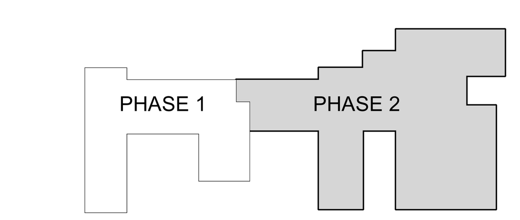
New York, NY 10004
T 212971-0936

Notes:

1. LEVEL TOLERANCE FOR UNDERLAYMENT APPLICATION ON EXISTING FLOORING: LEVEL UNDERLAYMENT APPLICATION TO MEET OR EXCEED THE FOLLOWING FLOOR FLATNESS (FF) AND FLOOR LEVELNESS (FL) LEVELS PER ACI 302.1R. FINAL SURFACE SHALL BE FREE OF TROWEL MARKS, UNIFORM IN TEXTURE AND APPEARANCE AND LEVELED TO AN OVERALL TOLERANCE OF FF 25 AND FL 20 AND MINIMUM LOCAL TOLERANCE OF FF 17 AND FL 13 FOR CARPET AND CERAMIC TILE FINISHES AND OVERALL TOLERANCE OF FF 35 AND FL 25 AND MINIMUM LOCAL TOLERANCE OF FF 25 AND FL 17 FOR EXPOSED SLABS AND OTHER FINISHES. UNLESS NOTED OTHERWISE, IN AREAS WHERE EXISTING CONCRETE SLAB ELEVATIONS VARY GREATER THAN 1-INCH, TROWEL-APPLY NON-SELF-LEVELING UNDERLAYMENT IN VARYING THICKNESS AS REQUIRED TO MEET FLOORING LEVELNESS CRITERIA WITHOUT LOCALLY EXCEEDING 1-INCH IN OVERALL THICKNESS OF ITS APPLICATION. GRIND SMOOTH SURFACE DEFECTS THAT WOULD TELEGRAPH THROUGH APPLIED FINISH FLOORING. OVER-TROWEL TO "BURN" EXPOSED SURFACES TO A DENSE, HARD, DARK FINISH.



Keyplan

Job Number 31909.00
Drawing By BF
Checked By xx
Filename
Date August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

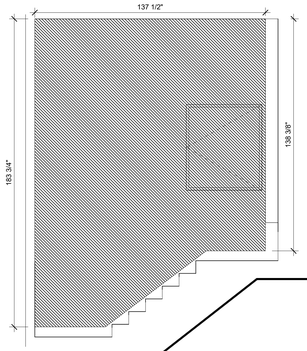
ROOM FINISH SCHEDULE, FLOORING TRANSITIONS, PATTERNS - PHASE 2

BID DOCUMENTS
Scale: As indicated

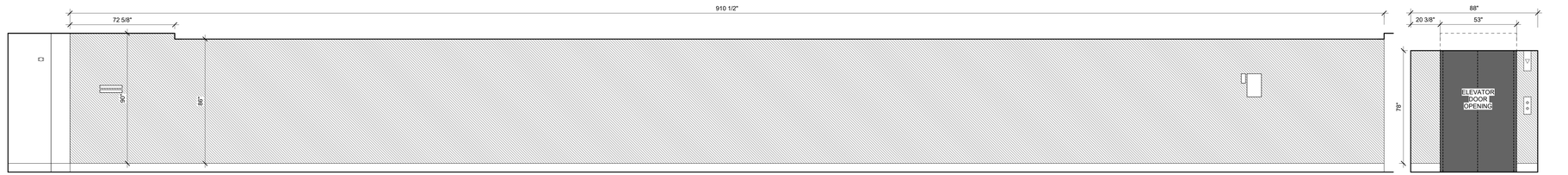
REGISTERED ARCHITECT JAMES VINCENT BLOUNT 022901-1 STATE OF NEW YORK

A9.05

2024 Ellenzweig ©



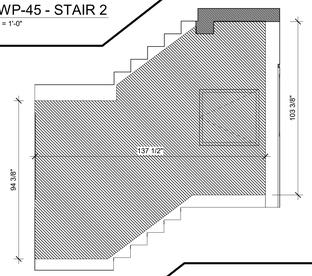
45 GWP-45 - STAIR 2
3/8" = 1'-0"



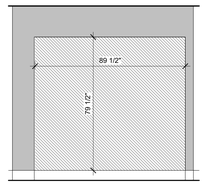
46 GWP-46 - NORTH WING CORRIDOR 40040
3/8" = 1'-0"

47 GWP-47 - EAST ELEV ENTRY
3/8" = 1'-0"

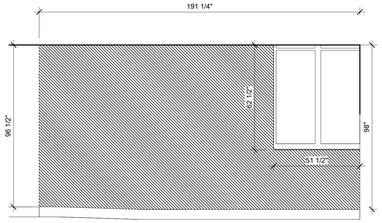
FOURTH FLOOR



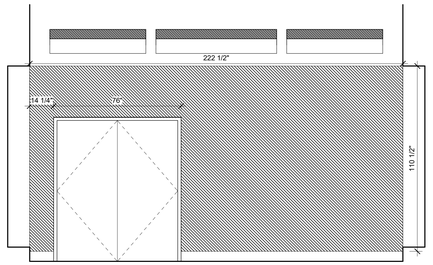
40 GWP-40 - CORRIDOR ALCOVE
3/8" = 1'-0"



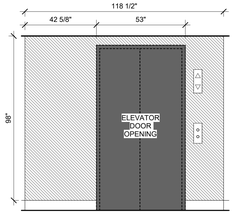
41 GWP-41 - CORRIDOR ALCOVE
3/8" = 1'-0"



42 GWP-42 - AT COLLAB AREA 305
3/8" = 1'-0"



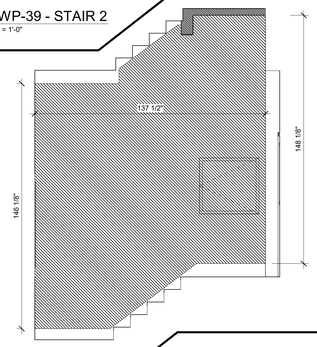
43 GWP-43 - COLLAB AREA AT EMERSON ENTRY
3/8" = 1'-0"



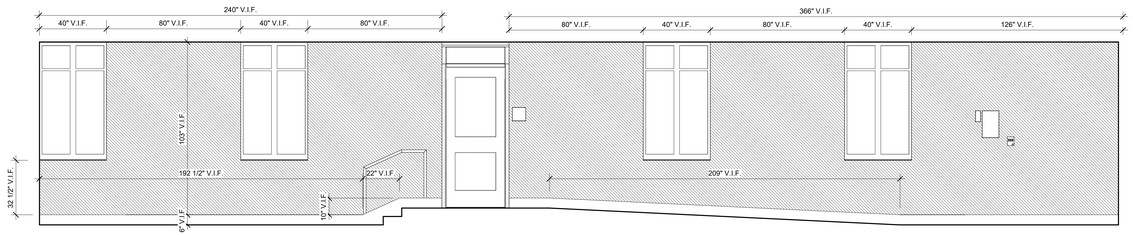
44 GWP-44 - EAST ELEVATOR ENTRY
3/8" = 1'-0"

THIRD FLOOR

39 GWP-39 - STAIR 2
3/8" = 1'-0"

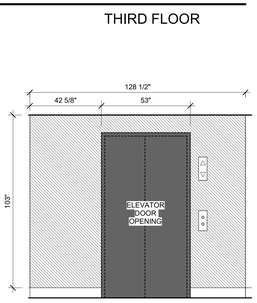


36 GWP-36 - CORRIDOR ALCOVE
3/8" = 1'-0"



37A GWP-37A - GARDEN TERRACE ACCESS
3/8" = 1'-0"

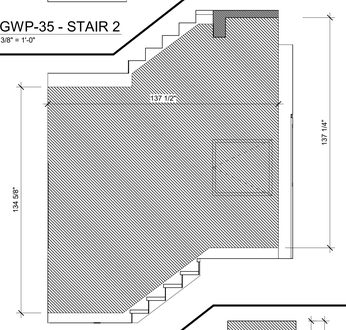
37B GWP-37B - GARDEN TERRACE ACCESS
3/8" = 1'-0"



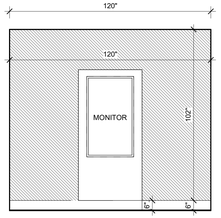
38 GWP-38 - EAST ELEVATOR ENTRY
3/8" = 1'-0"

SECOND FLOOR

35 GWP-35 - STAIR 2
3/8" = 1'-0"

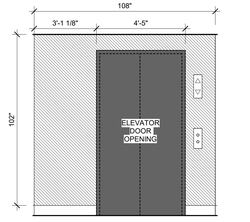


32 GWP-32 - CORRIDOR ALCOVE AT ADMIN SUITE
3/8" = 1'-0"



33 GWP-33 - VESTIBULE 10042 AT BREEZEWAY
3/8" = 1'-0"

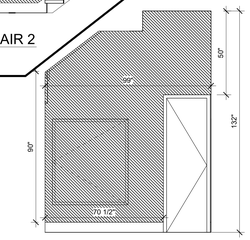
GRAPHIC WALLPAPER SCHEDULE - PHASE 2								
PHASE	FLOOR	Type	#	RM NUM	ROOM NAME	LOCATION	GRAPHIC DESCRIPTION	FILE NAME
PHASE 2	00 GROUND FLOOR	GWP	27	G0003	STAIR 2	WEST WALL	---	
PHASE 2	00 GROUND FLOOR	GWP	28	G0052	VESTIBULE	WEST WALL	---	
PHASE 2	00 GROUND FLOOR	GWP	29	G0043	CORRIDOR-EAST	TUNNEL ELEVATOR ALCOVE	---	
PHASE 2	00 GROUND FLOOR	GWP	30	G0042	CORRIDOR-NORTH WING	ELEVATOR ALCOVE	---	
00 GROUND FLOOR: 7								
PHASE 2	01 FIRST FLOOR	GWP	31	10003	STAIR 2	WEST WALL	---	
PHASE 2	01 FIRST FLOOR	GWP	32	10045	CORRIDOR-EAST	BENCH ALCOVE	---	
PHASE 2	01 FIRST FLOOR	GWP	33	G0042	VESTIBULE	WEST WALL	---	
PHASE 2	01 FIRST FLOOR	GWP	34	10041	CORRIDOR-NORTH WING	ELEVATOR ALCOVE	---	
01 FIRST FLOOR: 4								
PHASE 2	02 SECOND FLOOR	GWP	35	20003	STAIR 2	WEST WALL	---	
PHASE 2	02 SECOND FLOOR	GWP	36	20040	CORRIDOR-EAST	BENCH ALCOVE	---	
PHASE 2	02 SECOND FLOOR	GWP	37a	20041	CORRIDOR-NORTH WING	NORTH WALL	---	
PHASE 2	02 SECOND FLOOR	GWP	37b	20041	CORRIDOR-NORTH WING	NORTH WALL	---	
PHASE 2	02 SECOND FLOOR	GWP	38	20041	CORRIDOR-NORTH WING	ELEVATOR ALCOVE	---	
02 SECOND FLOOR: 5								
PHASE 2	03 THIRD FLOOR	GWP	39	30003	STAIR 2	WEST WALL	---	
PHASE 2	03 THIRD FLOOR	GWP	40	30042	CORRIDOR-EAST	BENCH ALCOVE	---	
PHASE 2	03 THIRD FLOOR	GWP	41	30042	CORRIDOR-EAST	BENCH ALCOVE	---	
PHASE 2	03 THIRD FLOOR	GWP	42	305	COLLAB	SOUTH WALL	---	
PHASE 2	03 THIRD FLOOR	GWP	43	30040	EMERSON PARTY WALL	EAST WALL	---	
PHASE 2	03 THIRD FLOOR	GWP	44	30041	CORRIDOR-NORTH WING	ELEVATOR ALCOVE	---	
03 THIRD FLOOR: 6								
PHASE 2	04 FOURTH FLOOR	GWP	45	40003	STAIR 2	WEST WALL	---	
PHASE 2	04 FOURTH FLOOR	GWP	46	40040	CORRIDOR-NORTH WING	LONG CORRIDOR WALL - NORTH	---	
PHASE 2	04 FOURTH FLOOR	GWP	47	40040	CORRIDOR-NORTH WING	ELEVATOR ALCOVE	---	
04 FOURTH FLOOR: 3								



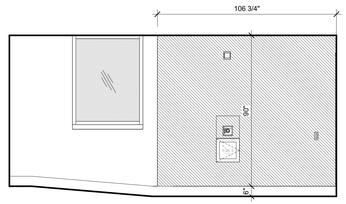
34 GWP-34 - EAST ELEVATOR ENTRY
3/8" = 1'-0"

FIRST FLOOR

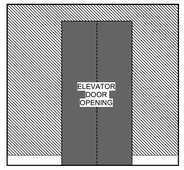
31 GWP-31 - STAIR 2
3/8" = 1'-0"



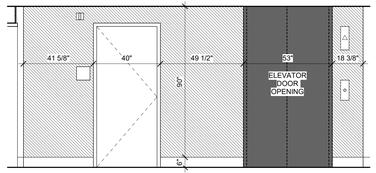
27 GWP-27 - STAIR 2 G0003
3/8" = 1'-0"



28 GWP-28 - VESTIBULE G0052
3/8" = 1'-0"



29 GWP-29 - WEILL TUNNEL ELEVATOR ENTRY
3/8" = 1'-0"



30 GWP-30 - EAST ELEVATOR ENTRY
3/8" = 1'-0"

GROUND FLOOR

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

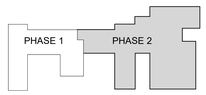
Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

GENERAL NOTE: PROVIDE LEVEL 5 GYPSUM WALLBOARD FINISH AT GRAPHIC WALLPAPER LOCATIONS



Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

A	ADDENDUM 6	11/19/2026

GRAPHIC WALLPAPER LEGEND

REGISTERED ARCHITECT JAMES ROBERT BOSWELL 022901-1 STATE OF NEW YORK

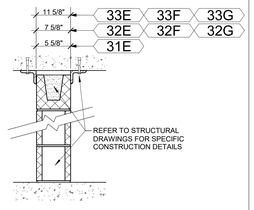
BID DOCUMENTS
Scale: 3/8" = 1'-0"

A9.06

2024 Ellenzweig ©

11/22/2026 2:31:47 PM

Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt



2 HR RATED ASSEMBLY
UL DESIGN NO. U905 OR U906

31E 6" NOMINAL CMU

32E 8" NOMINAL CMU

33E 10" NOMINAL CMU

3 HR RATED ASSEMBLY
UL DESIGN NO. U904

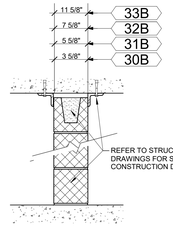
32F 8" NOMINAL CMU

33F 10" NOMINAL CMU

4 HR RATED ASSEMBLY
UL DESIGN NO. U901 OR U904

32G 8" NOMINAL CMU

33G 10" NOMINAL CMU



30B 4" NOMINAL SOLID CMU

31B 6" NOMINAL SOLID CMU

32B 8" NOMINAL SOLID CMU

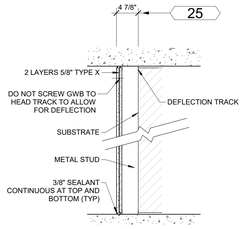
33B 10" NOMINAL SOLID CMU

30A 4" NOMINAL HOLLOW CMU

31A 6" NOMINAL HOLLOW CMU

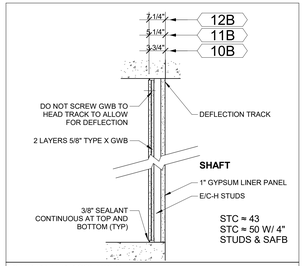
32A 8" NOMINAL HOLLOW CMU

33A 10" NOMINAL HOLLOW CMU



1 HR RATED ASSEMBLY
UL DESIGN NO. V497

27 3 5/8" STUDS W/ 2 LAYER TYPE X

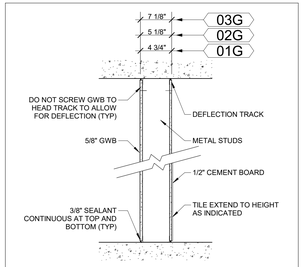


2 HR RATED ASSEMBLY
UL DESIGN NO. U419

10B 2 1/2" STUDS W/ 2 LAYER TYPE X GWB 1 SIDE AND 1 LAYER 1" LINER PANEL 1 SIDE

11B 4" STUDS W/ 2 LAYER TYPE X GWB 1 SIDE AND 1 LAYER 1" LINER PANEL 1 SIDE

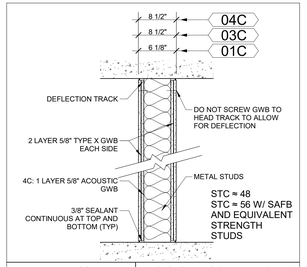
12B 6" STUDS W/ 2 LAYER TYPE X GWB 1 SIDE AND 1 LAYER 1" LINER PANEL 1 SIDE



01G 3 5/8" STUDS W/ 1 LAYER GWB 1 SIDE AND 1 LAYER CEMENT BOARD 1 SIDE

02G 4" STUDS W/ 1 LAYER GWB 1 SIDE AND 1 LAYER CEMENT BOARD 1 SIDE

03G 6" STUDS W/ 1 LAYER GWB 1 SIDE AND 1 LAYER CEMENT BOARD 1 SIDE



2 HR RATED ASSEMBLY
UL DESIGN NO. U419

04C: STC-62 NGC 2019062 OR EQ.
UL DESIGN NO. U411,V438

01C 3 5/8" STUDS W/ 2 LAYER TYPE X GWB ON EACH SIDE

03C 6" STUDS W/ 2 LAYER TYPE X GWB ON EACH SIDE

04C 6" STUDS W/ 2 LAYER TYPE X GWB ON ONE SIDE 1 LAYER ACOUSTIC, 1 LAYER TYPE X ON OPP. SIDE

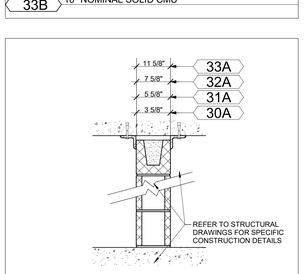
SPECIALITY FINISH CMU

30C 4" NOMINAL CMU

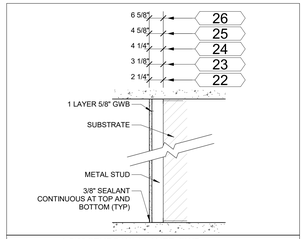
31C 6" NOMINAL CMU

32C 8" NOMINAL CMU

33C 10" NOMINAL CMU



29H.3 3 5/8" STUDS W/1 LAYER CEMENT BOARD BELOW 6'-3" + MRGWB ABOVE 6'-3"



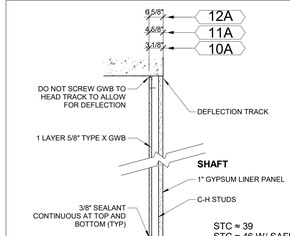
22 1 5/8" STUDS W/ 1 LAYER GWB

23 2 1/2" STUDS W/ 1 LAYER GWB

24 3 5/8" STUDS W/ 1 LAYER GWB

25 4" STUDS W/ 1 LAYER GWB

26 6" STUDS W/ 1 LAYER GWB

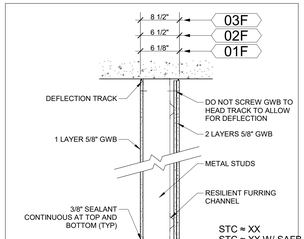


1 HR RATED ASSEMBLY
UL DESIGN NO. U419

10A 2 1/2" STUDS W/ 1 LAYER TYPE X GWB 1 SIDE AND 1 LAYER 1" LINER PANEL 1 SIDE

11A 4" STUDS W/ 1 LAYER TYPE X GWB 1 SIDE AND 1 LAYER 1" LINER PANEL 1 SIDE

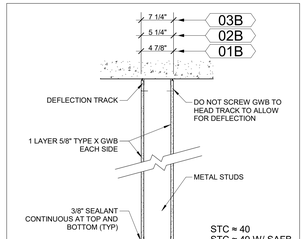
12A 6" STUDS W/ 1 LAYER TYPE X GWB 1 SIDE AND 1 LAYER 1" LINER PANEL 1 SIDE



01F 3 5/8" STUDS W/ 1 LAYER GWB ON 1 SIDE AND 2 LAYERS GWB ON RESILIENT CHANNEL 1 SIDE

02F 4" STUDS W/ 1 LAYER GWB ON 1 SIDE AND 2 LAYERS GWB ON RESILIENT CHANNEL 1 SIDE

03F 6" STUDS W/ 1 LAYER GWB ON 1 SIDE AND 2 LAYERS GWB ON RESILIENT CHANNEL 1 SIDE

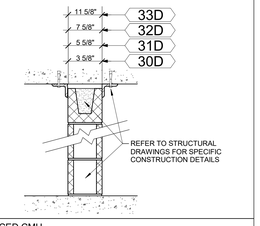


1 HR RATED ASSEMBLY
UL DESIGN NO. U419

01B 3 5/8" STUDS W/ 1 LAYER TYPE X GWB ON EACH SIDE

02B 4" STUDS W/ 1 LAYER TYPE X GWB ON EACH SIDE

03B 6" STUDS W/ 1 LAYER TYPE X GWB ON EACH SIDE



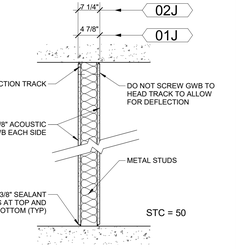
PREFACED CMU

30D 4" NOMINAL SOLID CMU

31D 6" NOMINAL SOLID CMU

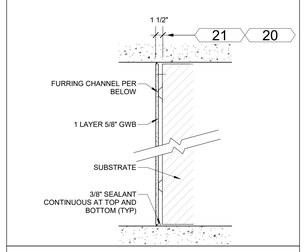
32D 8" NOMINAL SOLID CMU

33D 10" NOMINAL SOLID CMU



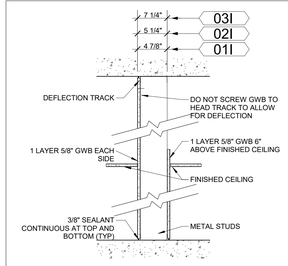
01J 3 5/8" STUDS W/ 1 LAYER TYPE GWB ON EACH SIDE

02J 6" STUDS W/ 1 LAYER TYPE GWB ON EACH SIDE



20 METAL FURRING CHANNEL W/ 1 LAYER GWB

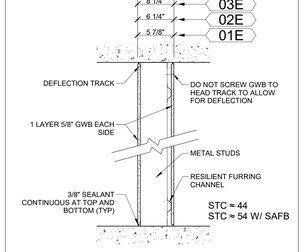
21 RESILIENT FURRING CHANNEL W/ 1 LAYER GWB



01I 3 5/8" STUDS W/ 1 LAYER GWB 1 SIDE 1 LAYER GWB 1 SIDE TO EXTEND 6" ABOVE CEILING

02I 4" STUDS W/ 1 LAYER GWB 1 SIDE 1 LAYER GWB 1 SIDE TO EXTEND 6" ABOVE CEILING

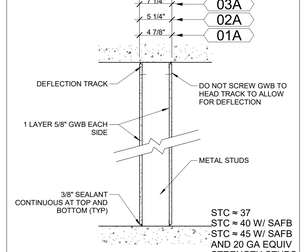
03I 6" STUDS W/ 1 LAYER GWB 1 SIDE 1 LAYER GWB 1 SIDE TO EXTEND 6" ABOVE CEILING



01E 3 5/8" STUDS W/ 1 LAYER GWB ON 1 SIDE AND 1 LAYER GWB ON RESILIENT CHANNEL 1 SIDE

02E 4" STUDS W/ 1 LAYER GWB ON 1 SIDE AND 1 LAYER GWB ON RESILIENT CHANNEL 1 SIDE

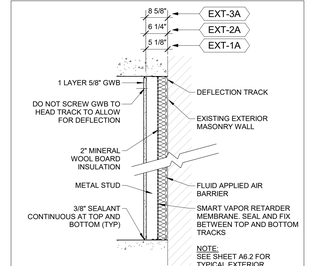
03E 6" STUDS W/ 1 LAYER GWB ON 1 SIDE AND 1 LAYER GWB ON RESILIENT CHANNEL 1 SIDE



01A 3 5/8" STUDS W/ 1 LAYER TYPE GWB ON EACH SIDE

02A 4" STUDS W/ 1 LAYER TYPE GWB ON EACH SIDE

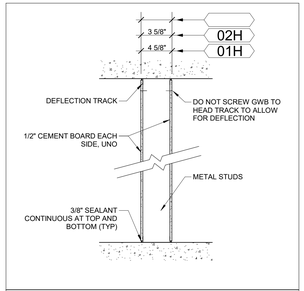
03A 6" STUDS W/ 1 LAYER TYPE GWB ON EACH SIDE



EXT-1A 2 1/2" STUDS W/ 1 LAYER GWB, 2" MINERAL WOOL BOARD AND FLUID APPLIED AIR BARRIER

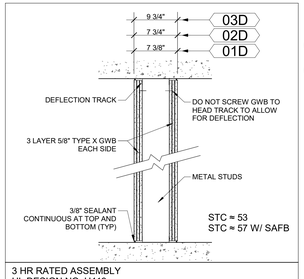
EXT-2A 3 5/8" STUDS W/ 1 LAYER GWB, 2" MINERAL WOOL BOARD AND FLUID APPLIED AIR BARRIER

EXT-3A 6" STUDS W/ 1 LAYER GWB, 2" MINERAL WOOL BOARD AND FLUID APPLIED AIR BARRIER



01H 3 5/8" STUDS W/ 1 LAYER OF CEMENT BOARD ON EACH SIDE

02H.3 2 1/2" STUDS W/ 1 LAYER OF CEMENT BOARD ON ONE SIDE, 1 LAYER OF 5/8" M-R BOARD OPP. SIDE



3 HR RATED ASSEMBLY
UL DESIGN NO. U419

01D 3 5/8" STUDS W/ 3 LAYER TYPE X GWB ON EACH SIDE

02D 4" STUDS W/ 3 LAYER TYPE X GWB ON EACH SIDE

03D 6" STUDS W/ 3 LAYER TYPE X GWB ON EACH SIDE

1. ALL METAL STUDS AND GWB TO RUN TO UNDERSIDE OF DECK ABOVE.
2. ALL BLOCKING IN FIRE-RATED PARTITIONS IS TO BE FIRE-RESISTANT.
3. ALL ELEMENTS IN FIRE-RATED PARTITIONS SUCH AS PUTTY PACKS ARE TO BE ASTM E84 CLASS A OR EQUIVALENT.

D

PARTITION NOTES

WALL TYPE SUFFIX DESIGNATIONS: .0 STANDARD

.1 ABUSE RESISTANT GWB ON ONE SIDE

.2 ABUSE RESISTANT GWB ON EACH SIDE

.3 MOISTURE / MOLD RESISTANT GWB ON ONE SIDE

.4 MOISTURE / MOLD RESISTANT ON EACH SIDE

.5 VENEER PLASTER OVER GYPSUM BASE ON ONE SIDE

.6 VENEER PLASTER OVER GYPSUM BASE ON EACH SIDE

'S' PROVIDE 3" SOUND ATTENUATION FIRE BLANKET (SAFB) INSULATION (INSULATION THICKNESS TYP U.N.O. IN REFERENCED ASSEMBLY), 20 GA. EQUIVALENT STRENGTH STUDS, ACOUSTIC SEALANT.

EXAMPLE

03C.5S

"03C" INDICATES 2-HOUR RATED PARTITION WITH 6" STUDS AND 2 LAYERS OF TYPE X GWB ON EACH SIDE. ".5" INDICATES VENEER PLASTER OVER GYPSUM BASE ON ONE SIDE, "S" INDICATES SOUND ATTENUATION FIRE BLANKET INSULATION WITHIN STUD CAVITY, USE OF 20GA. EQUIVALENT STRENGTH STUDS AND ACOUSTIC SEALANT.

WALL TYPE SUFFIX DESIGNATIONS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

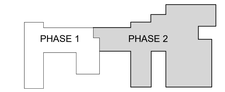
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

PARTITION TYPES - PHASE 2

BID DOCUMENTS
Scale: 1" = 1'-0"

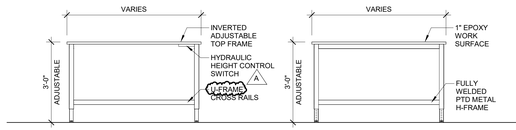
REGISTERED ARCHITECT DAVID VINCENT ROBERTS 022901 STATE OF NEW YORK

A9.12

2024 Ellenzweig ©

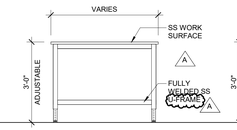
11/20/2026 3:50:14 PM

Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt



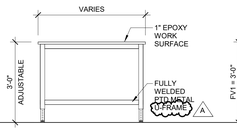
T4 ELECTRIC ADJ. TABLE
30" DEPTH. UNDER FUME HOOD.

T3 TABLE - H-FRAME
24" DEPTH



T2 TABLE - SS
30" DEPTH

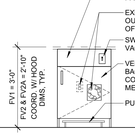
T2A TABLE - SS
24" DEPTH, BUTCHER BLOCK WORK SURFACE



T1 TABLE - U-FRAME
30" DEPTH

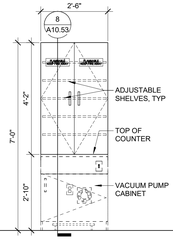
T1A TABLE - U-FRAME
36" DEPTH

T1B TABLE - U-FRAME
24" DEPTH



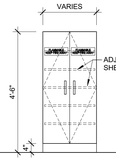
FV1 VACUUM PUMP
METAL WITH METAL FRONTS, SOUND PROOF

FV1A VACUUM PUMP
METAL WITH METAL FRONTS, SOUND PROOF -ADA



FS4 FLAM. STOR. OVER VAC.
FLAM STOR OVER VACUUM PUMP CABINET: 2 DOORS, LOCKING, SELF-CLOSING

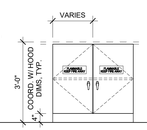
FS4A FLAM. STOR. OVER VAC.
FLAM STOR OVER VACUUM PUMP CABINET: 2 DOORS, LOCKING, SELF-CLOSING - ADA



FS3 TALL FLAM. STOR.
2 DOORS, LOCKING, SELF-CLOSING, 1'-10" D

FS3A TALL FLAM. STOR.
2 DOORS, LOCKING, SELF-CLOSING, 2'-6" D

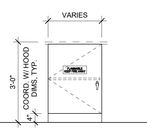
FS3B TALL FLAM. STOR.
DUAL VENTS, 2 DOORS, LOCKING, SELF-CLOSING, 2'-10" D



FS2 FLAM. STOR.
2 DOORS, LOCKING, SELF-CLOSING

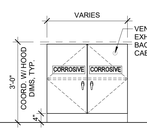
FS2A FLAM. STOR.
2 DOORS, LOCKING, UNDER COUNTER SELF-CLOSING - ADA

FS2B FLAM. STOR.
2 DOORS, VENTED, LOCKING, UNDER COUNTER
1'-10" D, VIF



FS1 FLAM. STOR.
1 DOOR, LOCKING, SELF-CLOSING, 1'-10" D, VIF

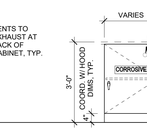
FS1A FLAM. STOR.
1 DOOR, LOCKING, SELF-CLOSING - ADA



FA2 CORROSIVE STOR.
2 DOORS, VENTED, LOCKING, AT FUME HOOD

FA2A CORROSIVE STOR.
2 DOORS, VENTED, LOCKING, UNDER COUNTER - ADA

FA2B CORROSIVE STOR.
2 DOORS, VENTED, LOCKING, UNDER COUNTER
1'-10" D, VIF



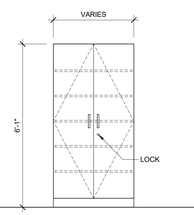
FA1 CORROSIVE STOR.
1 DOOR, VENTED, LOCKING
1'-10" D, VIF

FA1A CORROSIVE STOR.
1 DOOR, VENTED, LOCKING - ADA

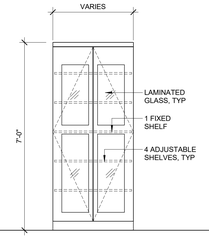
FA1B CORROSIVE STOR.
1 DOOR, VENTED, LOCKING
1'-5" D, VIF

T6 TABLE - U-FRAME - CASTERS
30" DEPTH

T5 TABLE - DRY TEACHING
24" DEPTH



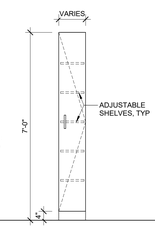
TC3 TALL STOR
24" DEEP, STAINLESS STEEL CONSTRUCTION, WITH LOCK



TC2 TALL STOR
15" DEEP

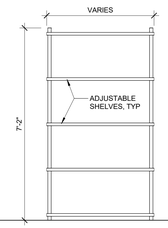
TC2A TALL STOR
24" DEEP

TC2B TALL STOR
15" DEEP, MOBILE

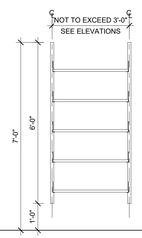


TC1 TALL STOR
32-5/8" DEEP

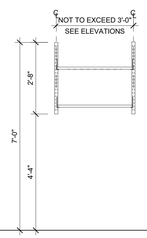
TC1A TALL STOR
29" DEEP



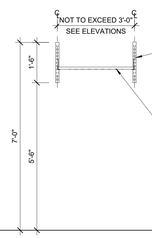
SH5 FOUR-POST SHELVING
METRO SHELVING, 24" DEEP, 5 ADJUSTABLE SHELVES



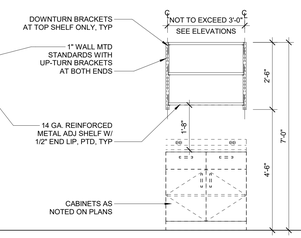
SH4 WALL MTD SHELVING
5 ADJUSTABLE SHELVES, 18" DEEP



SH3 WALL MTD SHELVING
2 ADJUSTABLE SHELVES, 12" DEEP

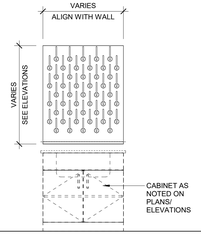


SH2 WALL MTD SHELVING
1 ADJUSTABLE SHELF, 12" DEEP

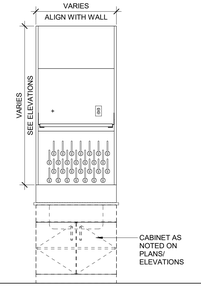


SH1 WALL MTD SHELVING
3 ADJUSTABLE SHELVES SHELF DEPTH VARIES (18", 14", 12")

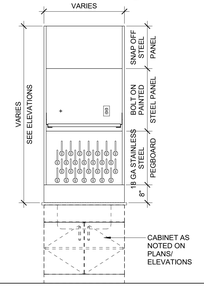
ADJUSTABLE SHELVING - REFER TO ENLARGED DETAIL FOR INFORMATION AND REFER TO PLANS AND ELEVATIONS FOR LOCATION, QUANTITY, AND TYPE



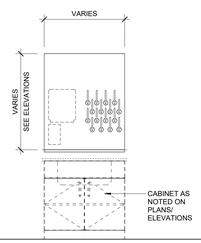
PB5 PEG BOARD
WALL MOUNTED



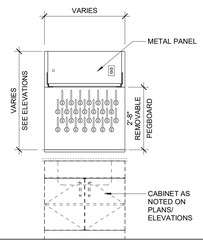
PB4 PEG BOARD
WALL MOUNTED



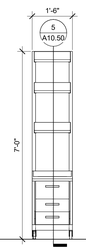
PB3 PEG BOARD
PANEL MOUNTED



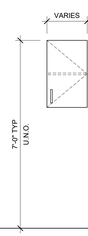
PB2 PEG BOARD
WALL MOUNTED



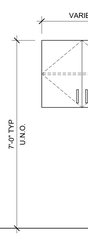
PB1 PEG BOARD
WALL MOUNTED



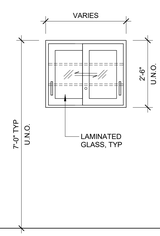
MC1 MOBILE CART
TISSUE CULTURE



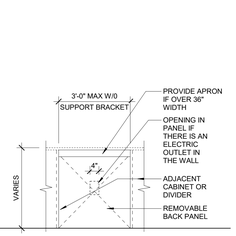
CW3 WALL CABINET
CW3A WALL CABINET
36" TALL



CW2 WALL CABINET
CW2A WALL CABINET
36" TALL

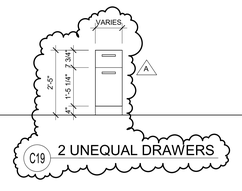


CW1 WALL CABINET
SLIDING DOORS

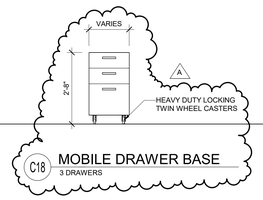


KS KNEE SPACE

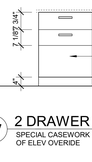
KS1 KNEE SPACE
2" APRON AT PENINSULA BENCHES



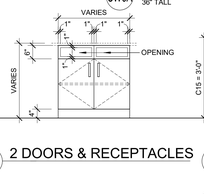
C19 2 UNEQUAL DRAWERS



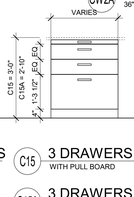
C18 MOBILE DRAWER BASE
3 DRAWERS



C17 2 DRAWER W/ DUMMY PANEL
SPECIAL CASEWORK ON TOP OF ELEV OVERIDE

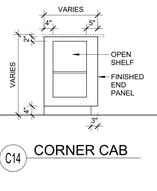


C16 2 DOORS & RECEPTACLES

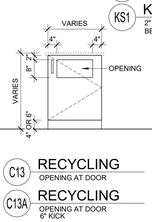


C15 3 DRAWERS
WITH PULL BOARD

C15A 3 DRAWERS
WITH PULL BOARD -ADA

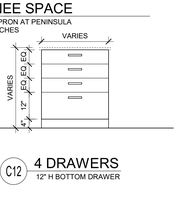


C14 CORNER CAB

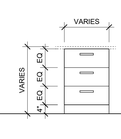


C13 RECYCLING
OPENING AT DOOR

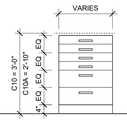
C13A RECYCLING
OPENING AT DOOR
6" KICK



C12 4 DRAWERS
12" H BOTTOM DRAWER

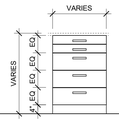


C11 3 DRAWERS

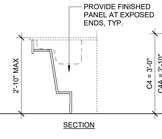


C10 6 DRAWERS

C10A 6 DRAWERS
-ADA



C9 5 DRAWERS

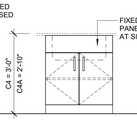


SECTION

C8 SINK BASE
ACCESSIBLE, MTL.

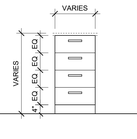
C8A SINK BASE
ACCESSIBLE, SS.

C8B SINK BASE
ACCESSIBLE, WOOD



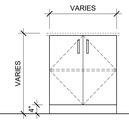
C7 SINK BASE

C7A SINK BASE
-ADA



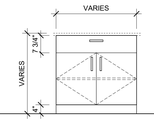
C6 4 DRAWERS

C6A 4 DRAWERS
-ADA



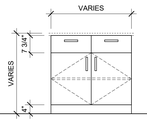
C5 2 DOORS

C5A 2 DOORS
-ADA

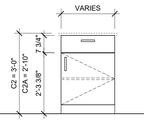


C4 2 DOORS & 1 DWR

C4A 2 DOORS & 1 DWR
6" KICK

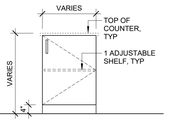


C3 2 DOORS & 2 DWRS



C2 1 DOOR & DWR

C2A 1 DOOR & DWR
-ADA



C1 1 DOOR

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

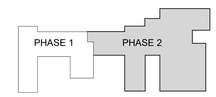
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	EC
Checked By	SMe
Filename	
Date	August 31, 2026

Revisions

A	ADDENDUM 6	11/19/2026

CASEWORK TYPES - PHASE 2

BID DOCUMENTS
Scale: 1/2" = 1'-0"

REGISTERED ARCHITECT JAMES VINCENT BIGGS 022901-1 STATE OF NEW YORK

A10.00

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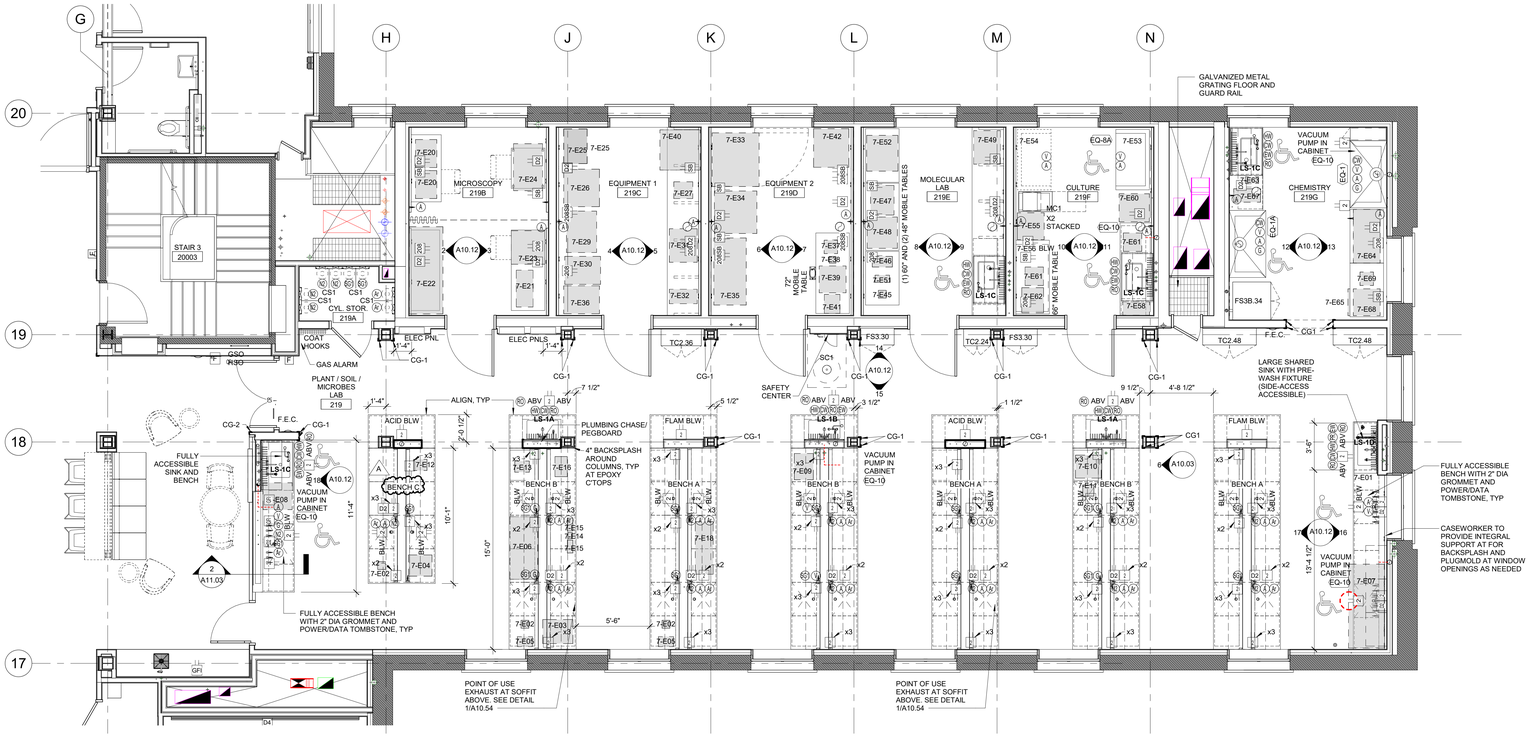
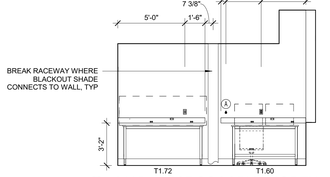
11/20/2026 8:50:19 PM

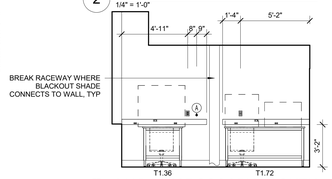
Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt



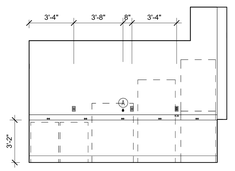
1 ENLARGED LAB PLAN - LEVEL 2 EAST / GROUP 7 - PLANT/SOIL/MICROBE RESEARCH LAB
1/4" = 1'-0"



2 219B - MICROSCOPY - NORTH
1/4" = 1'-0"



3 219B - MICROSCOPY - SOUTH
1/4" = 1'-0"



4 219C - EQUIPMENT 1 - NORTH
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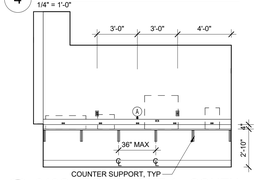

5 219C - EQUIPMENT 1 - SOUTH
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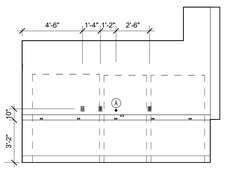
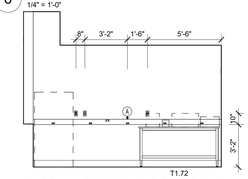


6 219D - EQUIPMENT 2 - NORTH
1/4" = 1'-0"



7 219D - EQUIPMENT 2 - SOUTH
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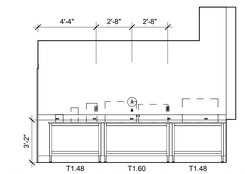
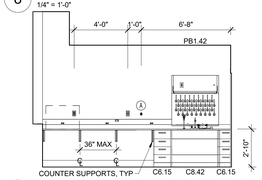


8 219E - MOLECULAR LAB - NORTH
1/4" = 1'-0"



9 219E - MOLECULAR LAB - SOUTH
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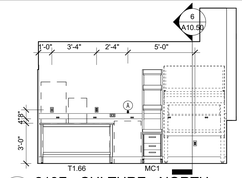

10 219F - CULTURE - NORTH
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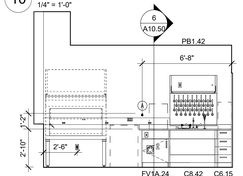

11 219F - CULTURE - SOUTH
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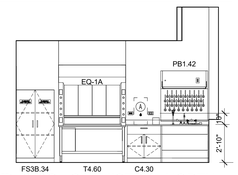

12 219G - CHEMISTRY - NORTH
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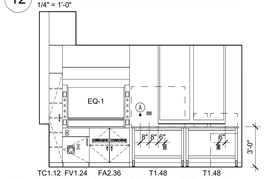
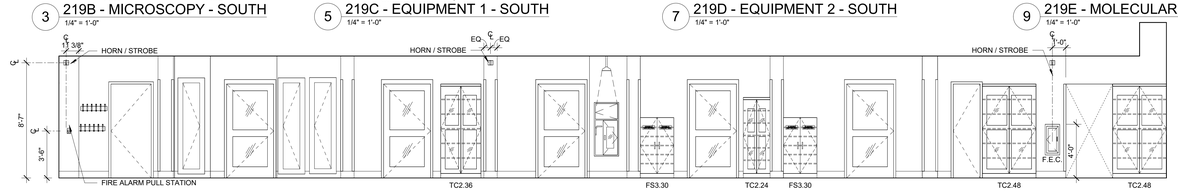
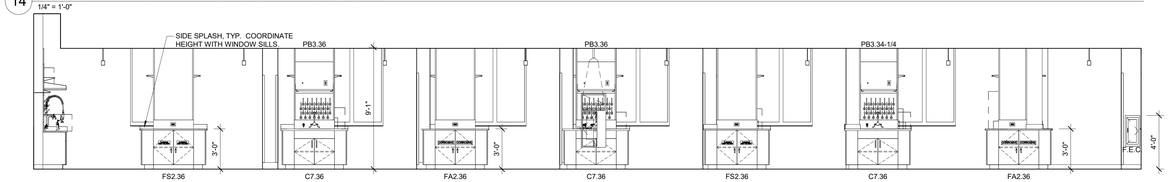


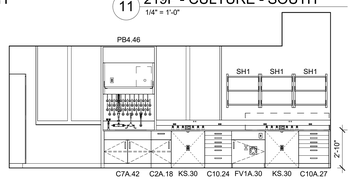
13 219G - CHEMISTRY - SOUTH
1/4" = 1'-0"



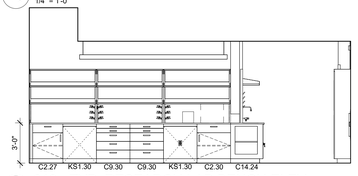
14 219 - PLANT/SOIL/MICROBE RESEARCH LAB - EAST
1/4" = 1'-0"



15 219 - PLANT/SOIL/MICROBE RESEARCH LAB - WEST
1/4" = 1'-0"



16 219 - RESEARCH LAB BENCH AT END
1/4" = 1'-0"



17 219 - TYP. RESEARCH LAB BENCH ELEV
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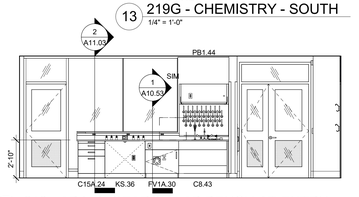

18 219 - ADA RESEARCH LAB BENCH AT ENTRY
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

CornellCALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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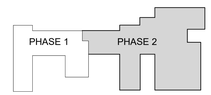
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	EC
Checked By	SMe
Filename	
Date	August 31, 2026

Revisions

A	ADDENDUM 6	11/19/2026

LEVEL 2 EAST LAB - ENLARGED PLAN & ELEVATIONS - PHASE 2

BID DOCUMENTS
Scale: 1/4" = 1'-0"

A10.12

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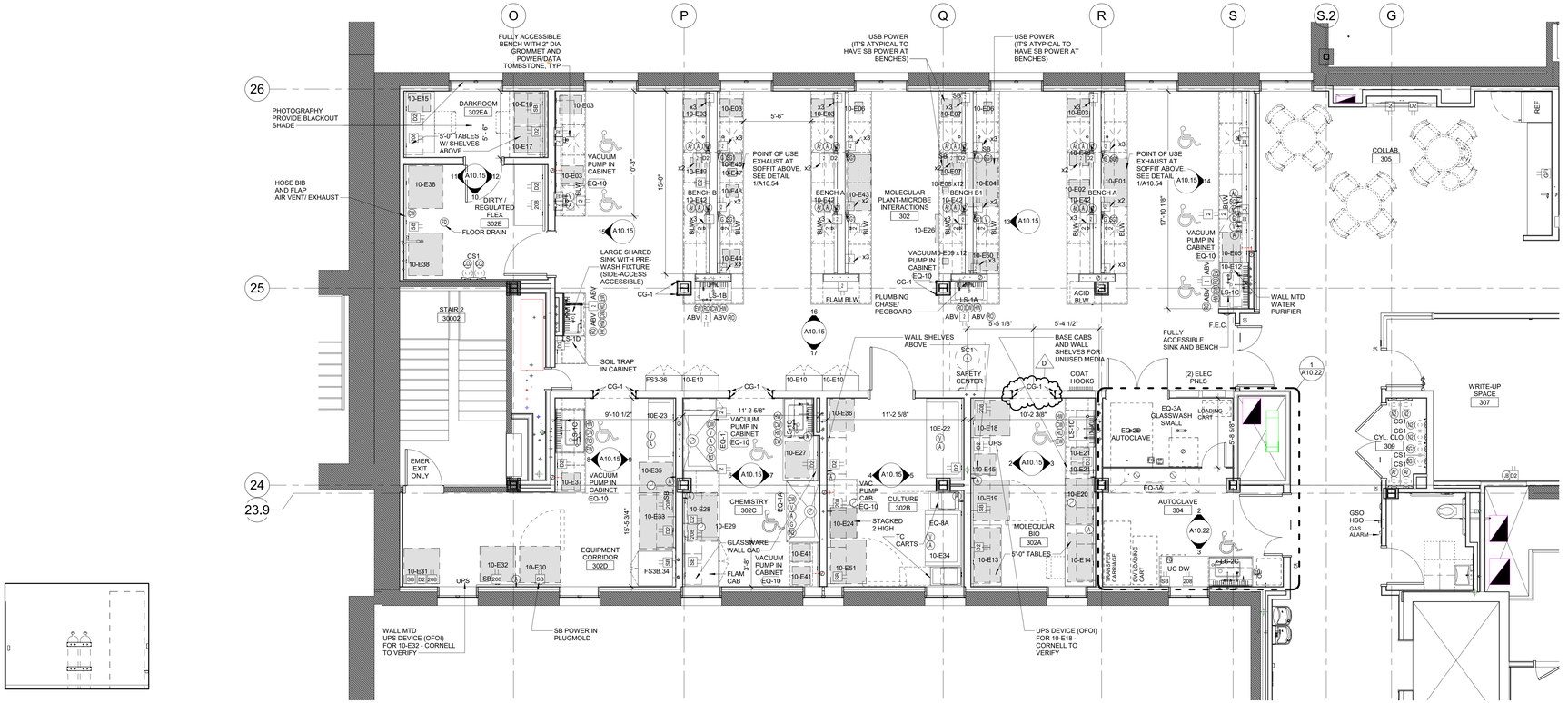
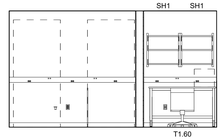
11/20/2026 3:50:48 PM

Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt



10 302EA - DIRTY / REGULATED FLEX - WEST
1/4" = 1'-0"

1 ENLARGED LAB PLAN - LEVEL 3 NORTH / GROUP 10 - MOLECULAR PLANT-MICROBE INTERACTIONS RESEARCH LAB
1/4" = 1'-0"



11 302EA - DIRTY / REGULATED FLEX - NORTH
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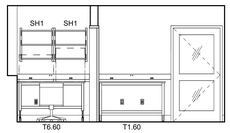
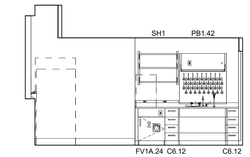
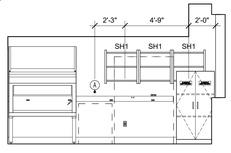


12 302EA - DIRTY / REGULATED FLEX - SOUTH
1/4" = 1'-0"



8 302D - EQUIPMENT CORRIDOR - NORTH
1/4" = 1'-0"



9 302D - EQUIPMENT CORRIDOR - SOUTH
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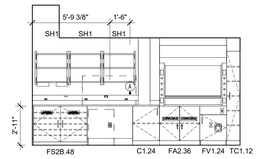
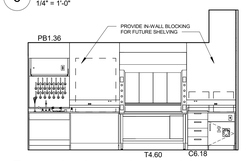
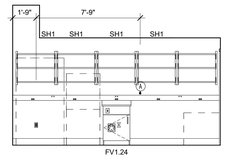


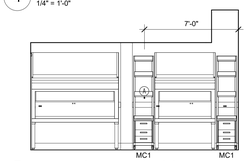
6 302C - CHEMISTRY - NORTH
1/4" = 1'-0"



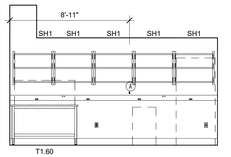
7 302C - CHEMISTRY - SOUTH
1/4" = 1'-0"



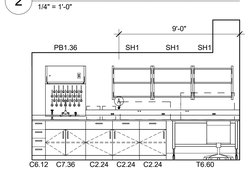
4 302B - CULTURE - NORTH
1/4" = 1'-0"



5 302B - CULTURE - SOUTH
1/4" = 1'-0"



2 302A - MOLECULAR BIO - NORTH
1/4" = 1'-0"



3 302A - MOLECULAR BIO - SOUTH
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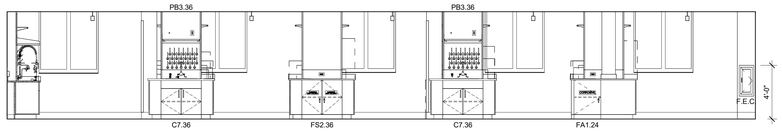
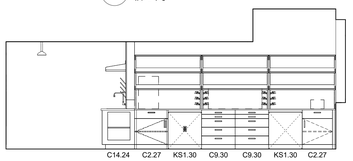
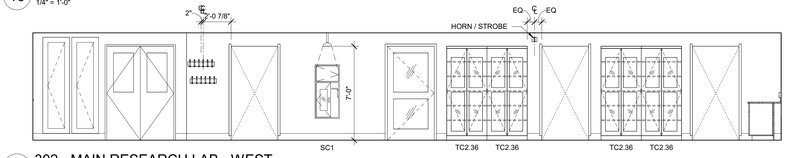


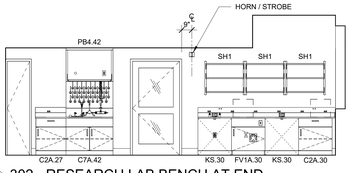
16 302 - MAIN RESEARCH LAB - EAST
1/4" = 1'-0"



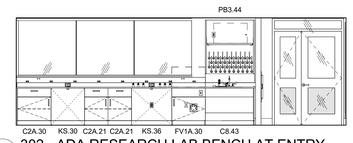
13 302 - TYP. RESEARCH LAB BENCH ELEVATION
1/4" = 1'-0"



17 302 - MAIN RESEARCH LAB - WEST
1/4" = 1'-0"



15 302 - RESEARCH LAB BENCH AT END
1/4" = 1'-0"



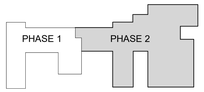
14 302 - ADA RESEARCH LAB BENCH AT ENTRY
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

CornellCALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	EC
Checked By	SMe
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

LEVEL 3 NORTH LAB - ENLARGED PLAN & ELEVATIONS - PHASE 2

BID DOCUMENTS
Scale: 1/4" = 1'-0"

REGISTERED ARCHITECT VINCENT R. ELLENZWEIG 032901-1 STATE OF NEW YORK

A10.15

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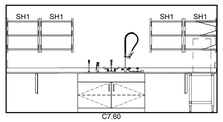
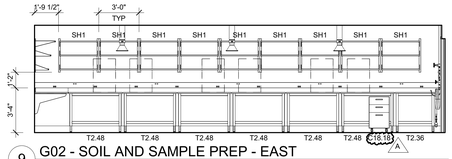
Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt



8 G02 - SOIL AND SAMPLE PREP - NORTH
1/4" = 1'-0"



9 G02 - SOIL AND SAMPLE PREP - EAST
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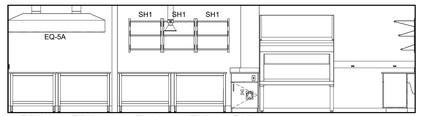
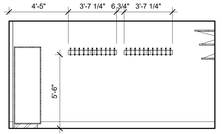


10 G02 - SOIL AND SAMPLE PREP - WEST
1/4" = 1'-0"



11 G04 - FIELD WORK ROOM - NORTH
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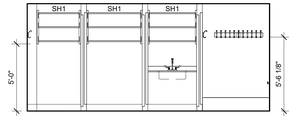

12 G04 - FIELD WORK ROOM - EAST
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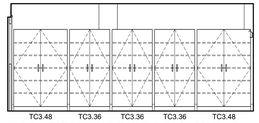

13 G04 - FIELD WORK ROOM - WEST
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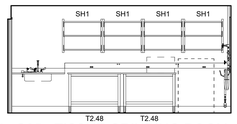

6 G05 - TISSUE GRINDING ROOM - EAST
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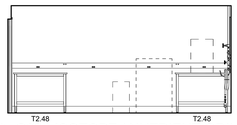
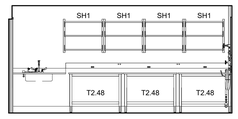


4 G03 - ISOTOPE / NUTRIENT GRINDING ROOM - EAST
1/4" = 1'-0"



2 G01 - SOIL GRINDING ROOM - EAST
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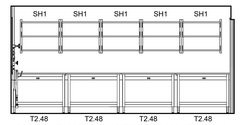
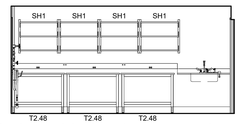
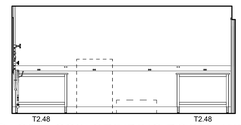


7 G05 - TISSUE GRINDING ROOM - WEST
1/4" = 1'-0"



5 G03 - ISOTOPE / NUTRIENT GRINDING ROOM - WEST
1/4" = 1'-0"



3 G01 - SOIL GRINDING ROOM - WEST
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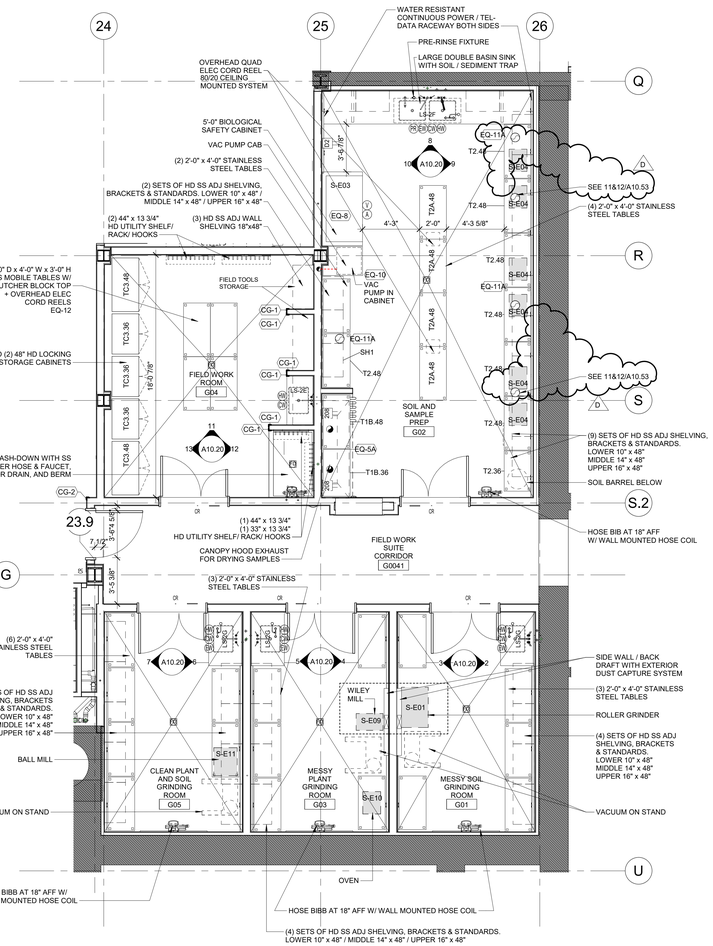

1 GROUND FLOOR - FIELD WORK SUPPORT LABS - ENLARGED PLAN
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

CornellCALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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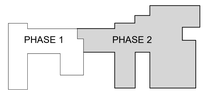
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	EC
Checked By	SMe
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

LEVEL G FIELD WORK SUPPORT LABS - ENLARGED PLANS & ELEVATIONS - PHASE 2

BID DOCUMENTS
Scale: 1/4" = 1'-0"

REGISTERED ARCHITECT JAMES VINCENT RUSSO 022901 STATE OF NEW YORK

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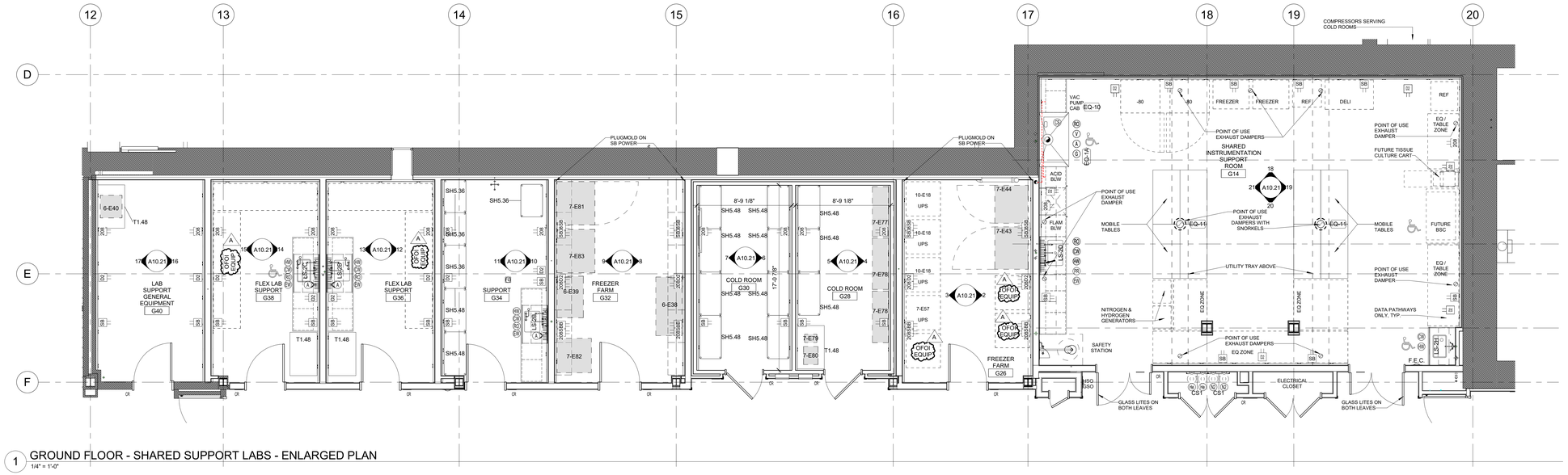
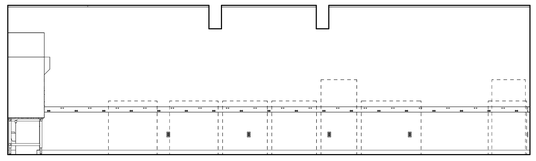
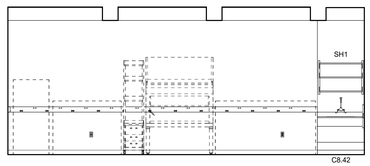
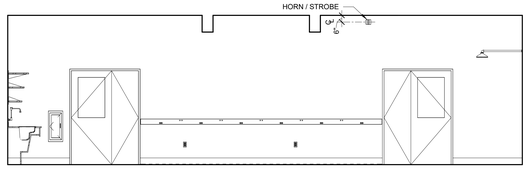
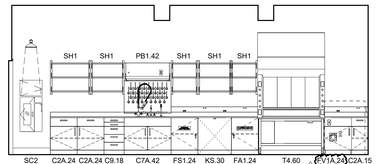


1 GROUND FLOOR - SHARED SUPPORT LABS - ENLARGED PLAN
1/4" = 1'-0"

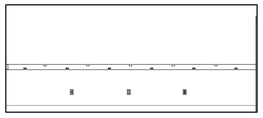




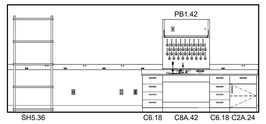


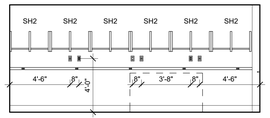


18 G14 - SHARED INSTRUMENTATION SUPPORT - NORTH
1/4" = 1'-0"

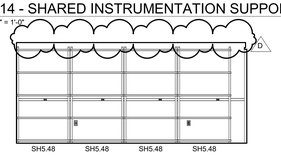


19 G14 - SHARED INSTRUMENTATION SUPPORT- EAST
1/4" = 1'-0"





20 G14 - SHARED INSTRUMENTATION SUPPORT - SOUTH
1/4" = 1'-0"



21 G14 - SHARED INSTRUMENTATION SUPPORT - WEST
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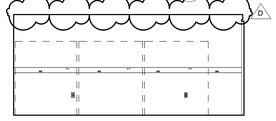

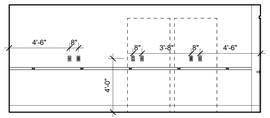

12 G36 - FLEX LAB SUPPORT 1 - EAST
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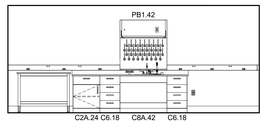

10 G34 - SUPPORT - EAST
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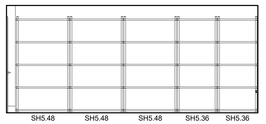
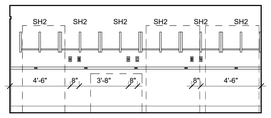


8 G32 - FREEZER FARM - EAST
1/4" = 1'-0"



6 G30 - COLD ROOM 2 - EAST
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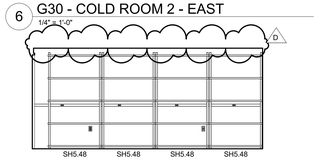
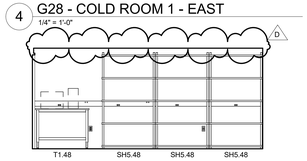
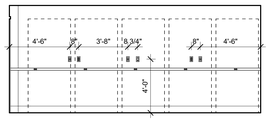


4 G28 - COLD ROOM 1 - EAST
1/4" = 1'-0"



2 G26 - FREEZER FARM - EAST
1/4" = 1'-0"



13 G36 - FLEX LAB SUPPORT 1 - WEST
1/4" = 1'-0"

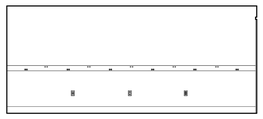
11 G34 - SUPPORT - WEST
1/4" = 1'-0"

9 G32 - FREEZER FARM - WEST
1/4" = 1'-0"

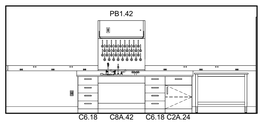
7 G30 - COLD ROOM 2 - WEST
1/4" = 1'-0"

5 G28 - COLD ROOM 1 - WEST
1/4" = 1'-0"

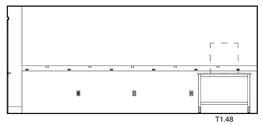
3 G26 - FREEZER - WEST
1/4" = 1'-0"



16 G40 - LAB SUPPORT GEN. EQUIPMENT - EAST
1/4" = 1'-0"



14 G38 - FLEX LAB SUPPORT 2 - EAST
1/4" = 1'-0"



17 G40 - LAB SUPPORT GEN. EQUIPMENT - WEST
1/4" = 1'-0"

15 G38 - FLEX LAB SUPPORT 2 - WEST
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
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Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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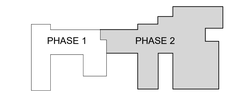
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	EC
Checked By	SMe
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

LEVEL G SHARED LAB SUPPORT - ENLARGED PLANS & ELEVATIONS - PHASE 2

BID DOCUMENTS
Scale: 1/4" = 1'-0"

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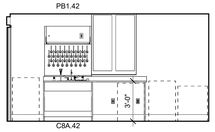
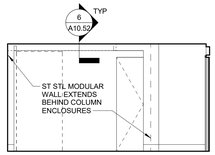
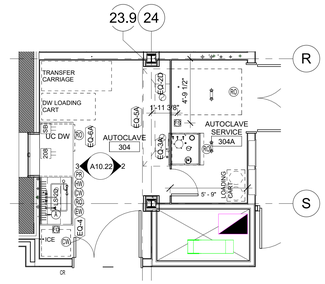


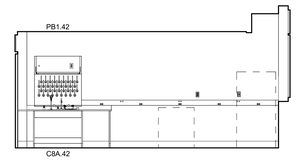
3 304 - SMALL AUTOCLAVE - WEST
1/4" = 1'-0"



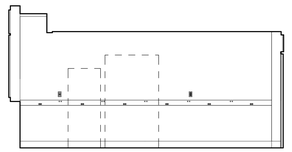
2 304 - SMALL AUTOCLAVE - EAST
1/4" = 1'-0"



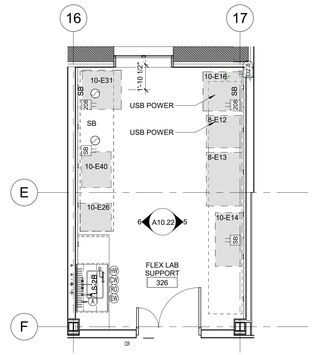
1 304 - SMALL AUTOCLAVE - ENLARGED PLAN
1/4" = 1'-0"



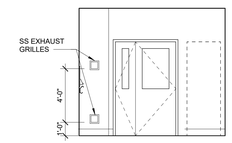
6 326 - FLEX LAB SUPPORT - WEST
1/4" = 1'-0"



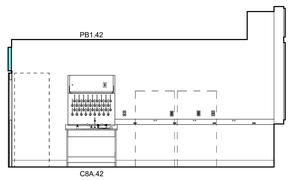
5 326 - FLEX LAB SUPPORT - EAST
1/4" = 1'-0"



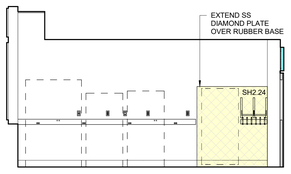
4 326 - FLEX LAB SUPPORT - ENLARGED PLAN
1/4" = 1'-0"



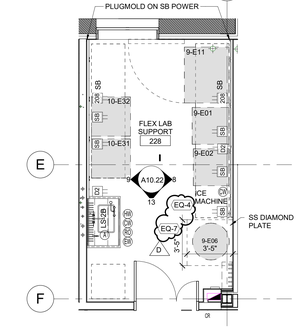
13 228 - FLEX LAB SUPPORT - SOUTH
1/4" = 1'-0"



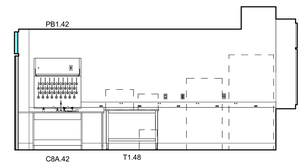
9 228 - FLEX LAB SUPPORT - WEST
1/4" = 1'-0"



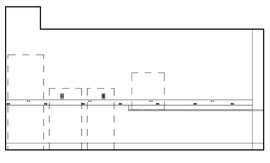
8 228 - FLEX LAB SUPPORT - EAST
1/4" = 1'-0"



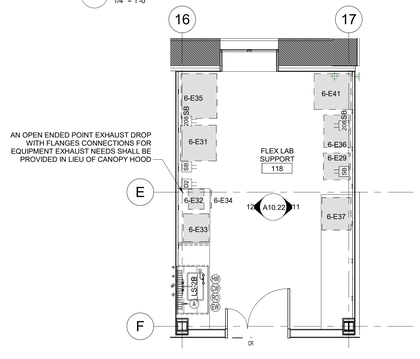
7 228 - FLEX LAB SUPPORT - ENLARGED PLAN
1/4" = 1'-0"



12 118 - FLEX LAB SUPPORT - WEST
1/4" = 1'-0"



11 118 - FLEX LAB SUPPORT - EAST
1/4" = 1'-0"



10 118 - FLEX LAB SUPPORT - ENLARGED PLAN
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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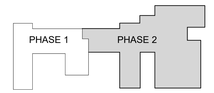
Notes:



Keyplan

Job Number	31909.00
Drawing By	EC
Checked By	SMe
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

LEVEL 1-3 SHARED LAB SUPPORT - ENLARGED PLANS & ELEVATIONS - PHASE 2

BID DOCUMENTS
Scale: 1/4" = 1'-0"

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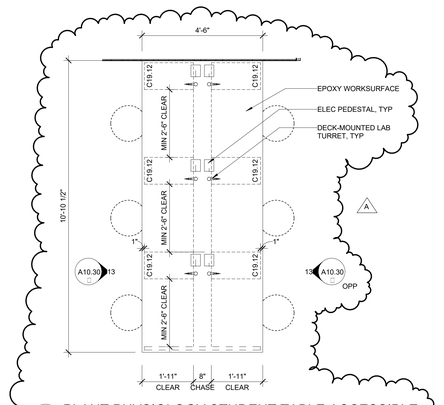
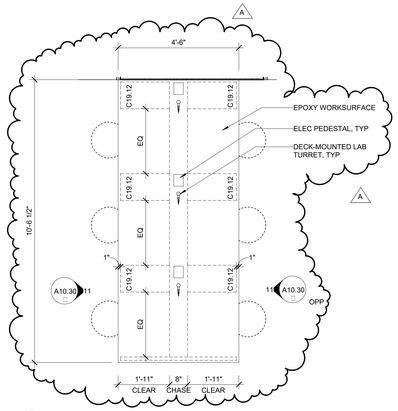
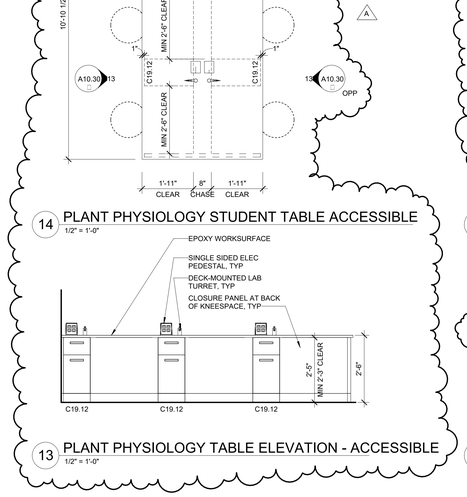


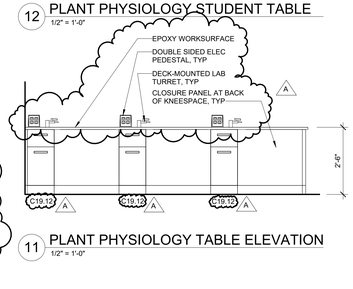
14 PLANT PHYSIOLOGY STUDENT TABLE ACCESSIBLE
1/2" = 1'-0"



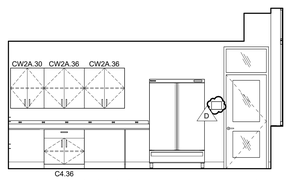
12 PLANT PHYSIOLOGY STUDENT TABLE
1/2" = 1'-0"



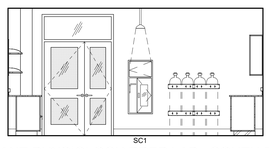
13 PLANT PHYSIOLOGY TABLE ELEVATION - ACCESSIBLE
1/2" = 1'-0"



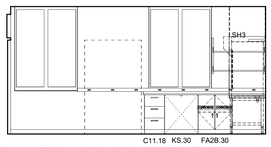
11 PLANT PHYSIOLOGY TABLE ELEVATION
1/2" = 1'-0"



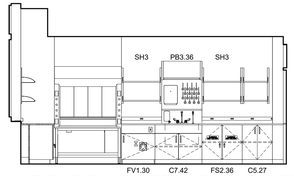
10 PLANT PHYSIOLOGY PREP LAB - WEST ELEVATION
1/4" = 1'-0"



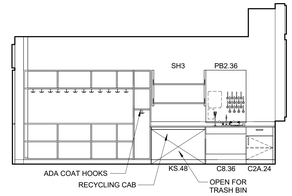
8 PLANT PHYSIOLOGY PREP LAB - SOUTH ELEVATION
1/4" = 1'-0"



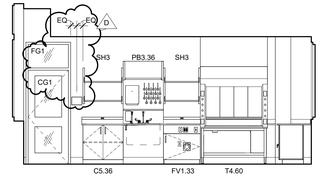
9 PLANT PHYSIOLOGY PREP LAB - NORTH ELEVATION
1/4" = 1'-0"



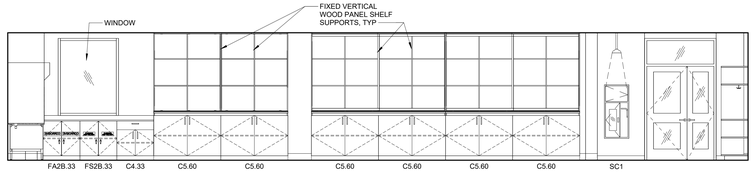
7 PLANT PHYSIOLOGY PREP LAB - EAST ELEVATION
1/4" = 1'-0"



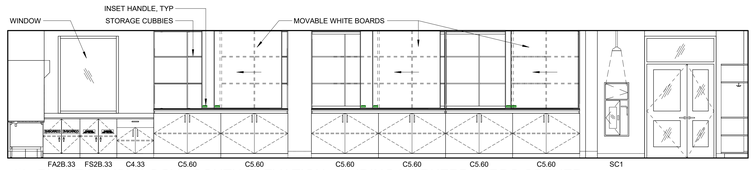
6 PLANT PHYSIOLOGY - WEST ELEVATION
1/4" = 1'-0"



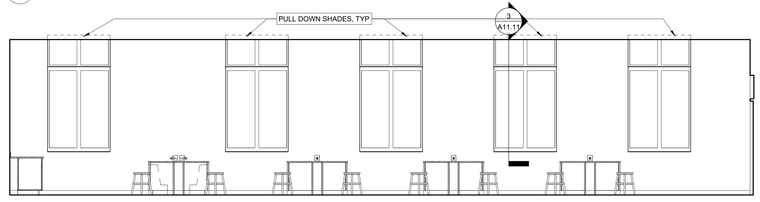
5 PLANT PHYSIOLOGY - EAST ELEVATION
1/4" = 1'-0"



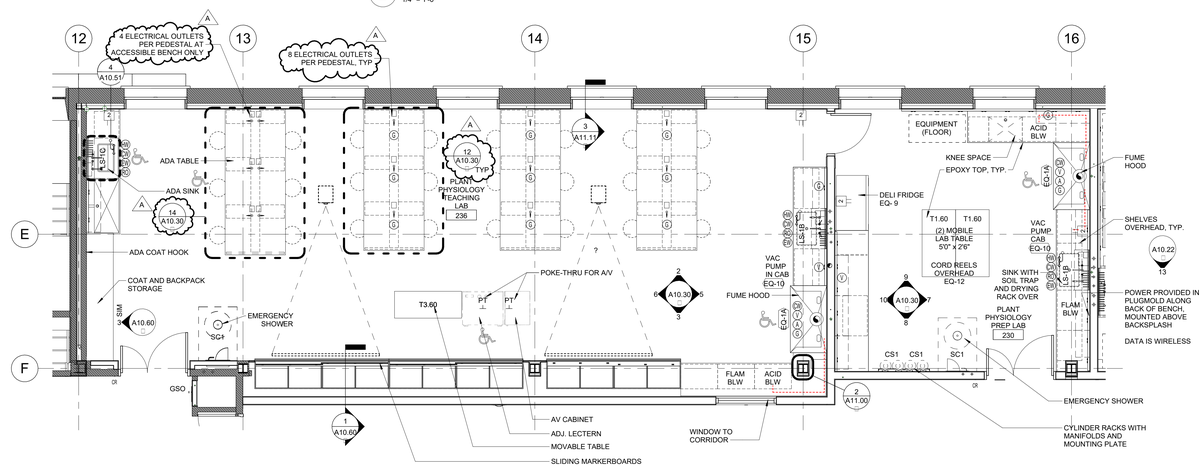
4 PLANT PHYSIOLOGY - SOUTH ELEVATION - SLIDING MARKERBOARDS NOT SHOWN
1/4" = 1'-0"



3 PLANT PHYSIOLOGY - SOUTH ELEVATION - SLIDING MARKERBOARDS OPENED
1/4" = 1'-0"



2 PLANT PHYSIOLOGY TEACHING LAB - NORTH ELEVATION
1/4" = 1'-0"



1 PLANT PHYSIOLOGY TEACHING LAB + PREP ROOM
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
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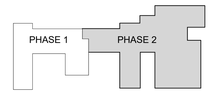
Notes:



Keyplan

Job Number	31909.00
Drawing By	EC
Checked By	SMe
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

PLANT PHYSIOLOGY LAB & SUPPORT SPACES - WET LAB - PHASE 2

BID DOCUMENTS
Scale: As indicated

A10.30

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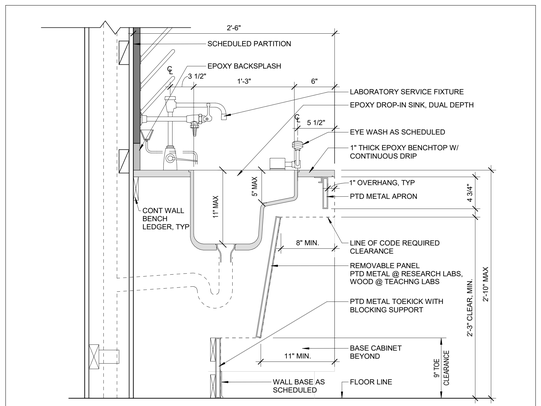
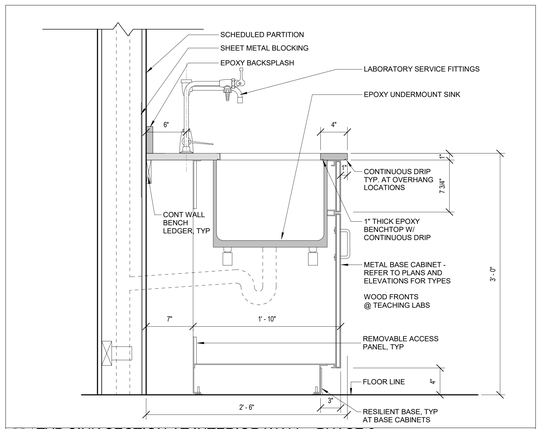
Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt



6 TYP SINK SECTION AT INTERIOR WALL - ADA - PHASE 2
1 1/2" = 1'-0"



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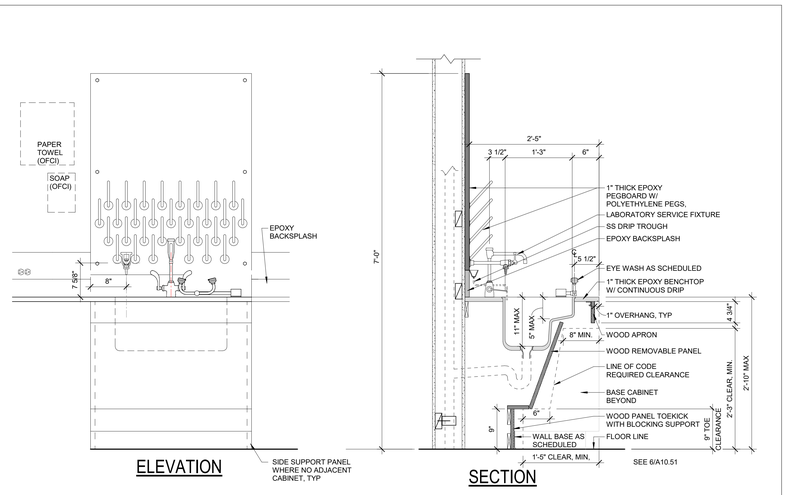
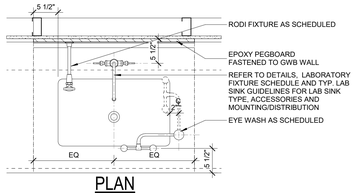
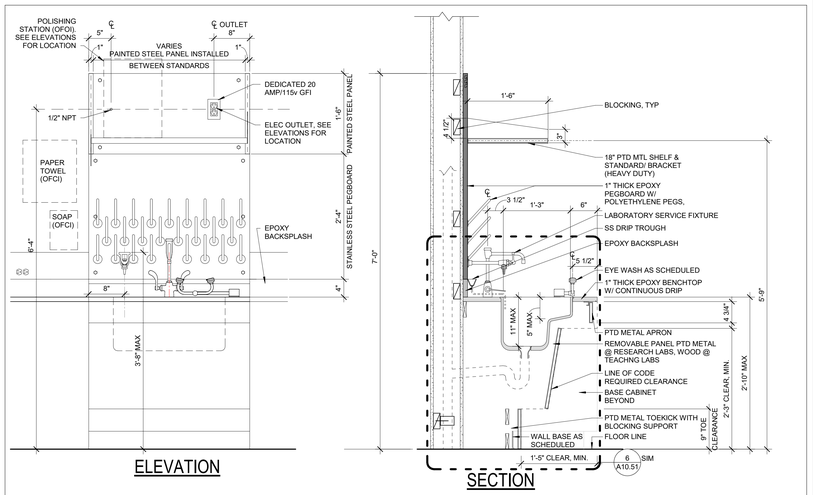


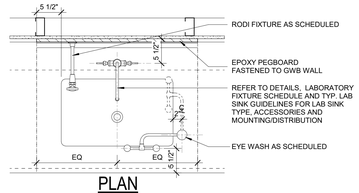
LOCATE ALL OPERABLE PARTS WITHIN ACCESSIBLE REACH



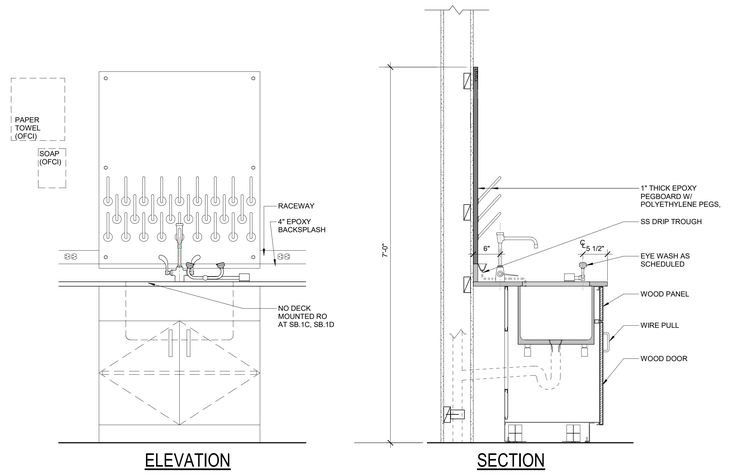
4 TYP SECTION AT SINK WITH PEGBOARD AND WOOD FRONT - ADA - PHASE 2 - LS-1C@TEACHING LAB
1" = 1'-0"

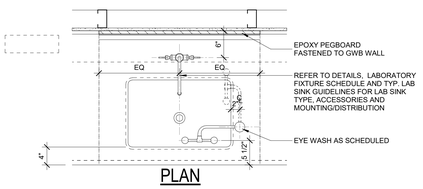


LOCATE ALL OPERABLE PARTS WITHIN ACCESSIBLE REACH

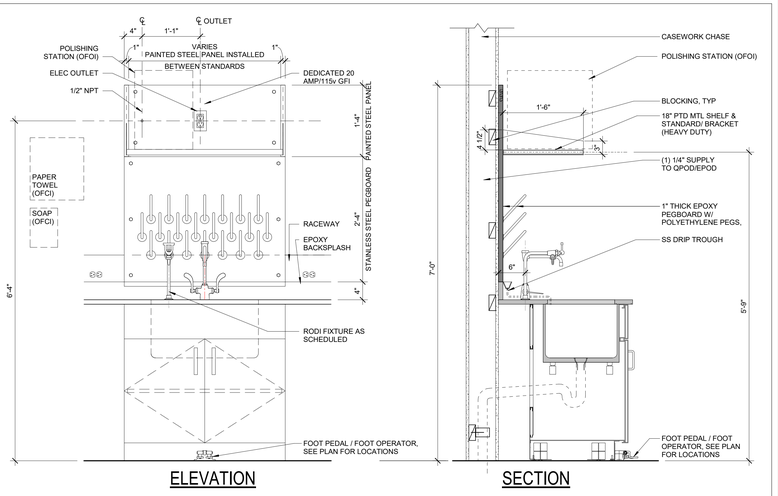


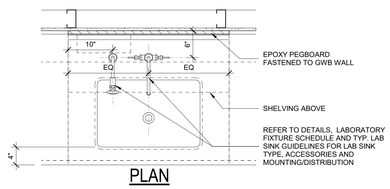
2 TYP SECTION AT SINK WITH PEGBOARD - ADA - PHASE 2 - LS-1C
1" = 1'-0"





3 TEACHING LAB SINK SECTION - PHASE 2 - LS-1B
1" = 1'-0"





1 TYP SINK SECTION - PURE WATER - PHASE 2 - LS-1A
1" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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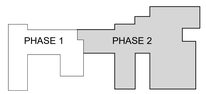
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

A

1. OFCI PAPER TOWEL DISPENSERS AND OFCI SOAP DISPENERS REQUIRED AT ALL SINKS



Keyplan

Job Number	31909.00
Drawing By	EC
Checked By	SMe
Filename	
Date	August 31, 2026

Revisions

A	ADDENDUM 6	11/19/2026

LAB DETAILS - PHASE 2

REGISTERED ARCHITECT JAMES VINCENT RIGGS 022901 STATE OF NEW YORK

BID DOCUMENTS
Scale: As indicated

A10.51

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New York State College of Agriculture and Life Sciences at Cornell University

Plant Science Building
State University Construction Fund Project No. 161026-00
Group 5 - Sustainable Crop Production

Laboratory Equipment Schedule

5 - Sustnble Crop Lvl G-East

PLUG & PLAY — Plug & play equipment is equipment requiring small floor/benchtop space and no utility connections (Exhaust, Lab Services, Special grounding, etc.) beyond standard 110v power. This will typically include small equipment such as printers, computers, scanners, benchtop centrifuges, water baths, Gel Rigs, etc.

Date: 19-Nov-26

ID	Equipment	Manufacturer and Model	Provided by/ Installed by	Quantity: Total	Exist	New	Size (inches): W	D	H	Existing Building	Existing Room #	Plug & Play? /n Place (X)	Services: Mounting Location	Vent/ Exhaus...	Air (PSI)	CO (PSI)	CO2 (PSI)	Gas (PSI)	LN2	N2 (PSI)	O2 (PSI)	V (Hg)	SG 1 (PSI)	SG 2 (PSI)	SG 3 (PSI)	RODI	PW (1,2,3)	CW	PCW Deg...	HW	Waste: Lab	Flr.	Wall	Power: 110v	208v	460v	Hard Wired	EM	BMS	T/D	Architectural Notes	Plumbing and Electrical Notes / Questions
Room:																																									
Room Name: Wet Main Research Lab # G20																																									
EQ-1	Fume Hood		CFCI	**1**		1	60	39.25	76				F	X	X			X			X						X		X												
EQ-1A	Fume Hood (Accessible)		CFCI	**1**		1	60	39.25	76				F	X	X			X			X						X		X												
5-E02	Water purifier		OFOI	**1**									S												X														
EQ-10	Vacuum Pump System	VacuuBrand ME 4C NT +2AK	CFCI	**3**										X																									
Room Name: Dedicated Equipment Support Lab #G15																																								
5-E03	-80 Freezer	SX Series Ultra-Low Freezer Model: TSX7008SV	OFOI	**1**		1	38	45.2	78				F																				230v/50Hz			X				
5-E04	-20 Freezer	TSX Series High-Performance Freezers, Model: TSX3020FV	OFOI	**1**		1	29	30	58				F																				230v			X				
5-E05	3-Door Cooler	Kratos Cooler-3 section-short term sample storage, Model:69K-814	OFOI	**1**		1	81	80	32				F																				208v/230v/60Hz/ 1 Ph. 4 wire (NEMA L14-20)							* Requires a current protected, designated circuit	
5-E06	Small Freezer		OFOI	**1**	1		24	24	36				F																							X				
5-E07	reagent small refrigerator		OFOI	**1**	1		20	20	34				F																							X				
Room Name: Dedicated Microscopy Support LabRG17																																								
5-E08	Micobial Incubator	Heratherm IGS750 - Microbiological Incubator General Protocol 26.4 cu. ft. / 747 Liter - Model: 51029333	OFOI	**1**		1	31	50	61				F				X?																120v/60 Hz/1500 W/12.5 A/Nema 5-15 US							2 unit stacked system-can have 2 temperature	
Room Name: Dedicated PCR Support LabRG19																																								
5-E09	Biosafety cabinet		OFOI	**1**		1	54	32	92				F		X						X																		4'-6' wide in master mix prep-no plant-clean area	
EQ-8A	**New BSC stand for 5-E09**		**CFCI**	**1**		**1**	**54**	**32**					**F**																											
5-E10	Roche MagNA Pure 96 System		OFOI	**1**		1	53.5	32	39.5				F																											needs cabinet base/table so unit at workable height ; unsure if included; assume final height to be around 72 inches; see picture. Place on one side of the room, the PCR equip on the other side	
EQ-10	Vacuum Pump System	VacuuBrand ME 4C NT +2AK		**1**										X																									
Room Name: Dedicated Flexible Support Lab #G21																																								
5-E01	Biosafety cabinet		OFOI	**1**		1	54	32	92				F		X						X																		4'-6' wide in main lab-dirty lab area	
Room Name: Dedicated Chemistry Support Lab #G23																																								
EQ-1A	Fume Hood (Accessible)		CFCI				60	39.25	76				F	X	X			X			X						X		X												
EQ-10	Vacuum Pump System	VacuuBrand ME 4C NT +2AK	CFCI											X																									

A

Abbreviations

OFOI	Owner furnished and installed
OFCI	Owner furnished contractor installed
CFCI	Contractor furnished and installed

B	Bench
C	Ceiling
F	Floor
M	Mobile
P	Recessed pit
W	Wall
S	Shelf

Air	Compressed Air
CO	Carbon...
CO2	Carbon Dioxide
Gas	Natural Gas
LN2	Liquid Nitrogen
N2	Nitrogen
O2	Oxygen

V	Vacuum
SG	Special Gas
RODI	Rev. Osmosis Deioniz. Water
PW	Pure Water
CW	Chilled Water
PCW	Process Water
HW	Hot Water

EM	Emergency Power
HdWr	Hard Wired
BMS	On Building Management System
TD	Tel/Data & Alarm

Confirm pressure required for compressed air wherever...

ELLENZWEIG

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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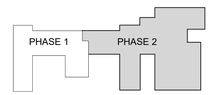
Notes:



Keyplan

Job Number 31909.00
Drawing By EC
Checked By SMe
Filename
Date August 31, 2026

Revisions

A	ADDENDUM 6	11/19/2026

GROUND FLOOR EAST - LAB EQUIPMENT SCHEDULE - PHASE 2

BID DOCUMENTS
Scale:

A10.70

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New York State College of Agriculture and Life Sciences at Cornell University
Plant Science Building
State University Construction Fund Project No. 161026-00
Group 6 - Fruit Production

Laboratory Equipment Schedule — **6 - Fruit Productn Lvl 1-East** — **Date: 19-Nov-26**

ELLENZWEIG

PLUG & PLAY	Plug & play equipment is equipment requiring small floor/benchtop space and no utility connections (Exhaust, Lab Services, Special grounding, etc.) beyond standard 110v power. This will typically include small equipment such as printers, computers, scanners, benchtop centrifuges, water baths, Gel Rigs, etc.

				Quantity			Size (inches)							Services																	Waste			Power								
ID	Equipment	Manufacturer and Model	Provided by/ Installed by	Total	Exist	New	W	D	H	Existing Building	Existing Room #	Plug & Play? Place (X)	Mounting Location	Vent/ Exhaus...	Air (PSI)	CO (PSI)	CO2 (PSI)	Gas (PSI)	LN2	N2 (PSI)	O2 (PSI)	V (Hg)	SG 1 (PSI)	SG 2 (PSI)	SG 3 (PSI)	RODI	PW (1,2,3)	CW	PCW Deg...	HW	Lab	Flr.	Wall	110v	208v	460v	Hard Wired	EM	BMS	T/D	Architectural Notes	Plumbing and Electrical Notes / Questions
Room...																																										
Room Name: Wet Main Research Lab # 113																																										
6-E04	Sonicator	Branson	OFOI	1	X		13	12	13		305		B																					117v/2A							Plug-n-play equipment.	
6-E05	UV/VIS spectrophotomter with computer on top	Molecular Devices 384 Spec	OFOI	1	X		33	30	26		311		B																					X							Plug-n-play equipment.	
6-E06	Buchi chiller. Connected to 6-E07	Buchi F-105	OFOI	2	X		11	15	19	PSB	123		B																					115v							Plug-n-play equipment.	
6-E07	Buchi vaccuum pump. Connected to 6-E06	Buchi V-300	OFOI	2	X		8	12	12	PSB	123		B																					X							Plug-n-play equipment. Vac pump located in cabinet	
6-E08	Rotovapor	(Multiple: see notes)	OFOI	2	X		20	20	30		122		B																					x							Plug-n-play equipment.	
6-E09	centrifuge	Thermo Megafuge 8R	OFOI	1	X		18	24	13		123		B																					120v/8A							Plug-n-play equipment.	
Room Name: Dedicated Micrsocopy Support Lab # 113B																																										
	Regular built-in benches																																								No curtain	
6-E10	Fluorescent microscope with computer space	Olympus CX43	OFOI	1	X		32	25	22				B																					X								
Room Name: Dedicated Tissue Culture Support Lab# 113C																																										
6-E11	Racks with flourescent lights attached to timers	(located off main corridor)	OFOI	4	X		48	24	74	PSB			F																													
6-E12	Laminar flow hoods	Nuair	OFOI	1	X		50	32	80	PSB	108		F		X							X												X								
6-E13	Refrigerator		OFOI	1	X		33	33	70		RM302		F																					X								
Room Name: Dedicated Equipment Support Lab# 113D																																										
CASE	Movable lab benches	New Mott Casework		0																																						
6-E14	ultralow freezer (-80)	Thermo -80	OFOI	1	X		40	40	80				F																						230v							
6-E15	Ultralow Freezer	VWR	OFOI	1	X		50	40	78		301		F																					X				X				
6-E16	Cold Cabinet	VWR	OFOI	1	X		55	30	80		301		F																					X								
6-E17	Regular freezer		OFOI	1	X		33	31	70		301		F																					X								
6-E18	Ultralow Freezer	VWR	OFOI	1	X		45	38	78		301		F																					X				X				
6-E19	Beckman Centrifuge	Beckman	OFOI	1	X		28	36	51		305		F																						X						Out of Order	
6-E20	Refrigerator		OFOI	1	X		33	33	70				F																					X								
Room Name: Dedicated Molecular Biology Support Lab # 113E																																										
	Regular built-in lab benches on one side																																									
	Movable lab benches on the otherside w/Under Counter storage			0																																						
6-E21	Laminar flow hood	Nuair	OFOI	1	X		50	32	80		301		F		X							X												X								
6-E22	Gel Imager		OFOI	1	X		15	16	33				B																					X				X			Plug-n-play equipment.	
6-E23	Regular freezer		OFOI	1	X		33	31	77				F																					X								
Room Name: Dedicated Chem 1 Support Lab # 113F																																										
6-E24	HPLC	Agilent 1100/1200	OFOI	1	X		65	21	40		305		B																		X			X							Waste collected on floor (G1316A; COLCOM DE91612252)	
EQ-1	Fume hood		CFCI	1		1					NEW																														waste from GC/MS	
	Regular built-in lab benches			0							NA																															
6-E25	GC/MS	Agilent 7890A/5975C	OFOI	1	X		35	21	36		Bradfield 305		B	X									X									X		X				X			HE connected to EQ and then vented to fume hood using small diameter tubing; waste collected on floor (G1362AR10; G1313A; DE91600567)	**125V 20A dedicated circuit NEMA 5-20P (VIF)**
6-E26	Nanopure water system		OFOI	1	X		26	17	22		301A		W																					120v/3A							Wall unit.	
Room Name: Dedicated Chem 2 Support Lab # 113G																																										
	Regular Lab Benches			0																																						
EQ-1	Fume Hood		CFCI	1							NEW				X			X				X						X														
EQ-1A	Fume Hood (ADA)		CFCI	1							NEW				X			X				X						X														
6-E27	Agilent HPLC	1200 Series		1			33	20	36				B																			X		X							WASTE CONTAINER (17"W x 9"D x 16"H) ON FLOOR	
6-E28?	FLAMABLE STORAGE CABINETS	Yellow stand alone	CFCI	1			24	20	45				F																												Listed	
CS-1	GAS CYLINDERS			**MISC**			.	.	.		NEW		F																												Listed	
6-E29	lab fridge (6-E?)	VWR		1			24	24	55				F																					X								
6-E30	HPLC	Dionex (Kent Post Lab)		1			33	20	36				B	NA																				X							Autosampler, detector, pump, gas cylinder, CPU and monitor	detector=10 Amps; plug strip sufficient for other equipment which are 1-2Amps
Other EQ surveyed but new location unknown																																										
6-EXX	Dry oven currently not used in Bradfield Rm 302	Yamato DX600	OFOI	1	X		27.5	27	32.75	BRD	302																							115v/13.5A								
6-EXX	UV/VIS spectrophotometer in Bradfield Rm 311	Shimadzu UV-1601	OFOI	1	X		?	?	?				B																													

Abbreviations

OFOI	Owner furnished and installed
OFCI	Owner furnished contractor installed
CFCI	Contractor furnished and installed

B	Bench
C	Ceiling
F	Floor
M	Mobile
P	Recessed pit
W	Wall
S	Shelf

Air	Compressed Air
CO	Carbon...
CO2	Carbon Dioxide
Gas	Natural Gas
LN2	Liquid Nitrogen
N2	Nitrogen
O2	Oxygen

V	Vacuum
SG	Special Gas
RODI	Rev. Osmosis
	Deioniz. Water
PW	Pure Water
CW	Chilled Water
PCW	Process Water
HW	Hot Water

EM	Emergency Power
HdWr	Hard Wired
BMS	On Building Management System
TD	Tel/Data & Alarm

Confirm pressure required for compressed air wherever...

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
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Ithaca, NY 14853

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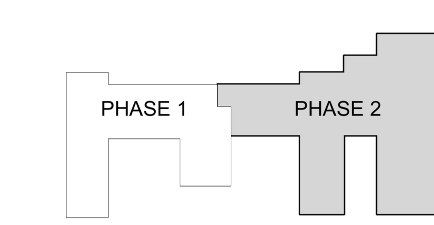
Notes:



Keyplan

Job Number 31909.00
Drawing By EC
Checked By SMe
Filename
Date August 31, 2026

Revisions
A ADDENDUM 6 11/19/2026

FIRST FLOOR EAST - LAB EQUIPMENT SCHEDULE - PHASE 2

BID DOCUMENTS
Scale:

A10.71

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New York State College of Agriculture and Life Sciences at Cornell University
Plant Science Building
State University Construction Fund Project No. 161026-00
Group 7 - Plant / Soil / Microbes

ELLENZWEIG

Laboratory Equipment Schedule

7 - Plant Soil Micrb Lvl 2-East

PLUG & PLAY	Plug & play equipment is equipment requiring small floor/benchtop space and no utility connections (Exhaust, Lab Services, Special grounding, etc.) beyond standard 110v power. This will typically include small equipment such as printers, computers, scanners, benchtop centrifuges, water baths, Gel Rigs, etc.

Date: 19-Nov-26

ID	Equipment	Manufacturer and Model	Provided by/ Installed by	Quantity Total	Quantity Exist	Quantity New	Size (inches) W	Size D	Size H	Existing Building	Existing Room #	Plug & Play? Place (X)	Mounting Location
Room Name:													
Room Name:	**Wet Main Research Lab # 219**												
7-E01	Nano Water purifier		CFCI	**1**		1	13.5	17.5	18		416		W
	Reagent prep area including pH meter and scales			***1***			*72*	*29.5*	*15*				B
7-E02	Stir plates (OKV)		OFOI	**3**	3		7	7	7				**B**
7-E03	refrigerator -20 small (OKV)	GE	OFOI	**1**	1		21.5	27	34		614		B/F
7-E04	4 degree refrigirator (OKV)	Avanti	OFOI	**1**	1		19	21	33.5		604		B/F
7-E05	Bench-top microcentrifuges (OKV)	Fisher Scientific	OFOI	**2**	2		9	13.5	18				B
7-E06	*Protein gel electrophoresis and gel-transfer systems/station area*	*BioRad*		***1***			*56*	*25*	*15*				*B*
7-E07	*DNA/RNA gel electrophoresis system/station area*			***1***			*75*	*32*	*15*				*B*
7-E08	UV/UF water purification system (OKV)	Barnstead Diamond	OFOI	**1**		1	24	26	20		NEW		W
7-E09	Waterbath (OKV)	fisher scientific isotemp 215	OFOI	**1**	1		23.5	17	15		614		B
7-E10	Water bath (OKV)	Max Q7000	OFOI	**1**	1		20.5	23	19		612		B
7-E11	Waterbath (OKV)	precision	OFOI	**1**	1		10	10	10		623		B
7-E12	Shaker (OKV)	gyrotory shaker model g2	OFOI	**1**	1		10	12	7		614		B
7-E13	Microvolume spectrophotometer and fluorometer (OKV)	DeNovix	OFOI	**1**	1		10	13	6		614		B
7-E14	CAliQ to pair with MultiseQ (OKV)	PhotosynQ	OFOI	**1**	1		5.5	4	2				B
7-E15	MultispeQ V2.0 (OKV)	PhotosynQ	OFOI	**2**	2		11.5	5	3				B
7-E16	GibcoBRL Life Technologies Electroporation system (OKV - operational condition unknown)	watman Biometra	OFOI	**1**	1		18	11	7.5				B
7-E18	seeds cabinet (OKV)	furniture to store seeds annually. Prefer a glass door. Storage temp: under 40 degrees F. Base cabinet to accommodate.	OFOI	**1**	1		47	16	47.5		623		B
7-E19	Not Used			**0**									
Room Name:	**Dedicated Microscopy Support Lab # 219B**												
	Movable Tables	WHERE DID THIS NOTE ORIGINATE?	OFOI	**?**									
7-E20	Stereomicroscopes (OKV)	Leica S6E	OFOI	**2**	2		25	19	19				B
7-E21	Fluorescent dissecting microscope (OKV)	Leica MZ16FA	OFOI	**1**	1		33	15	22		623		B
7-E22	Upright fluorescent microscope imaging system with computer system (OKV)	Zeiss Axio Imager M2	OFOI	**1**	1		78	29.5	26		623		B
7-E23	Inverted microsope system (OKV)	Zeiss AxioObserver A1	OFOI	**1**	1		30	30	29		623		B
7-E24	*Picture station*	*handmade*	OFOI	***1***			*42*	*26*	*37*		405		*B*
Room Name:	**Dedicated Equipment 1 Support Lab # 219C**												
	Regular built-in bench on one side of the room		*CFCI*										*X*
7-E25	Incubator (plants) (MJF)	Percival	OFOI	**2**	2		31	21	46		406		F
7-E26	Incubator (plants) (MJF)	Percival	OFOI	**1**	1		31.5	32	74		406		F
7-E27	Bead beater (MJF)	Qiagen Powerlyzer 24 homogenizer	OFOI	**1**	1		15	17	13		413		B
7-E29	Preparative ultracentrifuge (OKV)	Beckman Optima L-90K	OFOI	**1**	1		36.5	27	53		612		F
7-E30	Centrifuge (OKV)	Beckman Avanti J-E high-speed centrifuge	OFOI	**1**	1		25	32	36		413-612		F
7-E31	Bench-centrifuge (swing buckets) (OKV)	Beckman Allegra X-15R	OFOI	**1**	1		30	25	30		413-612		B
7-E32	Bench-top vacuume centrifuge (OKV)	ependorf vacufuge	OFOI	**1**	1		13	25	19		413-612		B
7-E40	Centrifuge (MJF)	Beckman Coulter, Allegra X-12R	OFOI	**1**	1		36	36	12				F
Room Name:	**Dedicated Equipment 2 Support Lab # 219D**												
7-E33	-80 Freezers (MJF)		OFOI	**1**	1		*48*	*42*	*78*		405		F
7-E34	-20 Freezers (MJF)		OFOI	**1**	1		38	38	78				F
7-E35	Deli Cooler (MJF)	VWR	OFOI	**1**	1		60	29	79		416		F
7-E36	Centrifuge (MJF)	Beckman Coulter Avanti J-E	OFOI	**1**	1		25	32	36				F
7-E37	spectophotometer (MJF)	Thermo Scientifica; Biomate 3	OFOI	**1**	1		12	12	12		413		B
7-E38	nanodrop (MJF)	Thermo Scientifica; NanodropOne	OFOI	**1**	1		6	6	6		413		B
7-E39	plate reader (MJF)	Biotek Synergy 2	OFOI	**1**	1		24	24	12		413		B
7-E41	spectrophometer (MJF)	ThermoSpectronic 20D+	OFOI	**1**	1		17	14	9				B
7-E42	refrigerator -20 (OKV)	Frigidaire	OFOI	**1**	1		34.5	31.5	67				F
					604								
Room Name:	**Dedicated Molecular Support Lab # 219E**												
	Built-in bench w/sink on one side			***0***									
	Movable tables on the other side			**0**									
7-E45	microcentrifuge for qPCR plate (OKV)	Labnet	OFOI	**1**	1		7	7	7		604		B
7-E46	Thermal Cycler (OKV)	BioRad T100	OFOI	**1**	1		9.5	18	17		604		B
7-E47	Spectrophotometer (OKV) (UV/VIS) - connected to 7-E48	Beckman Spectrophotometer DU-800	OFOI	**1**	1		26.5	21	16		604		B
7-E48	Computer system for DU-800 (OKV) - connected to 7-E47		OFOI	**1**	1		28	27	18.5		604		B
7-E49	AKTAfplc (OKV - operational condition unknown) - connected to 7-E50	Amersham pharmacia biotech	OFOI	**1**	1		30	24	21		604		B
7-E50	Analytical /Preparative HPLC system with comp system (OKV) - connected to 7-E49	Varian Inert	OFOI	**1**	1		72	26	24		604		B
7-E51	Thermal Cycler (OKV)	Techne	OFOI	**1**	1		6.5	13	13		604		B
7-E52	Real-Time PCR Detection System with comp syst (OKV)	BioRad CFX96	OFOI	**1**	1		32	28	21		604		B
Room Name:	**Dedicated Culture Support Lab #...**												
	Built-in bench w/sink												
7-E53	Biological Safety Cabinet		OFCI	**2? 1**		1	54				NEW		F
EQ-8A	**Biological Safety Cabinet Stand**		**CFCI**	**1**		**1**	**54**				NEW		F
7-E54	Laminar Flow Hood		OFCI	**2 1**							413A		F
7-E55	incubators (MJF)	Thelco	OFOI	**2**			24	24	38		413		F
7-E56	floor shaker/incubator (MJF)	New Brunswick Innova 44	OFOI	**1**			60	36	29		413		F
7-E58	shaking incubator (MJF)	VWR	OFOI	**1**			12	24	24				B/F
7-E60	37 degree incubator (OKV)	VWR	OFOI	**1**			25	27	37.5		604		F
7-E61	30 degree incubator (OKV)	VWR	OFOI	**2**			16.5	16.5	22.5		602		B
7-E62	80 degree incubator (OKV)	Isotemp	OFOI	**1**			22.5	19.5	37		602		F/B
Room Name:	**Dedicated Chemistry Support Lab # 219G**												
	Built-in bench w/sink												X
EQ-1	Chemical Fume Hood		CFCI	1		1	6						F
EQ-1A	Chemical Fume Hood (ADA)		CFCI	1		1	6						F
Casework	Flammable Storage Cabinet	Cabinets under CFH	CFCI	**1**		NA					NA		F
7-E63	electroporator (MJF)	Bioread Gene pulser Xcell	OFOI	**1**			6	12	6				B
7-E64	Geldock (MJF)	Biorad, Chemdo XRS+ with computer space	OFOI	**1**			48	24	36		409		B
7-E67	Real-time PCR machine (MJF)	BioRad CFX Connect Realtime system	OFOI	**1**			12	24	24		416		B
7-E68	PCR machine (MJF)	BioRad C1000 Thermal cycler	OFOI	**1**			24	24	12		416		B
7-E69	PCR machine (MJF)	BioRad T100 Thermal cyclers	OFOI	**4**			12	12	12		413		B

ID	Services: Vent/ Exhaust...	Air (PSI)	CO (PSI)	CO2 (PSI)	Gas (PSI)	LN2	N2 (PSI)	O2 (PSI)	V (Hg)	SG 1 (PSI)	SG 2 (PSI)	SG 3 (PSI)	RODI	PW (1,2,3)	CW	PCW Deg...	HW	Waste: Lab	Flr.	Wall	Power: 110v	208v	460v	Hard Wired	EM	BMS	T/D	Architectural Notes	Plumbing and Electrical Notes / Questions
7-E01																					x								
(Reagent prep area)																												*counter space*	
7-E02																					x							plug-n-play equipment.	
7-E03																					x							plug-n-play equipment.	
7-E04																					x							working	
7-E05																					120VAC/2A							plug-n-play equipment.	
7-E06																												*counter space*	
7-E07																												*counter space*	
7-E08																					x							working.	
7-E09																					x							plug-n-play equipment.	
7-E10																					120v/...							plug-n-play equipment.	
7-E11																					115v/1.9A							plug-n-play equipment.	
7-E12																					x							plug-n-play equipment.	
7-E13																					x								
7-E14																												plug-n-play equipment.	
7-E15																												plug-n-play equipment.	
7-E16																					x							plug-n-play equipment.	
7-E19																												working	
7-E24																					x							*working space. On a 36" table*	
7-E25				X?																	115v/6&7A							+2 inch CO2 tap. Stackable.	
7-E26				X?																	115v/12.4A							+2 inch CO2 tap	
7-E27																					115/230VAC/690VA								
7-E29																						x						working.	
7-E30																						208/240v/24A						working. +6 inch for rear filter.	
7-E31																					?							working.	
7-E32																					120v/3.8A							working.	
7-E40																					?							Moved from 219D	
7-E33																					x				x				Someone elses. To go to new freezer farm
7-E34																					x				x				
7-E35																					x							Vent on sides	Vent on side
7-E36																						208/240v/24A							Same model
7-E37																					?								
7-E38																					?								
7-E39																					x								
7-E41																					?								
7-E42																					?				x			working	
7-E45																					x							working	
7-E46																					x							working	
7-E47																					100-240V/2A							working	
7-E48																					x							working	
7-E49																												Unknown	
7-E50																												working	
7-E51																												working	
7-E52																					x							working	
7-E53		**X**							**X**																				
7-E54	X																												
7-E55																					120v/...							Stackable	Can be stacked
7-E56																					120v/800VA							Under table	
7-E60																												working	
7-E61																					115v/...							working	
7-E62																						specialt...						working	
EQ-1		X			X				X						X														
EQ-1A		X			X				X						X														
Casework																												Field notes:: PI has no stand alone cabinet	
7-E64																					100/115/230v/200VA								
7-E67																					x								

Abbreviations

OFOI	Owner furnished and installed
OFCI	Owner furnished contractor installed
CFCI	Contractor furnished and installed

B	Bench
C	Ceiling
F	Floor
M	Mobile
P	Recessed pit
W	Wall
S	Shelf

Air	Compressed Air
CO	Carbon Monoxide
CO2	Carbon Dioxide
Gas	Natural Gas
LN2	Liquid Nitrogen
N2	Nitrogen
O2	Oxygen

V	Vacuum
SG	Special Gas
RODI	Rev. Osmosis
	Deioniz. Water
PW	Pure Water
CW	Chilled Water
PCW	Process Water
HW	Hot Water

EM	Emergency Power
HdWr	Hard Wired
BMS	On Building Management System
TD	Tel/Data & Alarm

Confirm pressure required for compressed air wherever required

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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Watson Engineering
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Notes:

PHASE 1
PHASE 2

Keyplan

Job Number 31909.00
Drawing By EC
Checked By SMe
Filename
Date August 31, 2026

Revisions
D ADDENDUM 6 11/19/2026

SECOND FLOOR EAST - LAB EQUIPMENT SCHEDULE - PHASE 2

BID DOCUMENTS
Scale:

REGISTERED ARCHITECT JAMES VINCENT BLOUNT 022901-1 STATE OF NEW YORK

A10.72

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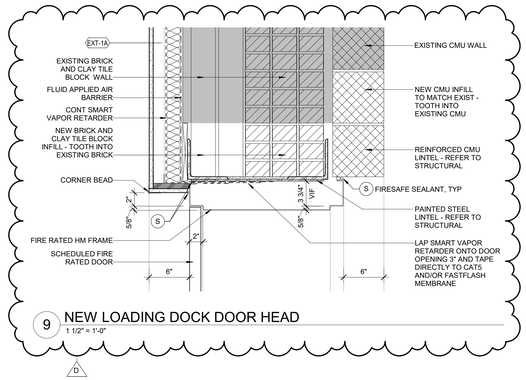
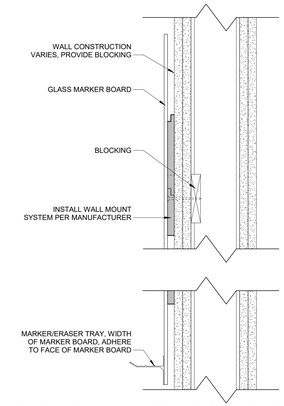
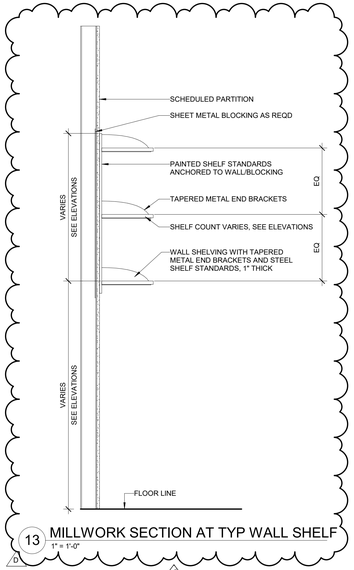


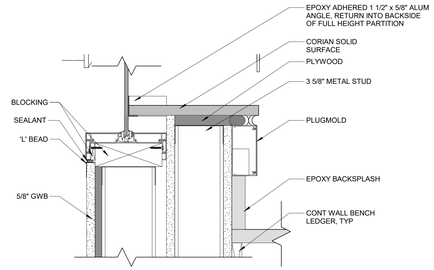
9 NEW LOADING DOCK DOOR HEAD
1 1/2" = 1'-0"



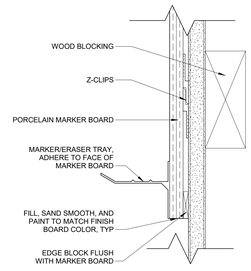
4 GLASS MARKER BOARD SECTION DETAIL
3" = 1'-0"



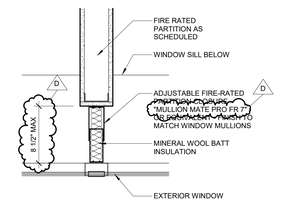
13 MILLWORK SECTION AT TYP WALL SHELF
1" = 1'-0"



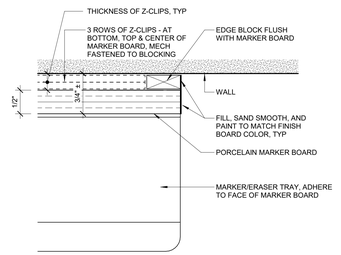
8 ALUMINUM FRAME SILL DETAIL PHASE 2
3" = 1'-0"



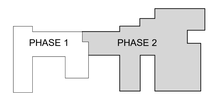
3 TYPICAL MARKER BOARD TRAY
6" = 1'-0"



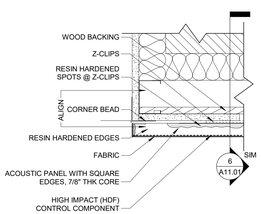
7 1 HR. RATED WALL CLOSURE AT WINDOW MULLION
1 1/2" = 1'-0"



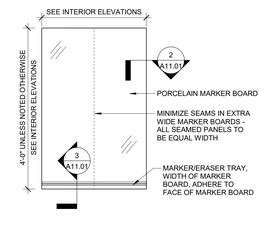
2 TYPICAL MARKER BOARD PLAN
1/2" = 1'-0"



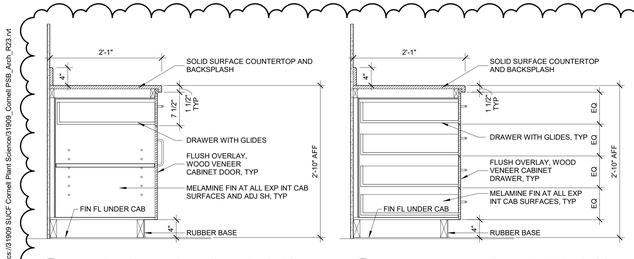
Keyplan



5 ACOUSTIC WALL PANEL PLAN
3" = 1'-0"

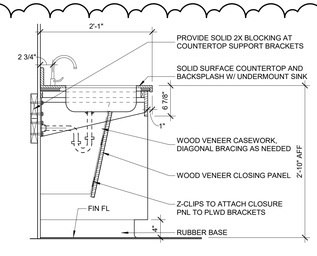


1 TYPICAL MARKER BOARD ELEVATION
3/4" = 1'-0"

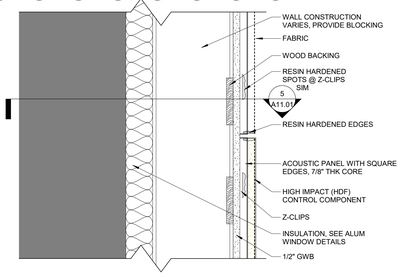


12 TYP CABINET MILLWORK SECTION
1" = 1'-0"

11 TYP DRAWER MILLWORK SECTION
1" = 1'-0"



10 TYP ACCESSIBLE SINK MILLWORK SECTION
1" = 1'-0"



6 ACOUSTIC WALL PANEL PLAN SECTION
3" = 1'-0"

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236 Tower Road
Ithaca, NY 14853

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Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

Job Number	31909.00
Drawing By	BF
Checked By	AT
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

INTERIOR DETAILS

BID DOCUMENTS
Scale: As indicated

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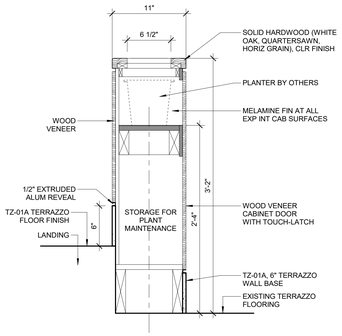
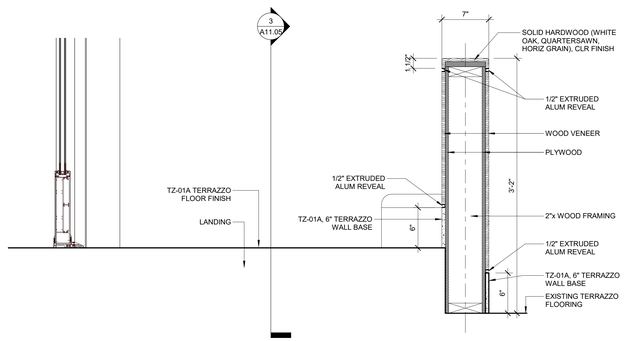


8 GARDEN TERRACE ACCESS PLANTER - D
1 1/2" = 1'-0"



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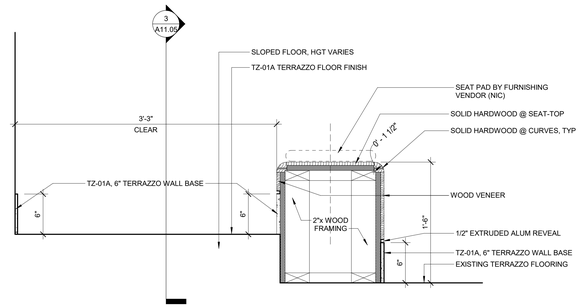

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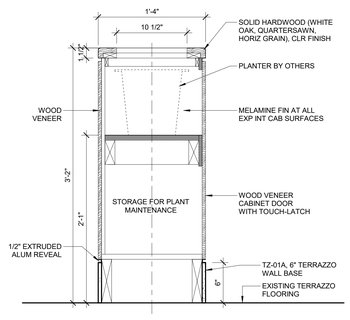

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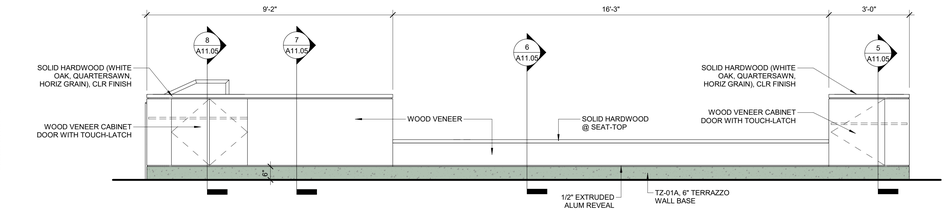
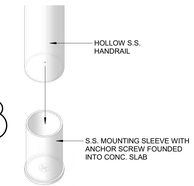


4 GARDEN TERRACE ACCESS MILLWORK - ELEVATION
1/2" = 1'-0"

3 GARDEN TERRACE SLOPED FLOOR - SECTION
1/2" = 1'-0"



11 HANDRAIL BASE MOUNTING SLEEVE
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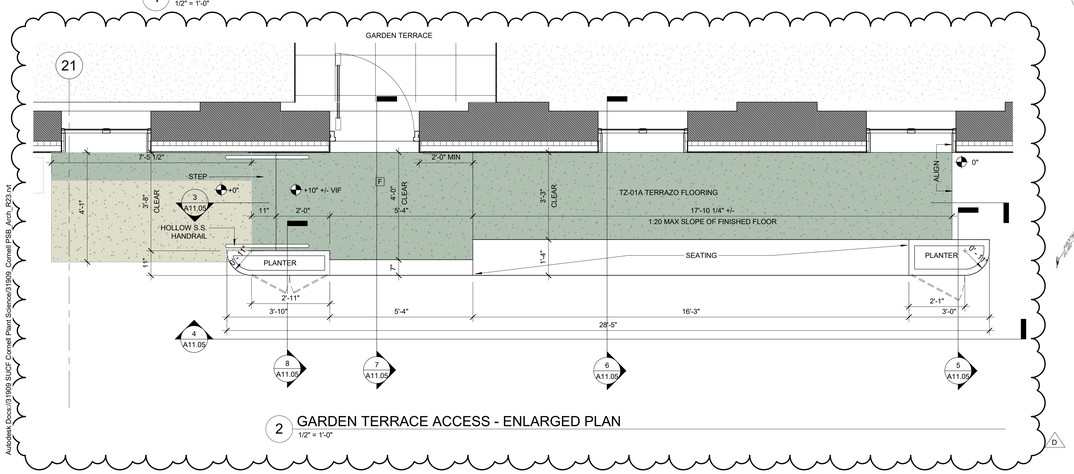
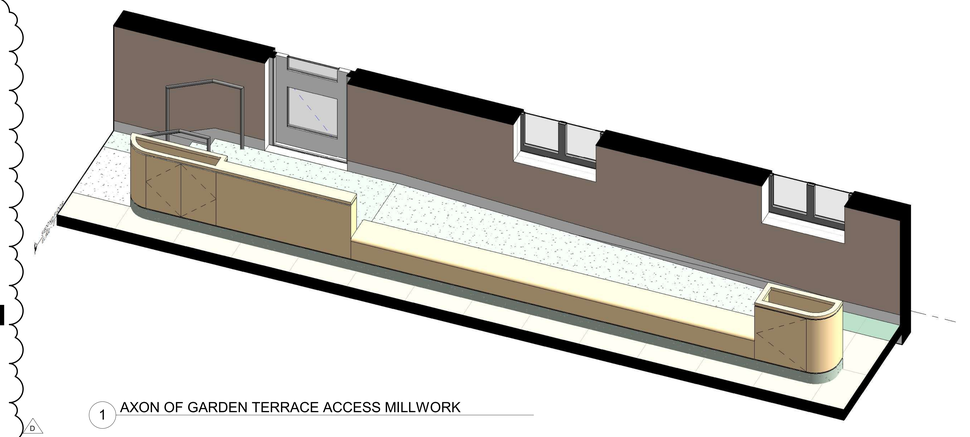


2 GARDEN TERRACE ACCESS - ENLARGED PLAN
1/2" = 1'-0"



1 AXON OF GARDEN TERRACE ACCESS MILLWORK

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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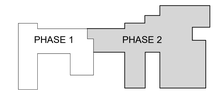
Notes:



Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

D	ADDENDUM 6	11/19/2026

INTERIOR DETAILS - GARDEN TERRACE ACCESS

BID DOCUMENTS
Scale: As indicated

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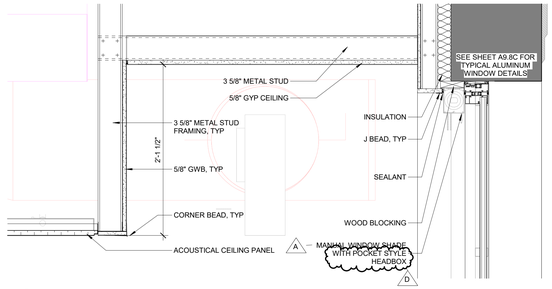
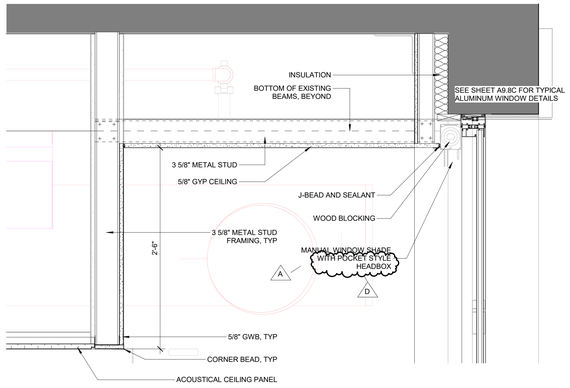


9 TYP. CEILING SOFFIT AT MAIN RESEARCH LAB - THIRD FLOOR
1 1/2" = 1'-0"



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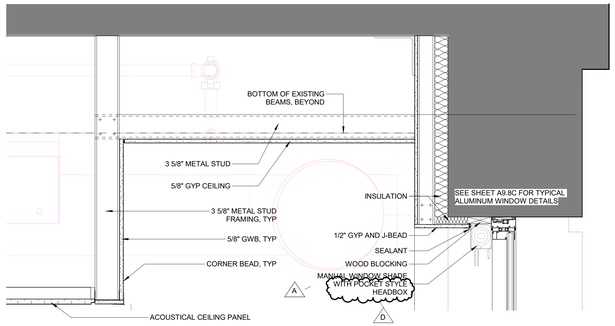
1 1/2" = 1'-0"



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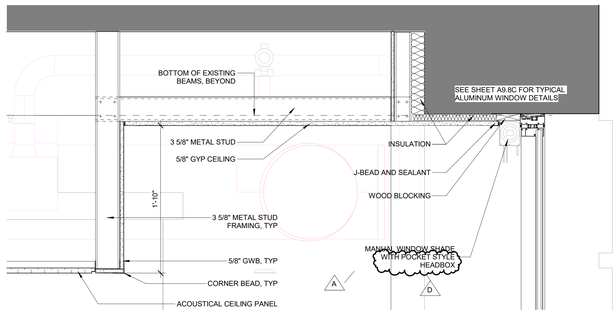
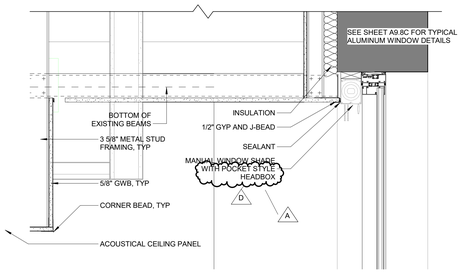
1 1/2" = 1'-0"



6 TYP. CEILING SOFFIT AT MAIN RESEARCH LAB - GROUND FLOOR
1 1/2" = 1'-0"



5 TYP. OFFICE CEILING SOFFIT - FOURTH FLOOR
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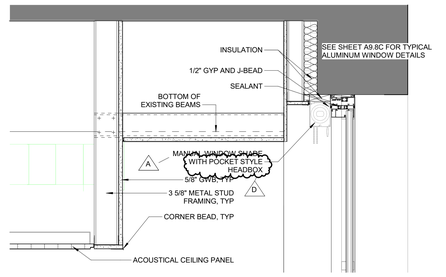

4 TYP. OFFICE CEILING SOFFIT - THIRD FLOOR
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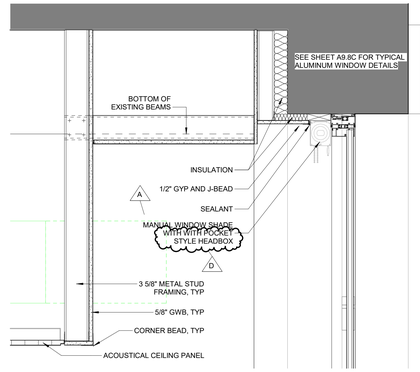

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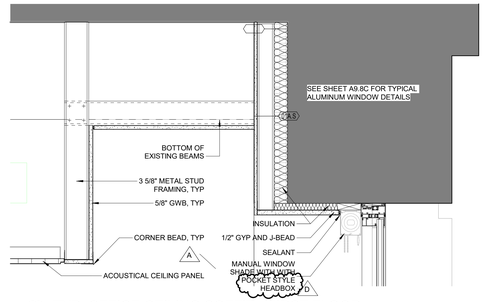

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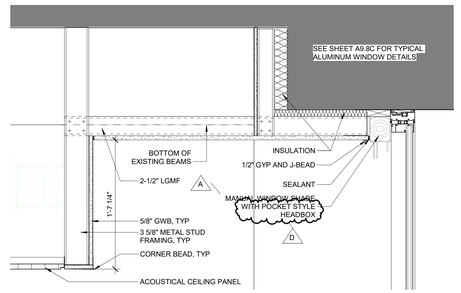

1 TYP. OFFICE CEILING SOFFIT - GROUND FLOOR
1 1/2" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

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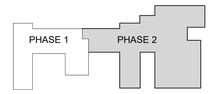

Keyplan

Job Number	31909.00
Drawing By	BF
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

A	ADDENDUM 4	11/12/2026
D	ADDENDUM 6	11/19/2026

CEILING DETAILS - PHASE 2

BID DOCUMENTS
Scale: 1 1/2" = 1'-0"

REGISTERED ARCHITECT JOHN VINCENT RIGGS 022991-1 STATE OF NEW YORK

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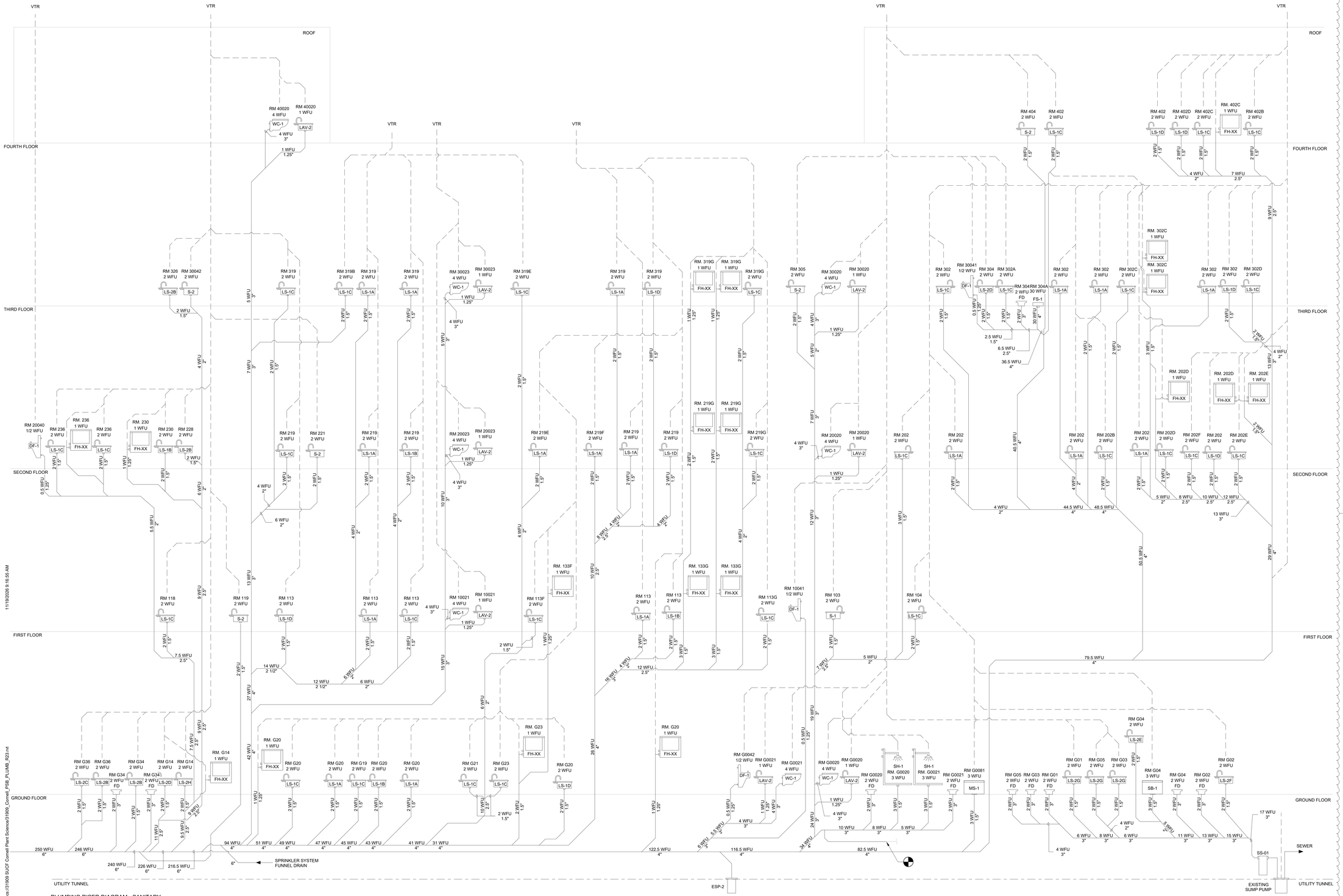

PLUMBING RISER DIAGRAM - SANITARY WASTE/VENT (PHASE 2)
NTS

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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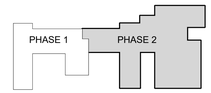

Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

D	ADDENDUM 6	11-19-2026

PLUMBING WASTE AND VENT SCHEMATIC RISER DIAGRAM (PHASE 2)

BID DOCUMENTS
Scale: NTS

STATE OF NEW YORK JOSEPH EVANGELISTA 095338 LICENSED PROFESSIONAL ENGINEER

P7.3

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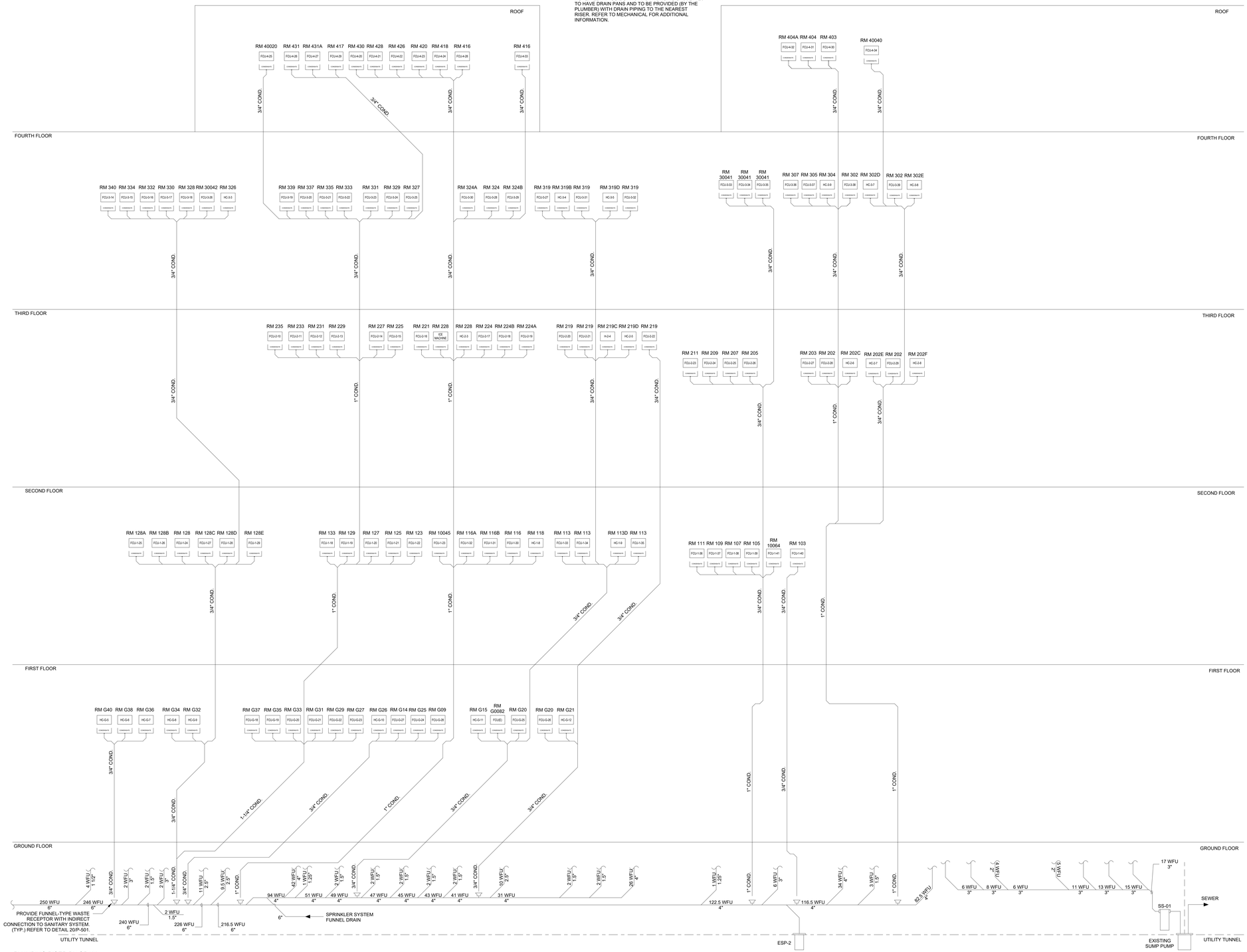
NOTE: ALL FAN COIL UNITS AND HYDRONIC CASSETTES TO HAVE DRAIN PANS AND TO BE PROVIDED (BY THE PLUMBER) WITH DRAIN PIPING TO THE NEAREST RISER. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.



1 PLUMBING RISER DIAGRAM - CONDENSATE DRAINAGE (PHASE 2)
NTS

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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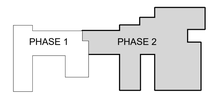

Keyplan

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Revisions

D	ADDENDUM 6	11-19-2026

D

D

PLUMBING CONDENSATE DRAINAGE SCHEMATIC RISER DIAGRAM (PHASE 2)

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Scale: NTS

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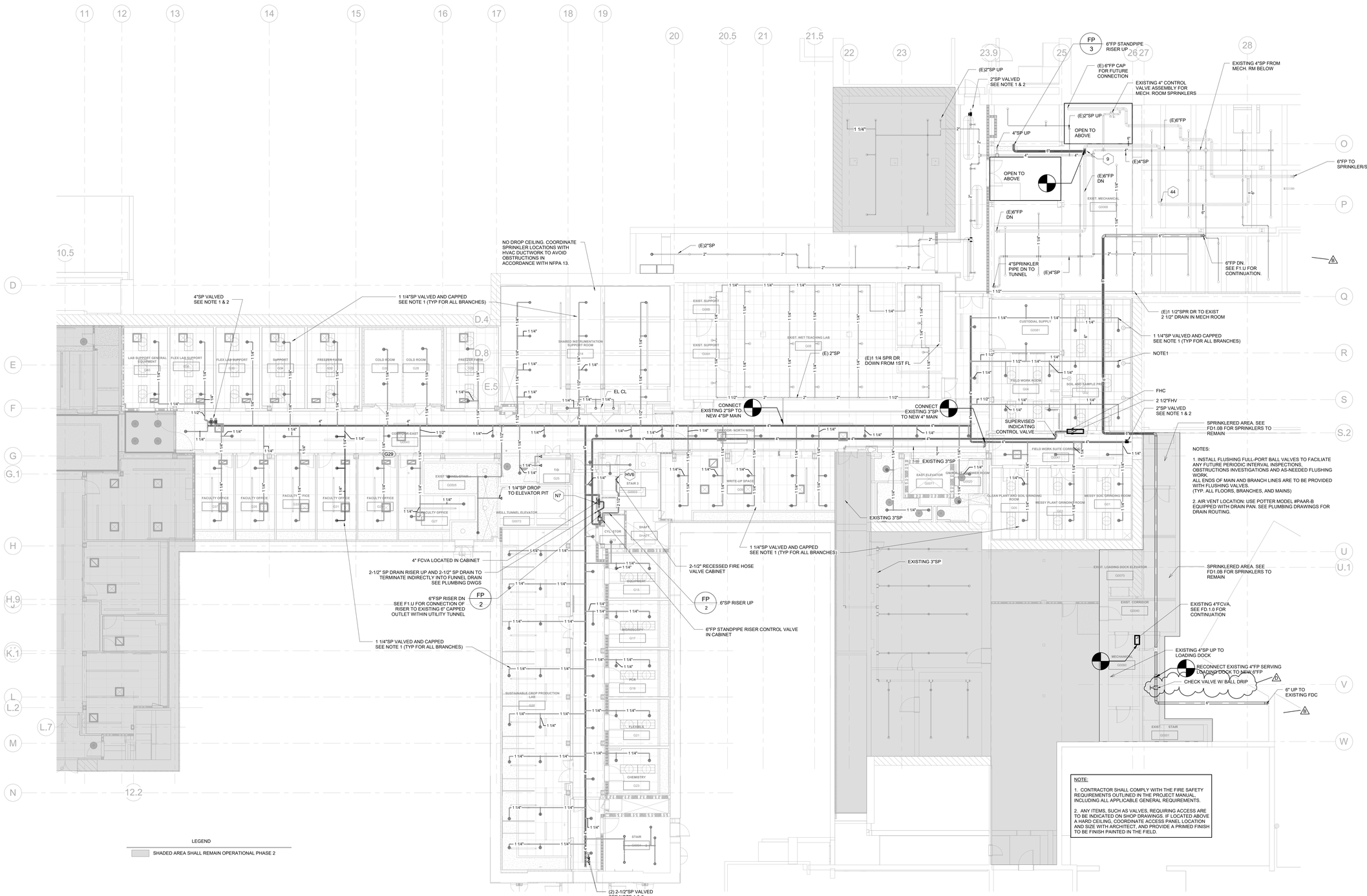

D 2 GROUND FLOOR
F1.0 SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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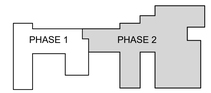

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Job Number	31909
Drawing By	Author
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Filename	
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Revisions

B	ADDENDUM NO 3	11/04/2026
D	ADDENDUM NO 6	11/19/2025

FIRE PROTECTION GROUND FLOOR PLAN - PHASE 2

STATE OF NEW YORK KARL DEPRETTA 095930 REGISTERED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: 1/8" = 1'-0"

F1.0

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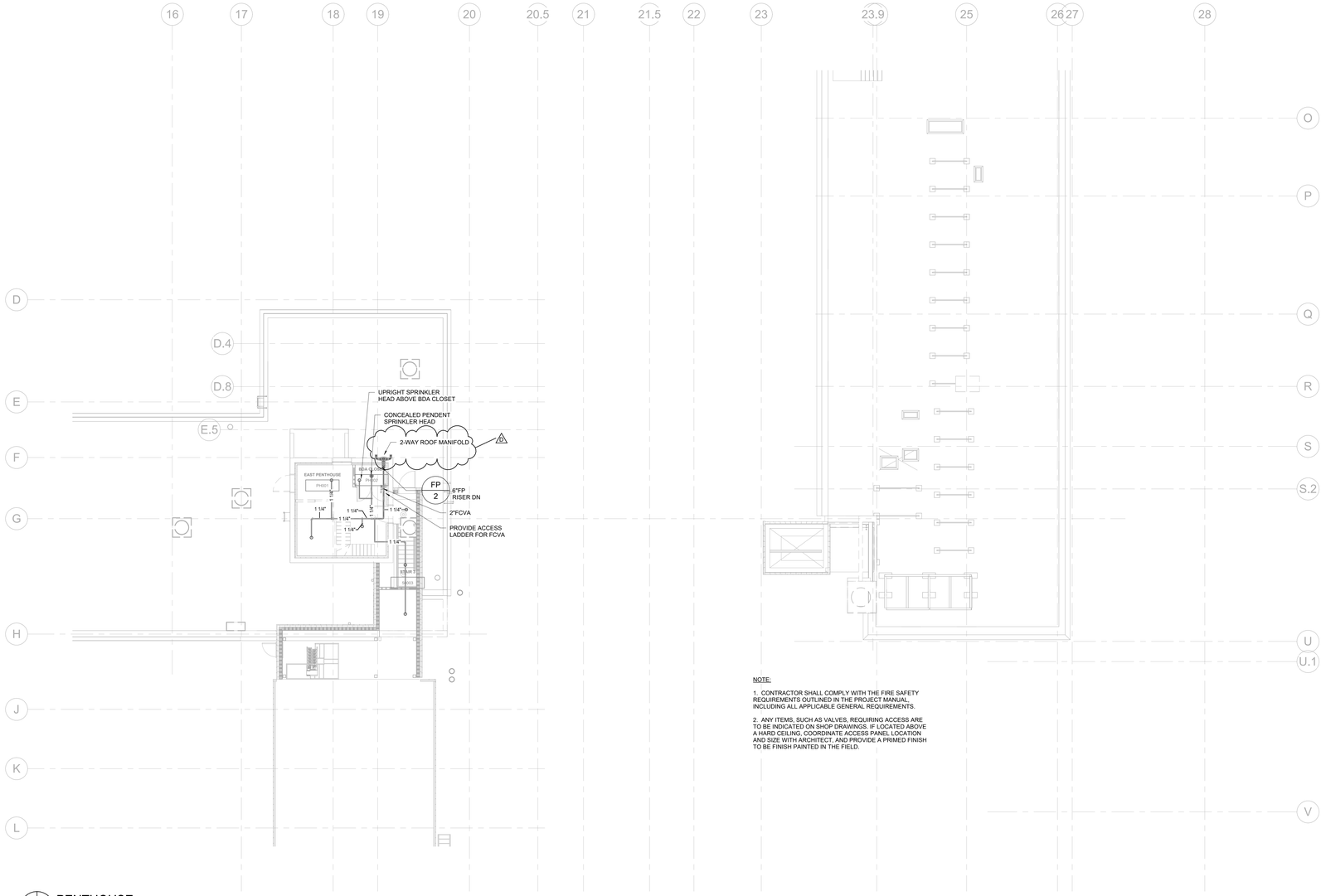

NOTE:

1. CONTRACTOR SHALL COMPLY WITH THE FIRE SAFETY REQUIREMENTS OUTLINED IN THE PROJECT MANUAL, INCLUDING ALL APPLICABLE GENERAL REQUIREMENTS.

2. ANY ITEMS, SUCH AS VALVES, REQUIRING ACCESS ARE TO BE INDICATED ON SHOP DRAWINGS. IF LOCATED ABOVE A HARD CEILING, COORDINATE ACCESS PANEL LOCATION AND SIZE WITH ARCHITECT, AND PROVIDE A PRIMED FINISH TO BE FINISH PAINTED IN THE FIELD.

D 1
F1.5 PENTHOUSE
SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
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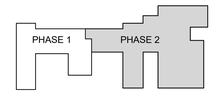

Keyplan

Job Number	31909
Drawing By	Author
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Filename	
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Revisions

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FIRE PROTECTION ROOF AND PENTHOUSE PLAN - PHASE 2

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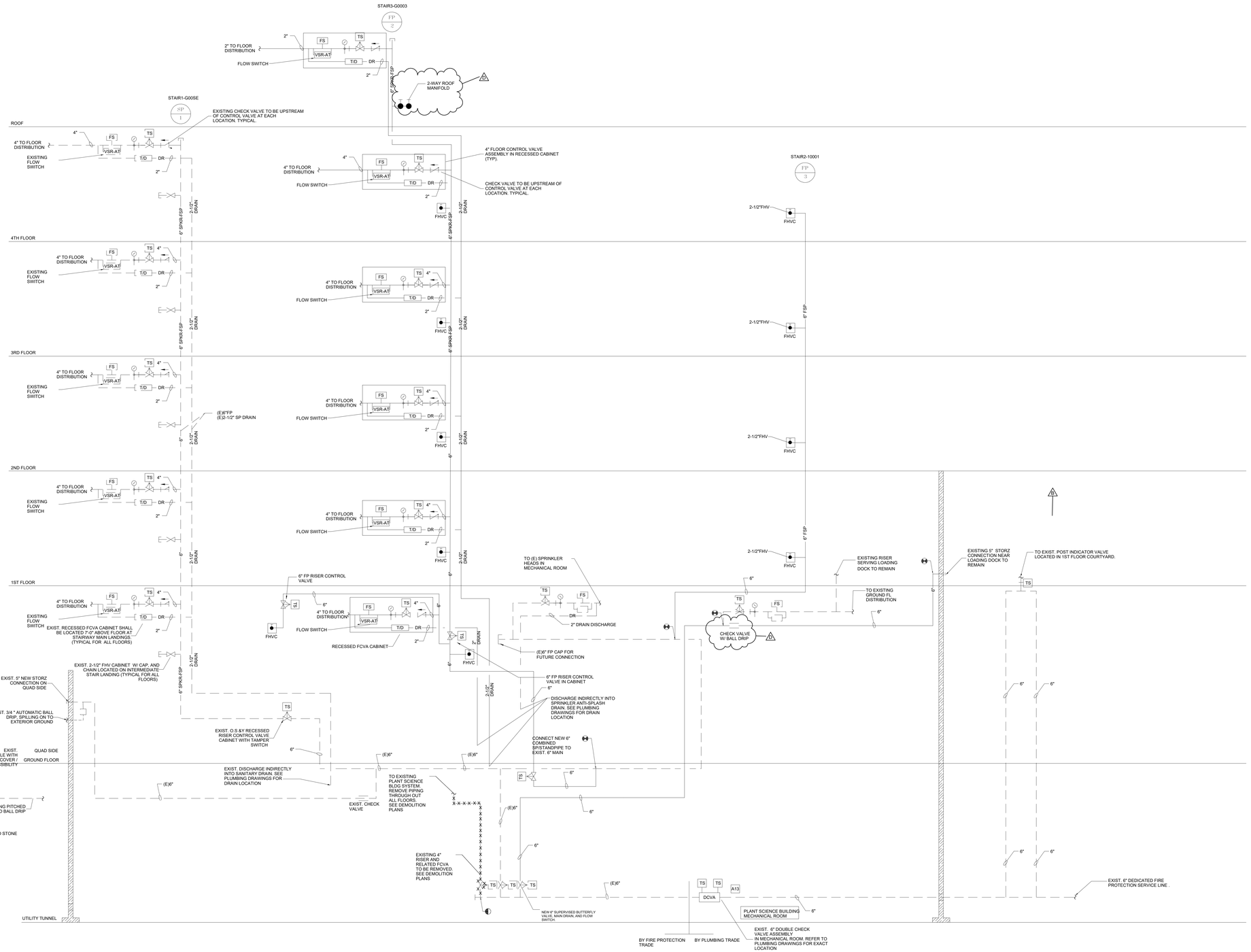

D | 1 — F2.1 SPRINKLER AND STADPIPE RISER DRIAGRAMS
SCALE: 12" = 1'-0"

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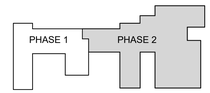

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SPRINKLER AND STANDPIPE RISER DIAGRAMS

BID DOCUMENTS
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F2.1

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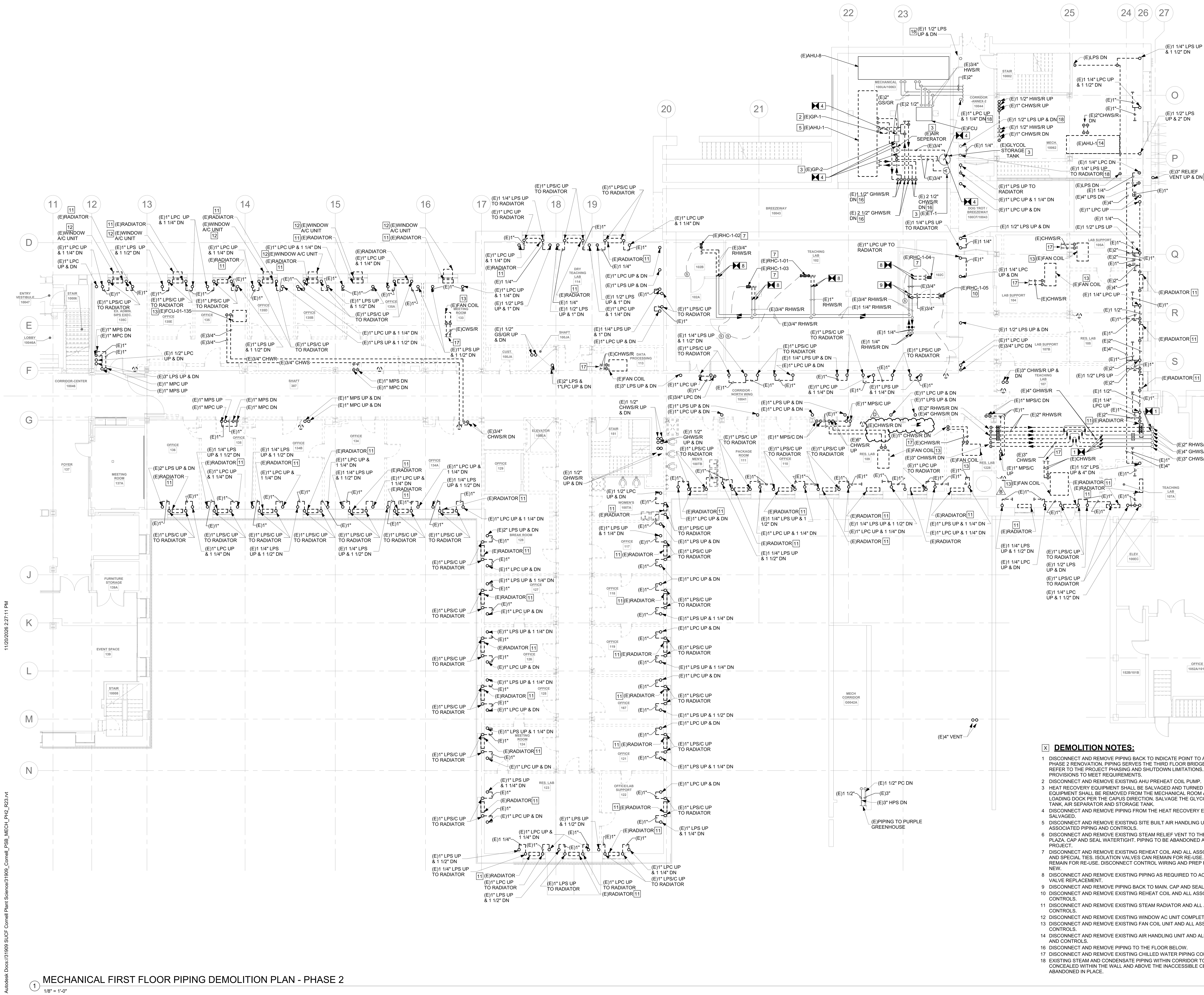

1 MECHANICAL FIRST FLOOR PIPING DEMOLITION PLAN - PHASE 2

1/8" = 1'-0"

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GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE, UNLESS NOTED OTHERWISE. EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK, AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

H. DISCONNECT AND REMOVE ALL PNEUMATIC TUBING BACK TO SOURCE. TUBING SHALL BE REMOVED COMPLETELY BACK TO THE MAIN. THE MAIN SHALL BE REMOVED BACK TO THE COMPRESSOR, UNLESS IT FEEDS EXISTING TO REMAIN EQUIPMENT. COPPER TUBING SHALL BE TERMINATED WITH SOLDERED END. POLY TUBING SHALL BE TERMINATED USING BRASS PLUGS. BENDING OVER COPPER TUBING, PINCHING/BRAZING, AND THE USE OF SHEETMETAL SCREWS TO MAKE TERMINATIONS ARE NOT ACCEPTABLE.

I. WHERE MECHANICAL EQUIPMENT IS INDICATED TO BE DEMOLISHED, REMOVE AN ASSOCIATED CONDENSATE DRAIN PIPING BACK TO THE NEAREST ACTIVE CONNECTION OR POINT OF TERMINATION. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

J. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

X DEMOLITION NOTES:

1 DISCONNECT AND REMOVE PIPING BACK TO INDICATE POINT TO ACCOMMODATE THE PHASE 2 RENOVATION. PIPING SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES. REFER TO THE PROJECT PHASING AND SHUTDOWN LIMITATIONS. PROVIDE ALL REQUIRED PROVISIONS TO MEET REQUIREMENTS.

2 DISCONNECT AND REMOVE EXISTING AHU PREHEAT COIL PUMP.

3 HEAT RECOVERY EQUIPMENT SHALL BE SALVAGED AND TURNED OVER TO CAMPUS. EQUIPMENT SHALL BE REMOVED FROM THE MECHANICAL ROOM AND PLACED WITHIN THE LOADING DOCK PER THE CAPUS DIRECTION. SALVAGE THE GLYCOL PUMP, EXPANSION TANK, AIR SEPARATOR AND STORAGE TANK.

4 DISCONNECT AND REMOVE PIPING FROM THE HEAT RECOVERY EQUIPMENT TO BE SALVAGED.

5 DISCONNECT AND REMOVE EXISTING SITE BUILT AIR HANDLING UNIT COIL AND ALL ASSOCIATED PIPING AND CONTROLS.

6 DISCONNECT AND REMOVE EXISTING STEAM RELIEF VENT TO THE PENETRATION OF THE PLAZA. CAP AND SEAL WATERTIGHT. PIPING TO BE ABANDONED AS PART OF THIS PROJECT.

7 DISCONNECT AND REMOVE EXISTING REHEAT COIL AND ALL ASSOCIATED COIL VALVES AND SPECIAL TIES. ISOLATION VALVES CAN REMAIN FOR RE-USE. EXISTING CONTROLS TO REMAIN FOR RE-USE. DISCONNECT CONTROL WIRING AND PREP FOR CONNECTION TO NEW.

8 DISCONNECT AND REMOVE EXISTING PIPING AS REQUIRED TO ACCOMMODATE COIL AND VALVE REPLACEMENT.

9 DISCONNECT AND REMOVE PIPING BACK TO MAIN. CAP AND SEAL WATERTIGHT.

10 DISCONNECT AND REMOVE EXISTING REHEAT COIL AND ALL ASSOCIATED PIPING AND CONTROLS.

11 DISCONNECT AND REMOVE EXISTING STEAM RADIATOR AND ALL ASSOCIATED PIPING AND CONTROLS.

12 DISCONNECT AND REMOVE EXISTING WINDOW AC UNIT COMPLETE.

13 DISCONNECT AND REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.

14 DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.

16 DISCONNECT AND REMOVE PIPING TO THE FLOOR BELOW.

17 DISCONNECT AND REMOVE EXISTING CHILLED WATER PIPING COMPLETE.

18 EXISTING STEAM AND CONDENSATE PIPING WITHIN CORRIDOR TO MANN LIBRARY IS CONCEALED WITHIN THE WALL AND ABOVE THE INACCESSIBLE CEILING. PIPING SHALL BE ABANDONED IN PLACE.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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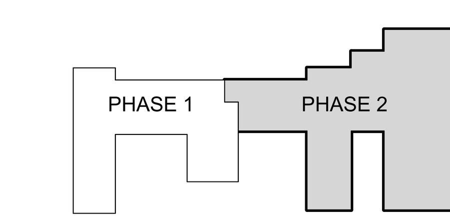

Keyplan

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Drawing By	ZMH
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Date	August 31, 2026

Revisions

B	Addendum No. 3	11/04/2026
D	Addendum No. 6	11/19/2026

MECHANICAL FIRST FLOOR PIPING DEMOLITION PLAN - PHASE 2

BID DOCUMENTS
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Reg. Exp: 04/30/2029
Cert. of Auth: 099088

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GENERAL NOTES:

A. BALANCE VENTILATION AIR TO EACH FAN COIL PER AIRFLOW LISTED IN FAN COIL UNIT SCHEDULE ON SCHEDULES SHEET.

B. THE DUCTWORK AT THE VAV AND AIR VALVE INLET AND OUTLET SHALL MATCH THE SIZES SHOWN ON THE EQUIPMENT SCHEDULE.

C. SMOKE DAMPER REMOTE TEST SWITCH SHALL BE COORDINATED WITH THE LOCATION OF THE DUCT SMOKE DETECTOR TEST/STATUS DEVICE AND LOCATED IN AN ACCESSIBLE LOCATION.

D. UNLESS OTHERWISE INDICATED, ALL LABORATORY EXHAUST IS LOCATED WITHIN THE LAB SUITE/CONTROL AREA IT SERVES AND DOES NOT REQUIRE FIRE WRAP.

E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1 FAN COIL UNIT RETURN PLENUM SHALL MATCH UNIT CONNECTION SIZE. PLENUM HEIGHT SHALL BE INCREASED AS REQUIRED TO ACCOMMODATE DUCTWORK CONNECTIONS.

2 PROVIDE 6" POINT OF USE EXHAUST. REFER TO DETAIL FOR FURTHER REQUIREMENTS. (D.)

3 TYPE A, 22x10 GRILLE.

4 TERMINATE OPEN ENDED DUCT WITH WIRE MESH SCREEN.

5 PROVIDE AUTOMATIC AIR DAMPER AND PLENUM FOR THE INTAKE LOUVER. LOUVER SHALL BE CONTROLLED BY EXISTING EXHAUST FANS EF-1-1 AND EF-7.

6 BLANK-OFF BOTTOM 24" OF INTAKE LOUVER. PLENUM AND AUTOMATIC AIR DAMPER SHALL BE 48x48.

7 PROVIDE ALL DUCTWORK MODIFICATIONS AS REQUIRED TO PROVIDE NEW REHEAT COIL.

8 RE-INSTALL EXISTING SALVAGED AIR VALVE IN LOCATION SHOWN. PROVIDE ALL MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.

9 RE-BALANCE AND RE-CALIBRATE EXISTING AIR VALVE PER THE LAB AIR FLOW SCHEDULES.

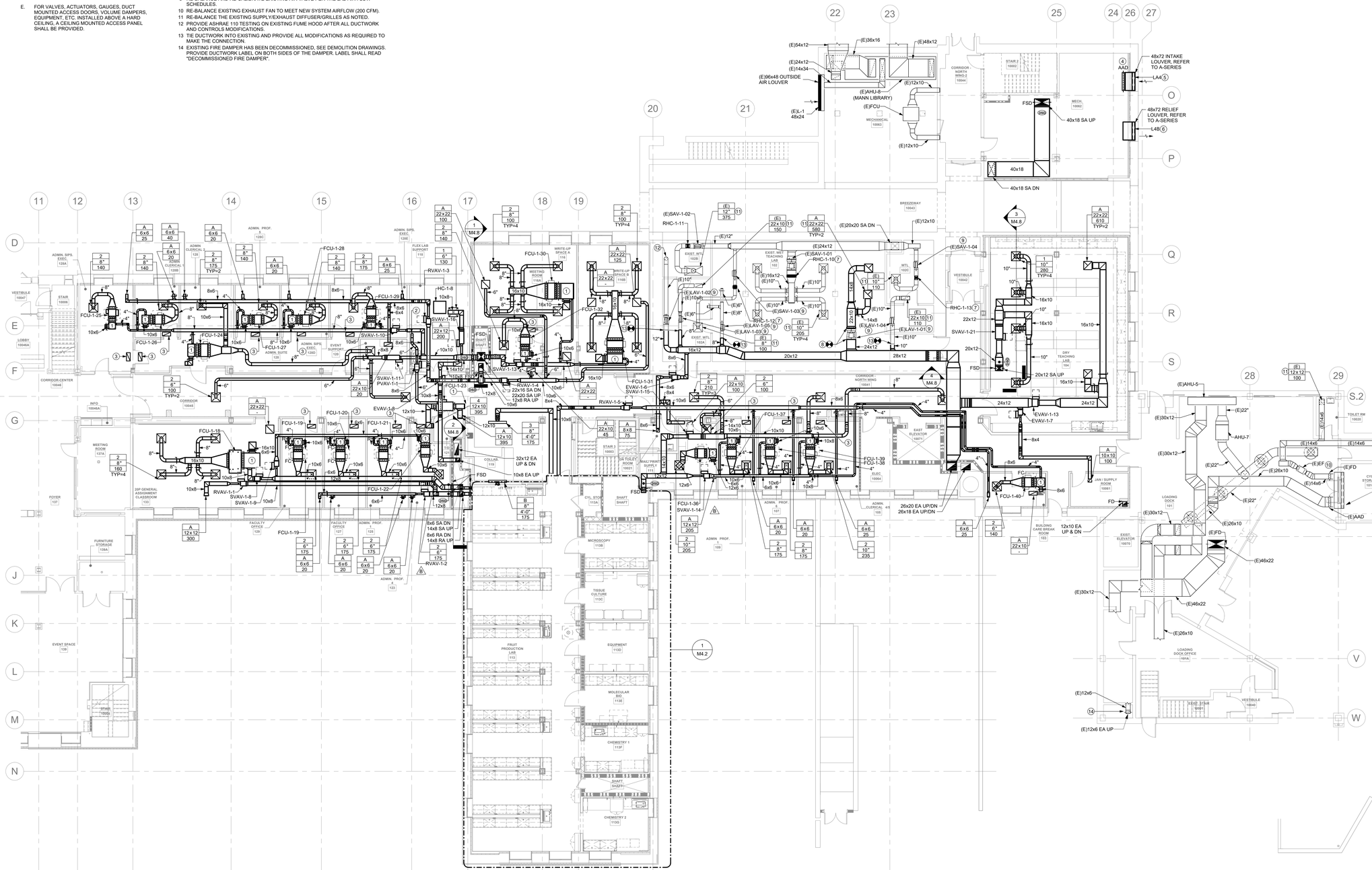
10 RE-BALANCE EXISTING EXHAUST FAN TO MEET NEW SYSTEM AIRFLOW (200 CFM).

11 RE-BALANCE THE EXISTING SUPPLY/EXHAUST DIFFUSER/GRILLES AS NOTED.

12 PROVIDE ASHRAE 110 TESTING ON EXISTING FUME HOOD AFTER ALL DUCTWORK AND CONTROLS MODIFICATIONS.

13 TIE DUCTWORK INTO EXISTING AND PROVIDE ALL MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.

14 EXISTING FIRE DAMPER HAS BEEN DECOMMISSIONED, SEE DEMOLITION DRAWINGS. PROVIDE DUCTWORK LABEL ON BOTH SIDES OF THE DAMPER. LABEL SHALL READ "DECOMMISSIONED FIRE DAMPER".



1 MECHANICAL FIRST FLOOR DUCTWORK PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
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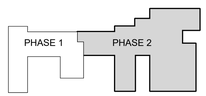

Keyplan

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MECHANICAL FIRST FLOOR DUCTWORK PLAN - PHASE 2

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GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, ALL BRANCH PIPING TO EQUIPMENT SHALL BE 3/4".

B. ALL BRANCH PIPING CONNECTIONS SHALL BE MADE AT THE TOP OF THE MAIN.

C. REFER TO DUCTWORK PLANS FOR ROUTING OF CORROSIVE CABINET VENT PIPING.

D. REFER TO DUCTWORK PLANS FOR ROUTING OF FLAMMABLE CABINET VENT PIPING.

E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1 TIE PIPING INTO EXISTING. PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.

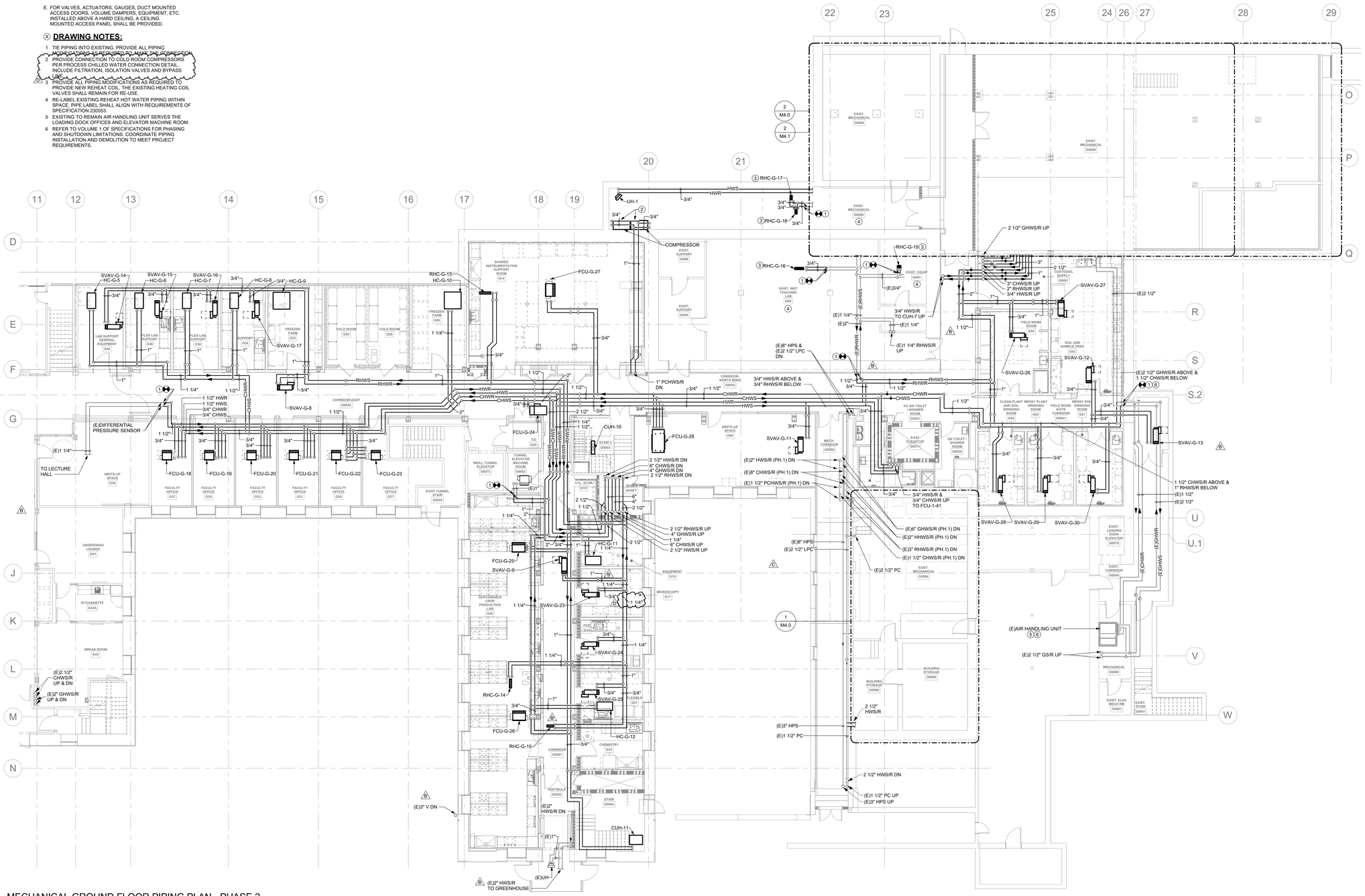
2 PROVIDE CONNECTION TO COLD ROOM COMPRESSORS PER PROCESS CHILLED WATER CONNECTION DETAIL. INCLUDE FILTRATION, ISOLATION VALVES AND BYPASS LINE.

3 PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO PROVIDE NEW REHEAT COIL. THE EXISTING HEATING COIL VALVES SHALL REMAIN FOR RE-USE.

4 RE-LABEL EXISTING REHEAT HOT WATER PIPING WITHIN SPACE. PIPE LABEL SHALL ALIGN WITH REQUIREMENTS OF SPECIFICATION 230553.

5 EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE LOADING DOCK OFFICES AND ELEVATOR MACHINE ROOM.

6 REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS. COORDINATE PIPING INSTALLATION AND DEMOLITION TO MEET PROJECT REQUIREMENTS.



1 MECHANICAL GROUND FLOOR PIPING PLAN - PHASE 2
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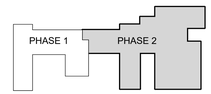

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MECHANICAL GROUND FLOOR PIPING PLAN - PHASE 2

STATE OF NEW YORK · MARIE DANIELLE YOUNES · LICENSED PROFESSIONAL ENGINEER · 094525

Reg. Exp: 04/30/2029
Cert. of Auth: 099088

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GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, ALL BRANCH PIPING TO EQUIPMENT SHALL BE 3/4".

B. ALL BRANCH PIPING CONNECTIONS SHALL BE MADE AT THE TOP OF THE MAIN.

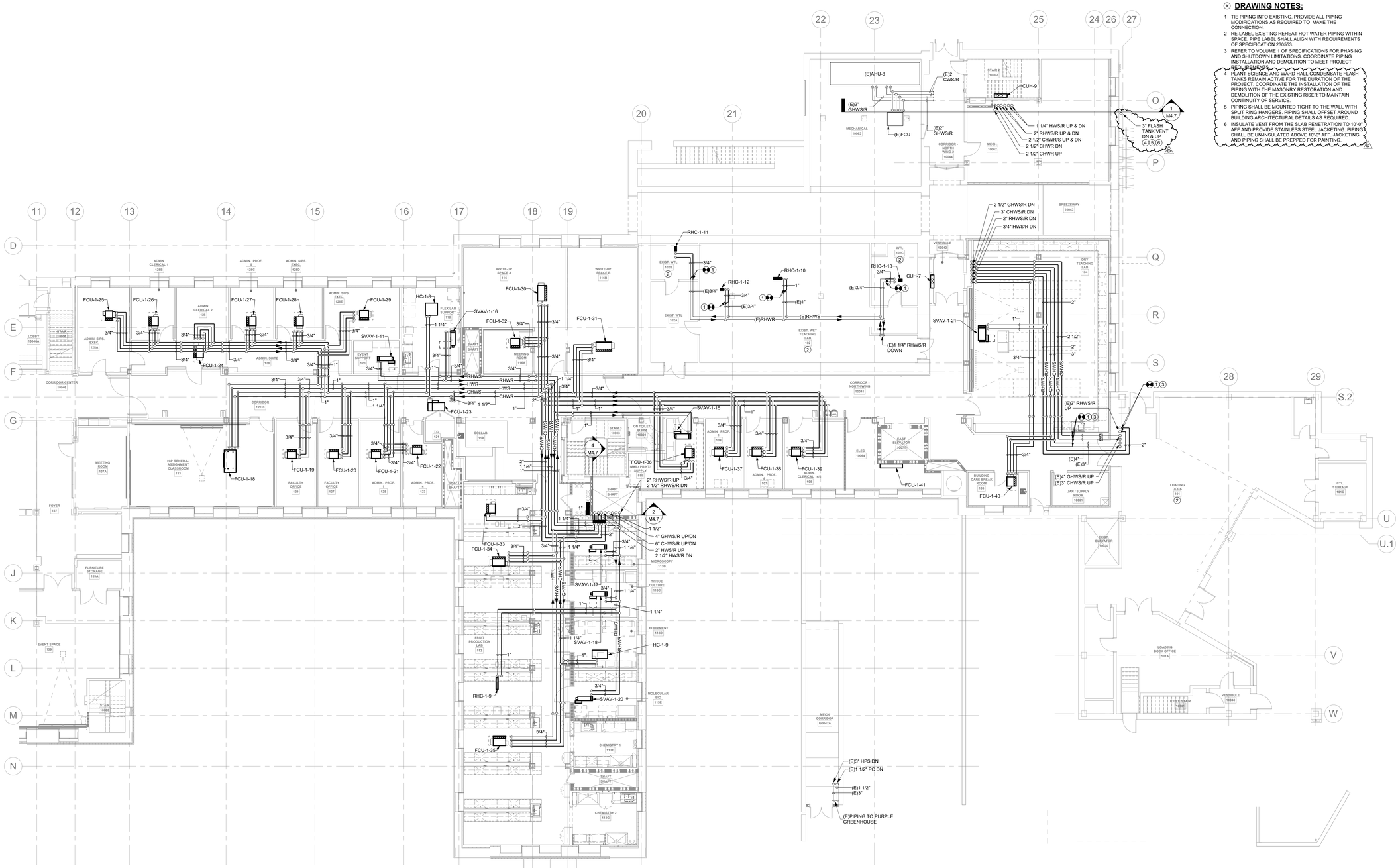
C. REFER TO DUCTWORK PLANS FOR ROUTING OF CORROSIVE CABINET VENT PIPING.

D. REFER TO DUCTWORK PLANS FOR ROUTING OF FLAMMABLE CABINET VENT PIPING.

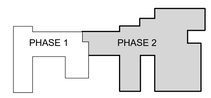
E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

Ⓧ DRAWING NOTES:

1. TIE PIPING INTO EXISTING. PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
2. RE-LABEL EXISTING REHEAT HOT WATER PIPING WITHIN SPACE. PIPE LABEL SHALL ALIGN WITH REQUIREMENTS OF SPECIFICATION 230553.
3. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS. COORDINATE PIPING INSTALLATION AND DEMOLITION TO MEET PROJECT REQUIREMENTS.
4. PLANT SCIENCE AND WARD HALL CONDENSATE FLASH TANKS REMAIN ACTIVE FOR THE DURATION OF THE PROJECT. COORDINATE THE INSTALLATION OF THE PIPING WITH THE MASONRY RESTORATION AND DEMOLITION OF THE EXISTING RISER TO MAINTAIN CONTINUITY OF SERVICE.
5. PIPING SHALL BE MOUNTED TIGHT TO THE WALL WITH SPLIT RING HANGERS. PIPING SHALL OFFSET AROUND BUILDING ARCHITECTURAL DETAILS AS REQUIRED.
6. INSULATE VENT FROM THE SLAB PENETRATION TO 10'-0" AFF AND PROVIDE STAINLESS STEEL JACKETING. PIPING SHALL BE UN-INSULATED ABOVE 10'-0" AFF. JACKETING AND PIPING SHALL BE PREPPED FOR PAINTING.



1 MECHANICAL FIRST FLOOR PIPING PLAN - PHASE 2
1/8" = 1'-0"



Keyplan

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

Job Number	31909.00	
Drawing By	ZMH	
Checked By	NMT	
Filename		
Date	August 31, 2026	
Revisions		
C	Addendum No. 4	11/12/2026
D	Addendum No. 6	11/19/2026

MECHANICAL FIRST FLOOR PIPING PLAN - PHASE 2

STATE OF NEW YORK DANIEL GRAIG SWEET 094525 LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
Cert. of Auth: 099088

BID DOCUMENTS
Scale: 1/8" = 1'-0"

M2.1

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GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, ALL BRANCH PIPING TO EQUIPMENT SHALL BE 3/4".

B. ALL BRANCH PIPING CONNECTIONS SHALL BE MADE AT THE TOP OF THE MAIN.

C. REFER TO DUCTWORK PLANS FOR ROUTING OF CORROSIVE CABINET VENT PIPING.

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ⓧ DRAWING NOTES:

1 RE-BALANCE EXISTING AIR HANDLING UNIT TO FLOW RATES INDICATED ON PIPING SCHEMATIC.

2 RE-LABEL EXISTING REHEAT HOT WATER PIPING WITHIN SPACE. PIPE LABEL SHALL ALIGN WITH REQUIREMENTS OF SPECIFICATION 230553.

3 EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES.

4 LOCATE DIFFERENTIAL PRESSURE SENSOR FOR THE PERIMETER, REHEAT, GLYCOL PREHEAT AND CHILLED WATER SYSTEMS WITHIN THE SHAFT. SENSORS SHALL BE MOUNTED FOR EASE OF ACCESSIBILITY BASED ON OTHER SYSTEMS WITHIN THE SHAFT.

5 LOCATE DIFFERENTIAL PRESSURE SENSOR FOR THE PERIMETER, REHEAT AND CHILLED WATER SYSTEMS WITHIN THE SHAFT. SENSORS SHALL BE MOUNTED FOR EASE OF ACCESSIBILITY BASED ON OTHER SYSTEMS WITHIN THE SHAFT.

6 THE EXISTING GLYCOL PIPING ASSOCIATED WITH THE AIR HANDLING UNIT SHALL BE DRAINED, CLEANED AND REFILLED WITH THE OWNER FURNISHED TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF TO THE EXISTING PHASE 1 PIPING.

7 PLANT SCIENCE AND WARD HALL CONDENSATE FLASH TANKS REMAIN ACTIVE FOR THE DURATION OF THE PROJECT. COORDINATE THE INSTALLATION OF THE PIPING WITH THE MASONRY RESTORATION AND DEMOLITION OF THE EXISTING RISER TO MAINTAIN CONTINUITY OF SERVICE.

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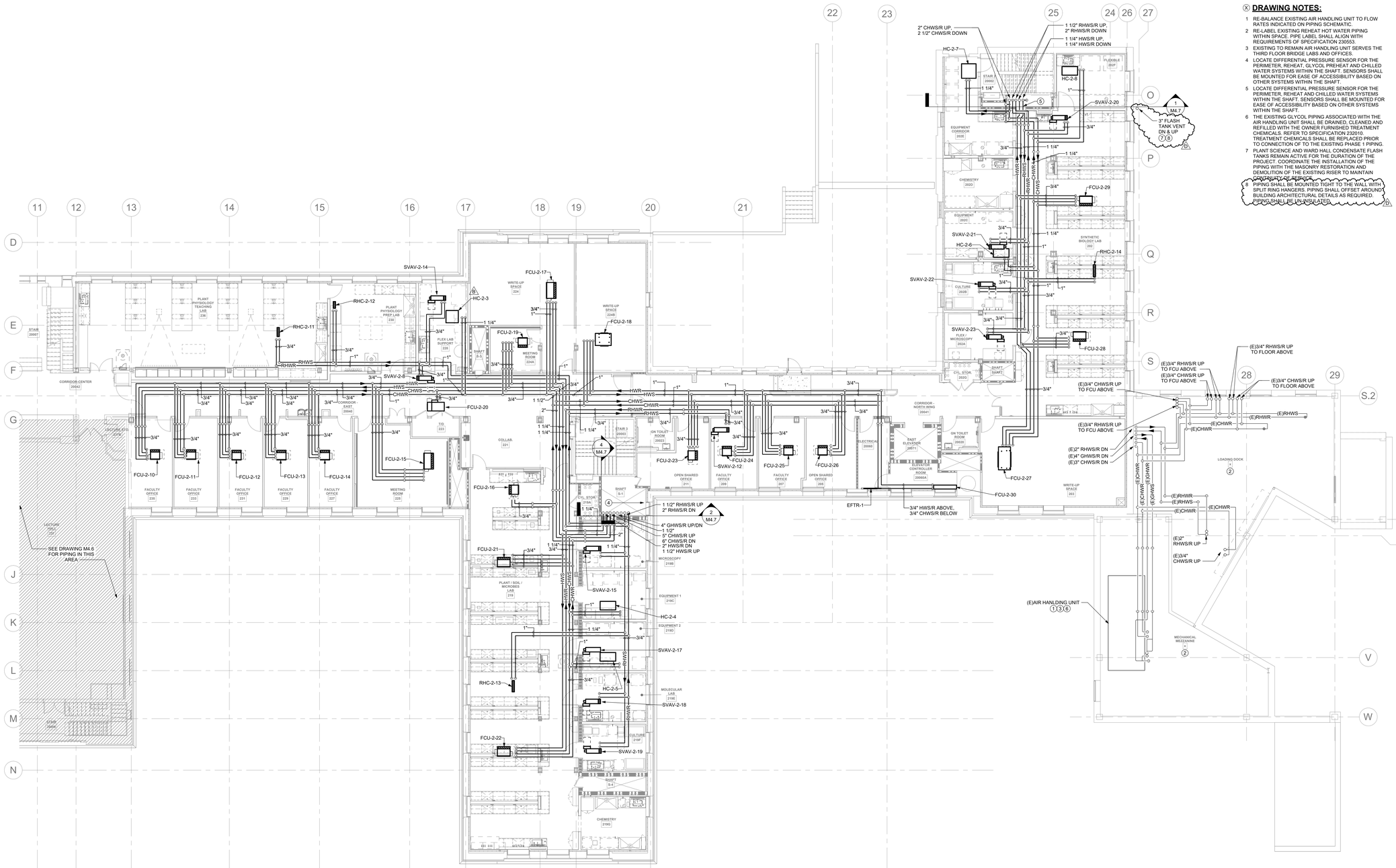

1 MECHANICAL SECOND FLOOR PIPING PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
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Notes:

Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

B	Addendum No. 3	11/04/2026
D	Addendum No. 6	11/19/2026

MECHANICAL SECOND FLOOR PIPING PLAN - PHASE 2

STATE OF NEW YORK · ROBERT DANIEL YONKER · 094525 · LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
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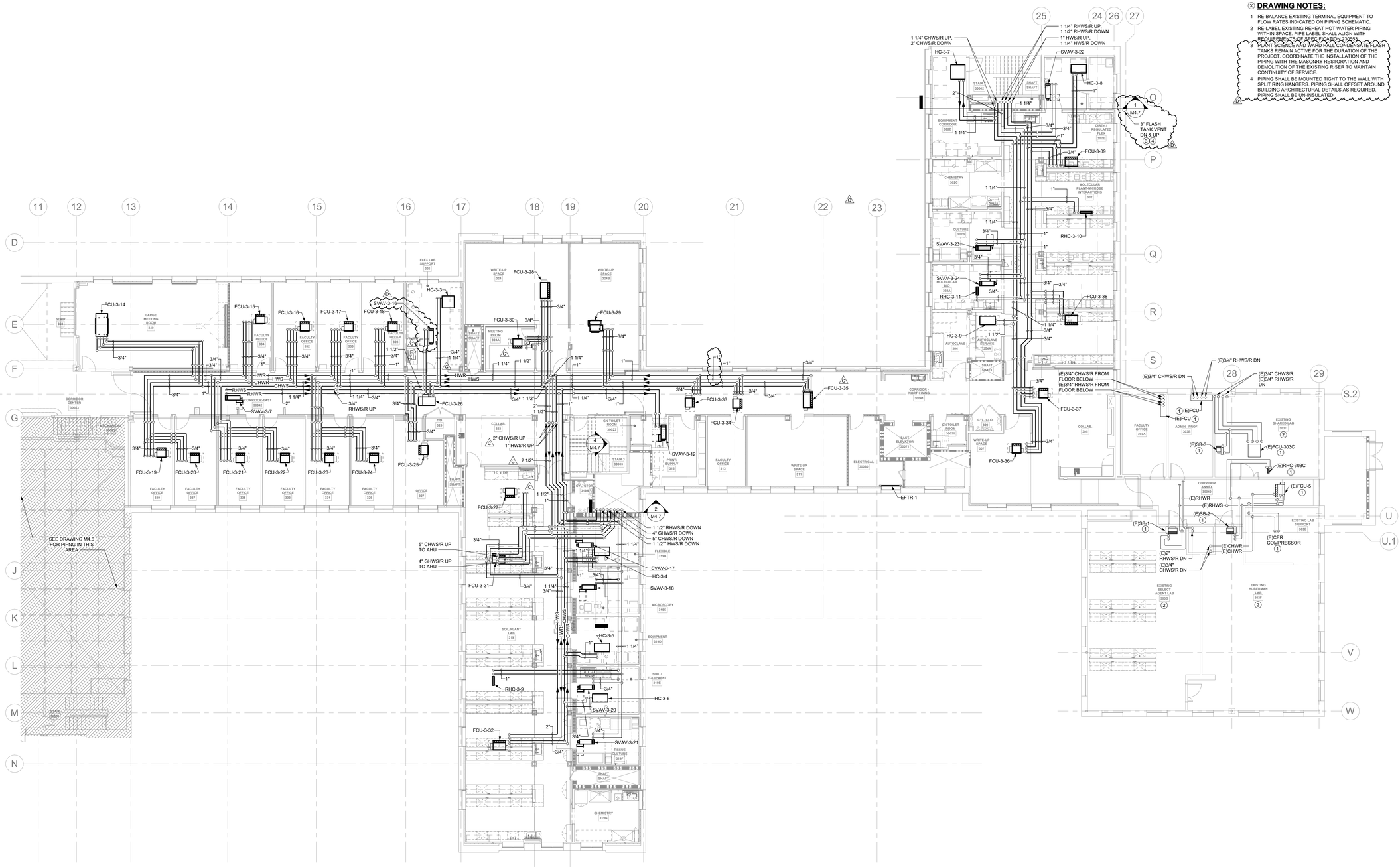
SEE DRAWING M4.6 FOR PIPNG IN THIS AREA
1 1/4" CHWS/R UP, 2" CHWS/R DOWN
1 1/4" RHWS/R UP
1 1/2" RHWS/R DOWN
1" HWS/R UP, 1 1/4" HWS/R DOWN
3" FLASH TANK VENT DN & UP
(E)3/4" RHWS/R DN
(E)3/4" CHWS/R FROM FLOOR BELOW
(E)3/4" RHWS/R FROM FLOOR BELOW
(E)3/4" CHWS/R DN
(E)3/4" CHWS/R (E)3/4" RHWS/R DN
(E)FCU
(E)SB-3
(E)FCU-303C
(E)RHC-303C
(E)FCU-5
(E)RHWR
(E)RHWS
(E)SB-2
(E)SB-1
(E)CHWR
(E)CHWR
(E)2" RHWS/R DN
(E)3/4" CHWS/R DN
(E)CER COMPRESSOR
1 1/2" RHWS/R DOWN
4" GHWS/R DOWN
5" CHWS/R DOWN
1 1/2"" HWS/R DOWN
5" CHWS/R UP TO AHU
4" GHWS/R UP TO AHU
2" CHWS/R UP
1" HWS/R UP
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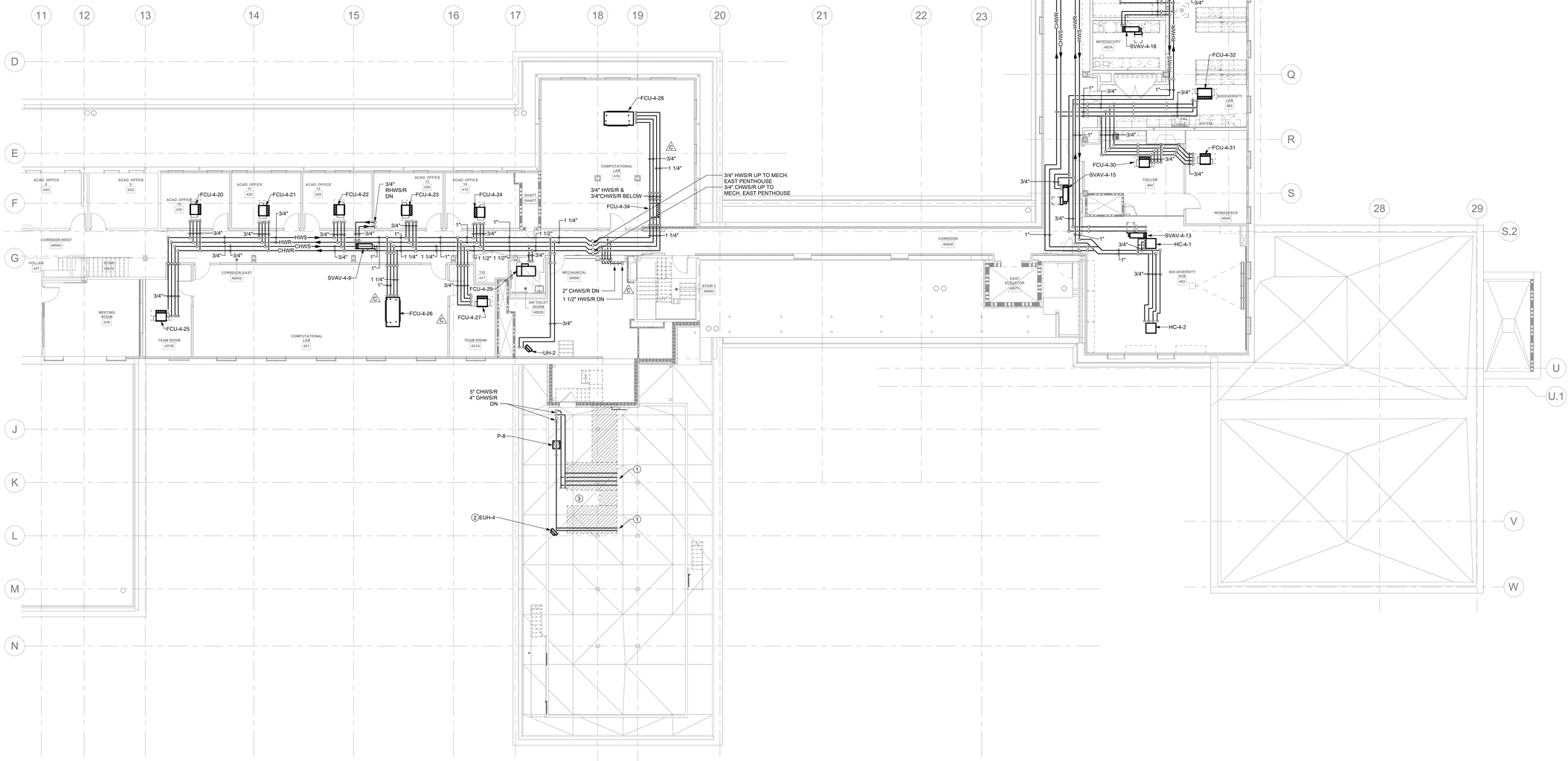


1 MECHANICAL FOURTH FLOOR PIPING PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, ALL BRANCH PIPING TO EQUIPMENT SHALL BE 3/4".

B. ALL BRANCH PIPING CONNECTIONS SHALL BE MADE AT THE TOP OF THE MAIN.

C. REFER TO DUCTWORK PLANS FOR ROUTING OF CORROSIVE CABINET VENT PIPING.

D. REFER TO DUCTWORK PLANS FOR ROUTING OF FLAMMABLE CABINET VENT PIPING.

E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1 PROVIDE INSULATED PIPING WITH JACKETING WITHIN THE AIR HANDLING UNIT CABINET FOR THE SPLIT COILS. ALL PIPING SHALL BE FIELD PIPED AND INSULATED.
2 MOUNT 7'-0" AFF.
3 PIPING WITHIN AIR HANDLING UNIT VESTIBULE SHALL BE CONFIGURED TO MAINTAIN COIL PULL CLEARANCE.
4 PLANT SCIENCE AND WARD HALL CONDENSATE FLASH TANKS REMAIN ACTIVE FOR THE DURATION OF THE PROJECT. COORDINATE THE INSTALLATION OF THE PIPING WITH THE MASONRY RESTORATION AND DEMOLITION OF THE EXISTING RISER TO MAINTAIN CONTINUITY OF SERVICE.
5 PIPING SHALL BE MOUNTED TIGHT TO THE WALL WITH SPLIT RING HANGERS. PIPING SHALL OFFSET AROUND BUILDING ARCHITECTURAL DETAILS AS REQUIRED. PIPING SHALL BE UN-INSULATED.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

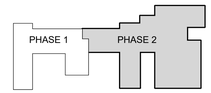
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

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Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

C	Addendum No. 4	11/12/2026
D	Addendum No. 6	11/19/2026

MECHANICAL FOURTH FLOOR PIPING PLAN - PHASE 2

Reg. Exp: 04/30/2029
Cert. of Auth: 099088

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

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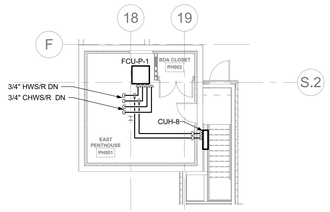
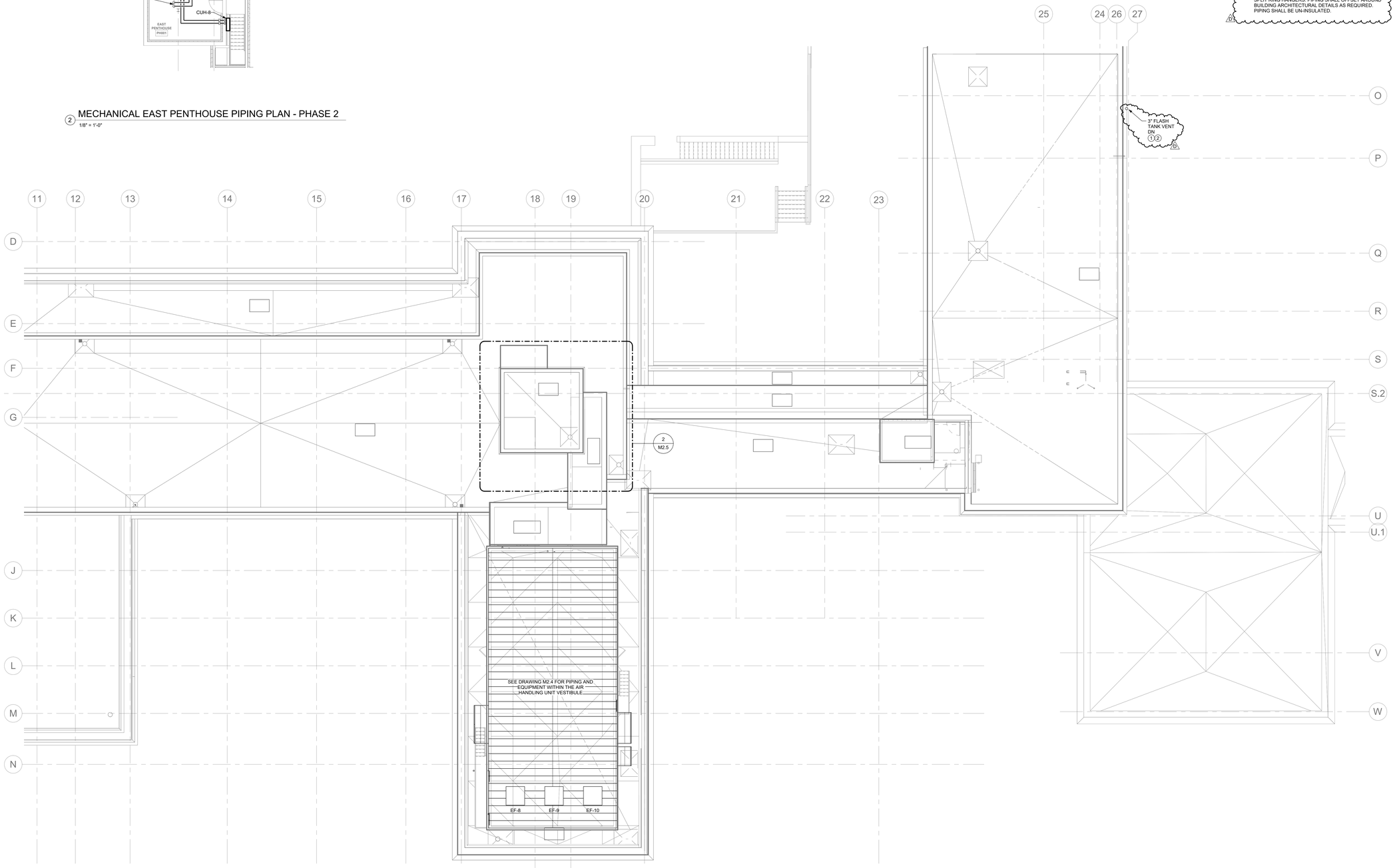


2 MECHANICAL EAST PENTHOUSE PIPING PLAN - PHASE 2
1/8" = 1'-0"



1 MECHANICAL ROOF PIPING PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, ALL BRANCH PIPING TO EQUIPMENT SHALL BE 3/4".

B. ALL BRANCH PIPING CONNECTIONS SHALL BE MADE AT THE TOP OF THE MAIN.

Ⓧ DRAWING NOTES:

1. PLANT SCIENCE AND WARD HALL CONDENSATE FLASH TANKS REMAIN ACTIVE FOR THE DURATION OF THE PROJECT. COORDINATE THE INSTALLATION OF THE PIPING WITH THE MASONRY RESTORATION AND DEMOLITION OF THE EXISTING RISER TO MAINTAIN CONTINUITY OF SERVICE.
2. PIPING SHALL BE MOUNTED TIGHT TO THE WALL WITH SPLIT RING HANGERS. PIPING SHALL OFFSET AROUND BUILDING ARCHITECTURAL DETAILS AS REQUIRED. PIPING SHALL BE UN-INSULATED.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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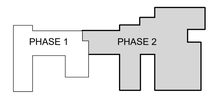
Notes:



Keyplan

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Date	August 31, 2026

Revisions

D	Addendum No. 6	11/19/2026

MECHANICAL ROOF PIPING PLAN - PHASE 2

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GENERAL NOTES:

A. COORDINATE EXACT LOCATION OF VENTILATION SHUTDOWN SWITCHES AND SPACE SENSORS WITH A-SERIES DRAWINGS.

B. REFER TO E-SERIES DRAWINGS FOR OCCUPANCY SENSOR LOCATIONS. OCCUPANCY SENSORS ARE PROVIDED BY DIVISION 26. CONTROL WIRING FROM OCCUPANCY SENSOR TO BACS CONTROLLER SHALL BE PROVIDED BY DIVISION 23.

C. SUBMIT PROPOSED LOCATIONS FOR BMS PANELS. PANELS SHALL BE CONCEALED ABOVE THE CEILING OR LOCATED WITHIN MECHANICAL / ELECTRICAL SPACE.

D. POWER SHALL BE EXTENDED FROM JUNCTION BOXES, PROVIDED BY DIVISION 26, TO BMS PANELS BY DIVISION 23. REFER TO E-SERIES DRAWINGS FOR JUNCTION BOXES AND CIRCUITS INTENDED FOR BMS PANELS.

E. PROVIDE BMS MONITORING ALL COMBINATION FIRE SMOKE DAMPERS OR SMOKE DAMPERS. REFER TO PLANS FOR LOCATIONS.

F. PROVIDE COMBINATION SPACE TEMPERATURE AND HUMIDITY SENSOR FOR TEMPERATURE CONTROL IN ALL SPACES SERVED BY HEATING/COOLING EQUIPMENT.

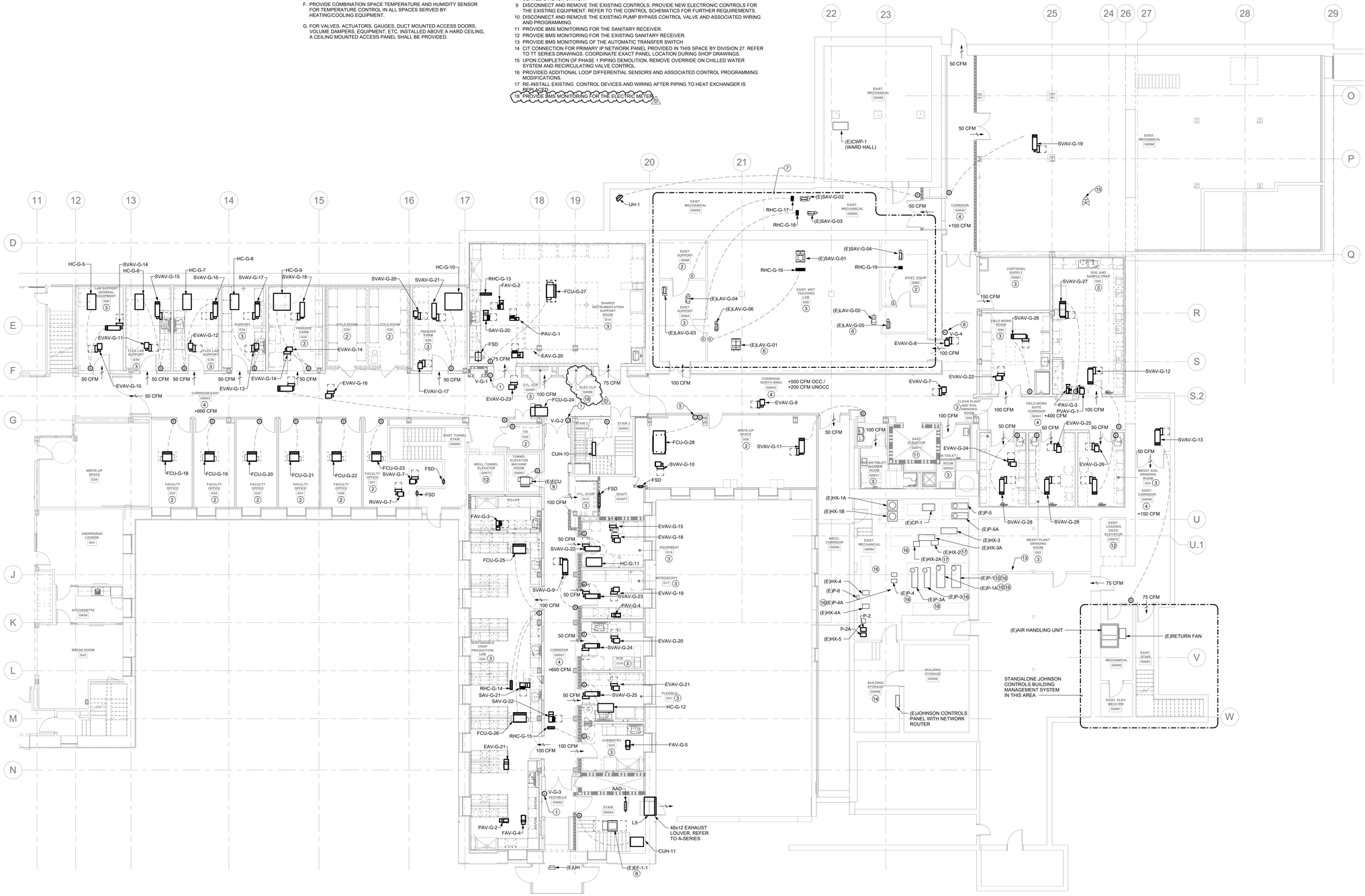
G. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1 PROVIDE FLUSH MOUNTED BREAK GLASS VENTILATION SHUT-OFF SWITCH. HARDWIRE TO ALL CONTROLLERS. REFER TO SCHEDULE FOR ZONES SERVED BY EACH SWITCH.
2 NEUTRAL PRESSURIZATION
3 NEGATIVE PRESSURIZATION
4 POSITIVE PRESSURIZATION
5 PROVIDE COMBINATION SENSOR WITH CO2 MONITORING.
6 MODIFY THE EXISTING CONTROLS AS REQUIRED TO RELOCATE THE EXISTING EQUIPMENT TO THE LOCATION SHOWN.
7 THE EXISTING AUTOMATED LOGIC CONTROLS AND CONTROLLERS WITH EXISTING BACNET/ARCNET SHALL REMAIN. THE EXISTING SYSTEM SHALL BE RECOMMISSIONED. RECOMMISSIONING SHALL INCLUDE POINT TO POINT CHECKOUT WITH SENSOR RE-CALIBRATION. ALL PHYSICAL EQUIPMENT DEFICIENCIES IDENTIFIED AND SHALL BE REPORT TO CORNELL UNIVERSITY FOR RESOLUTION AND SHALL BE ADDRESSED ON A CASE-BY-CASE BASIS. THE AIR VALVE SETPOINTS SHALL BE REVISED AND RE-CALIBRATED PER THE AIRFLOW SCHEDULE. THE SEQUENCE OF OPERATION SHALL BE MODIFIED TO INCORPORATE THE EMERGENCY VENTILATION SHUTOFF SWITCH.
8 PROVIDE FLUSH MOUNTED BREAK GLASS VENTILATION SHUT-OFF SWITCH. HARDWIRE TO ALL EXISTING CONTROLLERS. FOR EXISTING CONTROLLERS WITHOUT SPARE I/O. PROVIDE NETWORK COMMUNICATIONS INSTEAD OF REPLACING THE CONTROLLER. REFER TO SCHEDULE FOR ZONES SERVED BY EACH SWITCH.
9 DISCONNECT AND REMOVE THE EXISTING CONTROLS. PROVIDE NEW ELECTRONIC CONTROLS FOR THE EXISTING EQUIPMENT. REFER TO THE CONTROL SCHEMATICS FOR FURTHER REQUIREMENTS.
10 DISCONNECT AND REMOVE THE EXISTING PUMP BYPASS CONTROL VALVE AND ASSOCIATED WIRING AND PROGRAMMING.
11 PROVIDE BMS MONITORING FOR THE SANITARY RECEIVER.
12 PROVIDE BMS MONITORING FOR THE EXISTING SANITARY RECEIVER.
13 PROVIDE BMS MONITORING OF THE AUTOMATIC TRANSFER SWITCH
14 CIT CONNECTION FOR PRIMARY IP NETWORK PANEL PROVIDED IN THIS SPACE BY DIVISION 27. REFER TO TT SERIES DRAWINGS. COORDINATE EXACT PANEL LOCATION DURING SHOP DRAWINGS.
15 UPON COMPLETION OF PHASE 1 PIPING DEMOLITION, REMOVE OVERRIDE ON CHILLED WATER SYSTEM AND RECIRCULATING VALVE CONTROL.
16 PROVIDED ADDITIONAL LOOP DIFFERENTIAL SENSORS AND ASSOCIATED CONTROL PROGRAMMING MODIFICATIONS.
17 RE-INSTALL EXISTING CONTROL DEVICES AND WIRING AFTER PIPING TO HEAT EXCHANGER IS REPLACED.
18 PROVIDE BMS MONITORING FOR THE ELECTRIC METER. (D)

SHUTDOWN SWITCH SCHEDULE

UNIT NO.	SERVICE
V-G-1	G14, G0087
V-G-2 / V-G-3	G13, G15, G17, G19, G21, G23
V-G-4	G08, G08A, G08B, G08C



1 MECHANICAL GROUND FLOOR CONTROLS AND PRESSURIZATION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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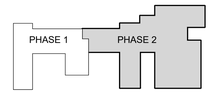
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

D	Addendum No. 6	11/19/2026

MECHANICAL GROUND FLOOR PRESSURIZATION & CONTROLS PLAN - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

M3.0

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GENERAL NOTES:

A. COORDINATE EXACT LOCATION OF VENTILATION SHUTDOWN SWITCHES AND SPACE SENSORS WITH A-SERIES DRAWINGS.

B. REFER TO E-SERIES DRAWINGS FOR OCCUPANCY SENSOR LOCATIONS. OCCUPANCY SENSORS ARE PROVIDED BY DIVISION 26. CONTROL WIRING FROM OCCUPANCY SENSOR TO BACS CONTROLLER SHALL BE PROVIDED BY DIVISION 23.

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3 NEGATIVE PRESSURIZATION
4 POSITIVE PRESSURIZATION
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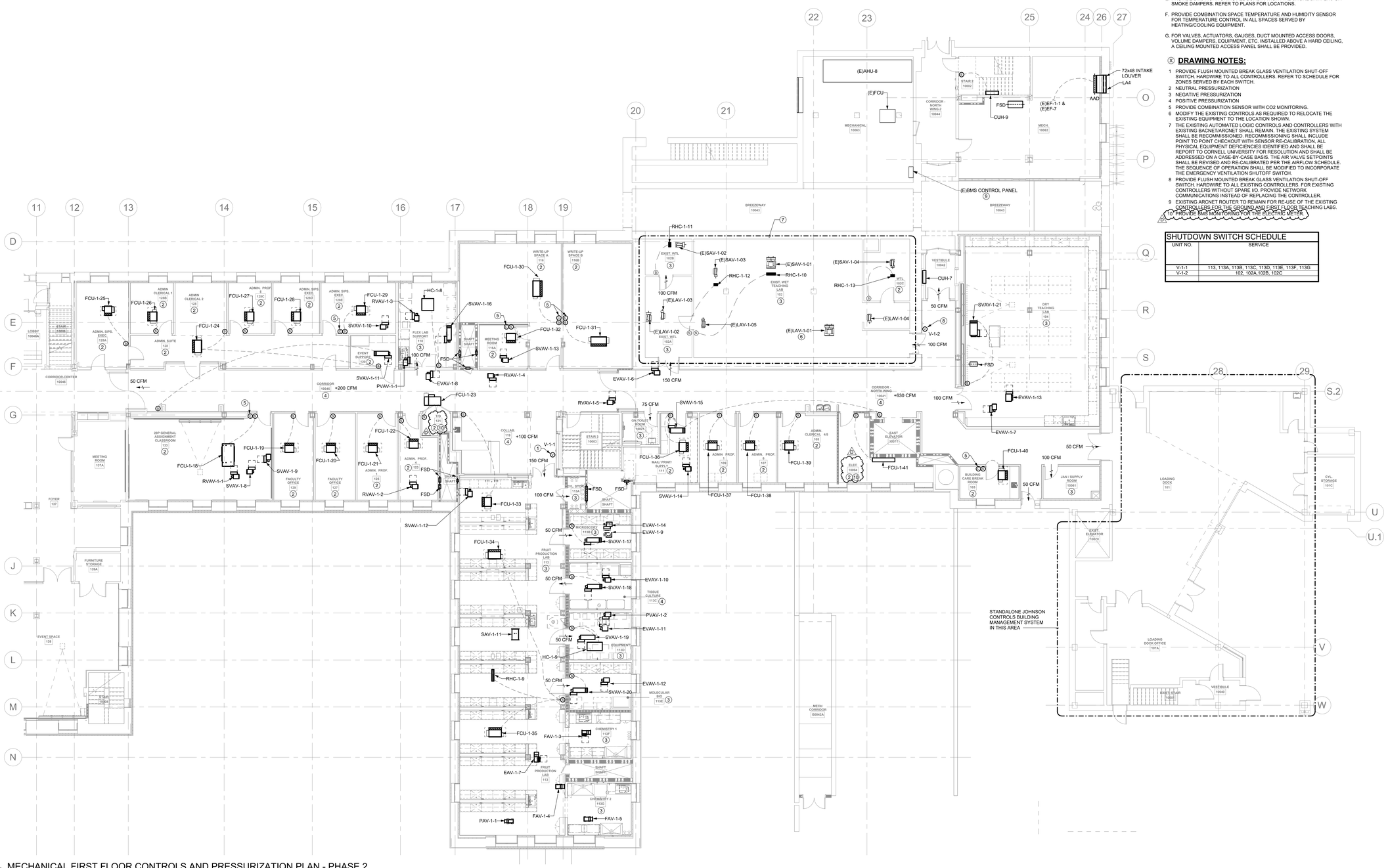
9 EXISTING ARCNET ROUTER TO REMAIN FOR RE-USE OF THE EXISTING CONTROLLERS FOR THE GROUND AND FIRST FLOOR TEACHING LABS.
10 PROVIDE BMS MONITORING FOR THE ELECTRIC METER.

SHUTDOWN SWITCH SCHEDULE	
UNIT NO.	SERVICE
V-1-1	113, 113A, 113B, 113C, 113D, 113E, 113F, 113G
V-1-2	102, 102A,102B, 102C



1 MECHANICAL FIRST FLOOR CONTROLS AND PRESSURIZATION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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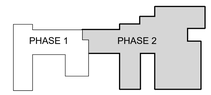
Notes:



Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

D	Addendum No. 6	11/19/2026

MECHANICAL FIRST FLOOR PRESSURIZATION & CONTROLS PLAN - PHASE 2

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GENERAL NOTES:

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4 POSITIVE PRESSURIZATION
5 PROVIDE COMBINATION SENSOR WITH CO2 MONITORING.
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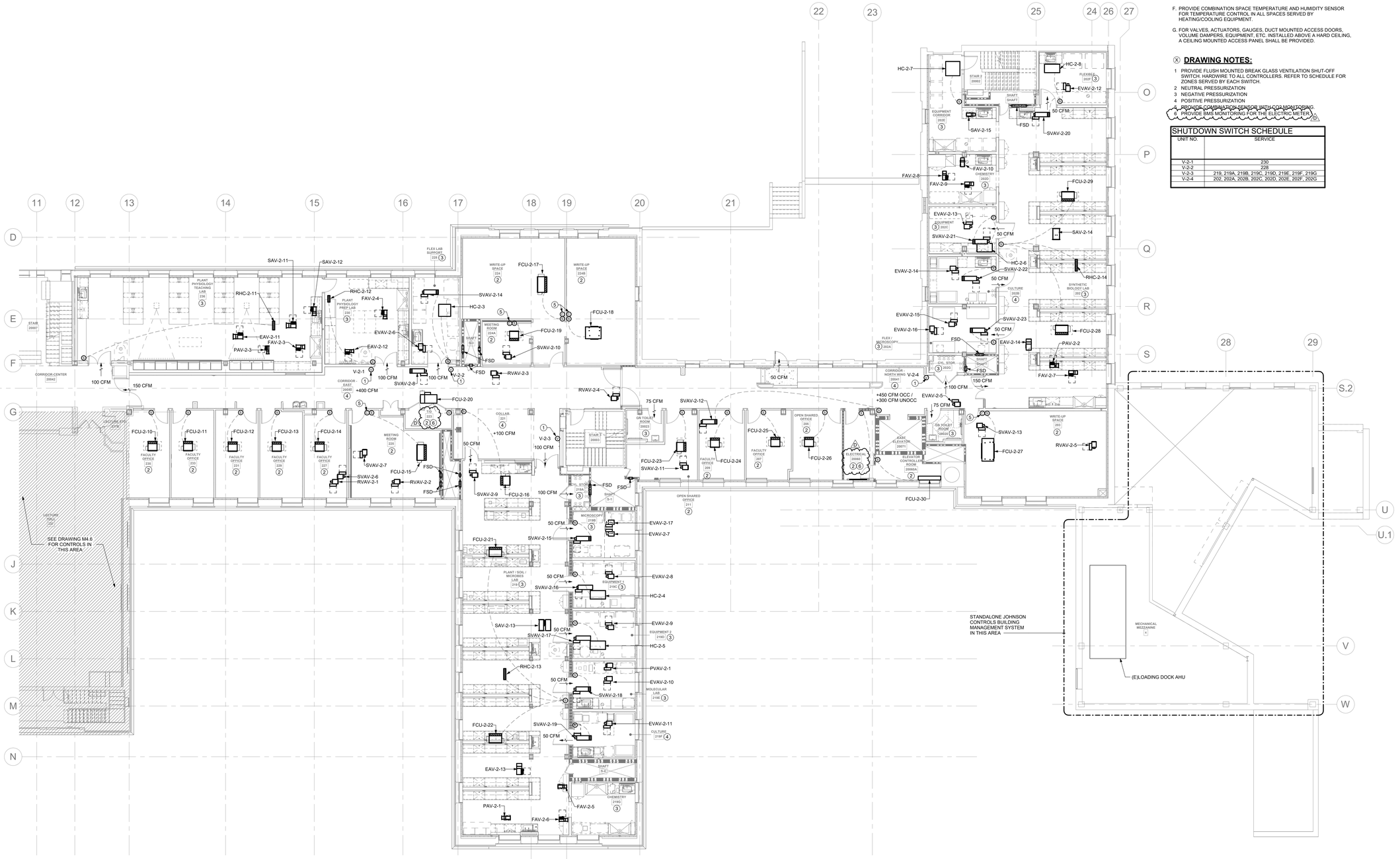
SHUTDOWN SWITCH SCHEDULE

UNIT NO.	SERVICE
V-2-1	230
V-2-2	228
V-2-3	219, 219A, 219B, 219C, 219D, 219E, 219F, 219G
V-2-4	202, 202A, 202B, 202C, 202D, 202E, 202F, 202G



1 MECHANICAL SECOND FLOOR CONTROLS AND PRESSURIZATION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

D	Addendum No. 6	11/19/2026

MECHANICAL SECOND FLOOR PRESSURIZATION & CONTROLS PLAN - PHASE 2

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GENERAL NOTES:

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3 NEGATIVE PRESSURIZATION
4 POSITIVE PRESSURIZATION
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6 PROVIDE BMS MONITORING FOR THE ELECTRIC METER

SHUTDOWN SWITCH SCHEDULE	
UNIT NO.	SERVICE
V-3-1	319, 319A, 319B, 319C, 319D, 319E, 319F, 319G
V-3-2	302, 302A, 302B, 302C, 302D, 302E,302EA, 309
V-4-1	402, 402A, 402B, 402C, 402D, 402E

STANDALONE JOHNSON CONTROLS BUILDING MANAGEMENT SYSTEM IN THIS AREA

SEE DRAWING M4.6 FOR CONTROLS IN THIS AREA

1 MECHANICAL THIRD FLOOR CONTROLS AND PRESSURIZATION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
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Cornell CALS College of Agriculture and Life Sciences

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Notes:

PHASE 1 PHASE 2
Keyplan

Job Number	31909.00
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MECHANICAL THIRD FLOOR PRESSURIZATION & CONTROLS PLAN - PHASE 2

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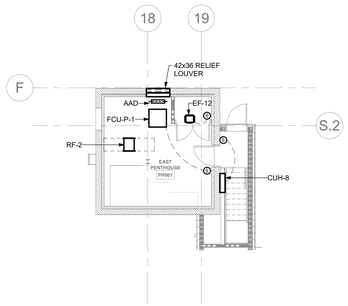
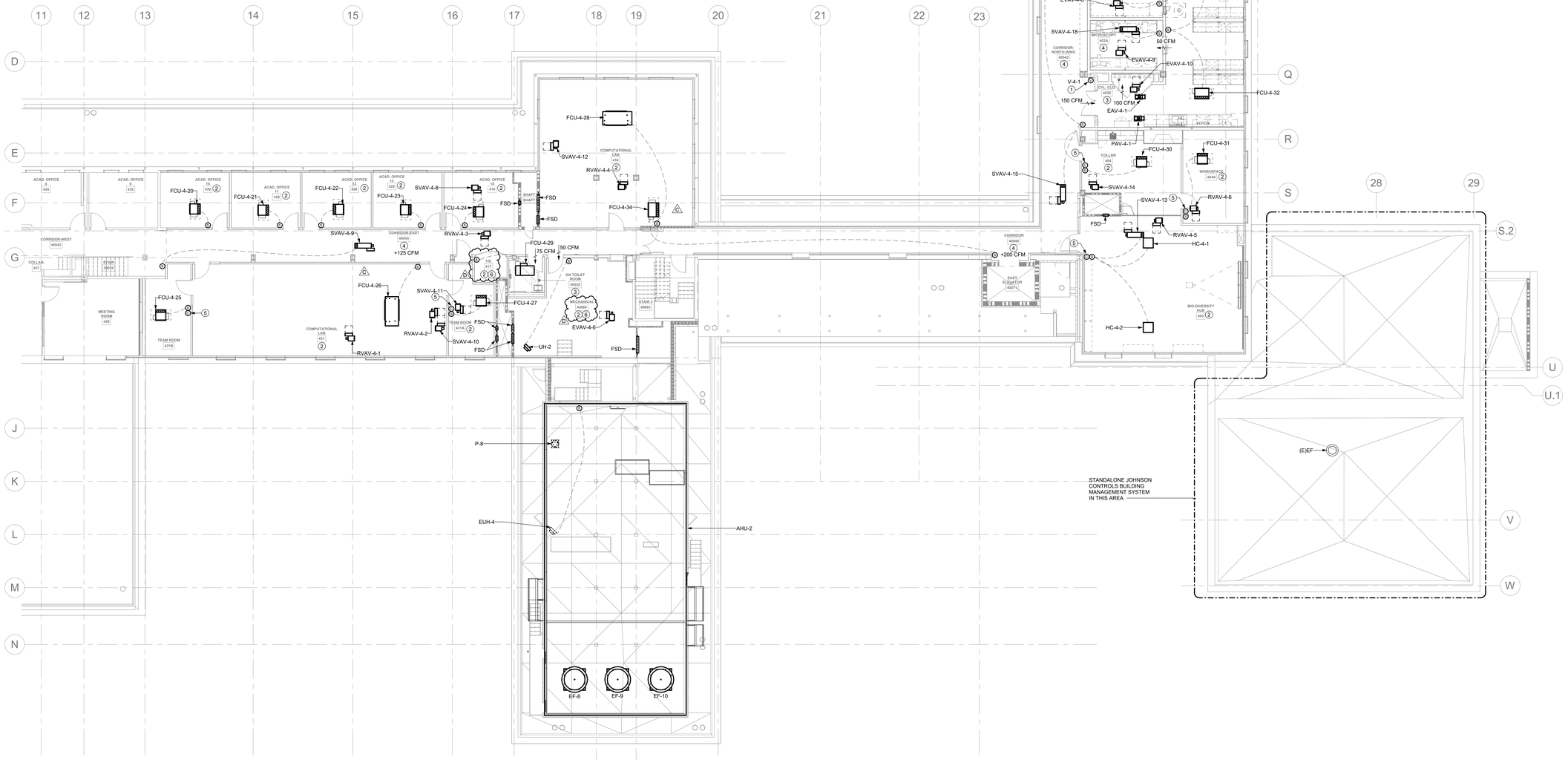


2 MECHANICAL EAST PENTHOUSE CONTROLS PLAN - PHASE 2
1/8" = 1'-0"



1 MECHANICAL FOURTH FLOOR CONTROLS AND PRESSURIZATION PLAN - PHASE 2
1/8" = 1'-0"

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5 PROVIDE COMBINATION SENSOR WITH CO2 MONITORING
6 PROVIDE BMS MONITORING FOR THE ELECTRIC METER

SHUTDOWN SWITCH SCHEDULE

UNIT NO.	SERVICE
V-4-1	402, 402A, 402B, 402C, 402D, 402E

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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Ithaca, NY 14853

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SUNY State University Construction Fund

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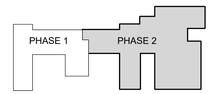
Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

C	Addendum No. 4	11/12/2026
D	Addendum No. 6	11/19/2026

MECHANICAL FOURTH FLOOR PRESSURIZATION & CONTROLS PLAN - PHASE 2

STATE OF NEW YORK · MATTHEW DANIEL ELLENZWEIG · LICENSED PROFESSIONAL ENGINEER · 094525

Reg. Exp: 04/30/2029
Cert. of Auth: 099088

BID DOCUMENTS
Scale: 1/8" = 1'-0"

M3.4

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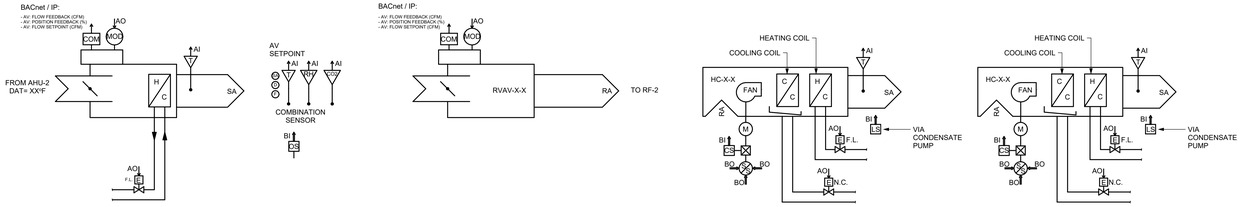
Autodesk Docs://31909 SUCF Cornell Plant Sciences/31909_Cornell_PSB_MECH_PH2_R23.rvt



CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
									ALARM				
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION		
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
RETURN VAV DAMPER POSITION COMMAND (%)				X				X				X	
RETURN VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
RETURN VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
RETURN VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
HYDRONIC CASSETTE MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	TYP>2
HYDRONIC CASSETTE MOTOR SPEED - LOW		X						X				X	TYP>2
HYDRONIC CASSETTE MOTOR SPEED - MEDIUM		X						X				X	TYP>2
HYDRONIC CASSETTE MOTOR SPEED - HIGH		X						X				X	TYP>2
HC HEATING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP>2
HC COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP>2
HYDRONIC CASSETTE DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	TYP>2
HYDRONIC CASSETTE CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	TYP>2
SPACE TEMPERATURE / SETPOINT (°F)			X		><			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE CARBON DIOXIDE / SETPOINT			X		X			X	X		> 900 PPM	X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

1 BIOHUB 403 CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

4 PIPE FAN COIL UNIT
VENTILATION SUPPLY AIR TERMINAL UNIT WITH REHEAT
VENTILATION RETURN AIR TERMINAL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F
OCCUPIED SETBACK: 78°F
UNOCCUPIED: 81°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F
OCCUPIED SETBACK: 67°F
UNOCCUPIED: 64°F

MINIMUM SPACE OCCUPANCY INDEX TIME: 30 MINUTES

SUPPLY AIRFLOW RATE (CFM): SEE VAV SCHEDULE

RETURN AIRFLOW RATE (CFM): SEE VAV SCHEDULE

ZONE OCCUPANCY SCHEDULE: COORDINATE WITH OWNER

SPACE OCCUPANCY

ZONE OCCUPANCY SHALL BE DETERMINED BASED ON A COMBINATION OF TIME OF DAY SCHEDULE AND A SPACE OCCUPANCY SENSOR.

DURING THE SCHEDULED OCCUPANCY PERIOD, THE ZONE SHALL BE INITIALLY INDEXED TO OCCUPIED AND OPERATOR FOR A MINIMUM OF 30 MINUTES, AT WHICH TIME THE SPACE OCCUPANCY SENSOR SHALL INDEX THE SPACE BETWEEN OCCUPIED AND OCCUPIED SETBACK MODE.

DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE OCCUPANCY SENSOR SHALL INDEX THE ZONE TO OCCUPIED FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL INDEX BACK TO UNOCCUPIED WHEN OCCUPANCY IS NOT SENSED FOR A PERIOD OF 30 MINUTES.

SUPPLY & RETURN AIR VAV BOX CONTROL

OCCUPIED: THE AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIRFLOW SETPOINT.

UNOCCUPIED: THE AIR TERMINAL UNIT SHALL BE CLOSED.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED AIRFLOW CONTROL SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

FAN COIL START/STOP

THE SYSTEM SHALL START AND INDEX TO MINIMUM POSITION TO WHENEVER THE SPACE IS IN OCCUPIED MODE AND SHALL START TO MAINTAIN THE HEATING AND COOLING SETPOINTS WHENEVER THE SPACE IS IN OCCUPIED SETBACK OR UNOCCUPIED MODE.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULED AND ZONE OCCUPANCY.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE SPACE CONTINUES TO FALL BELOW SETPOINT, SETPOINT THE HYDRONIC CASSETTE (HC) FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE HC CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE HC FAN SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE HC FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE HC CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE HC FAN SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL BE CLOSED.

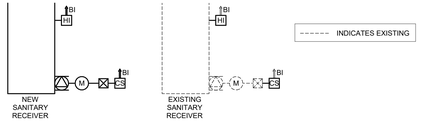
OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE HC FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE HC CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE HC SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
									ALARM				
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION		
SANITARY RECEIVER LEVEL	X							X	X	X	HIGH LEVEL	X	
PUMP STATUS	X							X	X	X	FAILURE	X	VIA CURRENT SENSOR

2 TYPICAL SANITARY SERVICE MONITORING CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

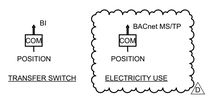
SYSTEM DESCRIPTION

SANITARY SERVICE MONITORING

GENERAL

SYSTEM SHALL BE MONITORED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
									ALARM				
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION		
TRANSFER SWITCHES POSITION	X							X				X	TYPICAL OF 2
ELECTRICITY USE					X			X				X	VIA BACNET MS/TP, TYPICAL OF 2

3 ELECTRICAL EQUIPTMENT MONITORING POINTS CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

AUTOMATIC TRANSFER SWITCH MONITORING

ELECTRIC METER MONITORING

GENERAL

SYSTEM SHALL BE MONITORED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ELECTRIC METERS SHALL BE CONNECTED VIA BACNET MS/TP TO TREND ALL USAGE AND ALARMS. PROVIDE USAGE SUMMARY GRAPHIC WITH KEY VALUES. VALUES SHALL BE DETERMINED DURING SUBMITTALS BASED ON ACTUAL METER.

D

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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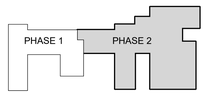

Keyplan

Job Number	31909.00
Drawing By	NMT
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Filename	
Date	August 31, 2026

Revisions

D	Addendum No. 6	11/19/2026

CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

STATE OF NEW YORK · CHRISTOPHER DANIEL YORKS · 094525 · LICENSED PROFESSIONAL ENGINEER

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DEMOLITION NOTES:

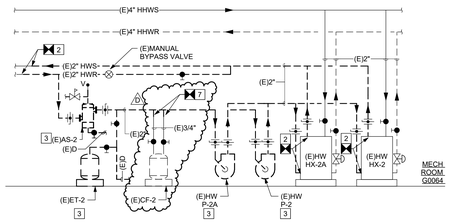
1. DISCONNECT AND REMOVE THE EXISTING BYPASS PIPING. CAP THE VALVES WATER TIGHT. THE BALANCE VALVE HAS FULL SHUTOFF CAPABILITIES. PROVIDE LOCKOUT ON VALVE AND TAG VALVES AS NOT IN USE.
2. DISCONNECT AND REMOVE EXISTING 2" PERIMETER HOT WATER PIPING FROM POINT OF DISCONNECT TO HEAT EXCHANGER, INCLUDING INLINE PUMPS, AIR SEPARATOR AND EXPANSION TANK. EXISTING CHEMICAL POT FEEDER TO REMAIN.
3. DISCONNECT AND REMOVE EXISTING PERIMETER HOT WATER PUMPS, AIR SEPARATOR AND EXPANSION TANK. EXISTING CHEMICAL POT FEEDER TO REMAIN.
4. CLOSE ISOLATION VALVE COMPLETELY. PROVIDE LOCKOUT ON VALVE AND TAG VALVE AS NOT IN USE.
5. REMOVE CONTROL ACTUATOR AND ALL ASSOCIATED WIRING AND CONTROLS.
6. DISCONNECT AND REMOVE THE EXISTING BYPASS PIPING.
7. DISCONNECT AND REMOVE EXISTING PIPING FOR CHEMICAL POT FEEDER. CHEMICAL POT FEEDER AND PIPING SHALL REMAIN FOR RE-USE.

DRAWING NOTES:

1. THE EXISTING PHASE 1 GLYCOL PIPING SHALL BE DRAINED AND REFILLED WITH THE OWNER FURNISHED, TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF ANY NEW PIPING.
2. THE EXISTING GLYCOL PIPING SHALL BE DRAINED, CLEANED AND REFILLED. THE PROPYLENE GLYCOL TREATMENT CHEMICALS SHALL BE OWNER FURNISHED. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF TO THE EXISTING PHASE 1 PIPING.

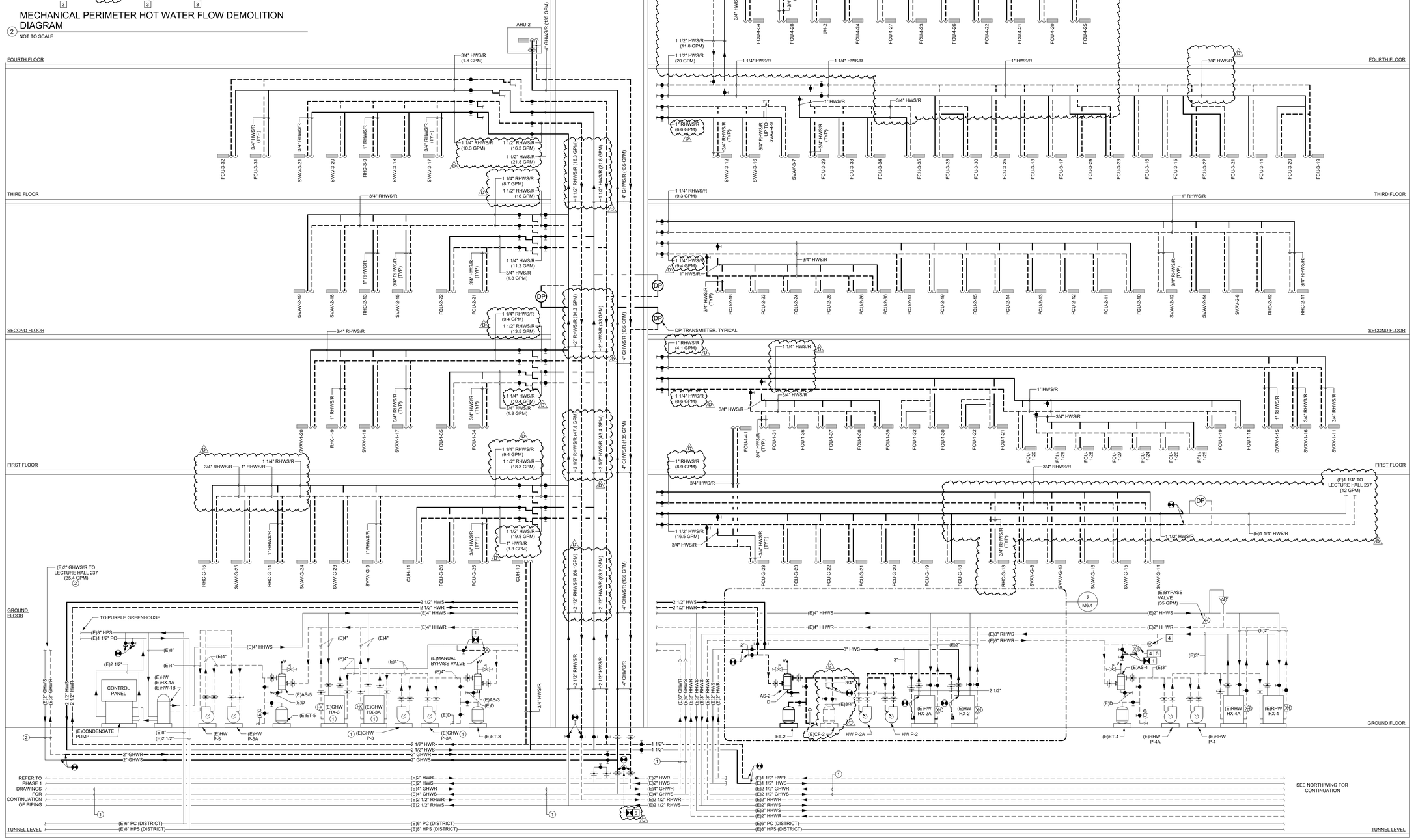
SYMBOLS

- COIL
- EXISTING SUPPLY
- EXISTING RETURN
- SUPPLY
- RETURN



MECHANICAL PERIMETER HOT WATER FLOW DEMOLITION DIAGRAM

2 NOT TO SCALE



1 MECHANICAL HOT WATER FLOW DIAGRAM - EAST WING

NOT TO SCALE

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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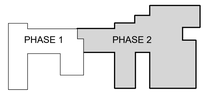

Keyplan

Job Number	31909.00
Drawing By	ZMH
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Filename	
Date	August 31, 2026

Revisions

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MECHANICAL HOT WATER FLOW DIAGRAM - EAST WING - PHASE 2

STATE OF NEW YORK
GARRET DANIEL WORKS
094525
LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
Cert. of Auth: 099088

BID DOCUMENTS
Scale: NOT TO SCALE

M6.4

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SYMBOLS

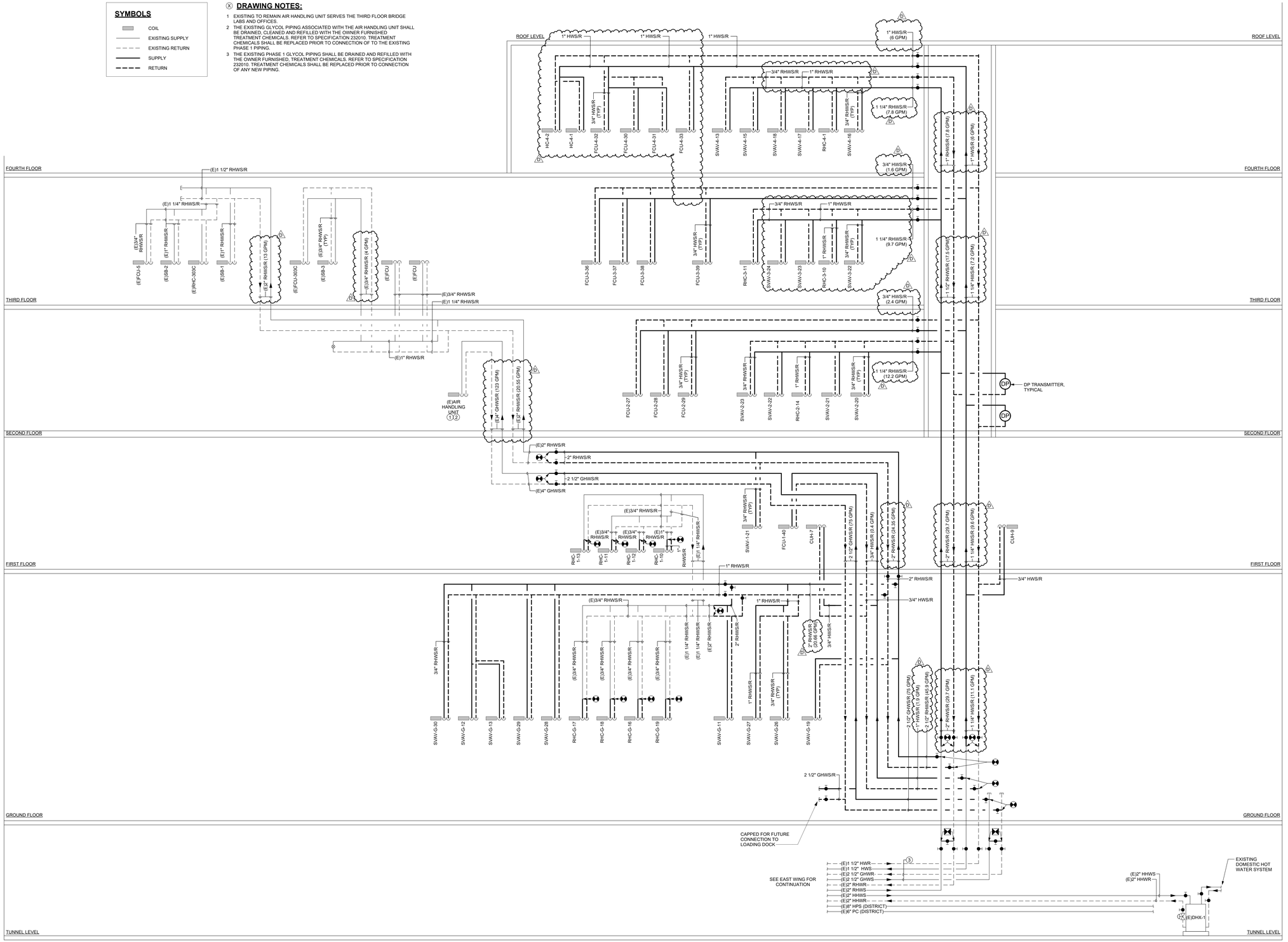
- COIL
- EXISTING SUPPLY
- EXISTING RETURN
- SUPPLY
- RETURN

ⓧ DRAWING NOTES:

1 EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES.

2 THE EXISTING GLYCOL PIPING ASSOCIATED WITH THE AIR HANDLING UNIT SHALL BE DRAINED, CLEANED AND REFILLED WITH THE OWNER FURNISHED TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010, TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF TO THE EXISTING PHASE 1 PIPING.

3 THE EXISTING PHASE 1 GLYCOL PIPING SHALL BE DRAINED AND REFILLED WITH THE OWNER FURNISHED, TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010, TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF ANY NEW PIPING.



1 MECHANICAL HOT WATER FLOW DIAGRAM - NORTH WING
NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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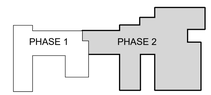
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

D	Addendum No. 6	11/19/2026

MECHANICAL HOT WATER FLOW DIAGRAM - NORTH WING - PHASE 2

STATE OF NEW YORK · MATTHEW DANIEL GRAY · 094525 · LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
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BID DOCUMENTS
Scale: NOT TO SCALE

M6.5

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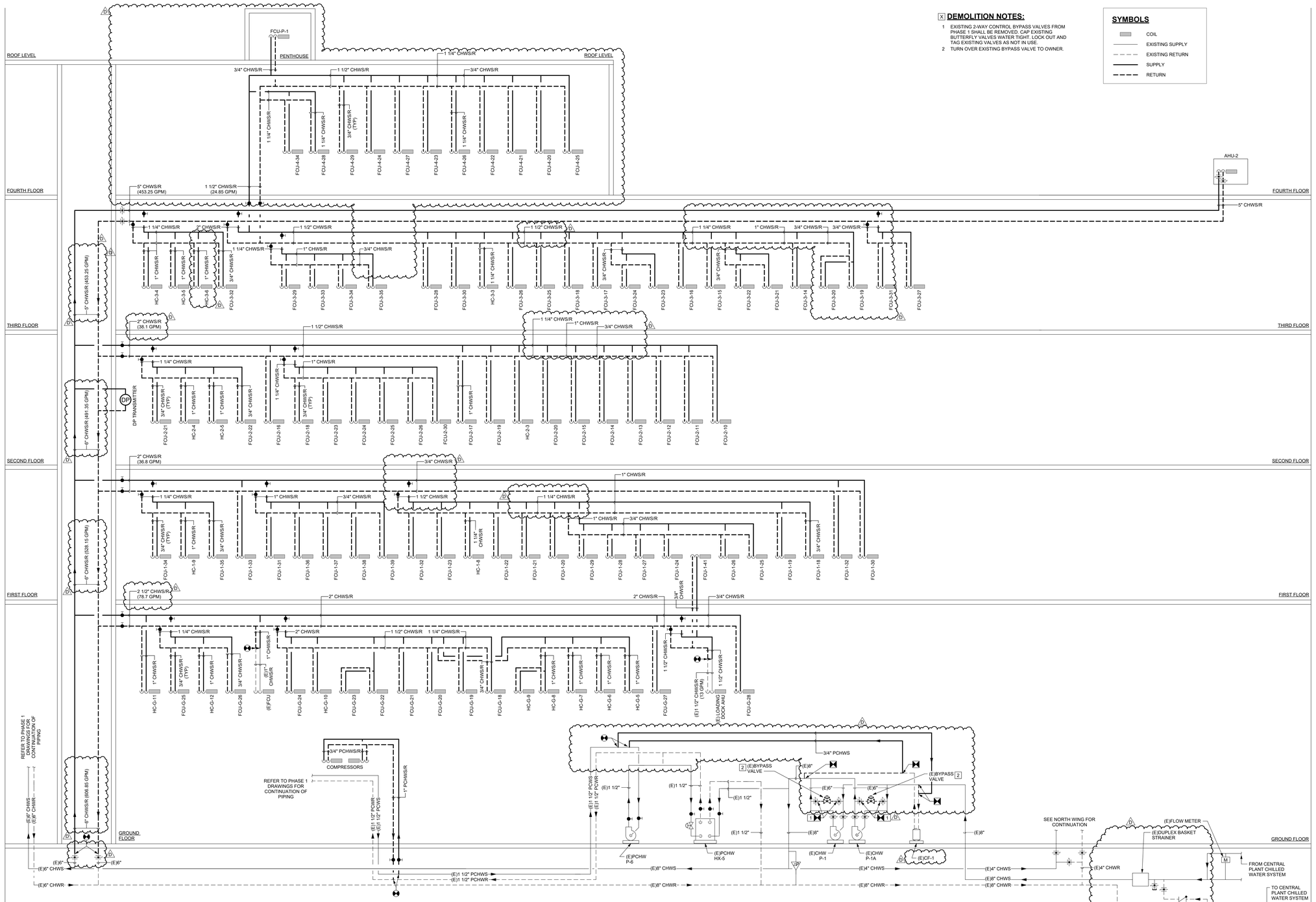

DEMOLITION NOTES:

1 EXISTING 2-WAY CONTROL BYPASS VALVES FROM PHASE 1 SHALL BE REMOVED. CAP EXISTING BUTTERFLY VALVES WATER TIGHT. LOCK OUT AND TAG EXISTING VALVES AS NOT IN USE.

2 TURN OVER EXISTING BYPASS VALVE TO OWNER.

SYMBOLS

- COIL
- EXISTING SUPPLY
- EXISTING RETURN
- SUPPLY
- RETURN

1 MECHANICAL CHILLED WATER FLOW DIAGRAM - EAST WING
NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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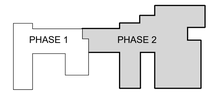

Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

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MECHANICAL CHILLED WATER FLOW DIAGRAM - EAST WING - PHASE 2

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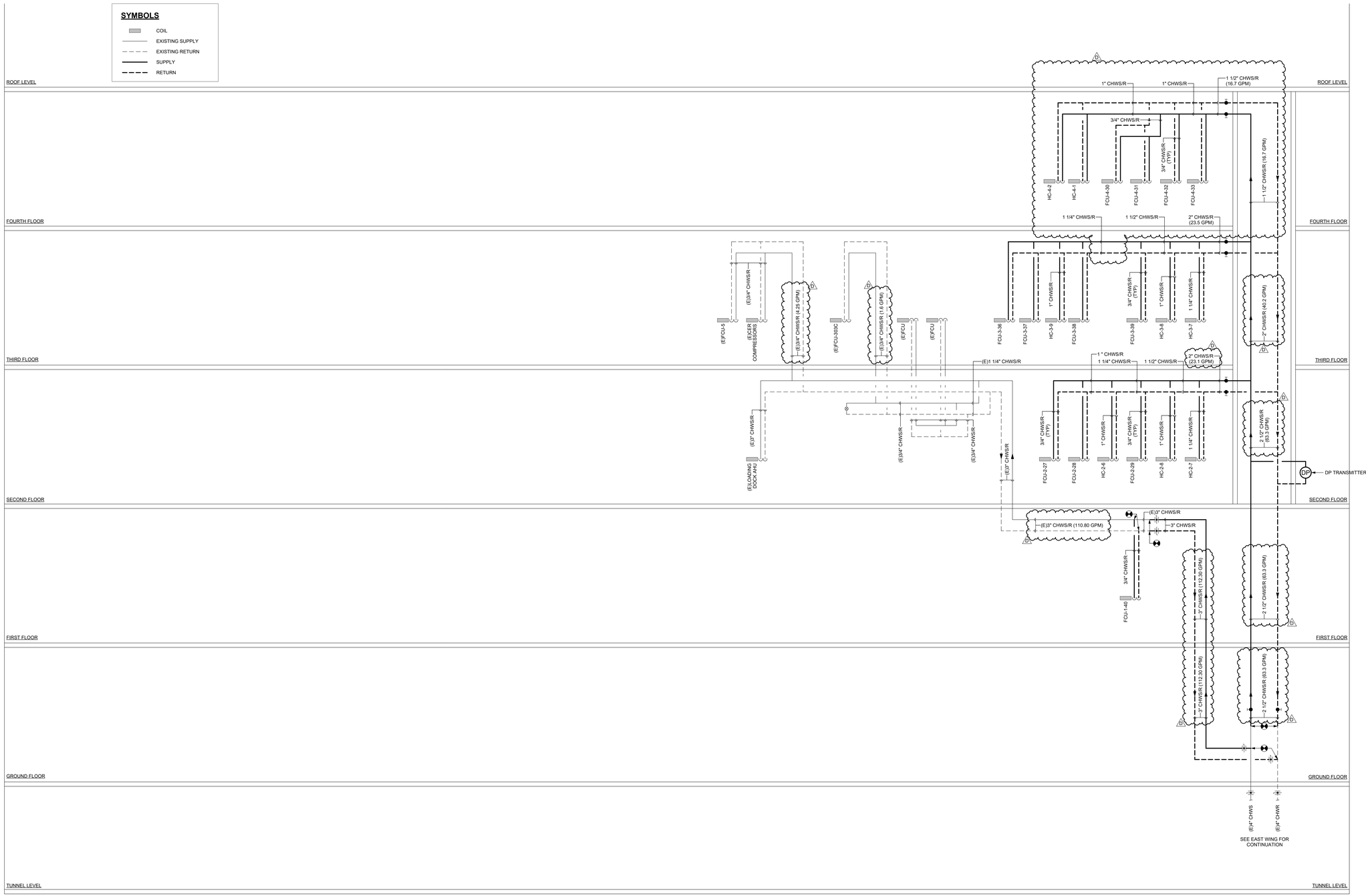

1 MECHANICAL CHILLED WATER FLOW DIAGRAM - NORTH WING
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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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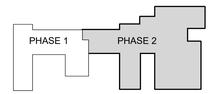
Notes:



Keyplan

Job Number	31909.00
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Revisions

D	Addendum No. 6	11/19/2026

MECHANICAL CHILLED WATER FLOW DIAGRAM - NORTH WING - PHASE 2

STATE OF NEW YORK
DANIEL JAMES PORTER
094525
LICENSED PROFESSIONAL ENGINEER

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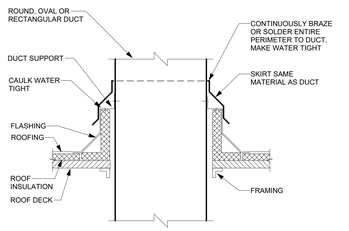


DETAIL NOTES:

A. REFER TO A-SERIES DRAWINGS FOR DUCTWORK CURB REQUIREMENTS

B. TO PROVIDE WEATHERTIGHT SKIRT FOR DUCTWORK.

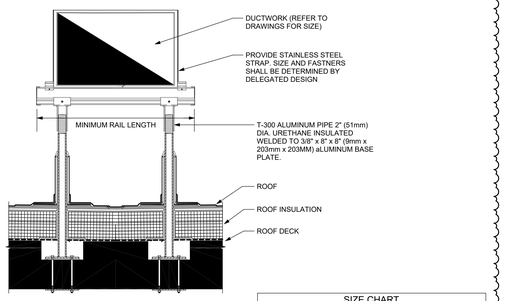
C. CURB SHALL BE LEVEL.

D. PROVIDE WIND RESTRAINT PER SPECIFICATION SECTION 230550- WIND RESTRAINT FOR HVAC SYSTEMS.

B

1 DUCT PENETRATION CURB DETAIL

NTS



DETAIL NOTES:

A. REFER TO A-SERIES DRAWINGS FOR DUCTWORK SUPPORT RQUIREMENTS, AND LOCATIONS.

B. SUPPORT SHALL BE LEVEL.

C. LENGTH OF SUPPORTS AS CALLED FOR.

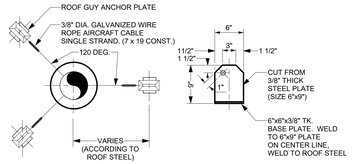
D. PROVIDE WIND RESTRAINT PER SPECIFICATION SECTION 230550-WIND RESTRAINT FOR HVAC SYSTEMS.

B

SIZE CHART	
DUCT SIZE	EQUIPMENT RAIL LENGTH
UP TO 12"	2'-0"
12 1/4" TO 24"	3'-0"
24 1/4" TO 36"	4'-0"
36 1/4" TO 48"	5'-0"
48 1/4" TO 60"	6'-0"
60 1/4" TO 72"	7'-0"
72 1/4" TO 84"	8'-0"

2 DUCTWORK SUPPORT DETAIL

NTS



ALTERNATE GUY-WIRE ROOF ANCHOR

DETAIL NOTES:

A. REFER TO A-SERIES DRAWINGS FOR GUY-WIRE ANCHOR REQUIREMENTS.

B. FOR STACKS UP TO 20'-0", PROVIDE (1) SET OF GUY WIRES ATTACHED TO STACK AT A POINT 2/3 OF THE FULL HEIGHT OF STACK ABOVE ROOF.

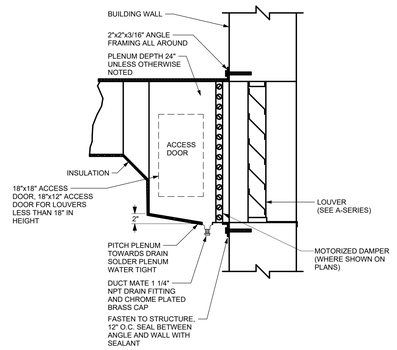
C. PROVIDE UV STABILIZED HIGH DENSITY PLASTIC GUY WIRE MARKER (8' LENGTH) FOR EACH GUY WIRE.

D. PROVIDE WIND RESTRAINT PER SPECIFICATION SECTION 230550-WIND RESTRAINT FOR HVAC SYSTEMS.

B

3 GUY-WIRE DETAIL

NTS



4 LOUVER PLENUM DETAIL

NTS

B

DETAIL NOTES:

A. REFER TO A-SERIES DRAWINGS FOR SUPPORT RAIL REQUIREMENTS..

B. SUPPORTS SHALL BE LEVEL.

C. LENGTH OF RAILS AS REQUIRED.

D. GUY WIRES SHALL BE AT 60 DEG MAXIMUM TO ROOF DECK AND ENCASED IN A WHITE, 2-INCH (51 mm) MINIMUM DIAMETER PLASTIC PIPE.

E. PROVIDE WIND RESTRAINT PER SPECIFICATION SECTION 230550-WIND RESTRAINT FOR HVAC SYSTEMS.

F. STACK SHALL BE CONSTRUCTED OF SAME MATERIAL AND TWO (2) GAUGE HEAVIER THAN CALLED FOR IN SPECIFICATIONS.

G. PROVIDE MINIMUM (3) THREE DUCT DIAMETERS OF STRAIGHT LENGTH AT FAN INLET.

H. REFER TO EQUIPMENT SUPPORT AND GUY WIRE DETAILS.

B

5 ROOF MOUNTED FAN SUPPORT DETAIL

NTS

DETAIL NOTES:

A. ELECTRICAL EQUIPMENT INCLUDES PANELS, TRANSFORMERS, DISCONNECTS, STARTERS, MOTOR CONTROL CENTERS, SWITCHGEAR, ADJUSTABKE SPEED DRIVES, AND FUSED SWITCHES (THIS ALSO APPLIES TO ELECTRICAL GEAR MOUNTED DIRECTLY ON MECHANICAL EQUIPMENT).

B. DEDICATED ELECTRICAL SPACE IS DEFINED BY NEC 110.

C. NO PIPING OR DUCTWORK MAY BE INSTALLED IN DEDICATED ELECTRICAL SPACE OR WORKING SPACE.

6 PIPING AND DUCTWORK OVER ELECTRICAL EQUIPMENT DETAIL

NTS

DETAIL NOTES:

A. REFER TO S-SERIES DRAWING FOR DUCTWORK SUPPORT REQUIREMENTS AND LOCATIONS.

B. SUPPORT SHALL BE LEVEL.

B

7 STRUCTURAL FRAMING DUCTWORK SUPPORT DETAIL

NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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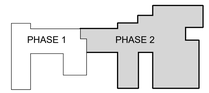
Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

B	Addendum No. 3	11/04/2026
D	Addendum No. 6	11/19/2026

MECHANICAL DETAILS - PHASE 2

STATE OF NEW YORK · ZACHARY MICHAEL HEET · DANIEL GRAIG · 094525 · PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
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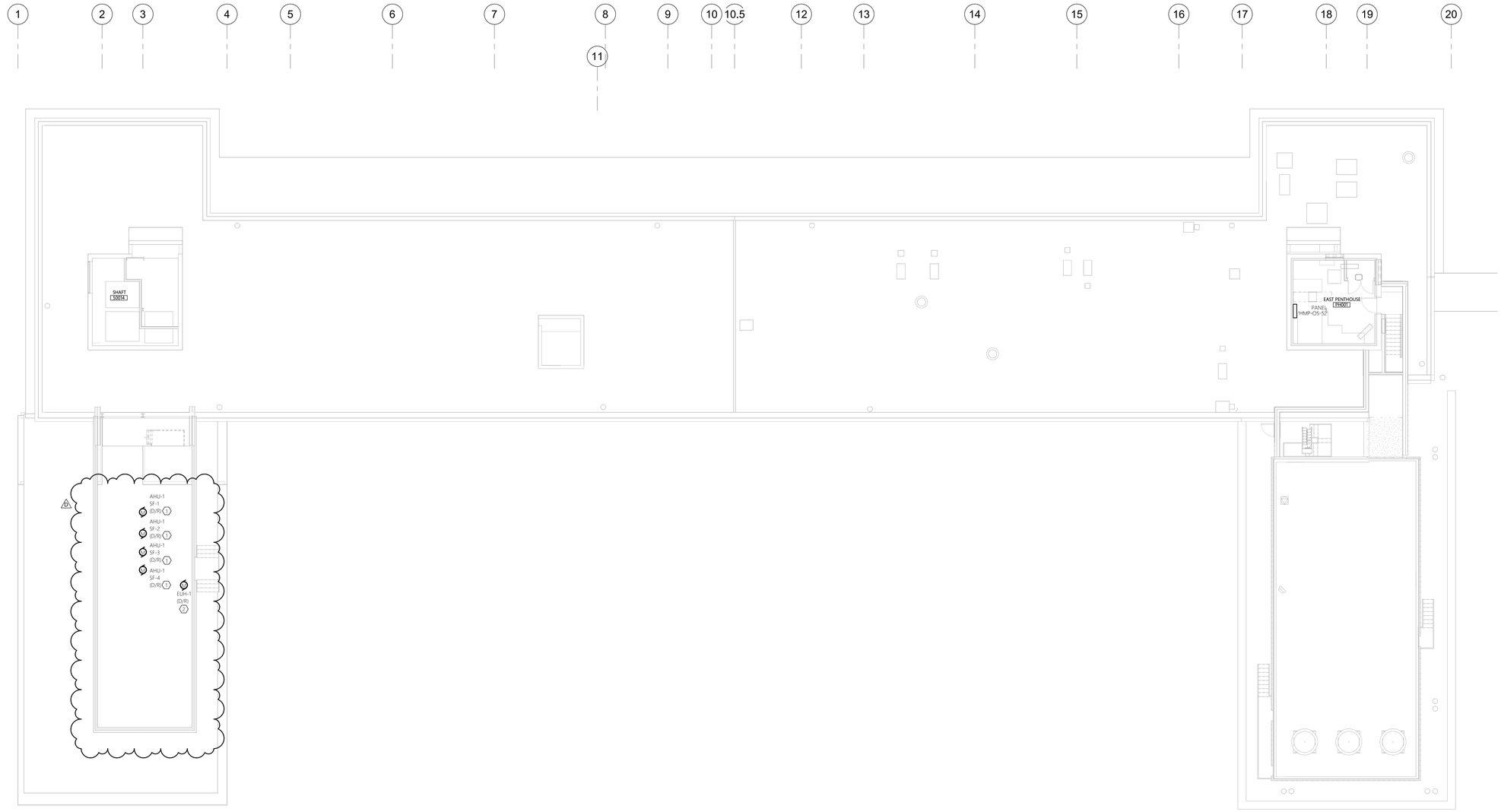
GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.

SHEET KEY NOTES:

1. INTERCEPT EXISTING FAN CIRCUIT FROM PANEL HNP-R1 AT A STRATEGIC LOCATION AND MIGRATE TO PANEL HMP-OS-52. PROVIDE CIRCUIT EXTENSIONS AS NECESSARY. MATCH EXISTING CIRCUITING CONFIGURATION. COORDINATE EXACT LOCATION AND ROUTING TO ROUGH-IN.
2. INTERCEPT EXISTING 277V, 20A CIRCUIT AT A STRATEGIC LOCATION AND EXTEND TO PANEL HMP-OS-52. UTILIZE EXISTING MOTOR STARTER/DISCONNECT. ASSUME (2)#10 & #10G, 3/4"C FOR CIRCUIT.



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

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

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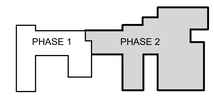

Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

D	Addendum 6	11/19/26

ELECTRICAL OVERALL ROOF POWER PLAN

STATE OF NEW YORK
SHANE GARRABRANT
106035
LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E0.5

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SHEET KEY NOTES:

1. PRIOR TO START OF PHASE 2 REMOVE EXISTING PANEL 'PPS1' FEED AND REPLACE IN KIND. COORDINATE ALL WORK REQUIREMENTS AND REPLACEMENT FEEDER ROUTING IN FIELD WITH OTHER TRADES AND CAMPUS PRIOR TO ROUGH-IN. ENSURE REPLACEMENT FEEDER IS NOT DISTURBED DURING PHASE 2 CONSTRUCTION ACTIVITIES. REFER TO E0.4 FOR ADDITIONAL INFORMATION.
2. PROVIDE REMOVAL OF EXISTING LIGHTING FIXTURES WITH CORRIDOR TO FACILITATE WORK BY OTHER TRADES. STORE FIXTURES FOR REINSTALLATION UPON COMPLETION OF CORRIDOR AREA WORK. MAINTAIN EXISTING LIGHTING CIRCUIT FOR RECONNECTION. COORDINATE WITH A-SHEETS.
3. PROVIDE REMOVAL OF EXISTING FIXTURES WITHIN MECHANICAL ROOM. MAINTAIN EXISTING CIRCUIT FOR RE-USE WITH REPLACEMENT LIGHTING FIXTURES.
4. PROVIDE REMOVAL OF EXISTING LIGHTING FIXTURES WITHIN SPACE TO FACILITATE WORK BY OTHER TRADES. STORE FIXTURES FOR REINSTALLATION UPON COMPLETION OF AREA WORK. MAINTAIN EXISTING LIGHTING CIRCUIT FOR RECONNECTION. COORDINATE WITH A-SHEETS.
5. PUMPS TO BE RE-CIRCUITED TO GENERATOR BACKED PANEL. INTERCEPT CIRCUIT AT A STRATEGIC LOCATION AND EXTEND TO PANEL. RETAIN AND REUSE ASSOCIATED MOTOR STARTER/DISCONNECT. COORDINATE WITH M-SHEETS. D

GENERAL DEMOLITION NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS & GENERAL NOTES.
2. THESE DEMOLITION DRAWINGS ARE SCHEMATIC IN NATURE & ARE BASED ON CASUAL FIELD OBSERVATIONS. IT IS NOT THE INTENTION OF THESE DRAWINGS TO INDICATE EVERY DEVICE/FIXTURE REQUIRING REMOVAL/DEMO, RATHER GENERAL SYSTEMS WHICH ARE TO BE REMOVED. IN GENERAL:

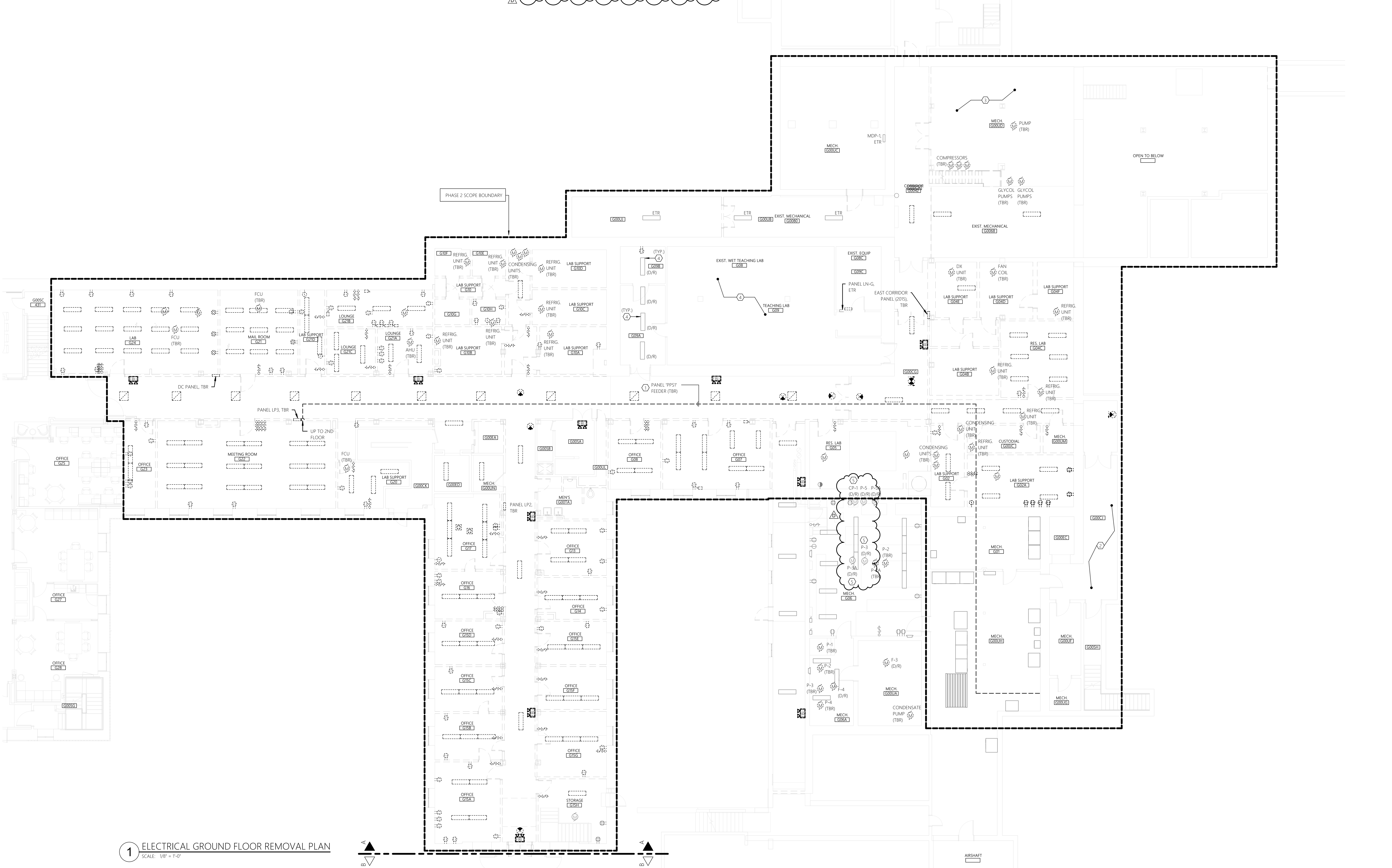
MECHANICAL EQUIPMENT & MISC. ELECTRICAL EQUIPMENT:
WHERE INDICATED TO BE REMOVED:
- REFER TO BOTH ELECTRICAL AND MECHANICAL DRAWINGS FOR AN ACCURATE DEPICTION OF ALL REMOVAL REQUIRED FOR THIS CONTRACT.
- REMOVE ALL WIRE & EXPOSED CONDUIT BACK TO SOURCE PANEL (UNLESS OTHERWISE NOTED).
- REMOVE ANY ASSOCIATED MOTOR STARTERS &/OR DISCONNECTS.
- REMOVE CIRCUIT WIRING FROM SOURCE ETR PANEL & LABEL BREAKER AS SPARE.
- PROVIDE REVISED TYPED PANELBOARD DIRECTORIES FOR ALL EXISTING TO REMAIN PANELS WHERE CIRCUITS ARE TO BE REMOVED.

RECEPTACLES:
- REMOVE ALL RECEPTACLES IMPACTED BY WALL MODIFICATION/DEMOLITION. REFER TO ARCHITECTURAL DRAWINGS WHERE NECESSARY. **NOTE** ALL RECEPTACLES MAY NOT BE SHOWN ON THESE DEMOLITION PLANS. MINOR FIELD VERIFICATION REQUIRED.
- REMOVE ALL ASSOCIATED WIRE & CONDUIT BACK TO SOURCE OR NEAREST ACTIVE JUNCTION BOX.
- WHERE NECESSARY, PROVIDE CIRCUIT EXTENSION(S) AS NEEDED TO MAINTAIN CIRCUITS IN ADJACENT NON-IMPACTED SPACES.

PANELBOARD REMOVAL AND REPLACEMENT:
- REFER TO SINGLE LINE DIAGRAM FOR SCOPE OF WORK.
- RECONNECTION AND EXTENSION OF NON-IMPACTED/EXISTING TO REMAIN CIRCUITS SHALL BE REQUIRED.

GENERAL CIRCUIT AND FEEDER REMOVAL AND REPLACEMENT:
- MAINTAIN ANY EXISTING NON-IMPACTED PANELBOARDS AND ANY NON-IMPACTED CIRCUITS WHICH ARE EXISTING TO REMAIN.
- WHERE CIRCUITS ARE AFFECTED BY MODIFICATION/REMOVAL ACTIVITIES, PROVIDE NECESSARY CIRCUIT EXTENSIONS AND ALL NECESSARY LABOR/MATERIALS AS NECESSARY TO REPAIR AND RE-CONNECT CIRCUIT(S).

LIGHTING: ROOMS WHERE LIGHTING IS INDICATED TO BE REMOVED - UNLESS OTHERWISE INDICATED ON PLAN:
- REMOVE FIXTURES IN THE GENERAL AREAS INDICATED ON PLAN. EXACT QTY OF FIXTURES MAY VARY, FIELD VERIFY AND COORDINATE WITH GENERAL CONTRACT.
- REMOVE SWITCHING & SENSING DEVICES.
- REMOVE CONDUCTORS & CONDUIT BACK TO SOURCE.
- REMOVE CONTACTORS ASSOCIATED WITH LOW VOLTAGE SWITCHING DEVICES
- DISPOSE OF ALL LAMPS IN ACCORDANCE WITH STATE/FEDERAL AND EPA REQUIREMENTS.
- CORNELL SHALL HAVE RIGHT OF FIRST REFUSAL FOR ALL REMOVED FIXTURES. ALL REMAINING FIXTURES SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
- REMOVE AND TURNOVER TO CORNELL, ALL EMEGENCY LIGHTING BATTERY PACKS AND ELECTRICAL EXIT SIGNS.



1 ELECTRICAL GROUND FLOOR REMOVAL PLAN
SCALE: 1/8" = 1'-0"

Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell_PSB_ELEC_PH2_R23.rvt

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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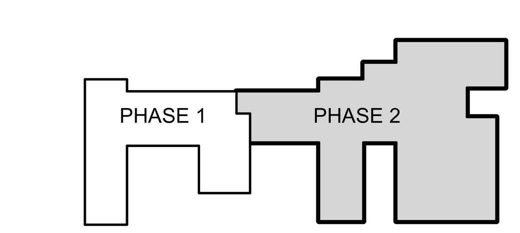
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL GROUND FLOOR REMOVAL PLAN

BID DOCUMENTS
Scale: As indicated

ED1.0

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SHEET KEY NOTES:

1. PROVIDE 20A, 120V CIRCUIT AND GFCI RECEPTACLE FOR WATER FOUNTAIN. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
2. PRIOR TO START OF PHASE 2 REMOVE EXISTING PANEL 'PPS1' FEED AND REPLACE IN KIND. COORDINATE ALL WORK REQUIREMENTS AND REPLACEMENT FEEDER ROUTING IN FIELD WITH OTHER TRADES AND CAMPUS PRIOR TO ROUGH-IN. ENSURE REPLACEMENT FEEDER IS NOT DISTURBED DURING PHASE 2 CONSTRUCTION ACTIVITIES.
3. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR AREA FIRE RELAYS. COORDINATE INSTALLATION LOCATION AND REQUIREMENTS WITH CORNELL FIRE ALARM VENDOR, AND FA SHEETS.
4. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR SENSOR FAUCET. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE 120V, 20A CIRCUIT FOR DOOR HARDWARE, CIRCUIT ALL DOORS ON FLOOR TO SAME CIRCUIT.
6. PROVIDE 120V, 20A GFCI RATED RECEPTACLE FOR ELEVATOR PIT. COORDINATE INSTALLATION IN FIELD WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
7. PROVIDE CIRCUITING AND INSTALLATION OF FURNITURE POWER IN ACCORDANCE WITH FURNITURE MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL INSTALLATION WITH A-SHEETS.
8. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR SENSOR OPERATED FLUSH VALVE. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
9. PROVIDE RECEPTACLES AND CIRCUIT FOR CYLINDER EQUIPMENT. RECEPTACLES TO BE MOUNTED 88"AFF. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
10. PROVIDE 120V, 20A CIRCUIT FOR BMS PANEL CONNECTION. COORDINATE ALL INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS & LOCATION WITH BMS INSTALLER.
11. PROVIDE DEDICATED 208V, 3PH, 4-WIRE, 20A CIRCUIT FROM PANEL LNPL-01 FOR CER CONDENSER. PROVIDE NON-FUSED DISCONNECT IN NEMA 1 ENCLOSURE UPSTREAM OF CONDENSER. COORDINATE DISCONNECT LOCATION IN FIELD WITH OWNER AND CER PROVIDER PRIOR TO ROUGH-IN. COORDINATE INSTALLATION/ROUGH-IN REQUIREMENTS WITH APPROVED CER SHOP DRAWINGS.
12. PUMPS TO BE RE-CIRCUITED TO GENERATOR BACKED PANEL. INTERCEPT CIRCUIT AT A STRATEGIC LOCATION AND EXTEND TO PANEL. RETAIN AND REUSE ASSOCIATED MOTOR STARTER/DISCONNECT. COORDINATE WITH M-SHEETS.
13. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR VAV POWER SUPPLIES. COORDINATE LOCATIONS IN FIELD WITH M-SHEETS AND BMS VENDOR PRIOR TO ROUGH-IN.

D

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
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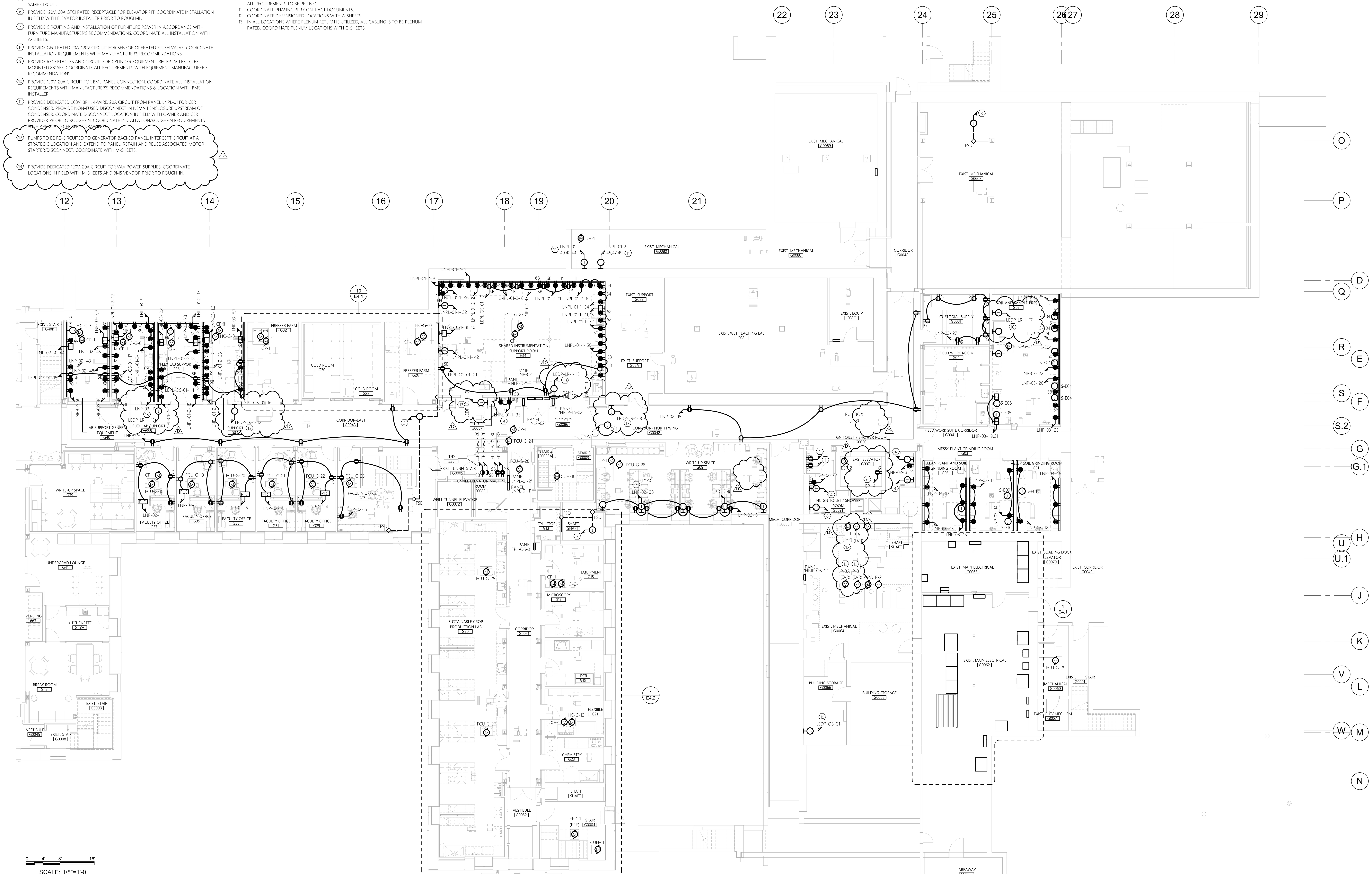
6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.



1 ELECTRICAL 0-GROUND FLOOR POWER PLAN

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

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575

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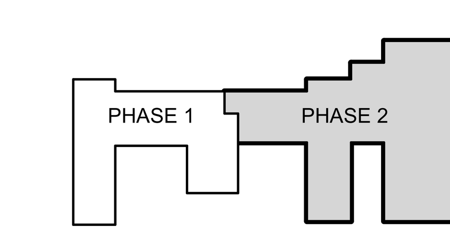

Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL GROUND FLOOR POWER PLAN

STATE OF NEW YORK — SHANE GARRABRANT — 106086 — LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E1.0

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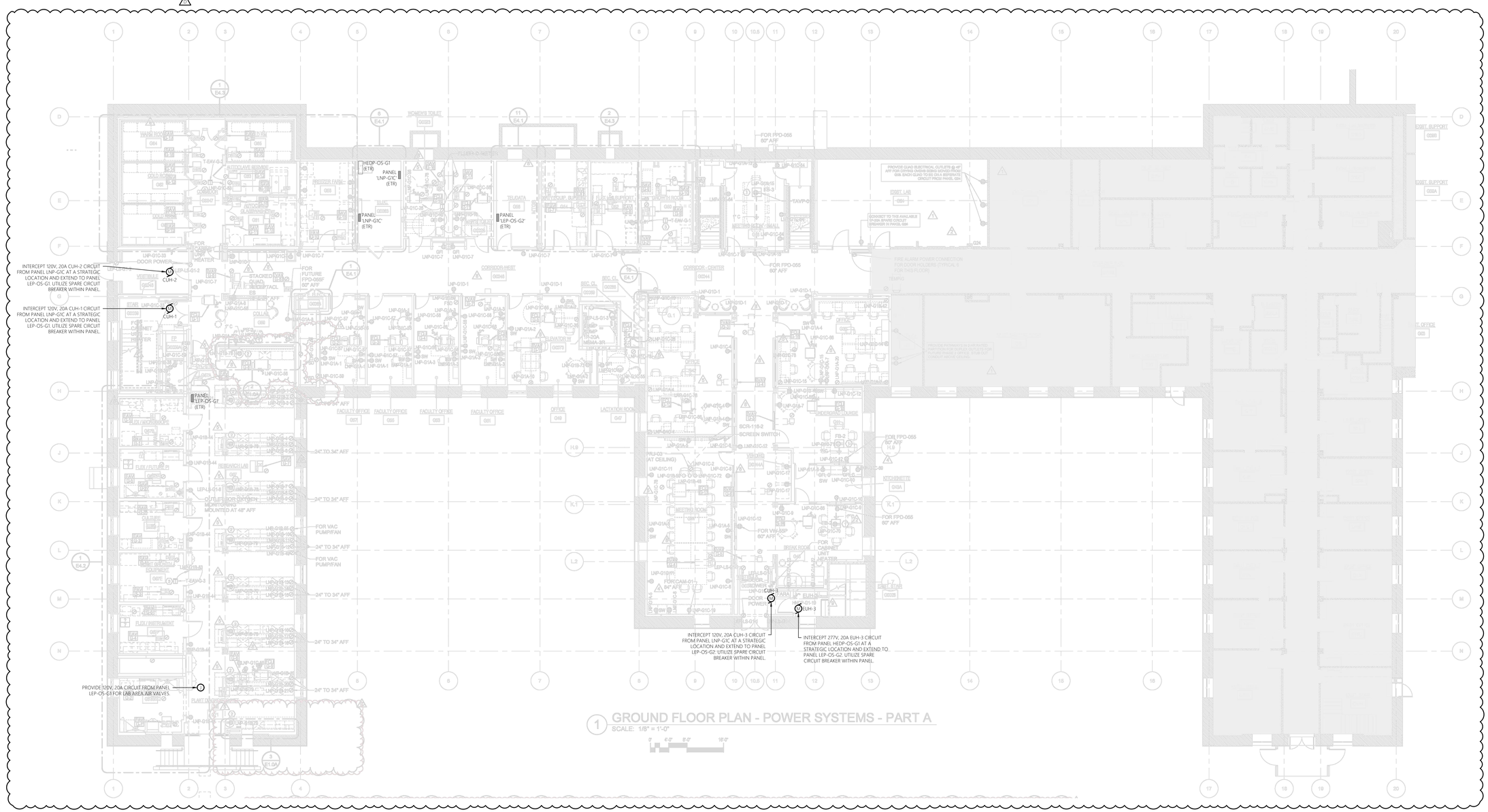
REFERENCE DRAWING UTILIZES PHASE 1 CONFORMED SET DRAWING. INTENT IS TO SHOW LOCATIONS OF HVAC UNITS TO BE RE-CIRCUITED TO PROVIDE BUILDING FREEZE PROTECTION. DISREGARD ANY LIGHT/FADED TEXT OR EQUIPMENT AS THIS WORK WAS PREVIOUSLY COMPLETED IN PHASE 1.



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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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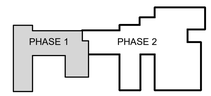
Notes:



Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

D	Addendum 6	11/19/26

ELECTRICAL GROUND FLOOR POWER PLAN - PHASE 1 AREA

BID DOCUMENTS
Scale:

E1.0A

STATE OF NEW YORK · JOANNE GARRAMONE · LICENSED PROFESSIONAL ENGINEER · 106086

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SHEET KEY NOTES:

1. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR WATER FOUNTAIN. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR AREA FIRE RELAYS. COORDINATE INSTALLATION LOCATION AND REQUIREMENTS WITH CORNELL FIRE ALARM VENDOR, AND FA SHEETS.
3. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR SENSOR FAUCET. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
4. PROVIDE 120V, 20A CIRCUIT FOR DOOR HARDWARE, CIRCUIT ALL DOORS ON FLOOR TO SAME CIRCUIT.
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6. PROVIDE 120V, 20A CIRCUIT FOR CEILING CORD REEL. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
7. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR SENSOR OPERATED FLUSH VALVE. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR VAV POWER SUPPLIES. COORDINATE LOCATIONS IN FIELD WITH M-SHEETS AND BMS VENDOR PRIOR TO ROUGH-IN.

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
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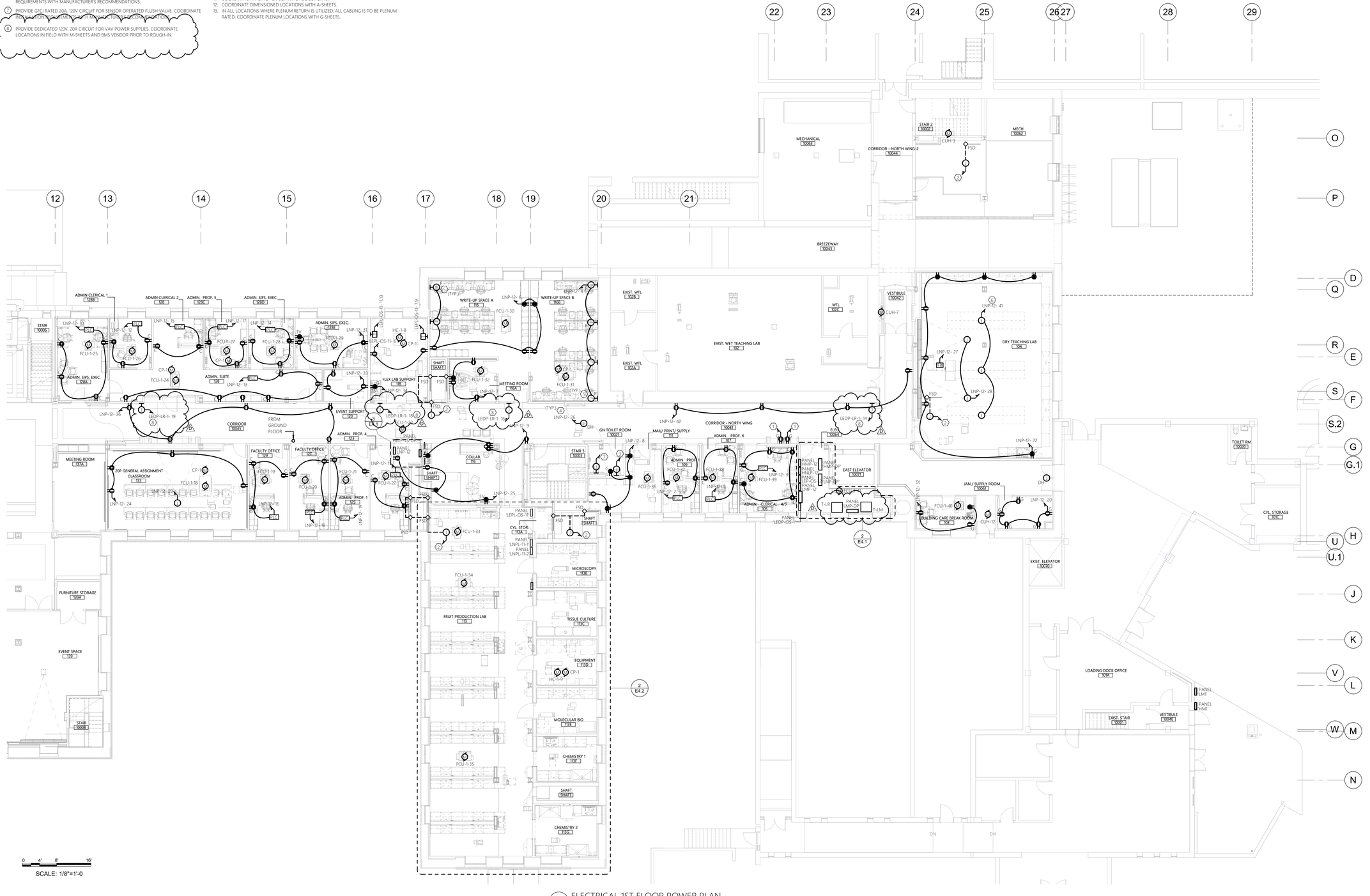

SCALE: 1/8"=1'-0

1 ELECTRICAL 1ST FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
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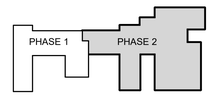

Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL FIRST FLOOR POWER PLAN

STATE OF NEW YORK · SHANE GARRABRANT · LICENSED PROFESSIONAL ENGINEER · 106028

BID DOCUMENTS
Scale: As indicated

E1.1

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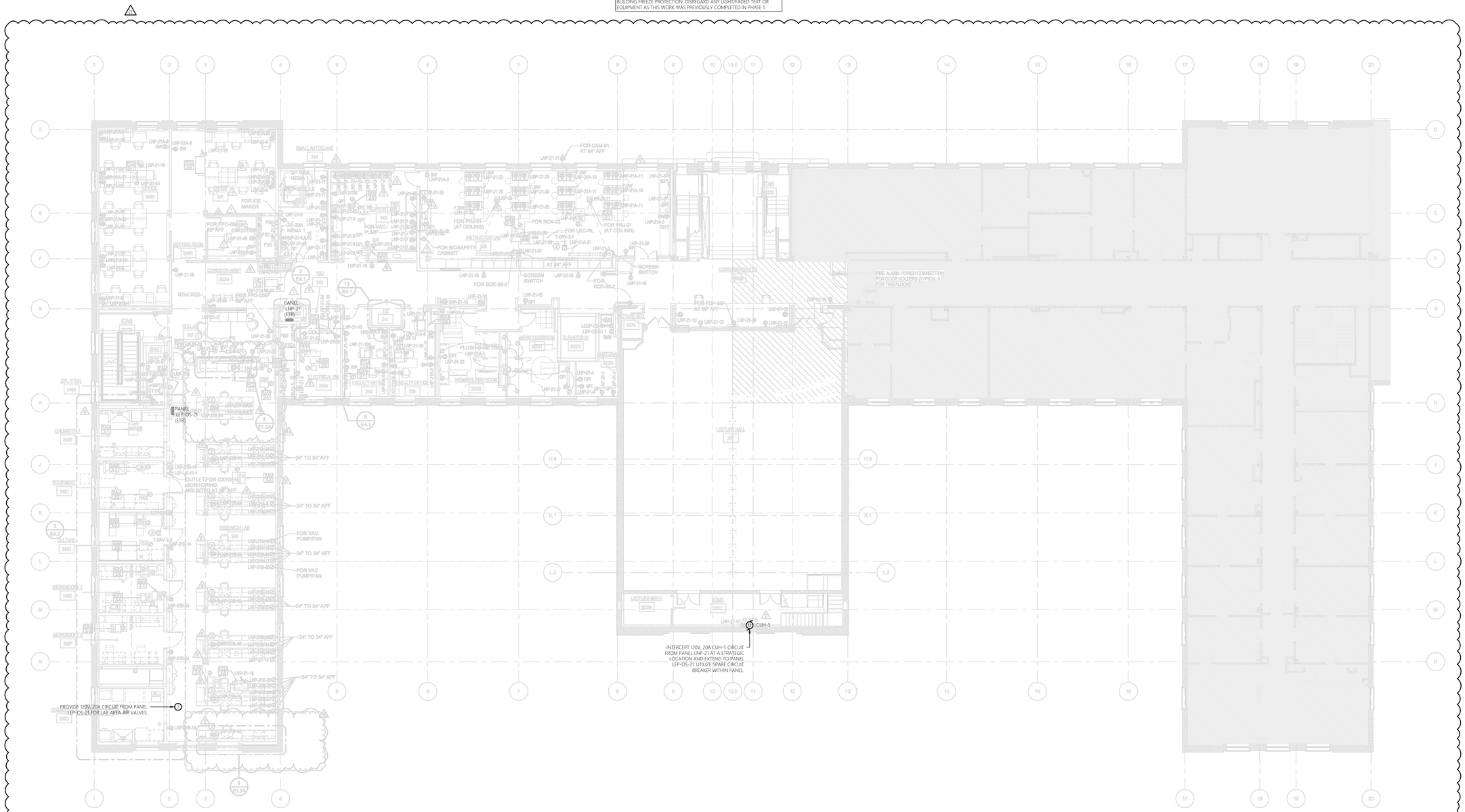
REFERENCE DRAWING UTILIZES PHASE 1 CONFORMED SET DRAWING. INTENT IS TO SHOW LOCATIONS OF HVAC UNITS TO BE RE-CIRCUITED TO PROVIDE BUILDING FREEZE PROTECTION. DISREGARD ANY LIGHT/FADED TEXT OR EQUIPMENT AS THIS WORK WAS PREVIOUSLY COMPLETED IN PHASE 1.



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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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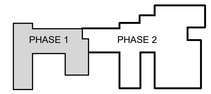

Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

D	Addendum 6	11/19/26

ELECTRICAL SECOND FLOOR POWER PLAN - PHASE 1 AREA

BID DOCUMENTS
Scale:

STATE OF NEW YORK · STEVEN GARRAMONE · LICENSED PROFESSIONAL ENGINEER · 106086

E1.1A

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SHEET KEY NOTES:

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2. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR AREA FIRE RELAYS. COORDINATE INSTALLATION LOCATION AND REQUIREMENTS WITH CORNELL FIRE ALARM VENDOR.
3. PROVIDE 120V, 20A CIRCUIT FOR DOOR HARDWARE, CIRCUIT ALL DOORS ON FLOOR TO SAME CIRCUIT.
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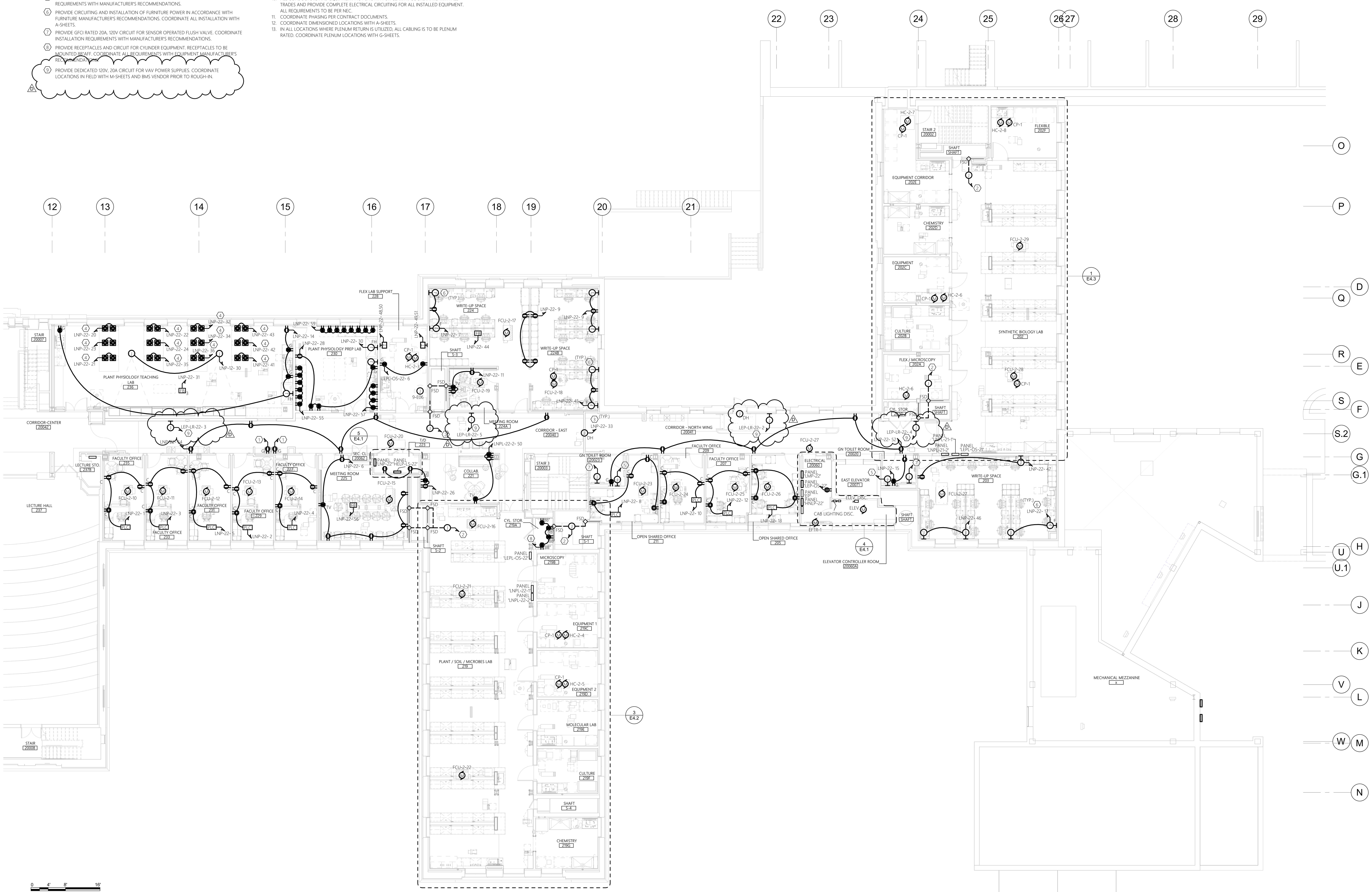

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SCALE: 1/8"=1'-0

1 ELECTRICAL 2ND FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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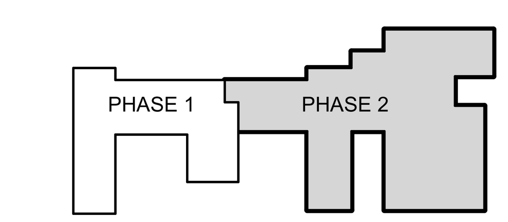
Notes:



Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL SECOND FLOOR POWER PLAN

BID DOCUMENTS
Scale: As indicated

STATE OF NEW YORK · SHANE GARRABRANT · 106086 · LICENSED PROFESSIONAL ENGINEER

E1.2

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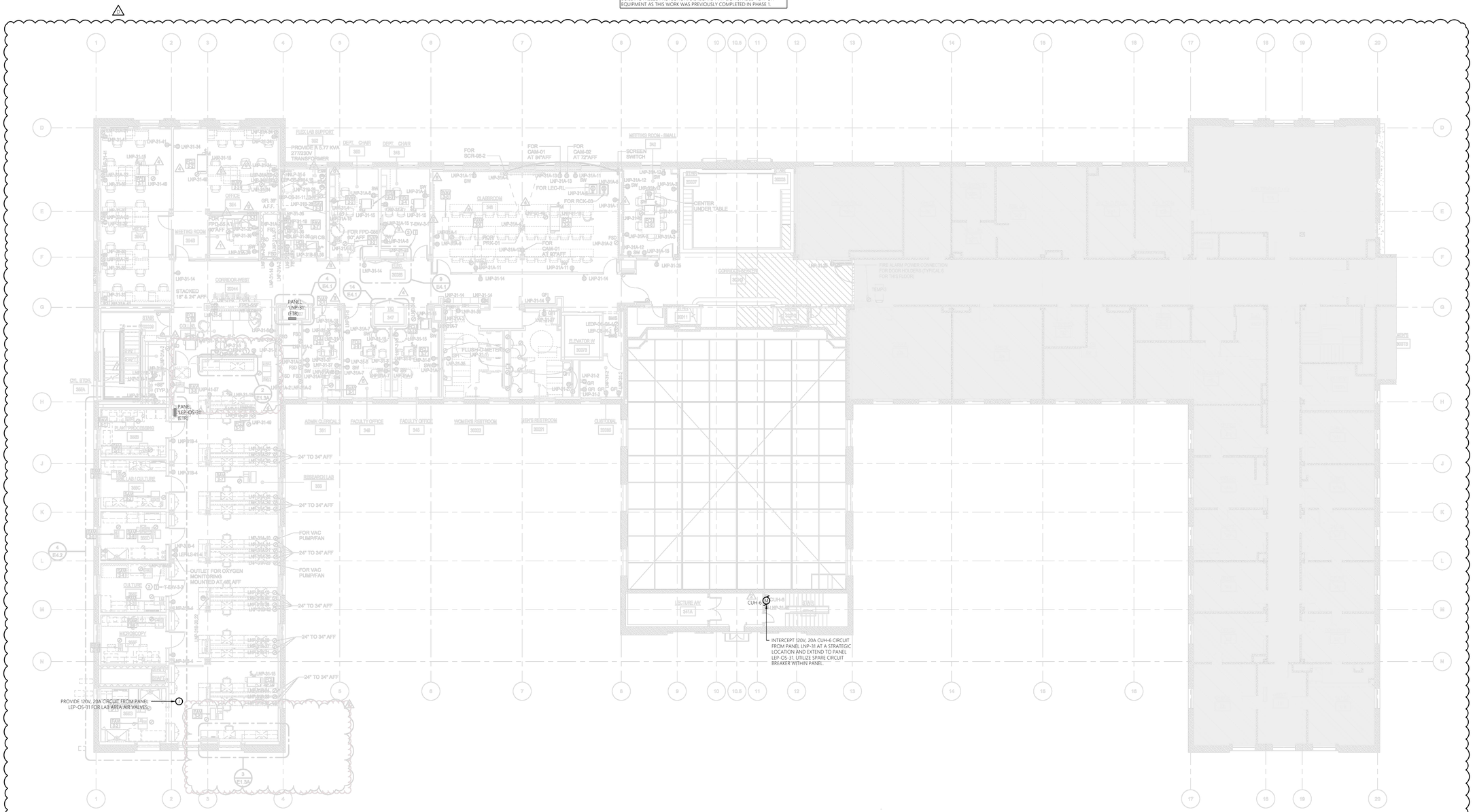
REFERENCE DRAWING UTILIZES PHASE 1 CONFORMED SET DRAWING. INTENT IS TO SHOW LOCATIONS OF HVAC UNITS TO BE RE-CIRCUITED TO PROVIDE BUILDING FREEZE PROTECTION. DISREGARD ANY LIGHT/FADED TEXT OR EQUIPMENT AS THIS WORK WAS PREVIOUSLY COMPLETED IN PHASE 1.



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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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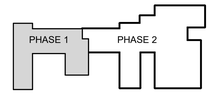

Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

D	Addendum 6	11/19/26

ELECTRICAL THIRD FLOOR POWER PLAN - PHASE 1 AREA

STATE OF NEW YORK — SHANE GARRAMONE — LICENSED PROFESSIONAL ENGINEER — 106085

BID DOCUMENTS
Scale:

E1.2A

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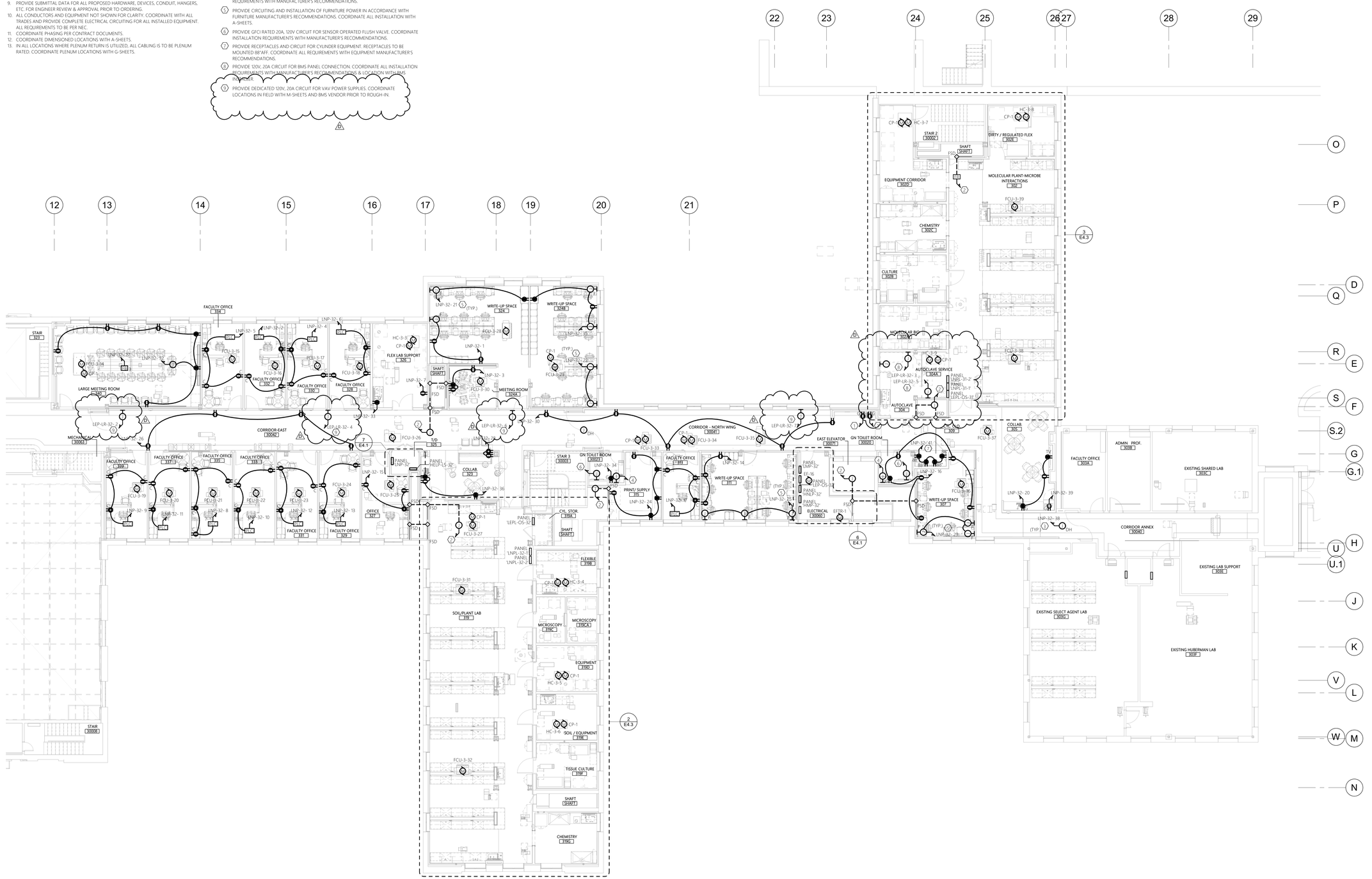
GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NEC21 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.

SHEET KEY NOTES:

1. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR WATER FOUNTAIN. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR AREA FIRE RELAYS. COORDINATE INSTALLATION LOCATION AND REQUIREMENTS WITH CORNELL FIRE ALARM VENDOR, AND FA SHEETS.
3. PROVIDE 120V, 20A CIRCUIT FOR DOOR HARDWARE, CIRCUIT ALL DOORS ON FLOOR TO SAME CIRCUIT.
4. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR SENSOR FAUCET. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE CIRCUITING AND INSTALLATION OF FURNITURE POWER IN ACCORDANCE WITH FURNITURE MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL INSTALLATION WITH A-SHEETS.
6. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR SENSOR OPERATED FLUSH VALVE. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
7. PROVIDE RECEPTACLES AND CIRCUIT FOR CYLINDER EQUIPMENT. RECEPTACLES TO BE MOUNTED 88"AFF. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE 120V, 20A CIRCUIT FOR BMS PANEL CONNECTION. COORDINATE ALL INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS & LOCATION WITH BMS INTEGRATOR.
9. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR VAV POWER SUPPLIES. COORDINATE LOCATIONS IN FIELD WITH M-SHEETS AND BMS VENDOR PRIOR TO ROUGH-IN.



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SCALE: 1/8"=1'-0

1 ELECTRICAL 3RD FLOOR POWER PLAN

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

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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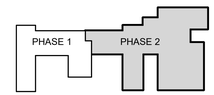

Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL THIRD FLOOR POWER PLAN

STATE OF NEW YORK
DUANE GARRABRANT
109338
LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E1.3

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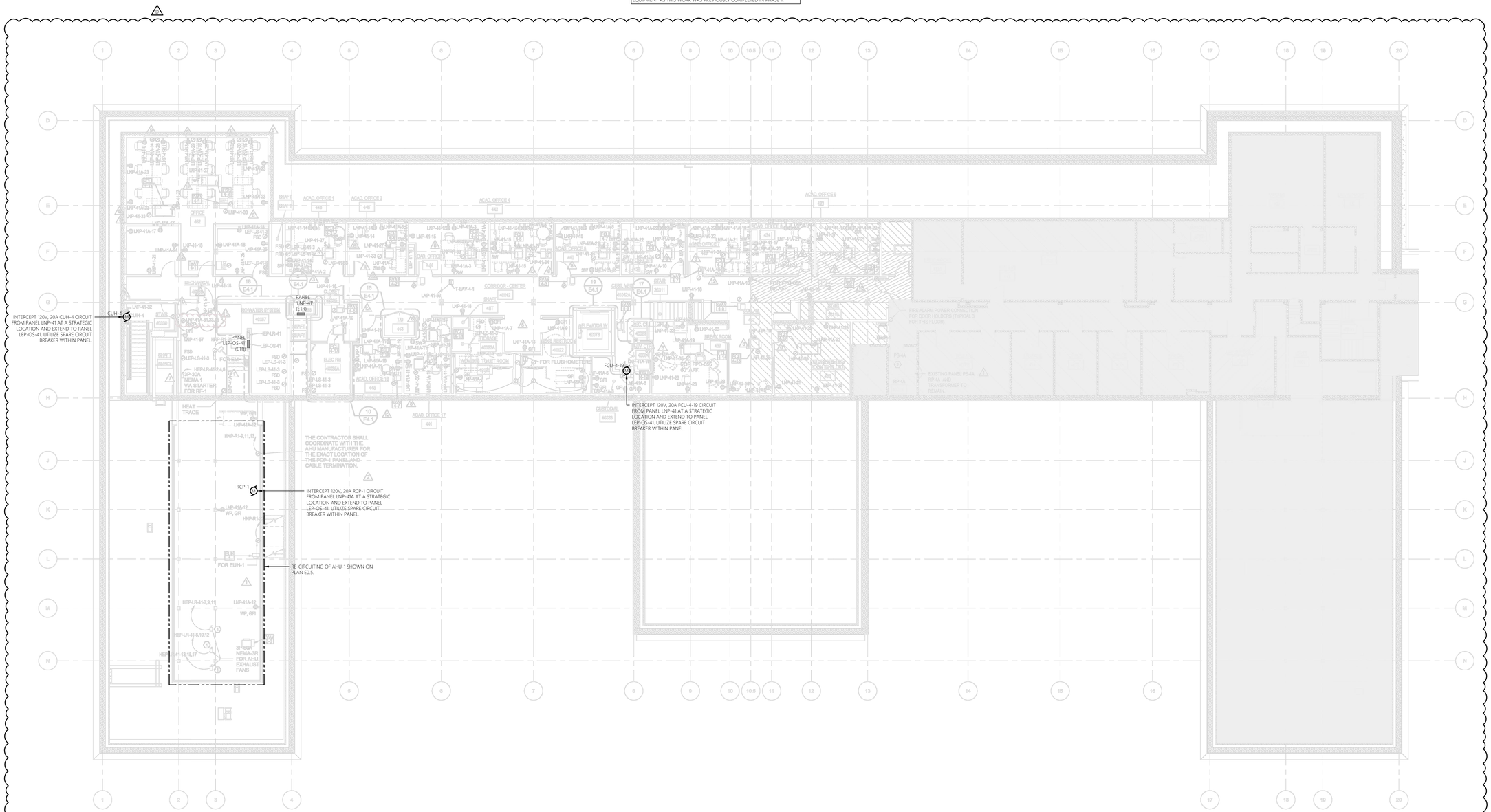
REFERENCE DRAWING UTILIZES PHASE 1 CONFORMED SET DRAWING. INTENT IS TO SHOW LOCATIONS OF HVAC UNITS TO BE RE-CIRCUITED TO PROVIDE BUILDING FREEZE PROTECTION. DISREGARD ANY LIGHT/FADED TEXT OR EQUIPMENT AS THIS WORK WAS PREVIOUSLY COMPLETED IN PHASE 1.



Keyplan

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Notes:

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Revisions

D	Addendum 6	11/19/26

ELECTRICAL FOURTH FLOOR POWER PLAN - PHASE 1 AREA

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Scale:

E1.3A

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SHEET KEY NOTES:

1. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR AREA FIRE RELAYS. COORDINATE INSTALLATION LOCATION AND REQUIREMENTS WITH CORNELL FIRE ALARM VENDOR, AND FA SHEETS.
2. PROVIDE 120V, 20A CIRCUIT FOR DOOR HARDWARE, CIRCUIT ALL DOORS ON FLOOR TO SAME CIRCUIT.
3. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR SENSOR FAUCET. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
4. PROVIDE CIRCUITING AND INSTALLATION OF FURNITURE POWER IN ACCORDANCE WITH FURNITURE MANUFACTURER'S RECOMMENDATIONS. COORDINATE AV INSTALLATION WITH A/V SHEETS.
5. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR VAV POWER SUPPLIES. COORDINATE LOCATIONS IN FIELD WITH M-SHEETS AND BMS VENDOR PRIOR TO ROUGH-IN.

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
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6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
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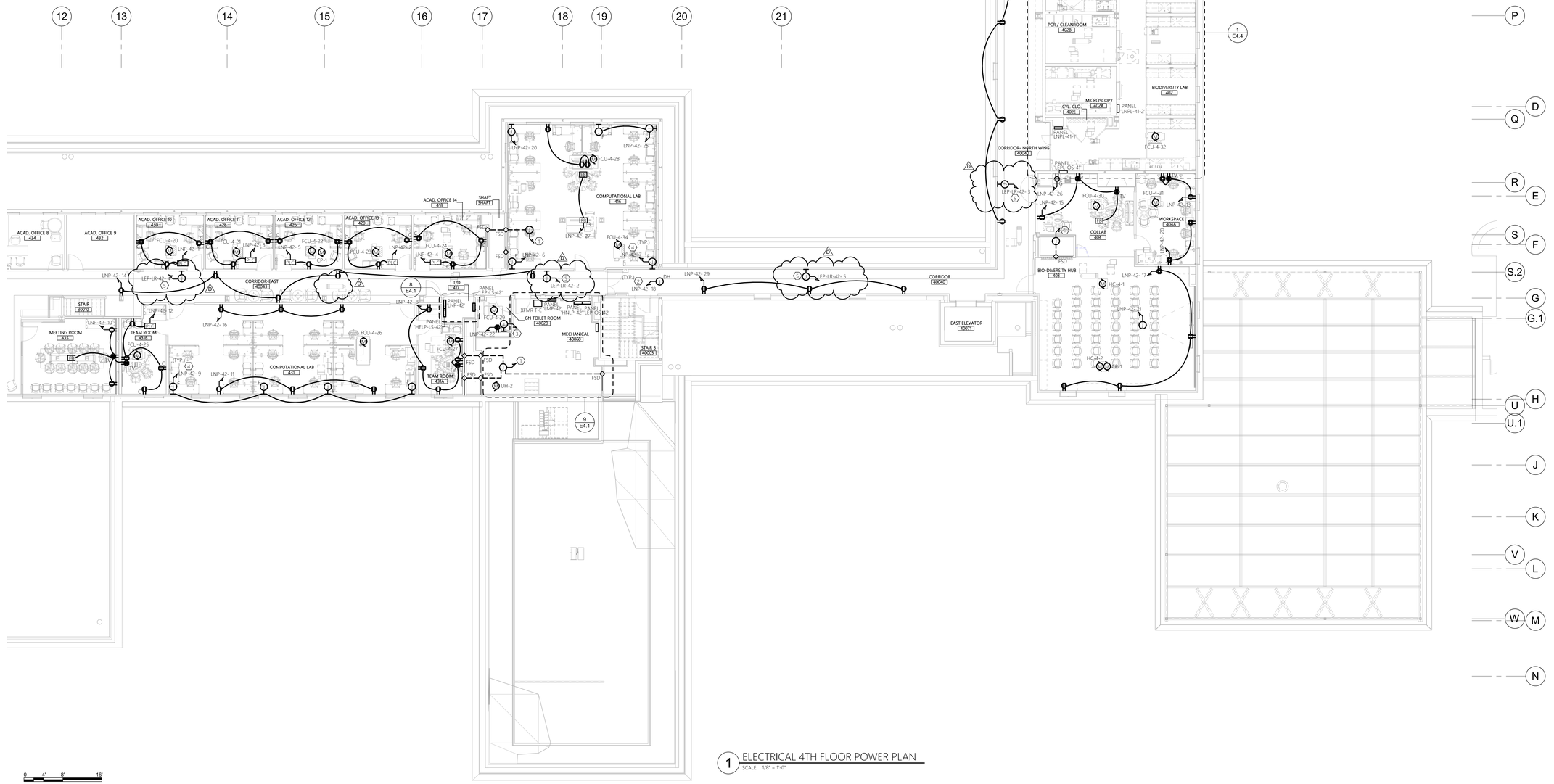

0 4' 8' 16'

SCALE: 1/8"=1'-0

1 ELECTRICAL 4TH FLOOR POWER PLAN

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

RENOVATE PLANT SCIENCE BUILDING - PHASE 2	
SUCF Project No. 161026-00	236 Tower Road Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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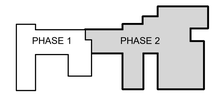

Keyplan

Job Number	31909.00
Drawing By	KJM
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Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL FOURTH FLOOR POWER PLAN

STATE OF NEW YORK · SEAN GARRAGHAN · LICENSED PROFESSIONAL ENGINEER · 106086

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Scale: As indicated

E1.4

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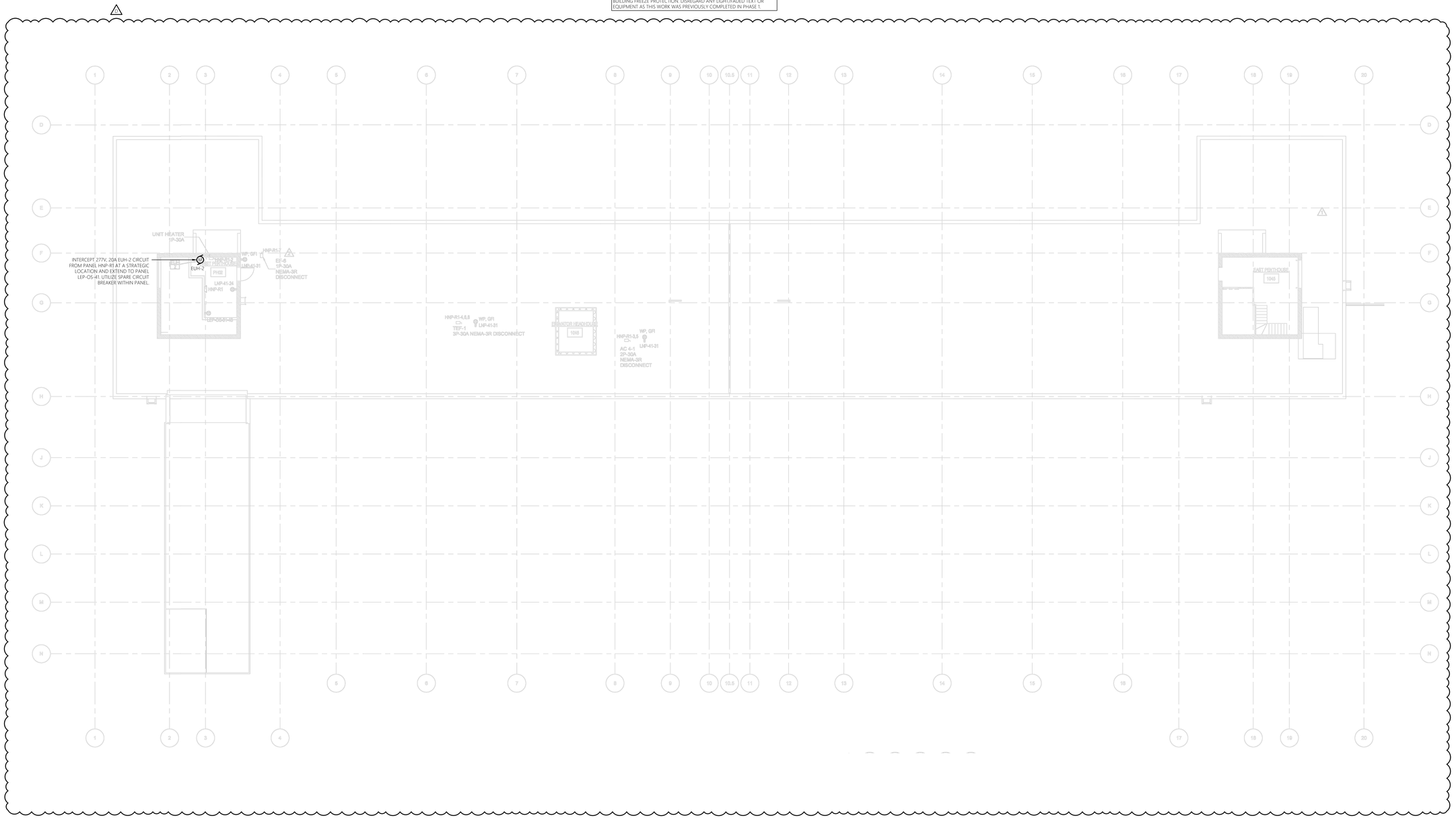

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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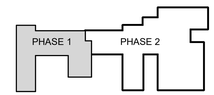

Keyplan

Job Number	31909.00
Drawing By	KJM
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Filename	
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Revisions

D	Addendum 6	11/19/26

ELECTRICAL ROOF POWER PLAN - PHASE 1 AREA

STATE OF NEW YORK
SHANE GARABRANT
LICENSED PROFESSIONAL ENGINEER
136435

BID DOCUMENTS
Scale:

E1.4A

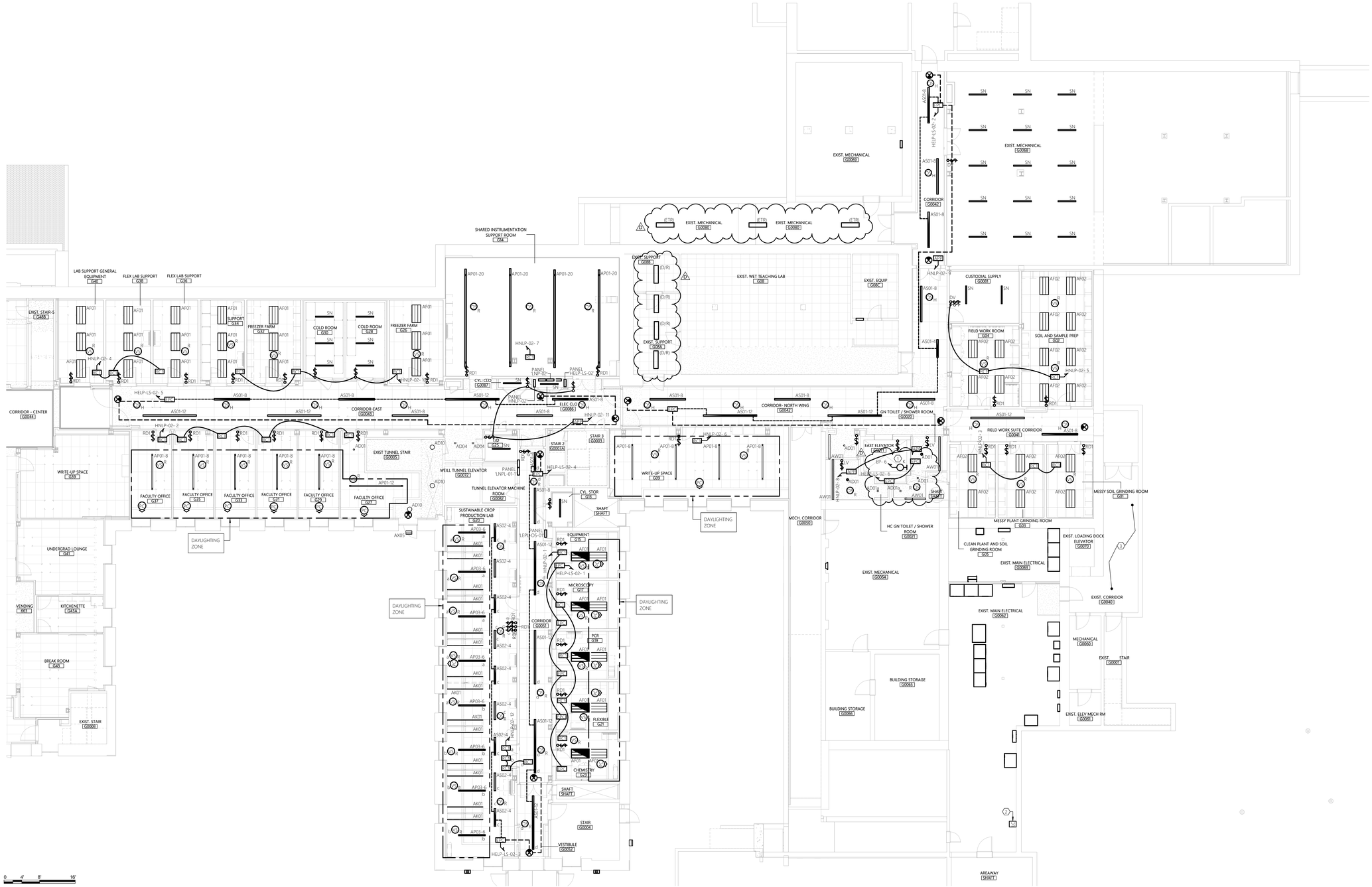
2024 Ellenzweig ©

SHEET KEY NOTES:

1. COORDINATE ELEVATOR SHAFT LIGHT FIXTURE MOUNTING HEIGHT IN FIELD WITH A-SHEETS PRIOR TO ROUGH-IN.
2. COORDINATE LOCATION OF EXTERIOR LIGHTING CONTROLS IN FIELD WITH OWNER PRIOR TO ROUGH-IN. REFER TO EXTERIOR LIGHTING CONTROL DETAIL, SHEET E8.2 FOR ADDITIONAL INFORMATION.
3. REINSTALL FIXTURES THAT WERE TEMPORARILY REMOVED DURING REMOVALS PHASE. REINSTALL IN PREVIOUS LOCATIONS AND CONNECT TO EXISTING CIRCUIT MAINTAINED DURING REMOVALS.

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGARS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. REFER TO LIGHTING CONTROL SCHEDULE, SHEET E6.5 FOR CIRCUITING REQUIREMENTS.



1 ELECTRICAL GROUND FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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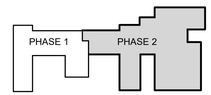
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL GROUND FLOOR LIGHTING PLAN

STATE OF NEW YORK · SHANE GARABRANT · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E2.0

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GENERAL SHEET NOTES:

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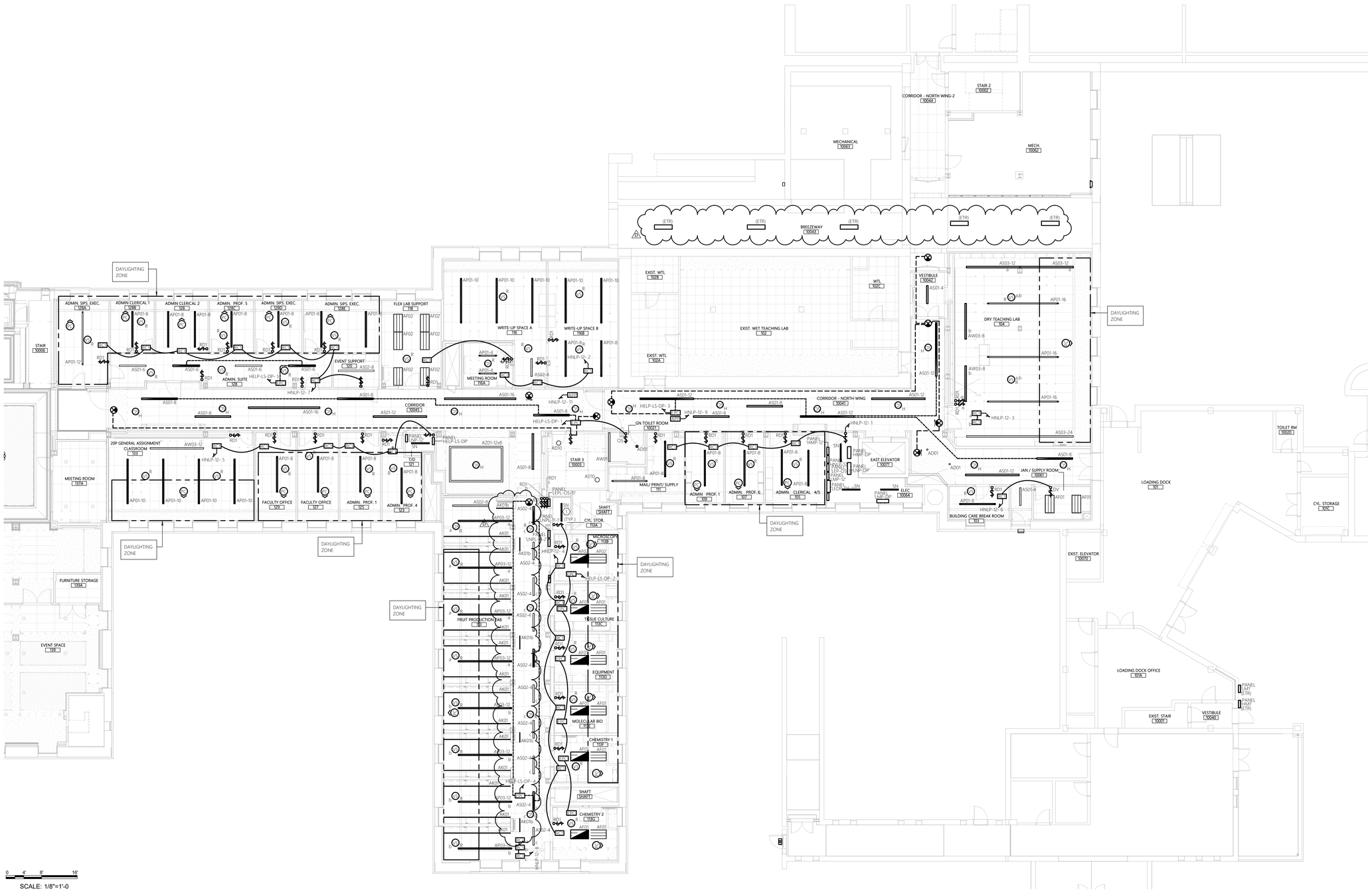

0 4' 8' 16'

SCALE: 1/8"=1'-0

1 ELECTRICAL 1ST FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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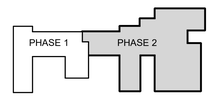
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL FIRST FLOOR LIGHTING PLAN

STATE OF NEW YORK SHANE GARRAMONE 100698 LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E2.1

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Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell_PSB_ELEC_PH2_R23.rvt

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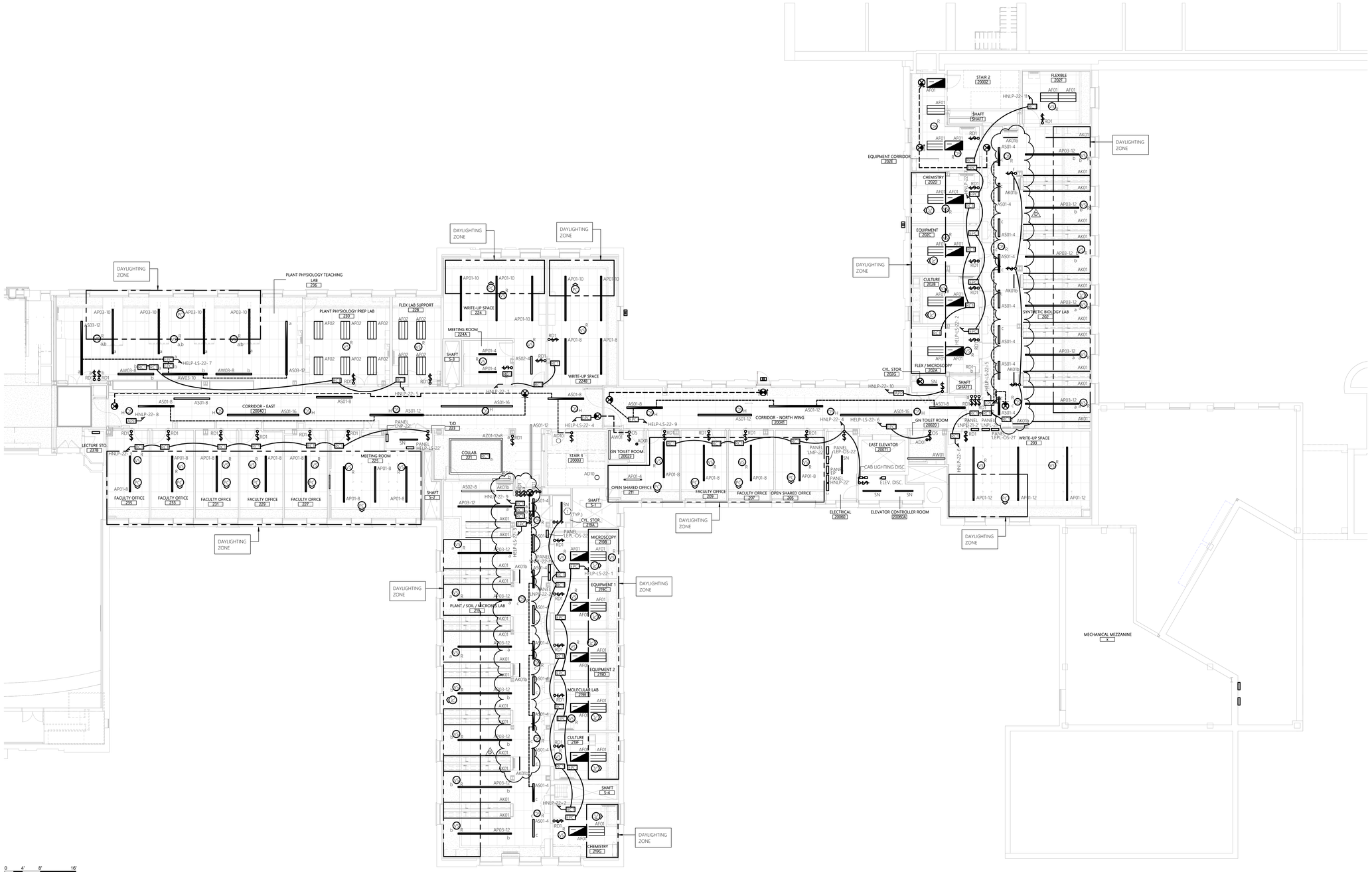

1 ELECTRICAL 2ND FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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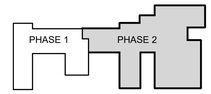
Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL SECOND FLOOR LIGHTING PLAN

STATE OF NEW YORK — SHANE GARRAGHAN — LICENSED PROFESSIONAL ENGINEER — 106686

BID DOCUMENTS
Scale: As indicated

E2.2

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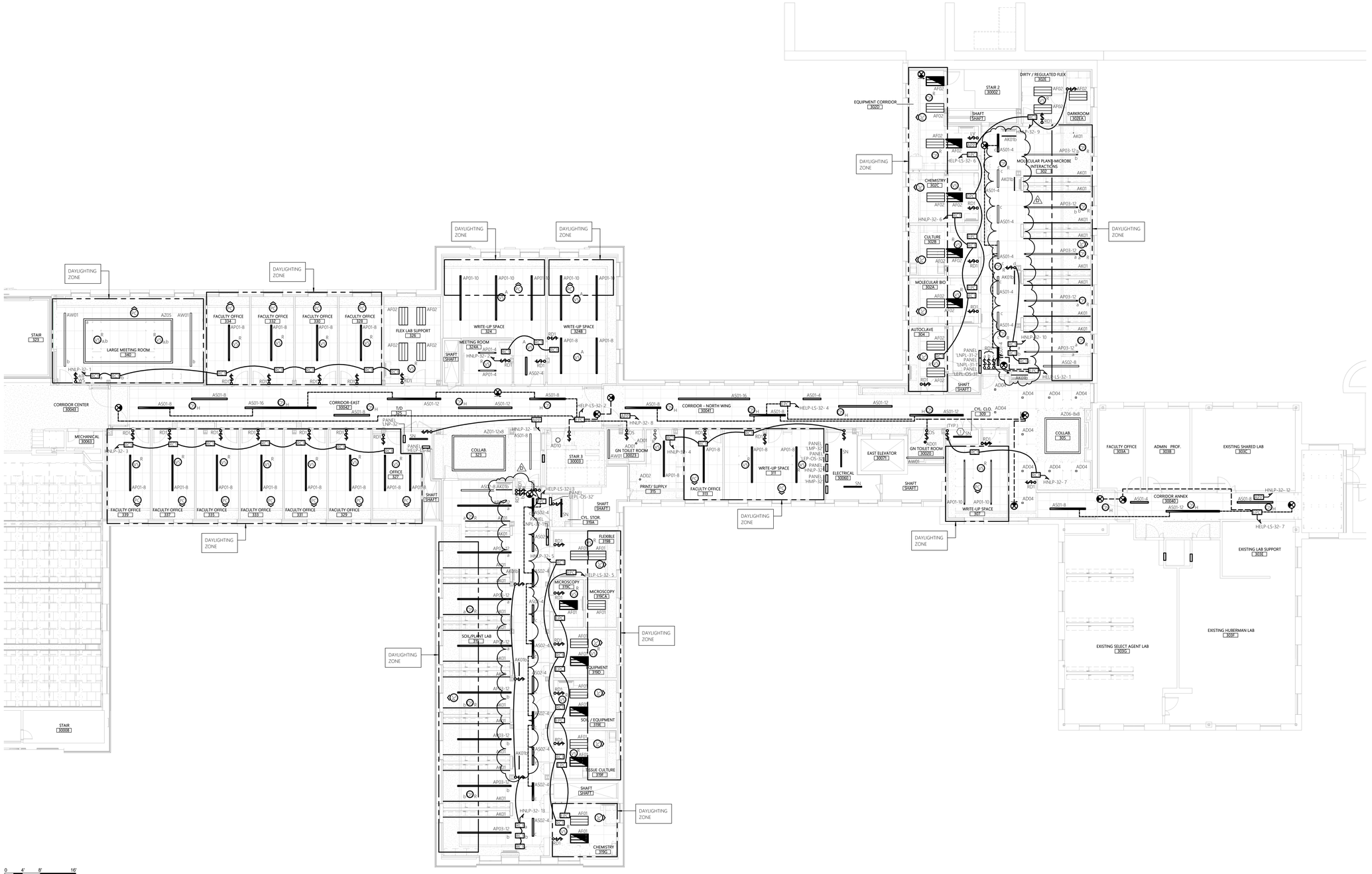

1 ELECTRICAL 3RD FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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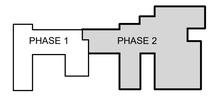
Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL THIRD FLOOR LIGHTING PLAN

STATE OF NEW YORK · DANIEL GARRIGHAN · 126008 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E2.3

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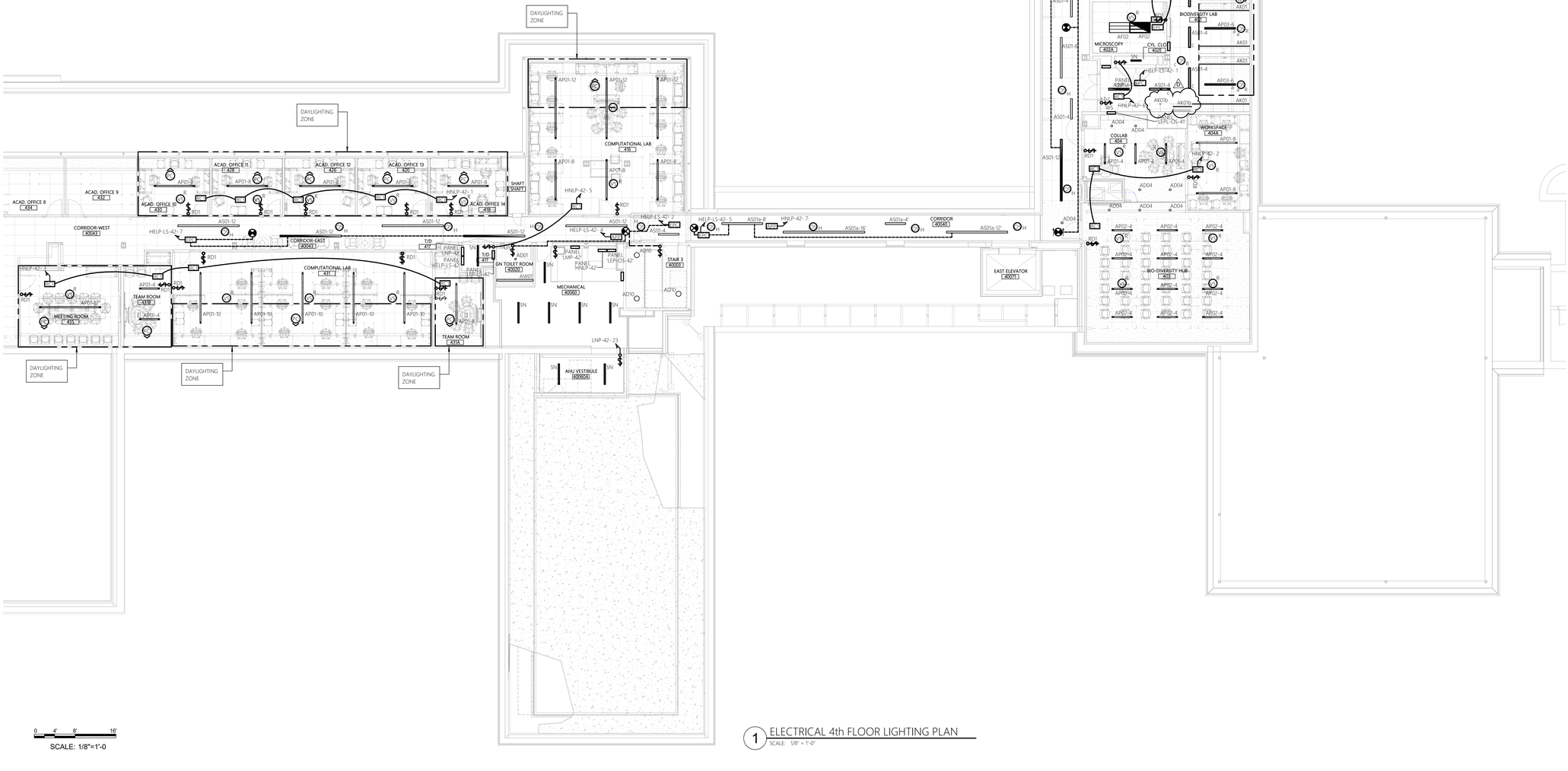

1 ELECTRICAL 4th FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

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Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell_PSB_ELEC_PH2_R23.rvt

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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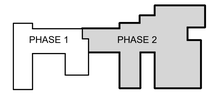
Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

D	Addendum 6	11/19/26

ELECTRICAL FOURTH FLOOR LIGHTING PLAN

STATE OF NEW YORK SHANE GARRABRANT LICENSED PROFESSIONAL ENGINEER 106566

BID DOCUMENTS
Scale: As indicated

E2.4

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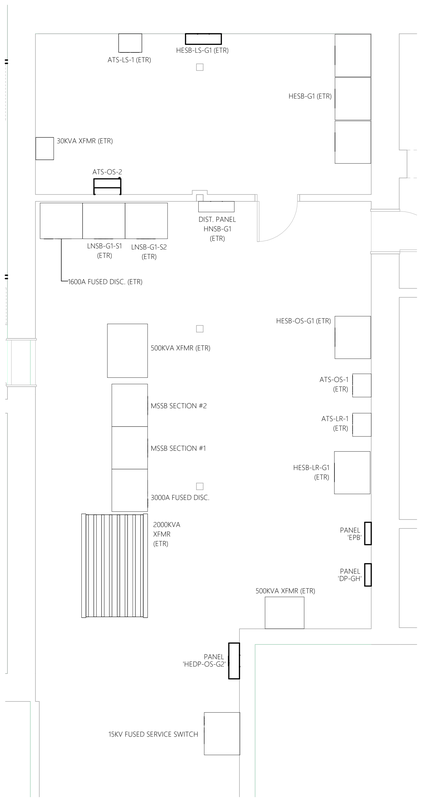
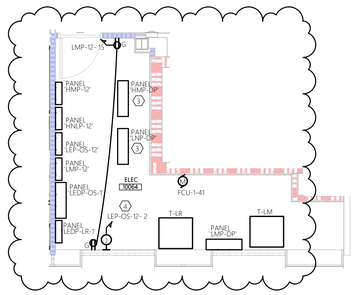
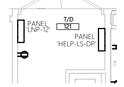


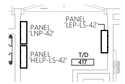
1 ELECTRICAL ENLARGED POWER PLAN - MAIN ELECTRICAL ROOM
SCALE: 1/4" = 1'-0"



2 ELECTRICAL ENLARGED POWER PLAN - ELEC 10064
SCALE: 1/4" = 1'-0"



3 ELECTRICAL ENLARGED POWER PLAN - T/D 121
SCALE: 1/4" = 1'-0"



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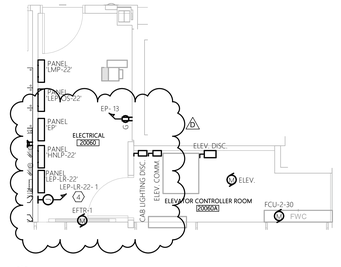
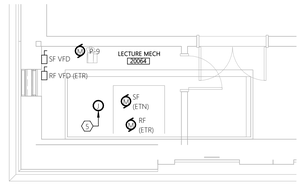
SCALE: 1/4" = 1'-0"

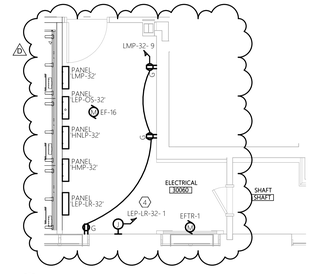


4 ELECTRICAL ENLARGED POWER PLAN - ELEC 20060
SCALE: 1/4" = 1'-0"

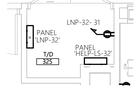
5 ELECTRICAL ENLARGED POWER PLAN - T/D 223
SCALE: 1/4" = 1'-0"



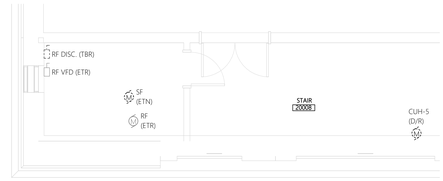
11 ELECTRICAL ENLARGED PLAN - LECTURE HALL MECH. ROOM
SCALE: 1/4" = 1'-0"



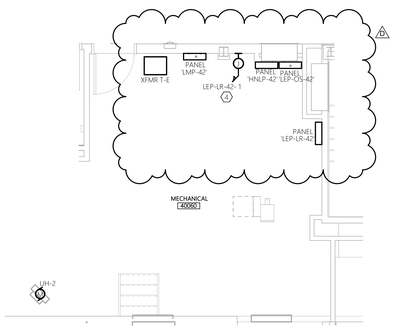
6 ELECTRICAL ENLARGED POWER PLAN - ELEC 30060
SCALE: 1/4" = 1'-0"



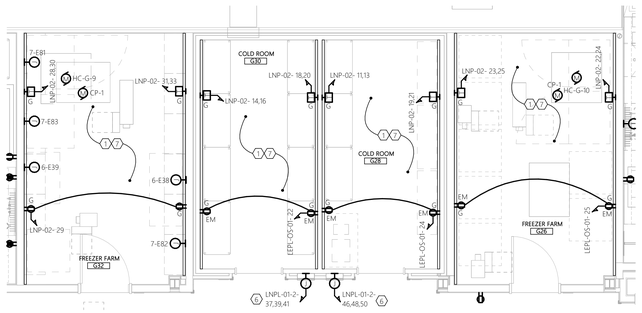
7 ELECTRICAL ENLARGED POWER PLAN - T/D 325
SCALE: 1/4" = 1'-0"



12 ELECTRICAL ENLARGED REMOVAL PLAN - LECTURE HALL MECH. ROOM
SCALE: 1/4" = 1'-0"



9 ELECTRICAL 4TH FLOOR POWER PLAN - MECH. 40060
SCALE: 1/4" = 1'-0"



10 ELECTRICAL ENLARGED PLAN - FREEZER FARMS & COLD ROOMS
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
SCALE: 1/4"=1'-0

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NEC® GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.

SHEET KEY NOTES:

1. RECEPTACLE AND POWER LAYOUT WITHIN FREEZER FARMS AND COLD ROOMS ARE NOT FINAL. COORDINATE FINAL COLD/FREEZER EQUIPMENT ELECTRICAL REQUIREMENTS WITH A-SHEETS PRIOR TO ROUGH-IN.
2. RECEPTACLE AND POWER LAYOUT WITHIN DATA ROOMS ARE NOT FINAL. COORDINATE FINAL DATA EQUIPMENT ELECTRICAL REQUIREMENTS WITH T-SHEETS PRIOR TO ROUGH-IN.
3. PROVIDE UNISTRUT MOUNTING FOR DISTRIBUTION PANELBOARDS IN ORDER TO AVOID STRUCTURAL BEAM.
4. PROVIDE 120V, 20A CIRCUIT FOR BMS PANEL CONNECTION. COORDINATE ALL INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS & LOCATION WITH BMS INSTALLER.
5. PROVIDE DEDICATED 120V, 20A CIRCUITS FOR AHU-3 LIGHTING AND CONVENIENCE RECEPTACLES. COORDINATE REQUIREMENTS WITH M-SHEETS PRIOR TO ROUGH-IN.
6. PROVIDE DEDICATED 208V, 3PH, 4-WIRE, 20A CIRCUIT FROM PANEL LNPL-01 FOR CER CONTROL PANEL. PROVIDE NON-FUSED DISCONNECT IN NEMA 1 ENCLOSURE UPSTREAM OF CONTROL PANEL. COORDINATE DISCONNECT LOCATION IN FIELD WITH OWNER AND CER PROVIDER PRIOR TO ROUGH-IN. COORDINATE INSTALLATION/ROUGH-IN REQUIREMENTS WITH APPROVED CER SHOP DRAWINGS.
7. ALL ASSOCIATED RACEWAYS, RECEPTACLES, AND WIRING WITHIN COLD ROOMS TO BE INSTALLED AND PROVIDED BY THE CER PROVIDER. COORDINATE ALL REQUIREMENTS WITH CER PROVIDER.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
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Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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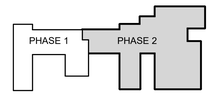
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL ENLARGED PLANS

STATE OF NEW YORK · MARK GARRAMONE · LICENSED PROFESSIONAL ENGINEER · 106086

BID DOCUMENTS
Scale: As indicated

E4.1

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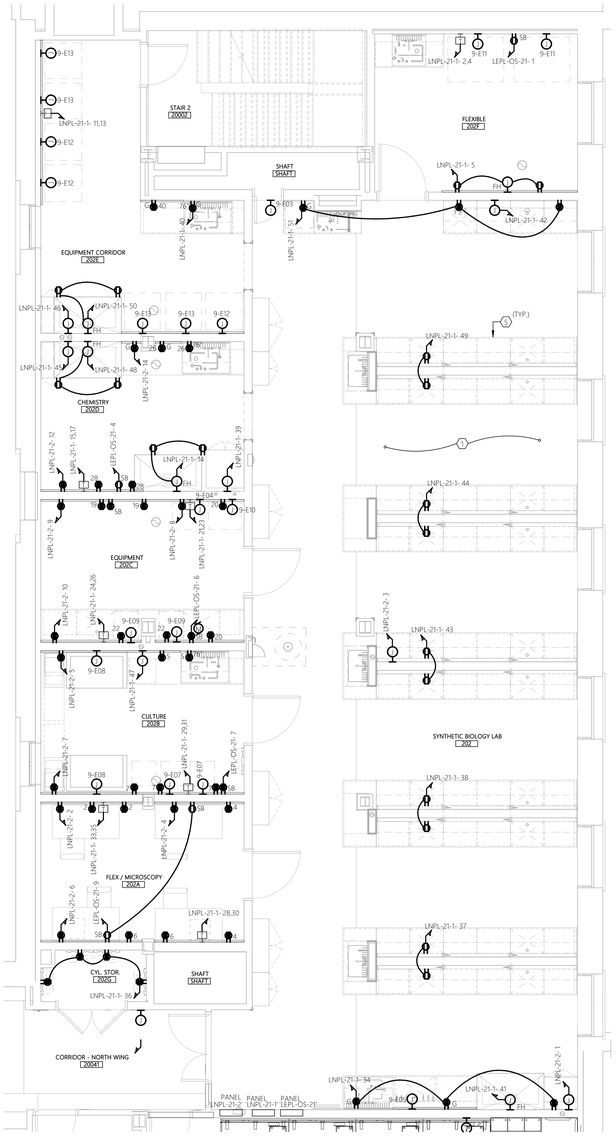
SHEET KEY NOTES:

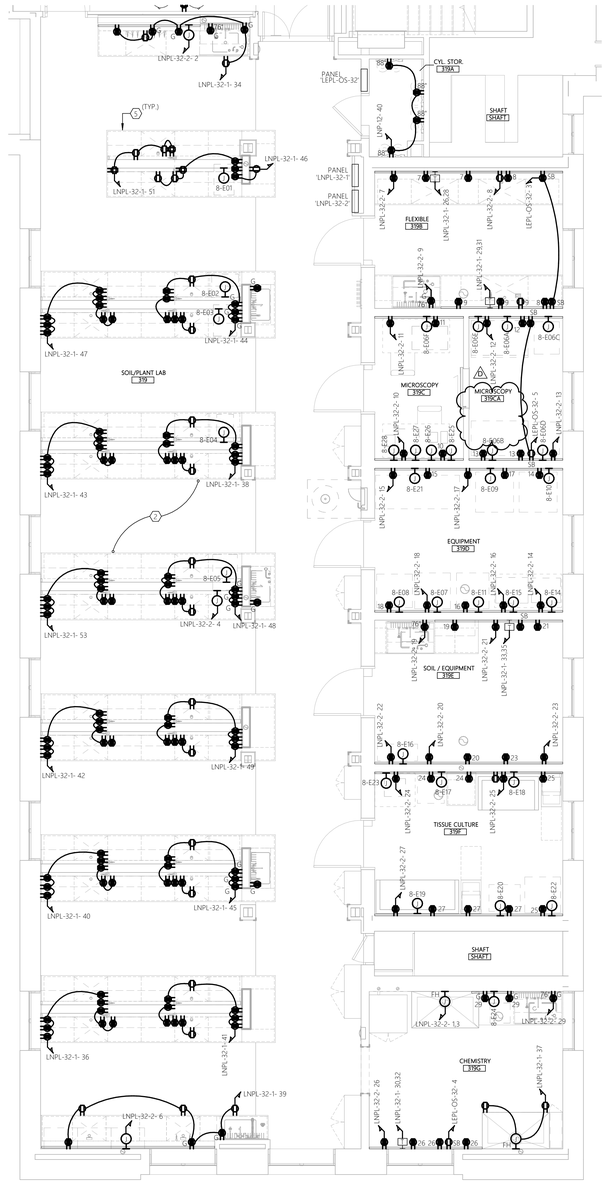
1. COORDINATE RECEPTACLE ROUGH-IN (MOUNTING HEIGHTS, QUANTITIES, CHARACTERISTICS, ETC.) WITH ARCHITECTURAL ELEVATIONS, DRAWING A10.14 PRIOR TO ROUGH-IN.
2. COORDINATE RECEPTACLE ROUGH-IN (MOUNTING HEIGHTS, QUANTITIES, CHARACTERISTICS, ETC.) WITH ARCHITECTURAL ELEVATIONS, DRAWING A10.13 PRIOR TO ROUGH-IN.
3. COORDINATE RECEPTACLE ROUGH-IN (MOUNTING HEIGHTS, QUANTITIES, CHARACTERISTICS, ETC.) WITH ARCHITECTURAL ELEVATIONS, DRAWING A10.15 PRIOR TO ROUGH-IN.
4. PROVIDE RECEPTACLES AND CIRCUIT FOR CYLINDER EQUIPMENT. RECEPTACLES TO BE MOUNTED 88"AFF. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
5. COORDINATE KNEESPACE RECEPTACLES WITH WIRING FOR CASEWORK STANCHION MOUNTED DEVICES WITH GC AND CASEWORK PROVIDER.

GENERAL SHEET NOTES:

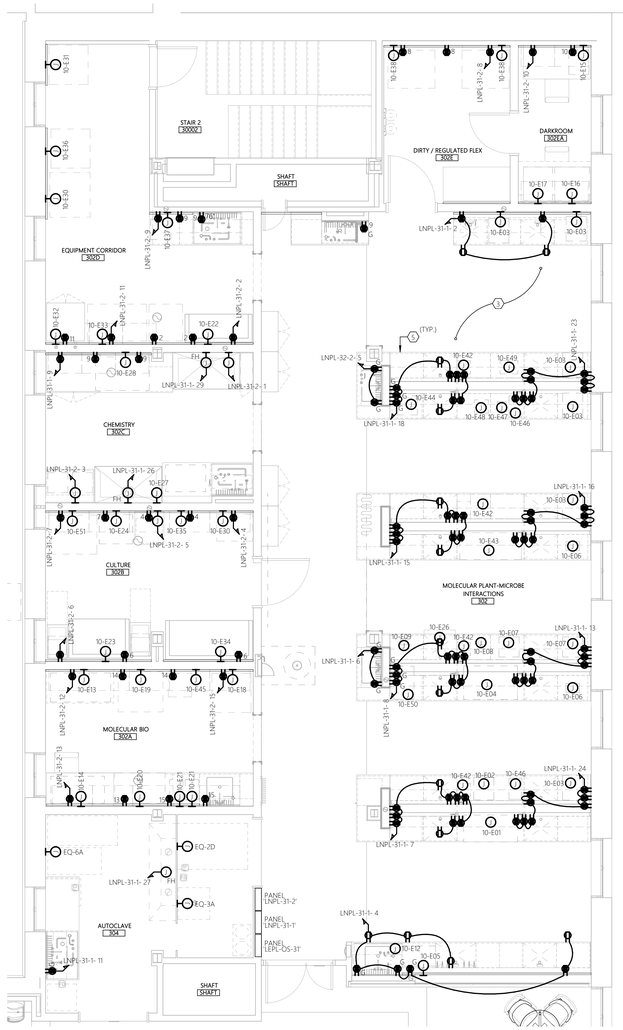
1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NEC41 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.



1 ELECTRICAL 2ND FLOOR POWER PLAN - LAB AREA NORTH
SCALE: 1/4" = 1'-0"



2 ELECTRICAL 3RD FLOOR POWER PLAN - LAB AREA SOUTH
SCALE: 1/4" = 1'-0"



3 ELECTRICAL 3RD FLOOR POWER PLAN - LAB AREA NORTH
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
SCALE: 1/4"=1'-0

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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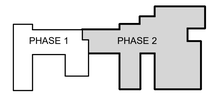
Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

D	Addendum 6	11/19/26

ELECTRICAL ENLARGED PLANS - LAB AREAS

STATE OF NEW YORK · DANIEL GARRAMONE · LICENSED PROFESSIONAL ENGINEER · 106086

BID DOCUMENTS
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E4.3

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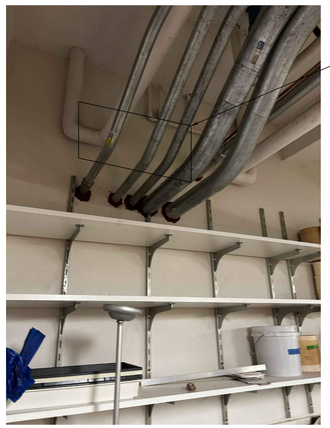
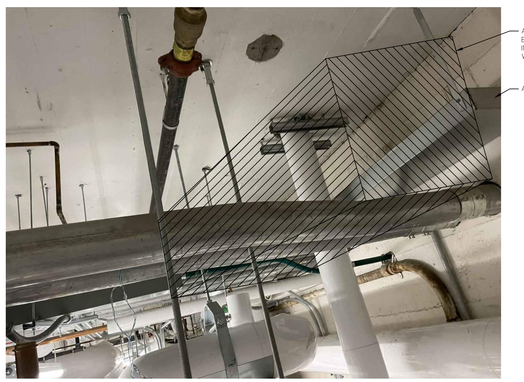
PROPOSED CONDUIT ROUTING LOCATION. CONDUIT TO ROUTED ALONG WALL. LOCATION SHOWN IS DIAGRAMMATIC IN NATURE. COORDINATE EXACT ROUTING AND CONDUIT CONFIGURATION IN FIELD WITH OWNER PRIOR TO ROUGH-IN.

3 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS



PROPOSED PUNCH-THRU LOCATION FOR CONDUIT ROUTING. INTENT IS FOR CONDUITS TO RISER VERTICALLY TO FLOOR ABOVE AFTER CORE DRILL THROUGH WALL. PROVIDE JUNCTION/PULL BOX AS NECESSARY. REFER TO ENLARGED PLAN, THIS SHEET FOR ADDITIONAL INFORMATION.

4 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS

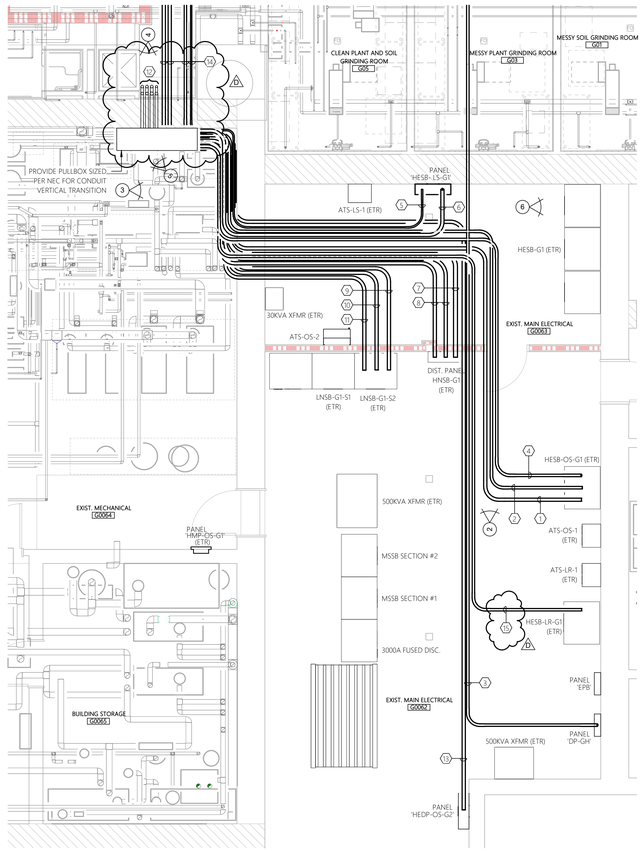


APPROXIMATE LOCATION FOR PULLBOX. REFER TO ENLARGED PLAN THIS SHEET FOR ADDITIONAL INFORMATION. COORDINATE PULLBOX LOCATION WITH OWNER PRIOR TO ROUGH-IN.

ABANDONED DUCT (TBR)

5 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS

0 2' 4' 8'
SCALE: 1/4"=1'-0



1 ELECTRICAL ENLARGED CONDUIT ROUTING PLAN
SCALE: 1/4" = 1'-0"

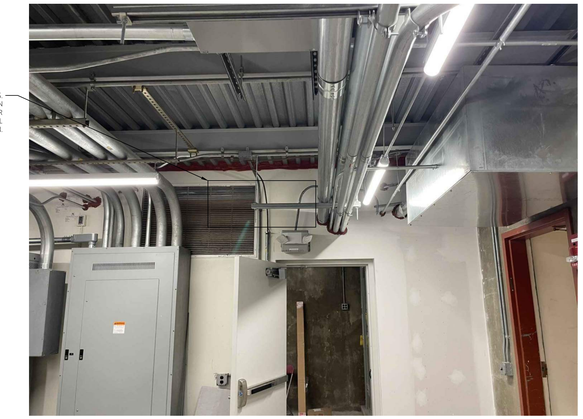
GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NEC41 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.

SHEET KEY NOTES:

1. INDICATIVE OF CONDUIT ROUTING FOR PANEL LEPL-OS-22.
2. INDICATIVE OF CONDUIT ROUTING FOR PANEL LEPL-OS-01.
3. INDICATIVE OF CONDUIT ROUTING FOR PANEL PPS1. REFER TO E0.4 & E3.4C FOR ADDITIONAL INFORMATION.
4. INDICATIVE OF CONDUIT ROUTING FOR PANEL LEPL-LS-01.
5. INDICATIVE OF CONDUIT ROUTING FOR PANEL HELP-LS-02.
6. PROVIDE NEW 400A, 3P POLE BREAKER WITHIN EXISTING SWITCHBOARD HESB-G1 FOR NEW PANEL FEED. INSTALL BREAKER WITHIN SECTION DESIGNATED FOR OPTIONAL STANDBY FEEDS. PROVIDE MODIFICATION OF SWITCHBOARD AS NECESSARY TO INSTALL BREAKER AND FEED.
7. INDICATIVE OF CONDUIT ROUTING FOR PANEL HMP-DP.
8. INDICATIVE OF CONDUIT ROUTING FOR PANEL HNLP-DP.
9. INDICATIVE OF CONDUIT ROUTING FOR PANEL LNPL-22A.
10. INDICATIVE OF CONDUIT ROUTING FOR PANEL LNP-DP.
11. INDICATIVE OF CONDUIT ROUTING FOR PANEL LNPL-01.
12. CONDUIT RISE VERTICALLY AT JUNCTION AND ADJACENT TO EXIST ES. FIELD CONTRACTOR.
13. INDICATIVE OF CONDUIT ROUTING FOR PANEL HMP-OS-S2.
14. CONDUIT TO BE RUN VERTICALLY AT PULLBOX AND UP TO FIRST FLOOR. CONDUITS ARE THEN TO BE ROUTED ACROSS FIRST FLOOR LEVEL AND DOWN TO GROUND FLOOR PANELS. ROUTE CONDUIT IN ORDER TO MINIMIZE AND AVOID MECHANICAL DUCTWORK AND PIPING. COORDINATE EXACT ROUTING IN FIELD WITH OWNER AND M-SHEETS PRIOR TO ROUGH-IN.
15. INDICATIVE OF CONDUIT ROUTING TO XFMR T-1R

6 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS



PROPOSED ROUTING LOCATION FOR CONDUITS. COORDINATE EXACT ROUTING LOCATION IN FIELD WITH OWNER PRIOR TO ROUGH-IN. REFER TO ENLARGED PLAN THIS SHEET FOR ADDITIONAL INFORMATION.

2 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS

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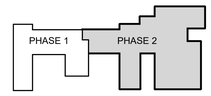

Keyplan

Job Number	31909.00
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ELECTRICAL ENLARGED CONDUIT ROUTING PLAN

BID DOCUMENTS
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E4.5

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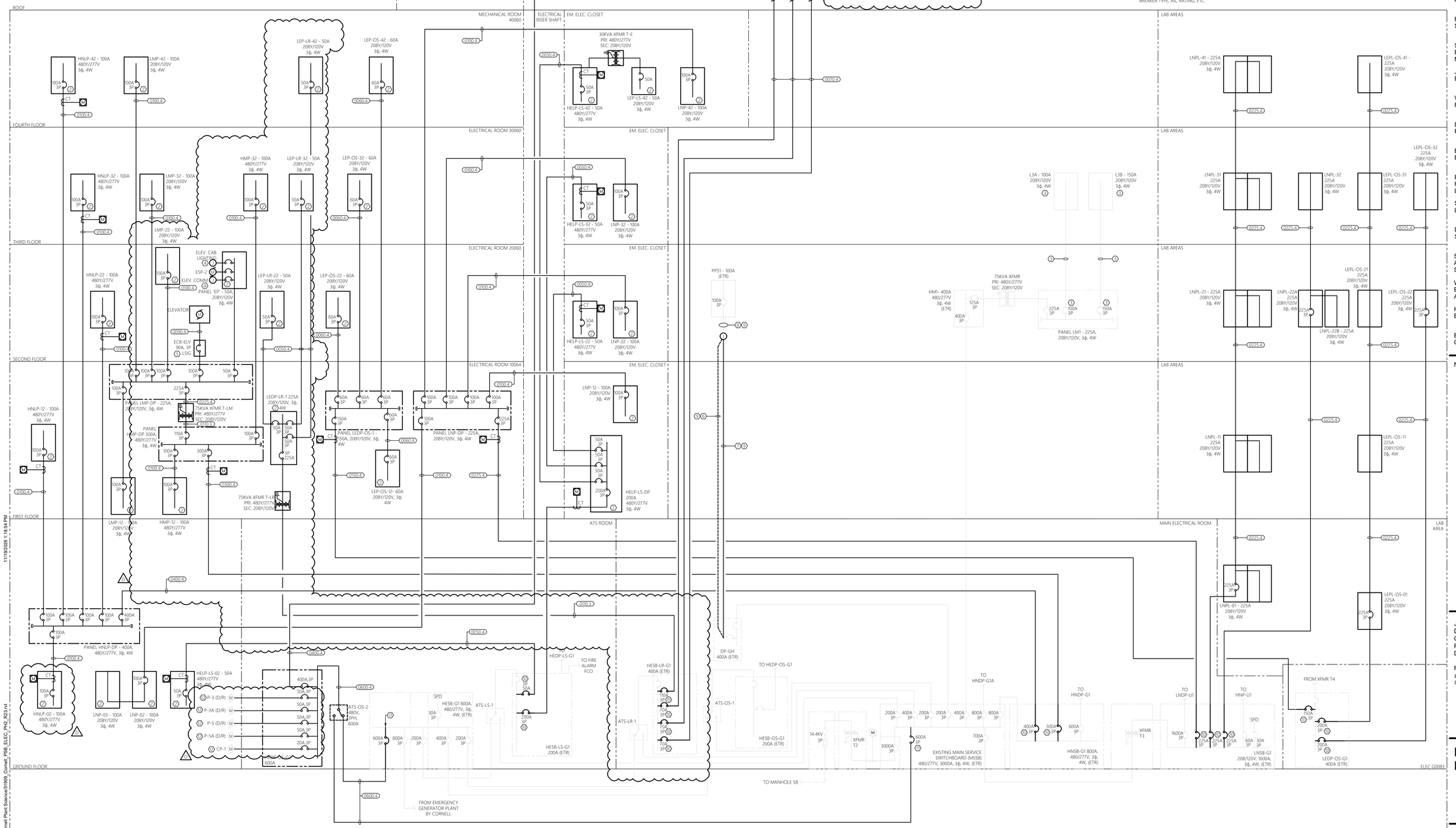
GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
3. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
4. REFER TO ELECTRICAL FLOOR PLAN DRAWINGS AND ELECTRICAL SITE PLAN FOR GENERAL LOCATIONS.
5. REFER TO ELECTRICAL DETAIL SHEETS AND SCHEDULE SHEETS FOR ADDITIONAL INFORMATION/REQUIREMENTS.
6. CONTRACTOR TO PROVIDE ADDITIONAL LUG TERMINATION KITS AS NECESSARY TO TERMINATE THE NUMBER OF SETS OF CONDUCTORS SHOWN/SPECIFIED.
7. COORDINATE PROJECT PHASING WITH ARCHITECTURAL PHASING PLANS.
8. PROVIDE UPDATED PANELBOARD DIRECTORIES AND CIRCUIT BREAKER LABELING.

SHEET KEY NOTES:

1. EXISTING ELECTRICAL EQUIPMENT AND FEEDS INSTALLED DURING PHASE 1 ARE NOT SHOWN FOR CLARITY.
2. REFER TO PANEL SCHEDULES, E-6.X SERIES, FOR ADDITIONAL INFORMATION REGARDING PANELS AND CIRCUIT BREAKERS.
3. MAINTAIN ELECTRICAL FEEDS TO THIRD FLOOR LAB PANELS IN GOOD CONDITION DURING ENTIRE DURATION OF CONSTRUCTION.
4. PROVIDE:
   - (1) 20A, 1P CIRCUIT BREAKER FOR ELEVATOR CAB LIGHTING CIRCUIT. CIRCUIT TO BE TERMINATED IN 120V, 30AF/20AT FUSED DISCONNECT IN NEMA 1 ENCLOSURE. COORDINATE DISCONNECT LOCATION IN FIELD WITH ELEVATOR INSTALLER.
   - (1) 20A, 1P CIRCUIT BREAKER FOR ELEVATOR COMM. CIRCUIT. CIRCUIT TO BE TERMINATED IN 120V, 30AF/20AT FUSED DISCONNECT IN NEMA 1 ENCLOSURE. COORDINATE DISCONNECT LOCATION IN FIELD WITH ELEVATOR INSTALLER.
5. PROVIDE 90A, 3P LSIG ENCLOSED CIRCUIT BREAKER IN NEMA 1 ENCLOSURE FOR ELEVATOR POWER CIRCUIT, WITH AUXILIARY CONTACT.
6. IN PHASE 2 SCOPE AREA, REMOVE EXISTING PANEL PPS1 SOURCE FEEDER CONDUCTORS, AND ASSOCIATED CONDUIT BACK TO SOURCE PANEL WITHIN BASEMENT. PROVIDE CAP/JUNCTION BOX AT LOCATION WHERE CONDUIT (THAT IS TO BE ABANDONED IN PLACE) EXITS PHASE 1 SCOPE AREA BOUNDARY.
7. IN PHASE 2 BOUNDARY, PROVIDE (4)#2/0 & #6G, 2"C FOR PANEL PPS1 FEED. ROUTES SHOWN ARE SCHEMATIC IN NATURE. COORDINATE PATH IN FIELD WITH OTHER TRADES PRIOR TO ROUGH-IN.
8. PROVIDE (4)#2/0 & #6G, IN 2"C FOR PANEL PPS1 FEED. IN PHASE 1 PROJECT BOUNDARY, UTILIZE EXISTING CONDUIT SO AS NOT TO DISTURB EXISTING TO REMAIN CEILINGS. ROUTES SHOWN ARE SCHEMATIC IN NATURE. COORDINATE PATH IN FIELD WITH OTHER TRADES PRIOR TO ROUGH-IN.
9. PRIOR TO START OF PHASE 2 REMOVE EXISTING PANEL PPS1 FEED AND REPLACE IN KIND. COORDINATE ALL WORK REQUIREMENTS AND REPLACEMENT FEEDER ROUTING IN FIELD WITH OTHER TRADES AND CAMPUS PRIOR TO ROUGH-IN. ENSURE REPLACEMENT FEEDER IS NOT DISTURBED DURING PHASE 2 CONSTRUCTION ACTIVITIES. FIELD VERIFY EXISTING CONDUCTORS/CONDUIT SIZES & QUANTITIES AND MATCH.
10. UTILIZE EXISTING PANEL SPACE. PROVIDE NEW CIRCUIT BREAKER (AS LISTED) FOR NEW FEEDER. MATCH EXISTING BREAKER TYPE, AIC RATING, ETC.
11. UTILIZE EXISTING SWITCHBOARD SPACE. PROVIDE NEW 400A, 3P CIRCUIT BREAKER FOR ATS FEED. MATCH EXISTING BREAKER TYPE, AIC RATING, ETC. REFER TO REFERENCE PHOTO, SHEET E4.5, FOR ADDITIONAL INFORMATION.
12. INTERCEPT EXISTING CIRCUIT FROM PANEL HMP-OS-G1 AT A STRATEGIC LOCATION AND MIGRATE TO PANEL HEDP-OS-G2. PROVIDE CIRCUIT EXTENSIONS AS NECESSARY. UTILIZE EXISTING STARTERS MAINTAINED DURING REMOVALS PHASE.
13. INTERCEPT EXISTING CIRCUIT FROM PANEL HNP-R1 AT A STRATEGIC LOCATION AND MIGRATE TO PANEL HMP-OS-52. PROVIDE CIRCUIT EXTENSIONS AS NECESSARY.



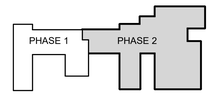
1 PARTIAL ELECTRICAL SINGLE LINE DIAGRAM
SCALE: NTS NEW WORK

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-6888
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL SINGLE LINE DIAGRAM

BID DOCUMENTS
Scale:

STATE OF NEW YORK · DUANE GARRABRANT · LICENSED PROFESSIONAL ENGINEER · 106628

E5.1

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Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell_PSB_ELEC_PH2_R23.rvt
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Branch Panel: LMP-DP

Location: ELEC 10064 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: 1 | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LMP-12	20 A	3	6600... 5400...			3	20 A	LMP-22	2
3	--	--	--		3360... 1800...		--	--	--	4
5	--	--	--			1080... 2400...	--	--	--	6
7	LMP-32	20 A	3	6000... 0 VA			3	20 A	LMP-42	8
9	--	--	--		4740... 1800...		--	--	--	10
11	--	--	--			3600... 6000...	--	--	--	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
			Total Load:	18000 VA	11700 VA	22800 VA				
			Total Amps:	158 A	98 A	198 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 52500 VA
Power	51600 VA	100.00%	51600 VA	**Total Est. Demand:** 52500 VA
Receptacle	900 VA	100.00%	900 VA	**Total Conn. Current:** 146 A
				Total Est. Demand Current: 146 A

Notes:

Branch Panel: HELP-LS-22

Location: T/D 223 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 10kA
Supply From: HELP-LS-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 50 A
Enclosure: 1 | **MCB Rating:** 50 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	EM. LIGHTING - 219B, 219C, 219D, 219E, 219F...	20 A	1	0 VA 0 VA			1	20 A	EM. LIGHTING - 202A, 202B, 202C, 202D, 202E	2
3	EM. LIGHTING - PLANT/SOIL/MICROBES LAB	20 A	1		0 VA 0 VA		1	20 A	EM. LIGHTING - CORRIDOR - EAST 20040	4
5	EM. LIGHTING - SYNTHETIC BIOLOGY LAB 202/	20 A	1			0 VA 0 VA	1	20 A	EM. LIGHTING - CORRIDOR NORTH WING...	6
7	EM. LIGHTING PLANT PHYSIO, TEACHING LA...	20 A	1	0 VA 0 VA			1	20 A	Spare	8
9	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:
- PROVIDE PANEL WITH INTEGRAL TYPE 2 SPD.

Branch Panel: HELP-LS-32

Location: T/D 325 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 10kA
Supply From: HELP-LS-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 50 A
Enclosure: 1 | **MCB Rating:** 50 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	EM. LIGHTING - LAB 302	20 A	1	0 VA 0 VA			1	20 A	EM. LIGHTING - CORRIDOR-EAST 30042	2
3	EM. LIGHTING SOIL/PLANT LAB 319	20 A	1		0 VA 0 VA		1	20 A	EM. LIGHTING - CORRIDOR - NORTH WING...	4
5	EM. LIGHTING - 319B, 319C, 319CA, 319D, 319...	20 A	1			0 VA 0 VA	1	20 A	EM. LIGHTING - 302A, 302B, 302C, 302D	6
7	EM. LIGHTING - CORRIDOR ANNEX 30040	20 A	1	0 VA 0 VA			1	20 A	Spare	8
9	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:
- PROVIDE PANEL WITH INTEGRAL TYPE 2 SPD.

Branch Panel: HELP-LS-42

Location: T/D 417 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 10kA
Supply From: HELP-LS-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 50 A
Enclosure: 1 | **MCB Rating:** 50 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	EM. LIGHTING - BIODIVERSITY LAB 402	20 A	1	0 VA 0 VA			1	20 A	EM. LIGHTING - CORRIDOR EAST 40043	2
3	EM. LIGHTING - 402A, 402B, 402C, 402D	20 A	1		0 VA 0 VA		1	20 A	Other	4
5	EM. LIGHTING - CORRIDOR 40340	20 A	1			0 VA 0 VA	1	20 A	EM. LIGHTING - CORRIDOR - NORTH WING...	6
7	EM. LIGHTING - CORRIDOR-EAST 40043	20 A	1	0 VA 0 VA			3	20 A	XFMR T-E	8
9	9	--	--		0 VA		--	--	--	10
11	Spare	20 A	1			0 VA 0 VA	--	--	--	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:
- PROVIDE PANEL WITH INTEGRAL TYPE 2 SPD.

Branch Panel: HNLP-12

Location: ELEC 10064 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 10kA
Supply From: HNLP-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LIGHTING - TOILET RM. 111, 109, 107, 105,...	20 A	1	0 VA 0 VA			1	20 A	LIGHTING - 116, 116B, 116A, 118	2
3	LIGHTING - DRY TEACHING LAB 104	20 A	1		0 VA 0 VA		1	20 A	LIGHTING - 113B, 113C, 113D, 113E, 113F, 113G	4
5	LIGHTING - 123, 125, 127, 129, 133	20 A	1			0 VA 0 VA	1	20 A	LIGHTING - BRANCH CIRCUIT 103 & SUPPLY...	6
7	LIGHTING - 120, 128, 128A, 128B, 128C, 128D...	20 A	1	0 VA 0 VA			1	20 A	113 LIGHTING	8
9	LIGHTING - CORRIDOR - NORTH WING 10041	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	LIGHTING - CORRIDOR 10045	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:

Branch Panel: HNLP-22

Location: ELECTRICAL 20060 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 10kA
Supply From: HNLP-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LIGHTING - WRITE-UP SPACE 224 & 224B	20 A	1	0 VA 0 VA			1	20 A	LIGHTING - 219B, 219C, 219D, 219E, 219F, 219G	2
3	LIGHT - 225, 227, 229, 231, 233, 235	20 A	1		0 VA 0 VA		1	20 A	LIGHTING - TOILET RM. OFFICES, ELECTRIC...	4
5	LIGHTING-LABS 236 & FLEX LAB...	20 A	1			0 VA 0 VA	1	20 A	LIGHTING - TOILET RM. WRITE-UP 203, SYNT...	6
7	LIGHTING - 202A, 202B, 202C, 202D	20 A	1	0 VA 0 VA			1	20 A	LIGHTING - CORRIDOR - EAST 20040	8
9	LIGHTING - PLANT/SOIL/MICROBES LAB	20 A	1		0 VA 0 VA		1	20 A	LIGHTING - CORRIDOR - NORTH WING 20041	10
11	LIGHTING - 202A, 202B, 202C, 202D, 202E, 202F	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:

Branch Panel: HNLP-32

Location: ELECTRICAL 30060 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 10kA
Supply From: HNLP-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LIGHTING - 326, 328, 330, 332, 334, 340	20 A	1	0 VA 0 VA			1	20 A	LIGHTING - 324A, 324B, 324	2
3	LIGHTING - 327, 329, 331, 333, 335, 337, 339	20 A	1		0 VA 0 VA		1	20 A	LIGHTING - 30060, 311, 313, 315	4
5	LIGHTING - 319B, 319C, 319CA, 319D, 319E...	20 A	1			0 VA 0 VA	1	20 A	LIGHTING - LABS 302C, 302B, 302A, 304	6
7	LIGHTING - WRITE-UP SPACE 307 & COLLAB...	20 A	1	0 VA 0 VA			1	20 A	LIGHTING - CORRIDOR - NORTH WING 30041	8
9	LIGHTING - EQUIPMENT CORRIDOR 302D...	20 A	1		0 VA 0 VA		1	20 A	LIGHTING - LAB 302	10
11	LIGHTING - CORRIDOR-EAST 30042	20 A	1			0 VA 0 VA	1	20 A	LIGHTING - CORRIDOR ANNEX 30040	12
13	319 LIGHTING	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:

Branch Panel: HNLP-42

Location: MECHANICAL 40060 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 10kA
Supply From: HNLP-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LIGHTING - 418, 420, 426, 428, 430	20 A	1	0 VA 0 VA			1	20 A	LIGHTING - 403, 404, 404A	2
3	LIGHTING - 431A, 431, 431B, 435	20 A	1		0 VA 0 VA		1	20 A	LIGHTING - 402A, 402B, 402C, 402D	4
5	LIGHTING - COMP. LAB 416, GN TOILET ROO...	20 A	1			0 VA 0 VA	1	20 A	LIGHTING - BIODIVERSITY LAB 402	6
7	LIGHTING - CORRIDOR 40040	20 A	1	0 VA 0 VA			1	20 A	Spare	8
9	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:

Branch Panel: LEP-OS-32

Location: ELECTRICAL 30060 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: LEDP-OS-1 | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 60 A
Enclosure: 1 | **MCB Rating:** 60 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1										2
3										4
5										6
7										8
9	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
				Total Conn. Load: 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575

Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506

Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd., Rochester, NY 14606, T 585 288-5590

Jade Stone Engineering Electrical Engineers — 444 Vanduzee St., Watertown, NY 13601, T 315 836 4062

Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334

DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339

Bell & Spina Building Envelope — 215 Wyoming Street S, Syracuse, NY 13204, T 315 488-0377

Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000, Syracuse, NY 13202, T 315 471-0688

Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor, New York, NY 10018, T 212 439-5650

D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill, East Greenbush, NY 12061, T 518 729-2967

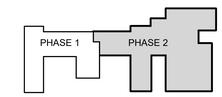
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue, New York, NY 10016, T 212 725-6800

Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300, Buffalo, NY 14203, T 716 206-5122

Hastings Consulting Building Code — 142 Hanlon Rd, Hollilston, MA 01746, T 508 397-8417

Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL SCHEDULES

BID DOCUMENTS
Scale:

E6.1

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Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell_PSB_ELEC_PH2_R23.rvt

Branch Panel: LEDP-OS-1

Location: ELEC 10064 | **Supply From:** | **Mounting:** Surface | **Enclosure:** 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 150 A | **MCB Rating:** 150 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LEP-OS-12	60 A	3	0 VA 0 VA			3	60 A	LEP-OS-22	2
3	--	--	--		0 VA 0 VA		--	--	--	4
5	--	--	--			0 VA 0 VA	--	--	--	6
7	LE-OS-32	60 A	3	0 VA 0 VA			3	60 A	LEP-OS-42	8
9	--	--	--		0 VA 0 VA		--	--	--	10
11	--	--	--			0 VA 1200...	--	--	--	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
			Total Load:	0 VA	0 VA	1200 VA				
			Total Amps:	0 A	0 A	10 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 1200 VA
Power	1200 VA	100.00%	1200 VA	**Total Est. Demand:** 1200 VA
				Total Conn. Current: 3 A
				Total Est. Demand Current: 3 A

Notes:

Branch Panel: LEP-OS-12

Location: ELEC 10064 | **Supply From:** LEDP-OS-1 | **Mounting:** Surface | **Enclosure:** 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 60 A | **MCB Rating:** 60 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1				0 VA			1	20 A	Other	2
3					0 VA		1	20 A	CUH-10	4
5						0 VA	1	20 A	CUH-11	6
7	CUH-7	20 A	1	0 VA 0 VA			1	20 A	Spare	8
9	CUH-9	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 0 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:** 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:

Branch Panel: LEP-OS-22

Location: ELECTRICAL 20060 | **Supply From:** LEDP-OS-1 | **Mounting:** Surface | **Enclosure:** 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 60 A | **MCB Rating:** 60 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1										2
3										4
5										6
7				0 VA			1	20 A	Spare	8
9	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
				Total Conn. Load: 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:

Branch Panel: LEP-LS-42

Location: T/D 417 | **Supply From:** | **Mounting:** Surface | **Enclosure:** 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 50 A | **MCB Rating:** 50 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	BAS ANTENNA	20 A	1	0 VA 0 VA			1	20 A	Spare	2
3	BAS ANTENNA	20 A	1		0 VA 0 VA		1	20 A	Spare	4
5	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	8
9	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31										32
33										34
35										36
37										38
39										40
41										42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:

Branch Panel: LEP-OS-42

Location: MECHANICAL 40060 | **Supply From:** LEDP-OS-1 | **Mounting:** Surface | **Enclosure:** 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 60 A | **MCB Rating:** 60 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1										2
3										4
5	FCU-4-25, 30	20 A	1			1200... 0 VA	1	20 A	CUH-8	6
7	EUH-3	20 A	1	0 VA 0 VA			1	20 A	UH-2	8
9	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	1200 VA				
			Total Amps:	0 A	0 A	10 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Power	1200 VA	100.00%	1200 VA	**Total Conn. Load:** 1200 VA
				Total Est. Demand: 1200 VA
				Total Conn. Current: 3 A
				Total Est. Demand Current: 3 A

Notes:

Branch Panel: LEPL-OS-21

Location: SYNTHETIC BIOLOGY LAB 202 | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MLO | **Mains Rating:** 50 A | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	202F RECEPTACLE	20 A	1	180 VA 600 VA			1	20 A	9-E12	2
3	9-E12	20 A	1		600 VA 180 VA		1	20 A	202D RECEPTACLE	4
5	9-E12	20 A	1			600 VA 180 VA	1	20 A	202C RECEPTACLE	6
7		20 A	1	180 VA 0 VA			1	20 A	Spare	8
9	202A RECEPTACLES	20 A	1		360 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	960 VA	1140 VA	780 VA				
			Total Amps:	8 A	10 A	7 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 2880 VA
Power	1800 VA	100.00%	1800 VA	**Total Est. Demand:** 2880 VA
Receptacle	1080 VA	100.00%	1080 VA	**Total Conn. Current:** 8 A
				Total Est. Demand Current: 8 A

Notes:

Branch Panel: LEPL-OS-31

Location: MOLECULAR PLANT-MICROB... | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MLO | **Mains Rating:** 50 A | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	2
3	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	4
5	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	8
9	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
				Total Conn. Load: 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

Notes:

Branch Panel: LEPL-OS-32

Location: SOIL/PLANT LAB 319 | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MLO | **Mains Rating:** 50 A | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	8-E22	20 A	1	600 VA 1800...			1	20 A	FCU-3-28, 29, 30	2
3	319B RECEPTACLE	20 A	1		360 VA 180 VA		1	20 A	319G RECEPTACLE	4
5	319C RECEPTACLES	20 A	1			360 VA 0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	8
9	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	2400 VA	540 VA	360 VA				
			Total Amps:	20 A	5 A	3 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 3300 VA
Power	2400 VA	100.00%	2400 VA	**Total Est. Demand:** 3300 VA
Receptacle	900 VA	100.00%	900 VA	**Total Conn. Current:** 9 A
				Total Est. Demand Current: 9 A

Notes:

Branch Panel: LEPL-OS-41

Location: BIODIVERSITY LAB 402 | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MLO | **Mains Rating:** 50 A | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1				0 VA			1	20 A	Spare	2
3	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	4
5	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	8
9	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	10
11	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	14
15	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	16
17	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	22
23	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	26
27	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	28
29	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	32
33	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	34
35	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA 0 VA			1	20 A	Spare	38
39	Spare	20 A	1		0 VA 0 VA		1	20 A	Spare	40
41	Spare	20 A	1			0 VA 0 VA	1	20 A	Spare	42
			Total Load:	0 VA	0 VA	0 VA				
			Total Amps:	0 A	0 A	0 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
				Total Conn. Load: 0 VA
				Total Est. Demand: 0 VA
				Total Conn. Current: 0 A
				Total Est. Demand Current: 0 A

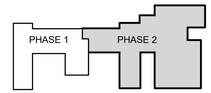
Notes:

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000 Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300 Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

D	Addendum 6	11/19/26

ELECTRICAL SCHEDULES

BID DOCUMENTS
Scale:

E6.2

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Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell_PSB_ELEC_PH2_R23.rvt

Branch Panel: LNPL-41-1

Location: BIODIVERSITY LAB 402 | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MLO | **Mains Rating:** 225 A | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPTS. - BIODIVERSITY LAB 402	20 A	1	900 VA	1080...					1	20 A	RECEPTS. - BIODIVERSITY LAB 402	2
3	RECEPTS. - BIODIVERSITY LAB 402	20 A	1			1080...	1260...			1	20 A	RECEPTS. - BIODIVERSITY LAB 402	4
5	RECEPTS. - BIODIVERSITY LAB 402	20 A	1					1260...	1080...	1	20 A	RECEPTS. - BIODIVERSITY LAB 402	6
7	RECEPTS. - BIODIVERSITY LAB 402	20 A	1	1260...	600 VA					1	20 A	11-E24	8
9	RECEPTS. - BIODIVERSITY LAB 402	20 A	1			360 VA	600 VA			1	20 A	11-E25	10
11	11-E27	20 A	1					600 VA	600 VA	1	20 A	11-E23	12
13	11-E26	20 A	1	600 VA	600 VA					1	20 A	11-E10	14
15	11-E17	20 A	1			600 VA	600 VA			1	20 A	11-E11	16
17	11-E18	20 A	1					600 VA	600 VA	1	20 A	11-E13	18
19	11-E12	20 A	1	600 VA	600 VA					1	20 A	11-E15	20
21	11-E16	20 A	1			600 VA	600 VA			1	20 A	11-E22	22
23	11-E14	20 A	1					600 VA	600 VA	1	20 A	402C FUME HOOD	24
25	RECEPT. - PCR/CLEANROOM 402B	20 A	1	180 VA	360 VA					1	20 A	RECEPTS. - CHEMISTRY 402C	26
27	RECEPT. - CHEMISTRY 402C	20 A	1			360 VA	600 VA			1	20 A	VAC PUMP CABINET - CHEMISTRY 402C	28
29	RECEPTS. - CYL. CLO. 402E	20 A	1					720 VA	600 VA	1	20 A	VAC PUMP CABINET - LAB 402	30
31	VAC PUMP CABINET - LAB 402	20 A	1	600 VA	540 VA					1	20 A	RECEPTS. - CULTURE 402D	32
33	RECEPTS. - MICROSCOPY 402A	20 A	1			540 VA	540 VA			1	20 A	RECEPTS. - MICROSCOPY 402A	34
35	VAC PUMP CABINET - CULTURE 402D	20 A	1					600 VA	0 VA	2	20 A	402A 208V RECEPTACLE	36
37	RECEPT. - MICROSCOPY 402A	20 A	1	540 VA	0 VA					--	--	--	38
39	RECEPT. - MICROSCOPY 402A	20 A	1			540 VA	0 VA			2	20 A	402B 208V RECEPTACLE	40
41	RECEPTS. - CHEMISTRY 402C	20 A	1					540 VA	0 VA	--	--	--	42
43	RECEPT. - CHEMISTRY 402C	20 A	1	540 VA	540 VA					1	20 A	RECEPTS. - PCR / CLEANROOM 402B	44
45	402C 208V RECEPTACLE	20 A	2			0 VA	0 VA			1	20 A	Spare	46
47	--	--	--					0 VA	0 VA	1	20 A	Spare	48
49	RECEPTS. - PCR / CLEANROOM 402B	20 A	1	720 VA	0 VA					1	20 A	Spare	50
51	RECEPTS. - PCR / CLEANROOM 402B	20 A	1			540 VA	0 VA			1	20 A	Spare	52
53	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	54
			Total Load:	10260 VA		8820 VA		8400 VA					
			Total Amps:	86 A		74 A		70 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	27480 VA
Power	12000 VA	100.00%	12000 VA	Total Est. Demand:	24740 VA
Receptacle	15480 VA	82.30%	12740 VA	Total Conn. Current:	76 A
				Total Est. Demand Current:	69 A

Notes:

Branch Panel: HMP-12

Location: ELEC 10064 | **Supply From:** HMP-DP | **Mounting:** Surface | **Enclosure:** 1
Volts: 480/277 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 100 A | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1					0 VA					1	20 A	Spare	2
3	EFTR-1	20 A	1			0 VA	0 VA			1	20 A	Spare	4
5	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	0 VA	0.00%	0 VA	Total Conn. Load:	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: HMP-32

Location: ELECTRICAL 30060 | **Supply From:** HMP-DP | **Mounting:** Surface | **Enclosure:** 1
Volts: 480/277 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 100 A | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EF-13	20 A	3	0 VA	0 VA					1	20 A	EFTR-1	2
3	--	--	--			0 VA	0 VA			3	20 A	RF-2	4
5	--	--	--					0 VA	0 VA	--	--	--	6
7	Spare	20 A	1	0 VA	0 VA					--	--	--	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	0 VA	0.00%	0 VA	Total Conn. Load:	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: HMP-DP

Location: ELEC 10064 | **Supply From:** | **Mounting:** Surface | **Enclosure:** 1
Volts: 480/277 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MCB | **Mains Rating:** 300 A | **MCB Rating:** 300 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	HMP-12	100 A	3	0 VA	0 VA					3	100 A	HMP-32	2
3	--	--	--			0 VA	0 VA			--	--	--	4
5	--	--	--					0 VA	0 VA	--	--	--	6
7	T-LM	110 A	3	0 VA	0 VA					1	20 A	Spare	8
9	--	--	--			0 VA	0 VA			1	20 A	Spare	10
11	--	--	--					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	0 VA	0.00%	0 VA	Total Conn. Load:	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LMP-12

Location: ELEC 10064 | **Supply From:** LMP-DP | **Mounting:** Surface | **Enclosure:** 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 100 A | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	FCU-G-18, 9, 20, 21, 22, 23	20 A	1	3600...	0 VA					1	20 A	CONDENSATE PUMP	2
3	FCU-G-25, 26	20 A	1			1200...	0 VA			1	20 A	CONDENSATE PUMP	4
5	FCU-G-24, 27, 28, 29	20 A	1					2400...	1800...	1	20 A	FCU-1-32, 39, 40	6
7	CONDENSATE PUMP	20 A	1	0 VA	0 VA					1	20 A	CONDENSATE PUMP	8
9	HC-G-9, 11	20 A	2			0 VA	0 VA			1	20 A	CONDENSATE PUMP	10
11	--	--	--					0 VA	0 VA	1	20 A	CONDENSATE PUMP	12
13	CONDENSATE PUMP	20 A	1	0 VA	3000...					1	20 A	FCU-1-33, 34, 35, 36, 38	14
15	RECEPTS. - ELEC 10064	20 A	1			360 VA	1800...			1	20 A	FCU-1-29, 30, 31	16
17	FCU-1-23, 24, 25, 26, 27, 28	20 A	1					3600...	3000...	1	20 A	FCU-1-18, 19, 20, 21, 22	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	6600 VA		3360 VA		10800 VA					
			Total Amps:	59 A		28 A		94 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	20760 VA
Power	20400 VA	100.00%	20400 VA	Total Est. Demand:	20760 VA
Receptacle	360 VA	100.00%	360 VA	Total Conn. Current:	58 A
				Total Est. Demand Current:	58 A

Notes:

Branch Panel: LMP-22

Location: ELECTRICAL 20060 | **Supply From:** LMP-DP | **Mounting:** Surface | **Enclosure:** 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 100 A | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	CONDENSATE PUMP	20 A	1	0 VA	3600...					1	20 A	FCU-2-10, 11, 12, 13, 14, 15	2
3	CONDENSATE PUMP	20 A	1			0 VA	1800...			1	20 A	FCU-2-16, 21, 22	4
5	FCU-2-17, 18, 19, 20	20 A	1					0 VA	2400...	1	20 A	FCU-2-23, 24, 25, 26	6
7	FCU-2-29, 30	20 A	1	1200...	600 VA					1	20 A	FCU-2-27, 28	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	5400 VA		1800 VA		2400 VA					
			Total Amps:	46 A		15 A		21 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	9600 VA	100.00%	9600 VA	Total Conn. Load:	9600 VA
				Total Est. Demand:	9600 VA
				Total Conn. Current:	27 A
				Total Est. Demand Current:	27 A

Notes:

Branch Panel: LMP-32

Location: ELECTRICAL 30060 | **Supply From:** LMP-DP | **Mounting:** Surface | **Enclosure:** 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 100 A | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	CONDENSATE PUMP	20 A	1	0 VA	0 VA					1	20 A	CONDENSATE PUMP	2
3	CONDENSATE PUMP	20 A	1			0 VA	0 VA			1	20 A	CONDENSATE PUMP	4
5	CONDENSATE PUMP	20 A	1					0 VA	0 VA	1	20 A	CONDENSATE PUMP	6
7	CONDENSATE PUMP	20 A	1	0 VA	3000...					1	20 A	FCU-3-14, 15, 16, 17, 18	8
9	RECEPTS. - ELECTRICAL 30060	20 A	1			540 VA	4200...			1	20 A	FCU-3-19, 20, 21, 22, 23, 24, 25	10
11	FCU-3-35, 36, 37, 38	20 A	1					1800...	1800...	1	20 A	FCU-3-27, 31, 32	12
13	FCU-3-39, 40	20 A	1	1200...	1800...					1	20 A	FCU-3-26, 33, 34	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	6000 VA		4740 VA		3600 VA					
			Total Amps:	51 A		41 A		30 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	14340 VA
Power	13800 VA	100.00%	13800 VA	Total Est. Demand:	14340 VA
Receptacle	540 VA	100.00%	540 VA	Total Conn. Current:	40 A
				Total Est. Demand Current:	40 A

Notes:

Branch Panel: LMP-42

Location: MECHANICAL 40060 | **Supply From:** LMP-DP | **Mounting:** Surface | **Enclosure:** 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 100 A | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	CONDENSATE PUMP	20 A	1	0 VA	0 VA					1	20 A	FCU-P-1	2
3	EF-14	20 A	1			0 VA	1800...			1	20 A	FCU-4-25, 26, 27	4
5	FCU-20, 21, 22, 23, 24	20 A	1					3000...	3000...	1	20 A	FCU-4-30, 31, 32, 33	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		1800 VA		6000 VA					
			Total Amps:	0 A		17 A		52 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	7800 VA	100.00%	7800 VA	Total Conn. Load:	7800 VA
				Total Est. Demand:	7800 VA
				Total Conn. Current:	22 A
				Total Est. Demand Current:	22 A

Notes:

Branch Panel: HELP-LS-DP

Location: T/D 121 | **Supply From:** | **Mounting:** Surface | **Enclosure:** 1
Volts: 480/277 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 200 A | **MCB Rating:** 50 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EM. LIGHTING - CORRIDOR 10045	20 A	1	0 VA	0 VA					1	20 A	EM. LIGHTING - 113B, 113C, 113D, 113E, 113F,...	2
3	EM. LIGHTING - CORRIDOR - NORTH WING...	20 A	1			0 VA	0 VA			1	20 A	EM. LIGHTING - FRUIT PRODUCTION LAB 113	4
5	EM. LIGHTING - ADMIN. SUITE 128	20 A	1					0 VA	0 VA	3	20 A	HELP-LS-22	6
7	HELP-LS-32	20 A	3	0 VA	0 VA					--	--	--	8
9	--	--	--			0 VA	0 VA			--	--	--	10
11	--	--	--					0 VA	0 VA	3	20 A	HELP-LS-42	12
13	Spare	20 A	1	0 VA	0 VA					--	--	--	14
15	Spare	20 A	1			0 VA	0 VA			--	--	--	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:
- PROVIDE PANEL WITH INTEGRAL TYPE 2 SPD.

D

RENOVATE PLANT SCIENCE
BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
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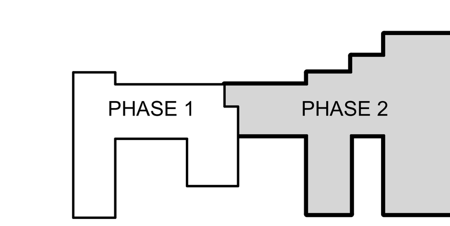
Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL SCHEDULES

BID DOCUMENTS
Scale:

E6.4

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INDICATED BY ⌀ ON PLAN SHEETS

MECHANICAL EQUIPMENT CONNECTION SCHEDULE (PART 1 OF 3)

EQUIPMENT – SPECIFIC NOTES:
1. WHEN LOCATION IS NOT REFERENCED ON 'E' SHEETS, REFER TO 'M' SHEETS.
2. LOCATIONS SHOWN ARE GENERAL IN NATURE. COORDINATE WITH DIV. 23 PRIOR TO ROUGH-IN.

DISCONNECT/SAFETY SWITCH – TYPES:
A: NON-FUSED
B: FUSED
M: MOTOR RATED SWITCH
R: RECEPTACLE/CORD/PLUG
N: NOT REQUIRED
C: CKT BREAKER WITHIN SIGHT

SIZES:
AF: AMPERE FRAME
AT: FUSE SIZE (RK5, UON)

STARTER – TYPES:
VFD: VARIABLE FREQUENCY DRIVE W/ INTEGRAL DISC.
CMS: COMBINATION MOTOR STARTER
ECM: ELECTRICALLY COMMUTATED MOTOR
M: MOTOR RATED SWITCH - MANUAL STARTER
AQUA: LINE VOLTAGE AQUA STAT
N: NOT REQUIRED
P: PACKAGED CONTROLLER BY MANUFACTURER
LVT: LINE VOLT T-STAT ('R' INDICATES REVERSE TYPE)

EQUIPMENT			ELECTRICAL LOAD				POWER CONNECTION				DISCONNECT/SAFETY SWITCH		STARTER				REMARKS
EQUIPMENT TAG	EQUIPMENT TYPE	LOCATION ON PLAN	FLA (MCA)	KVA (HP)	V	PH	HOMERUN TO	CKT BKR	CONDUCTORS & CONDUIT	CONNECTION BY DIVISION:	DISCONNECT TYPE/SIZE	NEMA ENCLOSURE TYPE	STARTER TYPE	NEMA ENCLOSURE TYPE	FURNISHED BY DIVISION:	FINAL CONNECTION BY DIVISION:	
AHU-2	AIR HANDLING UNIT FAN	ROOF	-	(40)	480	3	PANEL HMP-32	60/3	(3)#4 & #10G, 1-1/4"C	26	-	-	VFD	1	26	26	(1) (2)
	AIR HANDLING UNIT FAN	ROOF	-	(40)	480	3	PANEL HMP-32	60/3	(3)#4 & #10G, 1-1/4"C	26	-	-	VFD	1	26	26	(1)
	AIR HANDLING UNIT FAN	ROOF	-	(40)	480	3	PANEL HMP-32	60/3	(3)#6 & #10G, 1-1/4"C	26	-	-	VFD	1	26	26	(1)
	AIR HANDLING UNIT FAN	ROOF	-	(40)	480	3	PANEL HMP-32	60/3	(3)#6 & #10G, 1-1/4"C	26	-	-	VFD	1	26	26	(1)
EF-8	EXHAUST FAN	ROOF	-	(50)	480	3	PANEL HESB-LR-G1	70/3	(3)#4 & #8, 1-1/4"C	26	A	3R	VFD	1	23	26	
EF-9	EXHAUST FAN	ROOF	-	(50)	480	3	PANEL HESB-LR-G1	70/3	(3)#4 & #8, 1-1/4"C	26	A	3R	VFD	1	23	26	
EF-10	EXHAUST FAN	ROOF	-	(50)	480	3	PANEL HESB-LR-G1	70/3	(3)#4 & #8, 1-1/4"C	26	A	3R	VFD	1	23	26	
RF-2	FAN	PENTHOUSE	-	(2)	480	3	PANEL HMP-32	20/3	(3)#12 & #12G, 3/4"C	26	A	3R	VFD	1	26	26	
P-2	PUMP	MECH. G0064	-	(10)	480	3	PANEL HMP-OS-G1	20/3	(3)#12 & #12G, 3/4"C	26	A	1	VFD	1	26	26	
P-2A	PUMP	MECH. G0064	-	(10)	480	3	PANEL HMP-OS-G1	20/3	(3)#12 & #12G, 3/4"C	26	A	1	VFD	1	26	26	
P-8	PUMP	AHU VEST.	-	(3)	480	3	PANEL HMP-OS-G2	20/3	(3)#12 & #12G, 3/4"C	26	A	1	VFD	1	26	26	
FCU-G-18	FAN COIL UNIT	FACULTY OFFICE G37	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-19	FAN COIL UNIT	FACULTY OFFICE G35	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-20	FAN COIL UNIT	FACULTY OFFICE G33	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-21	FAN COIL UNIT	FACULTY OFFICE G31	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-22	FAN COIL UNIT	FACULTY OFFICE G29	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-23	FAN COIL UNIT	FACULTY OFFICE G27	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-24	FAN COIL UNIT	TEL/DATA G25	-	(1/3)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-25	FAN COIL UNIT	SUSTAINABLE LAB G20	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-26	FAN COIL UNIT	SUSTAINABLE LAB G20	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-27	FAN COIL UNIT	INSTRUMENTATION LAB G14	-	(1/2)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-28	FAN COIL UNIT	WRITE UP SPACE G09	-	(1/3) QTY 2	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-18	FAN COIL UNIT	CLASSROOM 133	-	(1/3) QTY 2	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-19	FAN COIL UNIT	FACULTY OFFICE 129	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-20	FAN COIL UNIT	FACULTY OFFICE 127	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-21	FAN COIL UNIT	ADMIN PROF 125	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-22	FAN COIL UNIT	ADMIN PROF 123	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-23	FAN COIL UNIT	TEL/DATA 121	-	(1/3)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-24	FAN COIL UNIT	ADMIN 128	-	(1/3)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-25	FAN COIL UNIT	ADMIN 128A	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-26	FAN COIL UNIT	ADMIN 128B	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-27	FAN COIL UNIT	ADMIN 128C	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-28	FAN COIL UNIT	ADMIN 128D	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-29	FAN COIL UNIT	ADMIN 128E	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-30	FAN COIL UNIT	WRITE UP SPACE 116	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-31	FAN COIL UNIT	WRITE UP SPACE 116B	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-32	FAN COIL UNIT	MEETING ROOM 116A	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-33	FAN COIL UNIT	COLLAB 119	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-34	FAN COIL UNIT	FRUIT LAB 113	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-35	FAN COIL UNIT	FRUIT LAB 113	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-36	FAN COIL UNIT	PRINT SUPPLY 111	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-37	FAN COIL UNIT	ADMIN PROF 109	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-38	FAN COIL UNIT	ADMIN PROF 107	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-39	FAN COIL UNIT	ADMIN/CLERICAL 105	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-40	FAN COIL UNIT	BREAK ROOM 103	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-41	FAN COIL UNIT	ELEC 10064	-	(1/4)	120	1	PANEL LMP-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-10	FAN COIL UNIT	FACULTY OFFICE 235	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-11	FAN COIL UNIT	FACULTY OFFICE 233	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-12	FAN COIL UNIT	FACULTY OFFICE 231	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-13	FAN COIL UNIT	FACULTY OFFICE 229	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-14	FAN COIL UNIT	FACULTY OFFICE 227	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-15	FAN COIL UNIT	MEETING 225	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-16	FAN COIL UNIT	COLLAB 221	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-17	FAN COIL UNIT	WRITE UP SPACE 224	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-18	FAN COIL UNIT	WRITE UP SPACE 224B	-	(1/3)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-19	FAN COIL UNIT	MEETING ROOM 224A	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-20	FAN COIL UNIT	TEL/DATA 223	-	(1/3)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-21	FAN COIL UNIT	PLANT LAB 219	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-22	FAN COIL UNIT	PLANT LAB 219	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-23	FAN COIL UNIT	OFFICE 211	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-24	FAN COIL UNIT	FACULTY OFFICE 209	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-25	FAN COIL UNIT	FACULTY OFFICE 207	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	

D

GENERAL SCHEDULE NOTES:
1. CONTRACTOR TO INSTALL STARTER/DISCONNECT ADJACENT TO UNIT. INSTALLATION TO COMPLY WITH NEC ARTICLE 110.26.
2. EQUIPMENT FURNISHED BY OTHERS. COORDINATE WITH ASSOCIATED TRADE CONTRACTOR.
3. CONFIRM HP, VOLTAGE AND PHASE CONNECTIONS PRIOR TO ROUGH-IN OF EQUIPMENT. COORDINATION REQUIRED BETWEEN TRADES.
4. STARTERS SHALL BE NEMA STYLE AND SIZED BASED ON ELECTRICAL LOAD DATA LISTED ON SCHEDULE.
5. MOTOR RATED SWITCHES SHALL BE EQUIPPED WITH HEATERS, WHICH SHALL BE SIZED BASED ON NAMEPLATE DATA (TO BE OBTAINED IN FIELD), NOT ON ELECTRICAL LOAD DATA ON SCHEDULE
6. CIRCUIT BREAKERS INDICATED ON SCHEDULE ABOVE SHALL BE PROVIDED BY THE CONTRACTOR IN THE PROPOSED PANEL (THEY ARE NOT EXISTING BREAKERS, UNLESS INDICATED ON THE PANELBOARD SCHEDULE).
7. FOR THIS PROJECT, THE FOLLOWING HAS BEEN ASSUMED BY THE ENGINEER:
   DIVISION 26: ELECTRICAL SUB
   DIVISION 23: MECHANICAL SUB AND/OR CONTROLS SUB
   DIVISION 22: PLUMBING SUB

REMARKS:
(1) PROVIDE (2) DEDICATED 20A, 120V CIRCUITS FOR AIR HANDLING UNIT LIGHTING AND CONVENIENCE RECEPTACLES. COORDINATE ALL REQUIREMENTS WITH M-SHEETS PRIOR TO ROUGH-IN.
(2) PROVIDE ADDITIONAL 120V, 20A CIRCUIT FOR AIR HANDLER LIGHT CIRCUIT, COORDINATE REQUIREMENTS WITH M-SHEETS PRIOR TO ROUGH-IN.

LIGHTING CONTROL SYSTEM SCHEDULE

SYMBOL	DESCRIPTION	FACEPLATE & DEVICE COLOR	BASIS OF DESIGN FACEPLATE	BASIS OF DESIGN SWITCH	REMARKS
RC1	20A POWER PACK WITH DIMMING	-	-	SENSORWORX SWX-900-AX	
APP	20A RATED POWER PACK (NON-DIMMING)	-	-	SENSORWORX SWX-900	
PLC	PLUG LOAD CONTROLLER	WHITE	-	SENSORWORX SWX-900	(2)
EPC	EMERGENCY POWER CONTROL DEVICE	-	-	SENSORWORX SWX-EPC-2-D	
$ RD1	RAISE/LOWER DIMMING WALL SWITCH	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-803-J10	
$ WS	WALL-MOUNTED TOUCH SCREEN	WHITE	THERMOPLASTIC NYLON	CRESTRON TSW-570-W-S	(4)
PC a	PHOTO CELL / DAYLIGHT SENSOR	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-250-1-D	
VS R a	PASSIVE INFRARED VACANCY SENSOR	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-201-1	(3)
OS R a	PASSIVE INFRARED OCCUPANCY SENSOR	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-201-1-AR	(3)
OS H a	PASSIVE INFRARED OCCUPANCY SENSOR	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-201-1	
$ VS	VACANCY SENSOR PIR WALL SWITCH	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-103	
$ OS	OCCUPANCY SENSOR PIR WALL SWITCH	WHITE	THERMOPLASTIC NYLON	WATTSTOPPER SWX-101-AR	
$ DV	VACANCY SENSOR DUAL TECH DIMMING (0-10V) WALL SWITCH	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-103	
$ DO	OCCUPANCY SENSOR DUAL TECH DIMMING (0-10V) WALL SWITCH	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-103	
$ LV	1-BUTTON LOW VOLTAGE MOMENTARY WALL SWITCH	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-801	
$	SINGLE POLE SWITCH	WHITE	THERMOPLASTIC NYLON	PASS & SEYMOUR PT20AC1	

GENERAL SCHEDULE NOTES:
1. NYLON FACEPLATE COLOR SHALL MATCH DEVICE COLOR
2. "a, b, c ..." LOWER CASE LETTERING IS USED TO INDICATE FIXTURE SWITCHING CONFIGURATION

REMARKS:
(1) COORDINATE DURING SUBMITTALS.
(2) PLUG LOAD CONTROLLER IS TO BE USED TO INTEGRATE RECEPTACLE CONTROL INTO ROOM LIGHTING OCCUPANCY/VACANCY SENSORS. REFER TO DETAIL, SHEET E8.1, FOR ADDITIONAL INFORMATION.
(3) COORDINATE BMS CONNECTION OF OCCUPANCY SENSORS WITH MECHANICAL/CONTROLS DRAWINGS.
(4) TOUCH SCREEN TO INTEGRATE INTO ROOM LIGHTING POWER PACK/SENSORS. LIGHTING VENDOR TO PROVIDE ALL NECESSARY ACCESSORIES, PATCH PANELS, INTERFACE MODULES, ETC. TO PROVIDE NECESSARY INTERFACING. TOUCH SCREEN TO BE PROGRAMMED IN FIELD BY FIELD REPRESENTATIVE DURING COMMISSIONING.

RACEWAY SCHEDULE

AREA	CABLING/RACEWAY METHOD	REMARKS
FINAL CONNECTIONS TO EQUIPMENT. LIMIT LENGTH TO 6'-0" OR LESS.	FMC CABLE (DRY LOCATIONS) LTFMC (WET LOCATIONS)	SEE NOTES BELOW
PERMITTED ONLY WHERE PRIOR APPROVAL HAS BEEN GRANTED. GENERALLY - AREAS WHERE EMT CONDUIT USAGE IS NOT PRACTICAL.	MC CABLE	SEE NOTES BELOW
BRANCH CIRCUITS & FEEDERS CONCEALED DRY AREAS, PANELBOARD HOMERUNS, EXPOSED (NON FINISHED AREAS)	EMT	SEE NOTES BELOW
BELOW 10' IN MECH ROOMS, WET OR DAMP AREAS, OR AREAS SUBJECT TO PHYSICAL DAMAGE	GRS	SEE NOTES BELOW
USE WHERE DIRECTED ON DRAWINGS OR WHERE DEVICES (FIXTURES, ETC. ARE PROPOSED ON EXISTING NON-FISHABLE SURFACES (BLOCK/BRICK/MASONRY).	SURFACE METAL RACEWAY (WIREMOLD OR EQUAL)	SEE NOTES BELOW

GENERAL CONDUIT SCHEDULE NOTES:
1. FITTINGS:
   - EMT: SET SCREW TYPE WITH INSULATED BUSHINGS & THROAT.
   - GRS: THREADED STEEL WITH INSULATED BUSHINGS & THROAT.
   - MC: CLAMP STYLE WITH LOCKNUTS AND INSULATED BUSHING & THROAT
   - SURFACE RACEWAY/WIREMOLD: MANUFACTURER APPROVED FITTINGS NECESSARY, AS REQUIRED FOR COMPLETEINSTALLATION.
2. ALL CIRCUITS SHALL CONTAIN DEDICATED NEUTRALS (NO MULTI-WIRE CIRCUITS PERMITTED)
3. CONDUIT SHALL NOT BE UTILIZED FOR EFFECTIVE GROUND FAULT RETURN PATH. ALL CIRCUITS SHALL CONTAIN DEDICATED GREEN INSULATED CONDUCTOR SIZED PER DRAWINGS OR IN ACCORDANCE WITH APPLICABLE NEC CRITERIA.
4. ALL RACEWAY TYPES ARE AS DESCRIBED HERE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
5. ANY EMPTY RACEWAYS SHALL BE EQUIPPED WITH A PULL ROPE.
6. ALL CONDUITS SHALL BE LABELED WITH VOLTAGE, PANEL OR ORIGIN AND LOAD SERVED.

BRANCH CIRCUIT SCHEDULE

CIRCUIT BREAKER	PHASE CONDUCTORS AND/OR NEUTRAL CONDUCTORS	GROUND CONDUCTOR	CONDUIT
3-POLE CIRCUITS			
50/3	(3)#6	#10	1"C
40/3	(3)#8	#10	1"C
30/3	(3)#10	#10	3/4"C
20/3	(3)#12	#12	3/4"C
15/3	(3)#12	#12	3/4"C
2-POLE CIRCUITS			
50/2	(2)#6	#10	1"C
40/2	(2)#8	#10	3/4"C
30/2	(2)#10	#10	3/4"C
20/2	(2)#12	#12	3/4"C
15/2	(2)#12	#12	3/4"C
1-POLE CIRCUITS			
40/1	(2)#8	#10	3/4"C
30/1	(2)#10	#10	3/4"C
20/1	(2)#12	#12	3/4"C
15/1	(2)#12	#12	3/4"C

NOTES REGARDING USE OF THIS SCHEDULE:
1. USE THIS SCHEDULE AS FOLLOWS:
   - FOR ALL RECEPTACLE AND LIGHTING CIRCUITS.
   - WHERE SPECIFIC CONDUCTOR/CONDUIT SIZING IS NOT INDICATED ELSEWHERE ON THE DRAWING SET.
   - FOR ANY BRANCH CIRCUITS THAT ARE REQUIRED TO BE RELOCATED/EXTENDED, ETC.
2. DO NOT USE THIS SCHEDULE AS FOLLOWS:
   - FOR LARGE MECHANICAL LOADS (REFER TO MECHANICAL EQUIPMENT SCHEDULE, THIS SHEET).
   - FOR SERVICE ENTRANCE CONDUCTORS.
   - WHERE SPECIFIC CONDUCTOR/CIRCUIT IS CALLED FOR ON THE DRAWINGS.
3. WHERE CIRCUIT LENGTH EXCEEDS 100', CONTRACTOR SHALL USE NEXT HIGHER PHASE/NEUTRAL CONDUCTOR SIZE TO COMPENSATE FOR VOLTAGE DROP.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
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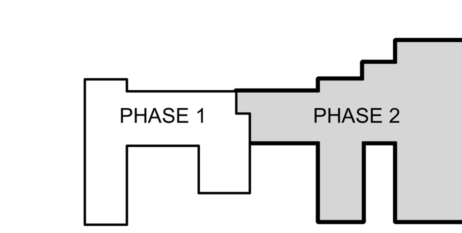
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL SCHEDULES

STATE OF NEW YORK · SHANE GARRABRANT · 106086 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale:

E6.5

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INDICATED BY ⬡ ON PLAN SHEETS

MECHANICAL EQUIPMENT CONNECTION SCHEDULE (CONTINUED PART 2 OF 3)

EQUIPMENT			ELECTRICAL LOAD				POWER CONNECTION			DISCONNECT/SAFETY SWITCH		STARTER				REMARKS
SPECIFIC NOTES: 1. WHEN LOCATION IS NOT REFERENCED ON 'E' SHEETS, REFER TO 'M' SHEETS. 2. LOCATIONS SHOWN ARE GENERAL IN NATURE. COORDINATE WITH DIV. 23 PRIOR TO ROUGH-IN.										TYPES: A: NON-FUSED B: FUSED M: MOTOR RATED SWITCH R: RECEPTACLE/CORD/PLUG N: NOT REQUIRED C: CKT BREAKER WITHIN SIGHT	SIZES: AF: AMPERE FRAME AT: FUSE SIZE (RKS, UON)	TYPES: VFD: VARIABLE FREQUENCY DRIVE W/ INTEGRAL DISC. CMS: COMBINATION MOTOR STARTER ECM: ELECTRICALLY COMMUTATED MOTOR M: MOTOR RATED SWITCH - MANUAL STARTER AQUA: LINE VOLTAGE AQUA STAT N: NOT REQUIRED P: PACKAGED CONTROLLER BY MANUFACTURER LVT: LINE VOLT T-STAT ('R' INDICATES REVERSE TYPE)				
EQUIPMENT TAG	EQUIPMENT TYPE	LOCATION ON PLAN	FLA (MCA)	KVA (HP)	V	PH	HOMERUN ⚠1	CKT BKR	CONDUCTORS & CONDUIT	CONNECTION BY DIVISION:	DISCONNECT TYPE/SIZE	NEMA ENCLOSURE TYPE	STARTER TYPE	NEMA ENCLOSURE TYPE	FURNISHED BY DIVISION:	FINAL CONNECTION BY DIVISION:	
FCU-2-26	FAN COIL UNIT	FACULTY OFFICE 205	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-2-27	FAN COIL UNIT	WRITE UP SPACE 203	-	(1/2)	120	1	PANEL LMP-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-2-28	FAN COIL UNIT	SYNTHETIC BIO LAB 202	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-2-29	FAN COIL UNIT	SYNTHETIC BIO LAB 202	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-2-30	FAN COIL UNIT	ELEVATOR CONTROLLER ROOM 20060A	-	(1/4)	120	1	PANEL LMP-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-14	FAN COIL UNIT	LARGE MEETING ROOM 340	-	(1/3) QTY 2	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-15	FAN COIL UNIT	FACULTY OFFICE 334	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-16	FAN COIL UNIT	FACULTY OFFICE 332	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-17	FAN COIL UNIT	FACULTY OFFICE 330	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-18	FAN COIL UNIT	FACULTY OFFICE 328	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-19	FAN COIL UNIT	FACULTY OFFICE 339	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-20	FAN COIL UNIT	FACULTY OFFICE 337	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-21	FAN COIL UNIT	FACULTY OFFICE 335	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-22	FAN COIL UNIT	FACULTY OFFICE 333	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-23	FAN COIL UNIT	FACULTY OFFICE 331	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-24	FAN COIL UNIT	FACULTY OFFICE 329	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-25	FAN COIL UNIT	FACULTY OFFICE 325	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-26	FAN COIL UNIT	TEL/DATA 325	-	(1/3)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-27	FAN COIL UNIT	COLLAB 323	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-28	FAN COIL UNIT	WRITE UP SPACE 324	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-29	FAN COIL UNIT	WRITE UP SPACE 324B	-	(1/3)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-30	FAN COIL UNIT	MEETING ROOM 324A	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-31	FAN COIL UNIT	PLANT LAB 319	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-32	FAN COIL UNIT	PLANT LAB 319	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-33	FAN COIL UNIT	PRINT SUPPLY 315	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-34	FAN COIL UNIT	FACULTY OFFICE 313	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-35	FAN COIL UNIT	WRITE UP SPACE 311	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-36	FAN COIL UNIT	WRITE UP SPACE 307	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-37	FAN COIL UNIT	COLLAB 305	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-38	FAN COIL UNIT	PLANT LAB 302	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-39	FAN COIL UNIT	PLANT LAB 302	-	(1/4)	120	1	PANEL LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-20	FAN COIL UNIT	ACAD OFFICE 430	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-21	FAN COIL UNIT	ACAD OFFICE 428	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-22	FAN COIL UNIT	ACAD OFFICE 426	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-23	FAN COIL UNIT	ACAD OFFICE 420	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-24	FAN COIL UNIT	ACAD OFFICE 418	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-25	FAN COIL UNIT	TEAM ROOM 431B	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-26	FAN COIL UNIT	COMPUTATIONAL LAB 431	-	(1/3)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-27	FAN COIL UNIT	TEAM ROOM 431A	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-28	FAN COIL UNIT	COMPUTATIONAL LAB 416	-	(1/3) QTY 2	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-29	FAN COIL UNIT	TEL/DATA 417	-	(1/3)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-30	FAN COIL UNIT	COLLAB 404	-	(1/3) QTY 2	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-31	FAN COIL UNIT	WORKSPACE 404A	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-32	FAN COIL UNIT	BIODIVERSITY 402	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-33	FAN COIL UNIT	CORRIDOR 40040	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-34	FAN COIL UNIT	CORRIDOR 40040	-	(1/4)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-P-1	FAN COIL UNIT	EAST PENTHOUSE PH001	-	(1/3)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
HC-G-5	HYDRONIC CASSETTE UNIT	LAB SUPPORT / EQUIPMENT G40	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-6	HYDRONIC CASSETTE UNIT	FLEX LAB SUPPORT G38	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-7	HYDRONIC CASSETTE UNIT	FLEX LAB SUPPORT G36	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-8	HYDRONIC CASSETTE UNIT	SUPPORT G34	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-9	HYDRONIC CASSETTE UNIT	FREEZER FARM G32	2.25	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-10	HYDRONIC CASSETTE UNIT	FREEZER FARM G26	2.25	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-11	HYDRONIC CASSETTE UNIT	EQUIPMENT G15	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-12	HYDRONIC CASSETTE UNIT	FLEXIBLE G21	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	

GENERAL SCHEDULE NOTES:
1. CONTRACTOR TO INSTALL STARTER/DISCONNECT ADJACENT TO UNIT. INSTALLATION TO COMPLY WITH NEC ARTICLE 110.26.
2. EQUIPMENT FURNISHED BY OTHERS. COORDINATE WITH ASSOCIATED TRADE CONTRACTOR.
3. CONFIRM HP, VOLTAGE AND PHASE CONNECTIONS PRIOR TO ROUGH-IN OF EQUIPMENT. COORDINATION REQUIRED BETWEEN TRADES.
4. STARTERS SHALL BE NEMA STYLE AND SIZED BASED ON ELECTRICAL LOAD DATA LISTED ON SCHEDULE.
5. MOTOR RATED SWITCHES SHALL BE EQUIPPED WITH HEATERS, WHICH SHALL BE SIZED BASED ON NAMEPLATE DATA (TO BE OBTAINED IN FIELD), NOT ON ELECTRICAL LOAD DATA ON SCHEDULE
6. CIRCUIT BREAKERS INDICATED ON SCHEDULE ABOVE SHALL BE PROVIDED BY THE CONTRACTOR IN THE PROPOSED PANEL (THEY ARE NOT EXISTING BREAKERS, UNLESS INDICATED ON THE PANELBOARD SCHEDULE).
7. FOR THIS PROJECT, THE FOLLOWING HAS BEEN ASSUMED BY THE ENGINEER:
   DIVISION 26: ELECTRICAL SUB
   DIVISION 23: MECHANICAL SUB AND/OR CONTROLS SUB
   DIVISION 22: PLUMBING SUB

REMARKS:
⚠1 PROVIDE (2) DEDICATED 20A, 120V CIRCUITS FOR AIR HANDLING UNIT LIGHTING AND CONVENIENCE RECEPTACLES. COORDINATE ALL REQUIREMENTS WITH M-SHEETS PRIOR TO ROUGH-IN.

COPPER FEEDER SCHEDULE

FEEDER TAG DESIGNATION	NOMINAL AMPERE RATING	NUMBER OF SETS	PHASE & NEUTRAL CONDUCTOR		GROUND CONDUCTOR		CONDUIT SIZE (WHEN X=3,4,5)		
			QTY OF COND.	COPPER SIZE AWG/KCMIL	QTY OF COND.	COPPER SIZE AWG/KCMIL	3 WIRE & GND	4 WIRE & GND	5 WIRE & GND w (DOUBLE NEUTRAL)
2020.X	20	1	X	12	1	12	3/4"	3/4"	3/4"
3030.X	30	1	X	10	1	10	3/4"	3/4"	3/4"
4040.X	40	1	X	8	1	10	3/4"	1"	1"
4045.X	45	1	X	6	1	10	1"	1"	1-1/4"
5050.X	50	1	X	6	1	10	1"	1"	1-1/4"
6060.X	60	1	X	4	1	10	1-1/4"	1-1/4"	1-1/4"
7070.X	70	1	X	4	1	8	1-1/4"	1-1/4"	1-1/4"
8080.X	80	1	X	3	1	8	1-1/4"	1-1/4"	1-1/2"
9090.X	90	1	X	2	1	8	1-1/4"	1-1/2"	1-1/2"
0100.X	100	1	X	1	1	8	1-1/2"	2"	2"
0110.X	110	1	X	2	1	6	1-1/4"	1-1/2"	1-1/2"
0125.X	125	1	X	1	1	6	1-1/2"	2"	2"
0150.X	150	1	X	1/0	1	6	2"	2"	2"
0175.X	175	1	X	2/0	1	6	2"	2"	2-1/2"
0200.X	200	1	X	3/0	1	6	2"	2-1/2"	2-1/2"
0225.X	225	1	X	4/0	1	4	2-1/2"	2-1/2"	3"
0250.X	250	1	X	250	1	4	2-1/2"	3"	3"
0300.X	300	1	X	350	1	4	3"	3"	3-1/2"
0350.X	350	1	X	500	1	3	3-1/2"	3-1/2"	3-1/2"
0400.X	400	2	X	3/0	1	3	2"	2-1/2"	2-1/2"
0450.X	450	2	X	4/0	1	2	2-1/2"	2-1/2"	3"
0500.X	500	2	X	250	1	2	2-1/2"	3"	3"
0600.X	600	2	X	350	1	1	3"	3"	3-1/2"
0700.X	700	2	X	500	1	1/0	3-1/2"	3-1/2"	4"
0800.X	800	3	X	300	1	1/0	3"	3"	3-1/2"

DUCT BANK SCHEDULE

DESIGNATION (QR-01)	TYPE	ORIGIN	DESTINATION	CIRCUIT			REMARKS
				CONDUCTORS/CONDUIT	ORIGIN	DESTINATION	
DB-01	SAND-FILLED	PLANT SCIENCE BUILDING	EXTERIOR LIGHTING	(2)#12 & #12G, 3/4"C	HNSB-G1	EXTERIOR LIGHTING	⚠1

GENERAL SCHEDULE NOTES:
1. VERIFY CIRCUIT REQUIREMENTS WITH APPLICABLE EQUIPMENT MANUFACTURERS. PROVIDE CONDUCTORS AND CONDUIT AS REQUIRED.
2. DUCT BANK SWEEPS SHALL NOT HAVE LESS THAN 20'-0" RADIUS UNLESS OTHERWISE NOTED.
3. COORDINATE DUCT BANK LOCATIONS AND INSTALLATIONS WITH EXISTING AND PROPOSED STRUCTURES, EQUIPMENT, AND PIPING SYSTEMS.

REMARKS:
⚠1 PROVIDE AS SAND-FILLED DUCT BANK UNLESS OTHERWISE INDICATED. PROVIDE AS REINFORCED CONCRETE DUCT BANK WHERE BENEATH PAVED AREAS, SIDEWALKS, OR AREAS SUBJECT TO VEHICLE LOADING. COORDINATE REQUIREMENTS WITH THE OVERALL SITE PLANS AND WITH THE GENERAL CONTRACTOR.

WHERE # DENOTES FLOOR BOX TAG

FLOOR BOX SCHEDULE

POWER PACK TAG	DESCRIPTION	COLOR	BASIS OF DESIGN SWITCH	REMARKS
1	4-GANG FLOOR BOX	BLACK	LEGRAND RFBA4	
2	POWER/AV FLOOR BOX	BLACK	FSR FL-500	
3	8" POKE THRU	BLACK	LEGRAND EVOLUTION BATC2	
4	QUADRUPLEX POKE THRU	BLACK	LEGRAND RC4	
5	UNDERCARPET FLOOR HUB	BLACK	HERMAN MILLER LOGIC REACH HUB	

GENERAL SCHEDULE NOTES:
1. FACEPLATE COLOR SHALL MATCH DEVICE COLOR.
2. COORDINATE ALL FLOOR BOX INSTALLATION/CONFIGURATION REQUIREMENTS WITH TA-SHEETS.

TEXT ADJACENT TO SYMBOL REPRESENTS THE TAG

JUNCTION BOX SCHEDULE

ITEM TAG	EQUIPMENT	LOAD DATA			SUPPLY DATA			PROVIDE CONNECTION VIA:			REMARKS
		KVA	VOLTS	PHASE	PANEL	BKR	CIRCUIT	RECEPTACLE TYPE	HEIGHT	DIRECT CONNECT	
FH	FUME HOOD	-	120	1	AS INDICATED	20/1	(2)#12 & #12G, 3/4"C	-	-	YES	⚠1
DH	DOOR HARDWARE	-	120	1	AS INDICATED	20/1	(2)#12 & #12G, 3/4"C	-	-	YES	
A	BAS ANTENNA	-	120	1	AS INDICATED	20/1	(2)#12 & #12G, 3/4"C	-	-	YES	
F	FURNITURE	-	120	1	AS INDICATED	20/1	(2)#12 & #12G, 3/4"C			YES	⚠2

SPECIFIC NOTES:
⚠1 COORDINATE INSTALLATION WITH FUME HOOD MANUFACTURER'S RECOMMENDATIONS.
⚠2 COORDINATE INSTALLATION WITH FURNITURE MANUFACTURER'S RECOMMENDATIONS AND WITH A-SHEETS.

UTILITY LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	FIXTURE BASIS OF DESIGN	LENS/DIFFUSER	VOLTAGE	LAMPS	BALLAST BASIS OF DESIGN	MOUNTING	DIMMING	REMARKS		
K	ELEVATOR PIT LIGHT	2SNLED-LD5-26SL-LC-UNV-L840-CD1-U-WG-SNX/2FT-B-K	FROSTED ACRYLIC	UNV	LED, 3500K, LUMENS	0-10V DIMMING DRIVER	SURFACE WALL	YES			
SN	SURFACE STRIPLIGHT	4SNLED-LD5-30SL-LN-UNV-L835-CD1-U	FROSTED ACRYLIC	UNV	LED, 3500K, LUMENS	0-10V DIMMING DRIVER	SURFACE CEILING	YES			
	EXIT SIGN - QUANTITY & ORIENTATION OF FACES & HANDS AS INDICATED ON DRAWINGS	NICOR LIGHTING EXLZ-10UNV-AL-CL-G-1	RED CLEAR 1 FACE MIRROR 2 FACE	277V	1W LED	N/A	CEILING OR WALL	N/A	⚠1	⚠2	

GENERAL SCHEDULE NOTES:
1. MODELS ARE GIVEN FOR QUALITY ONLY. SUBSTITUTE LIGHT FIXTURES SHALL BE OF APPROVED EQUAL OR GREATER QUALITY. OTHER ACCEPTABLE MANUFACTURERS: COOPER, HUBBELL, AND ACUITY.
2. PROVIDE ALL NECESSARY MOUNTING HARDWARE FOR CEILING TYPE PROPOSED.

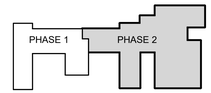
REMARKS:
⚠1 INTERCEPT & CONNECT TO NEAREST NON-SWITCHED PORTION OF LIGHTING CIRCUIT. TYPICAL FOR ALL EXIT SIGNS.
⚠2 CONTRACTOR IS TO REFER TO FLOOR PLANS TO DETERMINE ORIENTATION OF FACES & ARROWS, AND TO VERIFY MOUNTING TYPE.
⚠3 COORDINATE FIXTURE MOUNTING HEIGHT WITH ARCHITECT.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL SCHEDULES

BID DOCUMENTS
Scale:

E6.6

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INDICATED BY ⬡ ON PLAN SHEETS

MECHANICAL EQUIPMENT CONNECTION SCHEDULE (CONTINUED PART 3 OF 3)

EQUIPMENT			ELECTRICAL LOAD				POWER CONNECTION				DISCONNECT/SAFETY SWITCH		STARTER				REMARKS
SPECIFIC NOTES: 1. WHEN LOCATION IS NOT REFERENCED ON 'E' SHEETS, REFER TO 'M' SHEETS. 2. LOCATIONS SHOWN ARE GENERAL IN NATURE. COORDINATE WITH DIV. 23 PRIOR TO ROUGH-IN.											TYPES: A: NON-FUSED B: FUSED M: MOTOR RATED SWITCH R: RECEPTACLE/CORD/PLUG N: NOT REQUIRED C: CKT BREAKER WITHIN SIGHT	SIZES: AF: AMPERE FRAME AT: FUSE SIZE (RKS, UON)	TYPES: VFD: VARIABLE FREQUENCY DRIVE W/ INTEGRAL DISC. CMS: COMBINATION MOTOR STARTER ECM: ELECTRICALLY COMMUTATED MOTOR M: MOTOR RATED SWITCH - MANUAL STARTER AQUA: LINE VOLTAGE AQUA STAT N: NOT REQUIRED P: PACKAGED CONTROLLER BY MANUFACTURER LVT: LINE VOLT T-STAT ('R' INDICATES REVERSE TYPE)				
EQUIPMENT TAG	EQUIPMENT TYPE	LOCATION ON PLAN	FLA (MCA)	KVA (HP)	V	PH	HOMERUN TO	CKT BKR	CONDUCTORS & CONDUIT	CONNECTION BY DIVISION	DISCONNECT TYPE/SIZE	NEMA ENCLOSURE TYPE ⚠1	STARTER TYPE	NEMA ENCLOSURE TYPE	FURNISHED BY DIVISION	FINAL CONNECTION BY DIVISION	
HC-1-8	HYDRONIC CASSETTE UNIT	FLEX LAB SUPPORT 118	0.65	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-1-9	HYDRONIC CASSETTE UNIT	EQUIPMENT 113D	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-2-3	HYDRONIC CASSETTE UNIT	FLEX LAB SUPPORT 228	0.65	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-2-4	HYDRONIC CASSETTE UNIT	EQUIPMENT 1 219C	0.5	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-2-5	HYDRONIC CASSETTE UNIT	EQUIPMENT 2 219D	0.5	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-2-6	HYDRONIC CASSETTE UNIT	EQUIPMENT 202C	0.5	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-2-7	HYDRONIC CASSETTE UNIT	EQUIPMENT CORRIDOR 202E	1.5	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-2-8	HYDRONIC CASSETTE UNIT	FLEXIBLE 202F	0.5	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-3-3	HYDRONIC CASSETTE UNIT	FLEX LAB SUPPORT 326	0.65	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-3-4	HYDRONIC CASSETTE UNIT	FLEXIBLE 319B	0.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-3-5	HYDRONIC CASSETTE UNIT	EQUIPMENT 319D	0.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-3-6	HYDRONIC CASSETTE UNIT	EQUIPMENT 319E	0.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-3-7	HYDRONIC CASSETTE UNIT	EQUIPMENT CORRIDOR 302D	1.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-3-8	HYDRONIC CASSETTE UNIT	DIRTY/REGULATED FLEX 302E	0.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-3-9	HYDRONIC CASSETTE UNIT	AUTOCLAVE SERVICE 304A	0.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-4-1	HYDRONIC CASSETTE UNIT	BIO HUB 403	0.5	-	208	1	PANEL LMP-42	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
HC-4-2	HYDRONIC CASSETTE UNIT	BIO HUB 403	0.5	-	208	1	PANEL LMP-42	20/2	(2)#12 & #12G, 3/4"C	26	M	1	P	1	23	26	
CUH-10	CABINET UNIT HEATER	STAIR G0003	-	(1/10)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
CUH-11	CABINET UNIT HEATER	STAIR G0004	-	(1/10)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
(E) CUH-5	CABINET UNIT HEATER	STAIR 237C	-	(1/10)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
(E) CUH-6	CABINET UNIT HEATER	STAIR 6 30008	-	(1/10)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
CUH-7	CABINET UNIT HEATER	VEST. 10043	-	(1/10)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
CUH-8	CABINET UNIT HEATER	STAIR 2 50003	-	(1/10)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
CUH-9	CABINET UNIT HEATER	STAIR 3 100SA	-	(1/10)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
UH-1	UNIT HEATER	MECH G0080	-	-	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
UH-2	UNIT HEATER	MECH 40060	-	-	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
EUH-4	UNIT HEATER	AHU-2 VEST.	-	(1/6)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	LVT	1	23	26	
ESP-2	ELEVATOR SUMP PUMP	ELEV. PIT	-	-	120	1	PANEL EP	20/1	(2)#12 & #12G, 3/4"C	26	R	5-20R	P	1	23	26	②
EFTR-1	FIN TUBE RADIATOR	ELEC. ROOMS	4.5	-	277	1	PANEL HMP-#2	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	①
EF-13	EXHAUST FAN	ROOF	-	1	480	3	PANEL HMP-32	20/3	(2)#12 & #12G, 3/4"C	26	M	1	VFD	1	26	26	
EF-12	EXHAUST FAN	BDA CLOSET PH002	-	-	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	26	26	
CP-#	CONDENSATE PUMP	REFER TO FLOOR PLANS	0.83	-	120	1	③	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	26	26	③
SF-1	AHU SUPPLY FAN	THIRD FLOOR	-	(10)	208	3	PANEL LEP-OS-32	40/3	(3)#8 & #10G, 3/4"C	26	N	-	VFD	1	23	26	④
P-9	COIL PUMP	SECOND FLOOR	-	(1)	208	1	PANEL LEP-OS-22	20/2	(2)#12 & #12G, 3/4"C	26	A	1	ECM	-	23	26	

GENERAL SCHEDULE NOTES:

1. CONTRACTOR TO INSTALL STARTER/DISCONNECT ADJACENT TO UNIT. INSTALLATION TO COMPLY WITH NEC ARTICLE 110.26.
2. EQUIPMENT FURNISHED BY OTHERS. COORDINATE WITH ASSOCIATED TRADE CONTRACTOR.
3. CONFIRM HP, VOLTAGE AND PHASE CONNECTIONS PRIOR TO ROUGH-IN OF EQUIPMENT. COORDINATION REQUIRED BETWEEN TRADES.
4. STARTERS SHALL BE NEMA STYLE AND SIZED BASED ON ELECTRICAL LOAD DATA LISTED ON SCHEDULE.
5. MOTOR RATED SWITCHES SHALL BE EQUIPPED WITH HEATERS, WHICH SHALL BE SIZED BASED ON NAMEPLATE DATA (TO BE OBTAINED IN FIELD), NOT ON ELECTRICAL LOAD DATA ON SCHEDULE
6. CIRCUIT BREAKERS INDICATED ON SCHEDULE ABOVE SHALL BE PROVIDED BY THE CONTRACTOR IN THE PROPOSED PANEL (THEY ARE NOT EXISTING BREAKERS, UNLESS INDICATED ON THE PANELBOARD SCHEDULE).
7. FOR THIS PROJECT, THE FOLLOWING HAS BEEN ASSUMED BY THE ENGINEER:
   - DIVISION 26: ELECTRICAL SUB
   - DIVISION 23: MECHANICAL SUB AND/OR CONTROLS SUB
   - DIVISION 22: PLUMBING SUB

REMARKS:

① REFER TO FLOOR PLANS AND M-SHEETS FOR EXACT QUANTITY OF FIN TUBE RADIATORS. COORDINATE CIRCUITING/INSTALLATION REQUIREMENTS ACCORDINGLY.
② PROVIDE 20A, 1P CIRCUIT BREAKER WITHIN PANEL 'EP' FOR SUMP PUMP FEED. REFER TO ELECTRICAL SINGLE LINE DIAGRAM, SHEET E5.1 FOR ADDITIONAL INFORMATION.
③ REFER TO FLOOR PLANS AND M-SHEETS FOR EXACT QUANTITY OF CONDENSATE PUMPS. COORDINATE CIRCUITING/INSTALLATION REQUIREMENTS ACCORDINGLY. CIRCUIT TO NEAREST LMP PANEL.
④ UTILIZE EXISTING SPACE MADE AVAILABLE WITHIN PANEL PPS1 FOR REPLACEMENT AHU SF-1 FEED. COORDINATE ALL INSTALLATION REQUIREMENTS WITH M-SHEETS.

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Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell_PSB_ELEC_PH2_R23.rvt

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

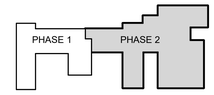
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S, Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000, Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor, New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill, East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue, New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300, Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL SCHEDULES

STATE OF NEW YORK · GIANNI GARRAMONE · LICENSED PROFESSIONAL ENGINEER · 106086

BID DOCUMENTS
Scale:

E6.7

2024 Ellenzweig ©

Lighting Fixture Schedule

Project: Cornell University, Renovated Plant Science Building Phase 2
Architect: Ellenzweig Architecture | Planning, Boston MA

Schluer Shook
240 W 40th St, 2nd Floor
New York, New York 10018
+1 212 439 5650

General Notes and Instructions:
1. Voltage for all luminaire types to be confirmed by Electrical Engineer and Contractor.
2. All controls are to be hardwired. Refer to Lighting Control Specifications for additional information.
3. All stem lengths, special mounting details, etc. to be confirmed by Contractor with Architect.
4. Provide specified luminaire or equal in all respects by alternate approved manufacturer as listed only.
5. Shop drawings submittals, including unit pricing, must be received within 21 days following award of bid for review and approval by Lighting Designer and Electrical Engineers.
6. All luminaire finishes to be confirmed by Architect.
7. All lumen outputs shown for LED luminaires are delivered lumens. Luminaires considered for alternates must have comparable delivered output.
8. Correlated Color Temperature (CCT) 3500 degrees Kelvin (unless requested otherwise). A minimum of Color Rendering index (CRI) of 80.

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AD01	LED 3" Round Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 14W Lumens Delivered: 1408 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33RF-15-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF Alt Mfr: Lightheaded Lighting CamberTaper Series, Lucifer Lighting Faxion Series, USA Illumination BevelLED 2.2 Series, Lumenwerx Voila 4 Series	IP44 Rated Emergency where required.	Throughout
AD01a	LED 3" Round Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 14W Lumens Delivered: 1408 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33RF-15-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF-WL Alt Mfr: Lightheaded Lighting CamberTaper Series, Lucifer Lighting Faxion Series, USA Illumination BevelLED 2.2 Series, Lumenwerx Voila 4 Series	Same as AD01, except: Wet-Location Rated Emergency where required.	Showers

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Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AD02	LED 3" Round Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 22W Lumens Delivered: 2132 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33RF-22-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF Alt Mfr: Lightheaded Lighting CamberTaper Series, Lucifer Lighting Faxion Series, USA Illumination BevelLED 2.2 Series, Lumenwerx Voila 4 Series	Emergency where required.	Research Labs, Ground Flr Meeting Room
AD03	Type not used in Ph2						
AD04	LED 3" Square Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 14W Lumens Delivered: 1408 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33RF-15-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF Alt Mfr: Lightheaded Lighting CamberTaper Series, Lucifer Lighting Faxion Series, USA Illumination BevelLED 2.2 Series, Lumenwerx Voila 4 Series	IP44 Rated Emergency where required.	Circulation Throughout
AD10	LED 24" Round Pendant	Ceiling, Suspended	Nominal Aperture: 24" Round Nominal Size: 4"H x 24"O.D. Optics: Diffuse Lens Suspension Style: Rigid Stem Internal Reflector: White Finish: White Housing: Diffuse acrylic Driver: Integral - Dimming, 0-10V Voltage: Univ 120-277V	Wattage: 22.4W Lumens Delivered: 3000 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: RUBO Model: 3G-PRU24-L30-S80-35K-UNV-DIM-WH-RSW-S_ Alt Mfr: Lumenwerx POP, Axis Helios, Prulite P4000	Contractor to confirm stem length prior to ordering. Emergency where required.	Stair 2
AF01	LED Troffer	Ceiling, Recessed	Nominal Aperture: N/A Nominal Size: 24" W x 48" L x 2 1/2" H Optics: Diffuse Lens, with Center Element Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Cold Rolled Steel Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Universal 120-277V	Wattage: 60W Lumens Delivered: 7800 lm Type: LED Board Color Temp: 3500K Min CRI: 81	Mfr: Visioneering by Viscor Series: LRTH Series Model: LRTH-C29-2X4-LED835K078LCUNV Alt Mfr: Mercury Lighting LR402 Series, Day-O-Lite Harmony Series, Axis Lighting Aura, Cooper Lighting Metalux Encounter 24EN	Emergency where required. Ultra Shallow Recess Luminaire Suitable for Wet Location	Support Lab Spaces, Flex Lab,

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Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AF02	LED Troffer - Wet Location	Ceiling, Recessed	Nominal Aperture: N/A Nominal Size: 24" W x 48" L x 3 15/16" H Optics: Diffuse Lens, Flush with Center Element Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Cold Rolled Steel Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Universal 120-277V	Wattage: 60W Lumens Delivered: 7800 lm Type: LED Board Color Temp: 3500K Min CRI: 81	Mfr: Visioneering by Viscor Series: LRTH Series Model: LRTH-C29-2X4-LED835K078LCUNV Alt Mfr: Mercury Lighting LR402 Series, Day-O-Lite Harmony Series, Axis Lighting Aura, Cooper Lighting Metalux Encounter 24EN	Emergency where required. Ultra Shallow Recess Luminaire Suitable for Wet Location	Field Work Suite
AK01	LED Lab Bench Task Lighting	Lab Shelving				Note: Lab bench lighting to be supplied as of casework package. Refer to **12 35 53 Laboratory Casework** for additional information	Laboratory
AK03	LED Linear Light - Wall	Ceiling, Surface - Vertical & Horizontal Mount	Nominal Aperture: Nominal Size: 1.14" W x .6" H x 11'-0" Overall Length Optics: Diffuse Lens with Omni Directional Distribution Trim Style: Round Profile Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: (2x) 3W/ft Lumens Delivered: (2x) 233lm/ft Type: LED Tape Color Temp: 3500K Min CRI: 80	Mfr: Klus Housing: GIZA B5556-W-LC-35-1220/2-24-XX'-P-T8D-IP20 LED Tape: K-CRI-1220-24V Provide Remote 0-10V Dimmable Driver Alt Mfr: Luminii Bara Series, Acolyte AT4 Series, Klus Giza Series	**Note:** Provide (2x) runs of LED tape for total output of ~450lm/ft. Provide 25' wire harness. Architect to coordinate mounting hardware. Luminaire is available with mounting clip and magnetic metal strip. Contractor to coordinate location of remote power supplies. Emergency where required.	1st Floor Corridor Connector/ Vestibule
AP01 - 04'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 4'-0"L Optics: Diffuse Lens, Regressed 82% UP / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP80DN LED Model: PF1-B-D-D-35-W-04-G-E1-M-03 Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Faculty Office, Write-Up, Admin

Cornell University Renovate Plant Science Building - Phase 2
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Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AP02 - 04'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 4'-0"L Optics: Diffuse Lens, Regressed 60% UP / 40% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile INDEP. UP/DN LED Model: PF3-B-B-D-35-W-04-D-E1-M-03-F Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for independent up and down operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated clip provide by Manufacturer.	1st Flr Heart Event Space
AP03 - 6'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 6'-0"L Optics: Diffuse Lens, Regressed 18% UP /82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP80DN LED Model: PF1-B-D-D-35-W-06-G-E1-M-03-F Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Classroom, Teaching Lab,
AP03 - 10'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 10'-0"L Optics: Diffuse Lens, Regressed 18% UP /82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP80DN LED Model: PF1-B-D-D-35-W-10-G-E1-M-03-F Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Classroom, Teaching Lab,

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Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AP03 - 12'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 12'-0"L Optics: Diffuse Lens, Regressed 18%UP / 82%DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP80DN LED Model: PF1-B-D-D-35-W-12-G-E1-M-03-G Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. Luminaire provided with 6'-0" and 8'-0" modules for 12ft row. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Faculty Office, Write-Up, Admin
AS01 - 04'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 3.25" W 4" H x 4'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG500-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout
AS01 - 08'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 8'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG500-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout
AS01 - 12'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 12'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG500-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout
AS01 - 16'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 16'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG500-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout

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Schuler Shook, Inc.

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AS01a	**LED Slotlight**	**Ceiling, Suspended**	**Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x Length Optics: Diffuse Lens, Flush Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V**	**Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80**	**Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-LIN-FLSH-LED35-PROG500-XX'-TMW-SAL-SC-UNV-CA48-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4**	**Same as AS01, except suspended mounting. DLC Certified luminaire. Emergency where required.**	**Corridor 4004B**
AS02 - 04'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 4'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 2W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG750-XX'-TMW-SAL-LP-SC(10"DC)-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Ground, 1st, 2nd, 3rd Flr Lab Circulation
AS02 - 08'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 4-1/32" W x 3-3/4"H x 8'-0" L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 7.25W/ft Lumens Delivered: 750lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG750-XX'-TMW-SAL-LP-SC(10"DC)-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Ground Floor - Office

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Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AS03 - 12'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 4-1/32" W x 3-3/4"H x 12'-0" L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 7.25W/ft Lumens Delivered: 750lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PROG750-XX'-TMW-SAL-LP-SC(10"DC)-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	2nd Floor Teaching Lab
AW01	LED Perimeter Wallwasher	Ceiling, Recessed	Nominal Aperture: 3" Continuous Nominal Size: 3"W x 5"H x Various Length Optics: Diffuse Lens, Regressed Trim Style: Overlap Flange - Drywall Reflector: White Finish: W Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5.6W/ft Lumens Delivered: 640lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro3 Model: BPRO3-PER-REG1-LED35-MO-XX'-TMW-SAL-WTW-SC-UNV-X7-DM01 Alt Mfr: Axis Lighting Beam 4 Perimeter, Selux Lighting M100 Series, Lumenwerx Via3 Perimeter	Emergency where required. Various length - refer to drawings for location.	Circulation - Niche
AW01B	LED Perimeter Wallwasher	Ceiling, Recessed	Nominal Aperture: 3" Continuous Nominal Size: 3"W x 5"H x Various Length Optics: Diffuse Lens, Regressed Trim Style: Overlap Flange - Drywall Reflector: White Finish: W Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5.6W/ft Lumens Delivered: 640lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro3 Model: BPRO3-PER-REG1-LED35-MO-XX'-TMW-SAL-WTW-SC-UNV-X7-DM01 Alt Mfr: Axis Lighting Beam 4 Perimeter, Selux Lighting M100 Series, Lumenwerx Via3 Perimeter	Emergency where required. Various length - refer to drawings for location.	1st Floor Meeting Room and Breakroom

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
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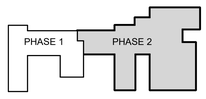
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

D	Addendum 6	11/19/26

ELECTRICAL SCHEDULES

BID DOCUMENTS
Scale:

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Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AW03	LED Linear Wallwasher	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5"W x 4" H x Various Length (4'-6"-8'-10"-12'.14') Optics: Wall Wash Distribution with Diffuse Lens, Flush Trim Style: Overlap Flange- Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5.6W/ft Lumens Delivered: 710lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80 Alt Mfr: Axis Lighting Wall Wash Perfekt, Selux Lighting M100 Series, Lumenwerx Via4	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-MO-XX-TMW-WWF-LP-SC-UNV-X1- DM01	Emergency where required. Various length - refer to drawings for location.	1st, 2nd and 3rd Floor - Classroom and Teaching Lab
AX01	Not Used						
AX02	LED 7" Round Downlight	Ceiling, Surface	Nominal Aperture: 7" Nominal Size: 7 7/8"OD x 5/8"H Optics: Diffuse Lens Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V Voltage: 120V	Wattage: 14W Lumens Delivered: 1000 lm Type: LED Module Color Temp: 3500K Min CRI: 80 Alt MfrI: Lightheaded Lighting CamberTaper Series, Lucifer Lighting Faxion Series, USA Illumination BevelLED 2.2 Series	Mfr: Lightolier Series: SlimSurface Model: S7R835K10WZ10U	IP44 Rated for Outdoor Canopies Emergency where required.	South Lab Exterior Entry - Canopy
AX03	Not Used						
AX04	**LED Pedestrian Pole**	**Post-mounted**	**Nominal Size: 15'H x 20" diameter Optics: Seeded Acrylic Type IV Finish: Sherwin Williams Acrolon - Classic Black Housing: Cas Aluminum Alloy Driver: Integral Voltage: 120-277V**	**Wattage: 40W Lumens: 3600 lm Type: LED Module Color Temp: 4000K Min CRIL 80**	**Mfr: Spring City Electrical Series: Northampton Pole, Edgewater top Model: ALMEDM-LE040-EVX-202-40-CR4-PPBP-FED-CU**	**Cornell University Campuse Standard pedestrian pole. Provide with 4000K CCT per campus standards. Provide with 13'-0" Pole.**	
AX05	**LED Wallpack Sconce**	**Wall, Surface**	**Nominal Size: 5'H x 6'W x 12"D Optics: Textured Glass Finish: TBD by Architect Housing: Cast Aluminum Driver: Integral Voltage: 120V, Phase-dim**	**Wattage: 30W Lumens: 1,422 lm Type: LED Module Color Temp: 3000K Min CRI: 80**	**Mfr: KIM Lighting Series: Site Wallforms Model: SW1-18L3K-TG**	**Emergency where required.**	**Exterior**

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AX07	LED Sconce	Wall, Surface	Nominal Size: 5"H x 10"W x 3.9"D Optics: Textured Glass Finish: TBD by Architect Housing: Cast Aluminum Driver: Integral Voltage: 120V, ELV dimming	Wattage: 30W Lumens: 1,500 lm Type: LED Module Color Temp: 3000K Min CRI: 80	Mfr: WAC Lighting Series: Tube Wall Mount Model: WS-W2610-3-xx	Emergency where required.	Exterior
AZ01	LED Pendant 12'x8'	Ceiling, Suspended	Nominal Aperture: 2" Continuous Nominal Size: 2 3/4" W x 4 1/2" H x 40'- 0" L Optics: Direct - Diffuse Lens, Flush, Indirect Wide Spread Suspension Style: Aircraft Cable Reflector: White Finish: Custom Finish - Wood Pattern Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 500lm/ft Direct and 600lm/ft Indirect Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Day-o-Lite Series: Profile Series Model: PRFL-24-DI-FL/BW-35-LO-**X*R-AC-CC'White Oak'-DIM10 Alt MfrI: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED, Lumenwerx Via4	Luminaire to be suspended at 9'-0" AFF. Luminaire to be designed with 1 circuit to control direct and indirect distribution simultaneously Emergency where required.	Ground, 1st, 2nd and 3rd floor - Collaboration
AZ05	LED Pendant 10'x20'	Ceiling, Suspended	Nominal Aperture: 2" Continuous Nominal Size: 2 3/4" W x 4 1/2" H x 60'- 0" L Optics: Direct - Diffuse Lens, Flush, Indirect Wide Spread Suspension Style: Aircraft Cable Reflector: White Finish: Custom Finish - Wood Pattern Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 500lm/ft Direct and 600lm/ft Indirect Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Day-o-Lite Series: Profile Series Model: PRFL-24-DI-FL/BW-35-LO-**X*R-AC-CC'White Oak'-DIM10 Alt MfrI: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED, Lumenwerx Via4	Luminaire to be suspended at 9'-0" AFF. Luminaire to be designed with 1 circuit to control direct and indirect distribution simultaneously. Architect to select wood pattern finish. Contractor to coordinate mounting hardware. Emergency where required.	Large Meeting Room 340

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AZ06	LED Pendant 8'x8'	Ceiling, Suspended	Nominal Aperture: 2" Continuous Nominal Size: 2 3/4" W x 4 1/2" H x 32'- 0" L Optics: Direct - Diffuse Lens, Flush, Indirect Wide Spread Suspension Style: Aircraft Cable Reflector: White Finish: Custom Finish - Wood Pattern Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Mfr: Day-o-Lite Series: Profile Series Model: PRFL-24-DI-FL/BW-35-LO-**X*R-AC-CC'White Oak'-DIM10 Alt MfrI: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED, Lumenwerx Via4	Mfr: Lumenwerx Series: Via 2 - Pattern Pendant Direct/Indirect Model: VIA2PDIPAT-HLO- FH- WIO-LED- 80- 500- 500- 35- 32'- 0"- LEV- 90(4)- UNV- D1- 1- 53WAC36- CUSTOM FINISH/ Wood Pattern TBD Alt MfrI: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED	Luminaire to be suspended at 9'-0" AFF. Luminaire to be designed with 1 circuit to control direct and indirect distribution simultaneously. Architect to select wood pattern finish. Contractor to coordinate mounting hardware. Emergency where required.	North Wing

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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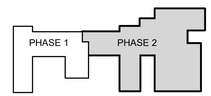
Notes:



Keyplan

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Branch Panel: HMP-OS-52

Location: EAST PENTHOUSE PH001 **Volts:** 480/277 Wye **A.I.C. Rating:** 22kA
Supply From: HEDP-OS-G2 **Phases:** 3 **Mains Type:** MLO
Mounting: Surface **Wires:** 4 **Mains Rating:** 400 A
Enclosure: Indoor **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	P-8	20 A	3	0 VA	0 VA					3	40 A	AHU-1 SF 1	2
3	--	--	--			0 VA	0 VA			--	--	--	4
5	--	--	--					0 VA	0 VA	--	--	--	6
7	AHU-1 SF-2	40 A	3	2244...	2244...					3	40 A	AHU-1 SF-3	8
9	--	--	--			2244...	2244...			--	--	--	10
11	--	--	--					2244...	2244...	--	--	--	12
13	AHU-1 SF-4	40 A	3	2244...	1007...					1	20 A	EUH-1	14
15	--	--	--			2244...							16
17	--	--	--					2244...					18
19													20
21													22
23													24
25	Spare	20 A	3	0 VA	0 VA					3	20 A	Spare	26
27	--	--	--			0 VA	0 VA			--	--	--	28
29	--	--	--					0 VA	0 VA	--	--	--	30
31	Spare	20 A	3	0 VA	0 VA					3	20 A	Spare	32
33	--	--	--			0 VA	0 VA			--	--	--	34
35	--	--	--					0 VA	0 VA	--	--	--	36
37	Spare	20 A	3	0 VA	0 VA					3	20 A	Spare	38
39	--	--	--			0 VA	0 VA			--	--	--	40
41	--	--	--					0 VA	0 VA	--	--	--	42
			Total Load:	77415 VA		67340 VA		67340 VA					
			Total Amps:	279 A		243 A		243 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	212096 VA	100.00%	212096 VA	Total Conn. Load:	212096 VA
				Total Est. Demand:	212096 VA
				Total Conn. Current:	255 A
				Total Est. Demand Current:	255 A

Notes:

Branch Panel: LNPL-22-1

Location: PLANT / SOIL / MICROBES LA... **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Flush **Wires:** 4 **Mains Rating:** 225 A
Enclosure: Indoor **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	7-E20	20 A	1	600 VA	600 VA					1	20 A	7-E23	2
3	7-E20	20 A	1			600 VA	600 VA			1	20 A	7-E21	4
5	7-E24	20 A	1					600 VA	1040...	2	20 A	7-E22	6
7	7-E25A & B	20 A	1	1560...	1040...					--	--	--	8
9	7-E26	20 A	1			1488...	4992...			2	40 A	7-E30	10
11	7-E29	20 A	2					1664...	4992...	--	--	--	12
13	--	--	--	1664...	690 VA					1	20 A	7-E27	14
15	7-E32	20 A	1			384 VA	690 VA			1	20 A	7-E40	16
17	7-E31	20 A	1					384 VA	600 VA	1	20 A	7-E35	18
19	7-E36	40 A	2	4992...	600 VA					1	20 A	7-E38	20
21	--	--	--			4992...	4992...			2	20 A	7-E39	22
23	7-E37	20 A	1					600 VA	4992...	--	--	--	24
25	7-E41	20 A	1	600 VA	240 VA					1	20 A	7-E48	26
27	7-E52	20 A	1			600 VA	240 VA			1	20 A	7-E46	28
29	7-E47	20 A	1					240 VA	240 VA	1	20 A	7-E51	30
31	7-E45	20 A	1	240 VA	1040...					2	20 A	7-E62	32
33	7-E50	20 A	2			1040...	1040...			--	--	--	34
35	--	--	--					1040...	800 VA	1	20 A	7-E56	36
37	7-E55	20 A	2	1040...	600 VA					1	20 A	7-E58	38
39	--	--	--			1040...	360 VA			1	20 A	7-E61	40
41	7-E60	20 A	1					600 VA	360 VA	1	20 A	7-E63	42
43	7-E67	20 A	1	360 VA	240 VA					1	20 A	7-E69	44
45	7-E68	20 A	2			416 VA	240 VA			1	20 A	7-E65	46
47	--	--	--					416 VA	720 VA	1	20 A	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	48
49	7-E08	20 A	1	600 VA	600 VA					1	20 A	7-E12	50
51	7-E02	20 A	1			600 VA	240 VA			1	20 A	7-E05	52
53	7-E04	20 A	1					600 VA	240 VA	1	20 A	7-E02	54
			Total Load:	17306 VA		24554 VA		20128 VA					
			Total Amps:	144 A		208 A		171 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	61988 VA
Power	61268 VA	100.00%	61268 VA	Total Est. Demand:	61988 VA
Receptacle	720 VA	100.00%	720 VA	Total Conn. Current:	172 A
				Total Est. Demand Current:	172 A

Notes:

Branch Panel: LNPL-11-1

Location: FRUIT PRODUCTION LAB 113 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Surface **Wires:** 4 **Mains Rating:** 225 A
Enclosure: Indoor **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPTS. - CHEMISTRY 2 113G	20 A	1	360 VA	1800...					1	20 A	RECEPTS. - FRUIT PRODUCTION LAB 113	2
3	RECEPTS. - FRUIT PRODUCTION LAB 113	20 A	1			1800...	600 VA			1	20 A	6-E07	4
5	RECEPTS. - FRUIT PRODUCTION LAB 113	20 A	1					1800...	600 VA	1	20 A	6-E06	6
7	6-E09	20 A	1	960 VA	900 VA					1	20 A	6-E27	8
9	6-E08	20 A	1			600 VA	900 VA			1	20 A	6-E29	10
11	6-E30	20 A	1					600 VA	1800...	1	20 A	RECEPTS. - FRUIT PRODUCTION LAB 113	12
13	6-E25	20 A	1	600 VA	600 VA					1	20 A	6-E16	14
15	6-E24	20 A	1			600 VA	2080...			2	20 A	6-E14	16
17	6-E23	20 A	1					600 VA	2080...	--	--	--	18
19	6-E17	20 A	1	1200...	600 VA					1	20 A	6-E13	20
21	6-E20	20 A	1			600 VA	1800...			1	20 A	RECEPTS. - FRUIT PRODUCTION LAB 113	22
23	6-E19	20 A	2					2080...	600 VA	1	20 A	6-E10	24
25	--	--	--	2080...	1440...					1	20 A	RECEPTS. - FRUIT PRODUCTION LAB 113	26
27	RECEPTS. - FRUIT PRODUCTION LAB 113	20 A	1			1800...	1800...			1	20 A	RECEPTS. - FRUIT PRODUCTION LAB 113	28
29	LAB 113 RECEPTACLES	20 A	1					720 VA	720 VA	1	20 A	RECEPTS. - FRUIT PRODUCTION LAB 113	30
31	VAC PUMP CABINET - LAB 113	20 A	1	600 VA	1440...					1	20 A	RECEPTS. - FRUIT PRODUCTION LAB 113	32
33	RECEPTS. - FRUIT PRODUCTION LAB 113	20 A	1			1440...							34
35	VAC PUMP CABINET - CHEMISTRY 1 113F	20 A	1					900 VA	720 VA	1	20 A	RECEPTS. - FRUIT PRODUCTION LAB 113	36
37					1440...					1	20 A	RECEPTS. - FRUIT PRODUCTION LAB 113	38
39	RECEPTS. - FRUIT PRODUCTION LAB 113	20 A	1			1440...							40
41									6240...	2	30 A	113C 208V RECEPTACLE	42
43	113D 208V RECEPTACLE	30 A	2	6240...	0 VA					--	--	--	44
45	--	--	--			0 VA	6240...			2	20 A	113E 208V RECEPTACLE	46
47	113E 208V RECEPTACLE	20 A	2					6240...	0 VA	--	--	--	48
49	--	--	--	0 VA	900 VA					1	20 A	113F FUME HOOD	50
51	113F 208V RECEPTACLE	30 A	2			6240...	900 VA			1	20 A	113G FUME HOOD	52
53	--	--	--					0 VA	900 VA	1	20 A	113G FUME HOOD	54
			Total Load:	21160 VA		28840 VA		26600 VA					
			Total Amps:	176 A		247 A		229 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	76600 VA
Power	23080 VA	100.00%	23080 VA	Total Est. Demand:	54840 VA
Receptacle	53520 VA	59.34%	31760 VA	Total Conn. Current:	213 A
				Total Est. Demand Current:	152 A

Notes:

Branch Panel: LNP-02

Location: ELEC CLO G0086 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: LNP-DP **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 225 A
Enclosure: Indoor **MCB Rating:** 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPTS. - FACULTY OFFICE G37	20 A	1	720 VA	720 VA					1	20 A	RECEPTS. - FACULTY OFFICE G31	2
3	RECEPTS. - FACULTY OFFICE G35	20 A	1			720 VA	720 VA			1	20 A	RECEPTS. - FACULTY OFFICE G29	4
5	RECEPTS. - FACULTY OFFICE G33	20 A	1					720 VA	720 VA	1	20 A	RECEPTS. - FACULTY OFFICE G27	6
7	G40 208V RECEPTACLE	20 A	2	0 VA	1080...					1	20 A	Receptacle	8
9	--	--	--			0 VA							10
11	G28 208V RECEPTACLE	20 A	2					0 VA	900 VA	1	20 A	RECEPTS. - CORRIDOR-EAST G0043	12
13	--	--	--	0 VA	0 VA					2	20 A	SPEC. RECEPT. - COLD ROOM G30	14
15	RECEPTS. - CORRIDOR-NORTH G0042	20 A	1			900 VA	0 VA			--	--	--	16
17									0 VA	2	20 A	SPEC. RECEPT. - COLD ROOM G30	18
19	SPEC. RECEPT. - COLD ROOM G30	20 A	2	0 VA	0 VA					--	--	--	20
21	--	--	--			0 VA	0 VA			2	20 A	SPEC. RECEPT. - FREEZER FARM G26	22
23	SPEC. RECEPT. - FREEZER FARM G26	20 A	2					0 VA	0 VA	--	--	--	24
25	--	--	--	0 VA									26
27							0 VA			2	20 A	SPEC. RECEPT. - FREEZER FARM G32	28
29	RECEPTS. - FREEZER FARM G32	20 A	1					360 VA	0 VA	--	--	--	30
31	SPEC. RECEPT. - FREEZER FARM G32	20 A	2	0 VA	180 VA					1	20 A	RECEPT. - HC RESTROOM G0021	32
33	--	--	--			0 VA	0 VA			2	20 A	HC-G-5, 6, 7, 8	34
35	RECEPTS. - RESTROOM G0020	20 A	1					180 VA	0 VA	--	--	--	36
37					0 VA					1	20 A	FURNITURE POWER - WRITE-UP SPACE G09	38
39	G38 208V RECEPTACLE	20 A	2			0 VA	0 VA			1	20 A	FURNITURE POWER - WRITE-UP SPACE G09	40
41	--	--	--					0 VA	0 VA	2	20 A	G40 208V RECEPTACLE	42
43	RECEPTS. - LAB SUPPORT EQUIP. G40	20 A	1	360 VA	0 VA					--	--	--	44
45	RECEPTS. - LAB SUPPORT EQUIP. G40	20 A	1			360 VA	360 VA			1	20 A	RECEPTS. - LAB SUPPORT EQUIP. G40	46
47	RECEPTS. - SHARED INST. SUPPORT ROOM...	20 A	1					540 VA	360 VA	1	20 A	RECEPTS. - LAB SUPPORT EQUIP. G40	48
49	Spare	20 A	1	0 VA	360 VA					1	20 A	RECEPTS. - LAB SUPPORT EQUIP. G40	50
51	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	52
53	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	54
			Total Load:	3420 VA		3060 VA		3780 VA					
			Total Amps:	29 A		26 A		32 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	10260 VA
Power	0 VA	0.00%	0 VA	Total Est. Demand:	10130 VA
Receptacle	10260 VA	98.73%	10130 VA	Total Conn. Current:	28 A
				Total Est. Demand Current:	28 A

Notes:

Branch Panel: LEPL-OS-01

Location: CORRIDOR G0051 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Flush **Wires:** 4 **Mains Rating:** 225 A
Enclosure: Indoor **MCB Rating:** 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	5-E04	20 A	2	2496...	2080...					2	20 A	5-E05	2
3	--	--	--			2496...	2080...			--	--	--	4
5	5-E03	20 A	2					2496...	1200...	1	20 A	5-E06	6
7	--	--	--	2496...	360 VA					1	20 A	G17 RECEPTACLES	8
9	5-E07	20 A	1			1440...	360 VA			1	20 A	G19 RECEPTACLES	10
11	G20 RECEPTACLE	20 A	1					180 VA	360 VA	1	20 A	G21 RECEPTACLES	12
13	G23 RECEPTACLE	20 A	1	180 VA	360 VA					1	20 A	RECEPTS. - FLEX LAB SUPPORT G36	14
15	RECEPTS. - FLEX LAB SUPPORT G38	20 A	1			360 VA	720 VA			1	20 A	RECEPTS. - SUPPORT G34	16
17	RECEPTS. - FLEX LAB SUPPORT G38	20 A	1					360 VA	0 VA	1	20 A	BMS CONNECTION	18
19	RECEPTS. - SHARED INST. SUPPORT ROOM...	20 A	1	720 VA									20
21	RECEPTS. - SHARED INST. SUPPORT ROOM...	20 A	1			720 VA	360 VA			1	20 A	RECEPTS. - COLD ROOM G30	22
23									360 VA	1	20 A	RECEPTS. - COLD ROOM G28	24
25	RECEPTS. - FREEZER FARM G26	20 A	1	360 VA	0 VA					1	20 A	TWIST LOCK RECEPT. - T/D G25	26
27	113B 208V RECEPTACLE	20 A	2			0 VA	0 VA			1	20 A	TWIST LOCK RECEPT. - T/D G25	28
29	--	--	--					0 VA	0 VA	1	20 A	QUAD RECEPT. - T/D G25	30
			Total Load:	9052 VA		8536 VA		4956 VA					
			Total Amps:	80 A		76 A		41 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	22544 VA
Power	16784 VA	100.00%	16784 VA	Total Est. Demand:	22544 VA
Receptacle	5760 VA	100.00%	5760 VA	Total Conn. Current:	63 A
				Total Est. Demand Current:	63 A

Notes:

Branch Panel: LNPL-11-2

Location: **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Flush **Wires:** 4 **Mains Rating:** 225 A
Enclosure: Indoor **MCB Rating:** 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPTS. - MICROSCOPY 113B	20 A	1	540 VA	360 VA					1	20 A	RECEPTS. - MICROSCOPY 113B	2
3	VAC PUMP CABINET - CHEMISTRY 2 113G	20 A	1			0 VA	600 VA			1	20 A	VAC PUMP CABINET - LAB 113	4
5	VAC PUMP CABINET - CHEMISTRY 2 113G	20 A	1					1200...	540 VA	1	20 A	RECEPTS. - TISSUE CULTURE 113C	6
7	RECEPTS. - MICROSCOPY 113B	20 A	1	540 VA	360 VA					1	20 A	RECEPTS. - TISSUE CULTURE 113C	8
9	Power	20 A	1			600 VA	360 VA			1	20 A	RECEPTS. - EQUIPMENT 113D	10
11	RECEPTS. - TISSUE CULTURE 113C	20 A	1					360 VA	360 VA	1	20 A	RECEPTS. - EQUIPMENT 113D	12
13	RECEPTS. - EQUIPMENT 113D	20 A	1	360 VA	360 VA					1	20 A	RECEPTS. - EQUIPMENT 113D	14
15	RECEPTS. - EQUIPMENT 113D	20 A	1			360 VA	360 VA			1	20 A	RECEPTS. - MOLECULAR BIO 113E	16
17	RECEPTS. - MOLECULAR BIO 113E	20 A	1					540 VA	540 VA	1	20 A	RECEPTS. - MOLECULAR BIO 113E	18
19	RECEPTS. - FRUIT PRODUCTION LAB 113	20 A	1	1260...	360 VA					1	20 A	RECEPTS. - CHEMISTRY 1 113F	20
21	Spare	20 A	1			0 VA	540 VA			1	20 A	RECEPTS. - CHEMISTRY 1 113F	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
43	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	44
45	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	46
47	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	48
49	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	50
51	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	52
53	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	54
			Total Load:	4140 VA		2820 VA		3540 VA					
			Total Amps:	35 A		24 A		30 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	10500 VA
Power	2400 VA	100.00%	2400 VA	Total Est. Demand:	10500 VA
Receptacle	8100 VA	100.00%	8100 VA	Total Conn. Current:	29 A
				Total Est. Demand Current:	29 A

Notes:

Branch Panel: LNP-03

Location: ELEC CLO G0086 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Surface **Wires:** 4 **Mains Rating:** 225 A
Enclosure: Indoor **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	G34 208V RECEPTACLE	20 A	2	0 VA	0 VA					2	20 A	G36 208V RECEPTACLE	2
3	--	--	--			0 VA	0 VA			--	--	--	4
5	G34 208V RECEPTACLE	20 A	2					0 VA	0 VA	2	20 A	G36 208V RECEPTACLE	6
7	--	--	--	0 VA	0 VA					--	--	--	8
9	RECEPTS. - FLEX LAB SUPPORT G38	20 A	1			540 VA	540 VA			1	20 A	RECEPTS. - FLEX LAB SUPPORT G38	10
11	RECEPTS. - FLEX LAB SUPPORT G38	20 A	1					540 VA	360 VA	1	20 A	RECEPTS. - SOIL GRINDING ROOM G05	12
13	RECEPTS. - SOIL GRINDING ROOM G05	20 A	1	360 VA	0 VA					1	20 A	RECEPTS. - MESSY PLANT GRINDING ROOM...	14
15	RECEPTS. - SOIL GRINDING ROOM G05	20 A	1			540 VA	540 VA			1	20 A	Other	16
17	RECEPTS. - MESSY PLANT GRINDING ROOM...	20 A	1					540 VA	360 VA	1	20 A	RECEPTS. - MESSY SOIL GRINDING ROOM G01	18
19	G02 208V RECEPTS.	20 A	2	0 VA	360 VA					1	20 A	RECEPTS. - SOIL AND SAMPLE PREP G02	20
21	--	--	--			0 VA	360 VA			1	20 A	RECEPTS. - SOIL AND SAMPLE PREP G02	22
23	RECEPTS. - SOIL AND SAMPLE PREP G02	20 A	1					360 VA	360 VA	1	20 A	RECEPTS. - SOIL AND SAMPLE PREP G02	24
25	RECEPTS. - SOIL AND SAMPLE PREP G02	20 A	1	360 VA	0 VA					1	20 A	Spare	26
27	RECEPTS. - CUSTODIAL SUPPLY G0081	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
43	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	44
45	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	46
47	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	48
49	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	50
51	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	52
53	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	54
			Total Load:	1080 VA		2520 VA		2520 VA					
			Total Amps:	9 A		23 A		23 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	6120 VA
Receptacle	6120 VA	100.00%	6120 VA	Total Est. Demand:	6120 VA
				Total Conn. Current:	17 A
				Total Est. Demand Current:	17 A

Notes:

Branch Panel: HEDP-OS-G2

Location: EXIST. MAIN ELECTRICAL... **Volts:** 480/277 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Surface **Wires:** 4 **Mains Rating:** 400 A
Enclosure: TYPE 1 **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	HMP-OS-52	400 A	3	7741...	0 VA					3	50 A	P-3A	2
3	--	--	--			6734...	0 VA			--	--	--	4
5	--	--	--					6734...	0 VA	--	--	--	6
7	P-3	50 A	3	0 VA	0 VA					3	50 A	P-5	8
9	--	--	--			0 VA	0 VA			--	--	--	10
11	--	--	--					0 VA	0 VA	--	--	--	12
13	P-5A	20 A	3	0 VA	0 VA					1	20 A	Spare	14
15	--	--	--			0 VA	0 VA			1	20 A	Spare	16
17	--	--	--					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	77415 VA		67340 VA		67340 VA					
			Total Amps:	279 A		243 A		243 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	212096 VA	100.00%	212096 VA	Total Conn. Load:	212096 VA
				Total Est. Demand:	212096 VA
				Total Conn. Current:	255 A
				Total Est. Demand Current:	255 A

Notes:

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

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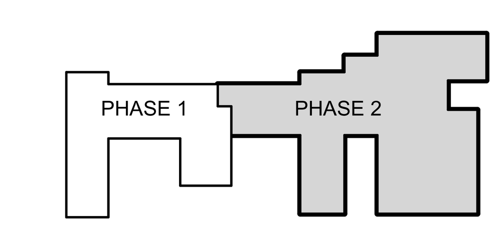
Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL SCHEDULES

BID DOCUMENTS
Scale:

E6.12

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Branch Panel: LNPL-21-1

Location: SYNTHETIC BIOLOGY LAB 202 | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MLO | **Mains Rating:** 225 A | **MCB Rating:** 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	9-E11	20 A	1	0 VA	6240...					2	20 A	202F 208V RECEPTACLE	2
3	9-E11	20 A	1			0 VA	0 VA			--	--	--	4
5	202F RECEPTACLES & FUME HOOD	20 A	1					960 VA	1040...	2	20 A	9-E03	6
7	9-E13	20 A	1	600 VA	1040...					--	--	--	8
9	9-E13	20 A	1			600 VA	600 VA			1	20 A	9-E13	10
11	202E 208V RECEPTACLE	20 A	2					6240...	600 VA	1	20 A	9-E13	12
13	--	--	--	0 VA	960 VA					1	20 A	202D FUME HOOD	14
15	202D 208V RECEPTACLE	30 A	2			6240...	1040...			2	20 A	9-E04	16
17	--	--	--					0 VA	1040...	--	--	--	18
19	9-E10	20 A	1	600 VA	2080...					2	20 A	9-E09	20
21	202C 208V RECEPTACLE	30 A	2			6240...	2080...			--	--	--	22
23	--	--	--					0 VA	6240...	2	30 A	202C 208V RECEPTACLE	24
25	9-E07	20 A	2	2080...	0 VA					--	--	--	26
27	--	--	--			2080...	6240...			2	30 A	202A 208V RECEPTACLE	28
29	202B 208V RECEPTACLE	30 A	2					6240...	0 VA	--	--	--	30
31	--	--	--	0 VA	600 VA					1	20 A	9-E05	32
33	202A 208V RECEPTACLE	30 A	2			6240...	540 VA			1	20 A	LAB 202 RECEPTACLES	34
35	--	--	--					0 VA	720 VA	1	20 A	RECEPTS. - CYL. STOR. 202G	36
37	LAB 202 RECEPTACLES	20 A	1	360 VA	360 VA					1	20 A	LAB 202 RECEPTACLES	38
39	VAC PUMP CABINET - CHEMISTRY 202D	20 A	1			600 VA	360 VA			1	20 A	RECEPTS. - EQ. CORRIDOR 202E	40
41	202 FUME HOOD	20 A	1					600 VA	600 VA	1	20 A	VAC PUMP CABINET - LAB 202	42
43	LAB 202 RECEPTACLES	20 A	1	360 VA	360 VA					1	20 A	LAB 202 RECEPTACLES	44
45	VAC PUMP CABINET - CHEMISTRY 202D	20 A	1			600 VA	600 VA			1	20 A	VAC PUMP CABINET - EQ. CORRIDOR 202E	46
47	VAC PUMP CABINET - CULTURE 202B	20 A	1					600 VA	960 VA	1	20 A	202D FUME HOOD	48
49	LAB 202 RECEPTACLES	20 A	1	360 VA	960 VA					1	20 A	202E FUME HOOD	50
51	LAB 202 RECEPTACLES	20 A	1			540 VA	0 VA			1	20 A	Spare	52
53	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	54
			Total Load:	16960 VA		34600 VA		25840 VA					
			Total Amps:	141 A		300 A		227 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	77400 VA
Power	22080 VA	100.00%	22080 VA	Total Est. Demand:	54740 VA
Receptacle	55320 VA	59.04%	32660 VA	Total Conn. Current:	215 A
				Total Est. Demand Current:	152 A

Notes:

Branch Panel: LNPL-41-2

Location: BIODIVERSITY LAB 402 | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MLO | **Mains Rating:** 225 A | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPT. - CHEMISTRY 402C	20 A	1	180 VA	180 VA					1	20 A	RECEPT. - CULTURE 402D	2
3	RECEPT. - CULTURE 402D	20 A	1			180 VA	180 VA			1	20 A	RECEPT. - CULTURE 402D	4
5	RECEPT. - CULTURE 402D	20 A	1					180 VA	180 VA	1	20 A	RECEPT. - CULTURE 402D	6
7	RECEPT. - CULTURE 402D	20 A	1	180 VA	180 VA					1	20 A	RECEPT. - CULTURE 402D	8
9	RECEPT. - BIODIVERSITY LAB 402	20 A	1			0 VA	180 VA			1	20 A	RECEPT. - CULTURE 402D	10
11	RECEPT. - BIODIVERSITY LAB 402	20 A	1					180 VA	180 VA	1	20 A	RECEPT. - CULTURE 402D	12
13	RECEPT. - BIODIVERSITY LAB 402	20 A	1	180 VA	180 VA					1	20 A	RECEPT. - BIODIVERSITY LAB 402	14
15	Spare	20 A	1			0 VA	180 VA			1	20 A	RECEPT. - BIODIVERSITY LAB 402	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
43	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	44
45	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	46
47	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	48
49	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	50
51	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	52
53	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	54
			Total Load:	1080 VA		720 VA		720 VA					
			Total Amps:	9 A		6 A		6 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	2520 VA
Receptacle	2520 VA	100.00%	2520 VA	Total Est. Demand:	2520 VA
				Total Conn. Current:	7 A
				Total Est. Demand Current:	7 A

Notes:

Branch Panel: LNPL-22-2

Location: PLANT / SOIL / MICROBES LA... | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 225 A | **MCB Rating:** 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	7-E06	20 A	1	1200...	1200...					1	20 A	7-E15	2
3	7-E13	20 A	1			600 VA	600 VA			1	20 A	7-E14	4
5	7-E03	20 A	1					600 VA	600 VA	1	20 A	7-E16	6
7	7-E05	20 A	1	240 VA	240 VA					1	20 A	7-E09	8
9	7-E02	20 A	1			240 VA	1068...			1	20 A	7-E10 & 7-E11	10
11	7-E18	20 A	1					240 VA	228 VA	1	20 A	7-E07	12
13	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1	900 VA	360 VA					1	20 A	RECEPTS. - MICROSCOPY 219B	14
15	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1			1800...	540 VA			1	20 A	RECEPTS. - MICROSCOPY 219B	16
17	RECEPTS. - EQUIPMENT 2 219D	20 A	1					360 VA	540 VA	1	20 A	RECEPTS. - MICROSCOPY 219B	18
19	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1	1800...	1800...					1	20 A	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20
21	RECEPTS. - EQUIPMENT 2 219D	20 A	1			360 VA	540 VA			1	20 A	RECEPTS. - MOLECULAR LAB 219E	22
23	RECEPTS. - MOLECULAR LAB 219E	20 A	1					540 VA	540 VA	1	20 A	RECEPTS. - MOLECULAR LAB 219E	24
25	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1	1800...	1800...					1	20 A	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	26
27	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1			1440...	360 VA			1	20 A	RECEPTS. - EQUIPMENT 1 219C	28
29	RECEPTS. - EQUIPMENT 1 219C	20 A	1					360 VA	360 VA	1	20 A	RECEPTS. - EQUIPMENT 1 219C	30
31	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1	1620...	540 VA					1	20 A	RECEPTS. - CULTURE 219F	32
33	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1			1080...	360 VA			1	20 A	219G FUME HOOD	34
35	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1					1260...	360 VA	1	20 A	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	36
37	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1	360 VA	1440...					1	20 A	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	38
39	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1			1440...	540 VA			1	20 A	RECEPTS. - CULTURE 219F	40
41	RECEPTS. - PLANT/SOIL/MICROBES LAB 219	20 A	1					1440...	540 VA	1	20 A	RECEPTS. - CULTURE 219F	42
43	RECEPT. - CHEMISTRY 219G	20 A	1	180 VA	240 VA					1	20 A	VAC PUMP CABINET - CHEMISTRY 219G	44
45	219G FUME HOOD	20 A	1			240 VA	360 VA			1	20 A	RECEPTS. - EQUIPMENT 2 219D	46
47	VAC PUMP CABINET - CHEMISTRY 219G	20 A	1					240 VA	360 VA	1	20 A	RECEPTS. - EQUIPMENT 2 219D	48
49	RECEPTS. - EQUIPMENT 2 219D	20 A	1	360 VA	0 VA					1	20 A	RECEPTS. - COLLAB 221	50
51	RECEPTS. - EQUIPMENT 1 219C	20 A	1			360 VA	0 VA			1	20 A	Spare	52
53	RECEPTS. - EQUIPMENT 1 219C	20 A	1					360 VA	0 VA	1	20 A	Spare	54
55	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	56
57	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	58
59	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	60
61	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	62
63	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	64
65	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	66
67	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	68
69	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	70
71	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	72
			Total Load:	16080 VA		11928 VA		8928 VA					
			Total Amps:	138 A		103 A		74 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	36936 VA
Power	8136 VA	100.00%	8136 VA	Total Est. Demand:	27536 VA
Receptacle	28800 VA	67.36%	19400 VA	Total Conn. Current:	103 A
				Total Est. Demand Current:	76 A

Notes:

Branch Panel: LNPL-21-2

Location: SYNTHETIC BIOLOGY LAB 202 | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MLO | **Mains Rating:** 225 A | **MCB Rating:** 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Other	20 A	1	600 VA	540 VA					1	20 A	RECEPTS. - FLEX / MICROSCOPY 202A	2
3	VAC PUMP CABINET - LAB 202	20 A	1			600 VA	540 VA			1	20 A	RECEPTS. - FLEX / MICROSCOPY 202A	4
5	RECEPTS. - CULTURE 202B	20 A	1					540 VA	540 VA	1	20 A	RECEPTS. - FLEX / MICROSCOPY 202A	6
7	RECEPTS. - CULTURE 202B	20 A	1	720 VA	540 VA					1	20 A	RECEPTS. - EQUIPMENT 202C	8
9	RECEPTS. - EQUIPMENT 202C	20 A	1			540 VA	540 VA			1	20 A	RECEPTS. - EQUIPMENT 202C	10
11	Spare	20 A	1					0 VA	540 VA	1	20 A	RECEPTS. - CHEMISTRY 202D	12
13	Spare	20 A	1	0 VA	540 VA					1	20 A	RECEPTS. - CHEMISTRY 202D	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
43	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	44
45	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	46
47	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	48
49	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	50
51	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	52
53	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	54
			Total Load:	2940 VA		2220 VA		1620 VA					
			Total Amps:	25 A		19 A		14 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	6780 VA
Power	1200 VA	100.00%	1200 VA	Total Est. Demand:	6780 VA
Receptacle	5580 VA	100.00%	5580 VA	Total Conn. Current:	19 A
				Total Est. Demand Current:	19 A

Notes:

Branch Panel: LNPL-32-1

Location: SOIL/PLANT LAB 319 | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MLO | **Mains Rating:** 225 A | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	8-E01	20 A	1	600 VA	1320...					1	20 A	8-E04	2
3	8-E02	20 A	1			1320...	1320...			1	20 A	8-E05	4
5	8-E03	20 A	1					600 VA	600 VA	1	20 A	8-E06F	6
7	8-E27 & 8-E28	20 A	1	972 VA	372 VA					1	20 A	8-E06B	8
9	8-E25 & 8-E26	20 A	1			1200...	372 VA			1	20 A	8-E06C	10
11	8-E06A	20 A	1					372 VA	1800...	1	20 A	8-E06D	12
13	8-E06E	20 A	1	372 VA	1500...					1	20 A	8-E09	14
15	8-E07	20 A	1			600 VA	1500...			1	20 A	8-E10	16
17	8-E08	20 A	1					600 VA	600 VA	1	20 A	8-E11	18
19	8-E14	20 A	1	600 VA	1800...					1	20 A	8-E20	20
21	8-E15	20 A	1			600 VA	1440...			1	20 A	8-E17	22
23	8-E21	20 A	1					1560...	600 VA	1	20 A	8-E23	24
25	8-E24	20 A	2	2496...	6240...					2	20 A	319B 208V RECEPTACLE	26
27	--	--	--			2496...	0 VA			--	--	--	28
29	319B 208V RECEPTACLE	20 A	2					6240...	6240...	2	20 A	319G 208V RECEPTACLE	30
31	--	--	--	0 VA	0 VA					--	--	--	32
33	319E 208V RECEPTACLE	30 A	2			6240...	1080...			1	20 A	RECEPTS. - SOIL/PLANT LAB 319	34
35	--	--	--					0 VA	1440...	1	20 A	RECEPTS. - SOIL/PLANT LAB 319	36
37	319G FUME HOOD	20 A	1	960 VA	1800...					1	20 A	RECEPTS. - SOIL/PLANT LAB 319	38
39	RECEPTS. - SOIL/PLANT LAB 319	20 A	1			1080...	1440...			1	20 A	RECEPTS. - SOIL/PLANT LAB 319	40
41	RECEPTS. - SOIL/PLANT LAB 319	20 A	1					1800...	1440...	1	20 A	RECEPTS. - SOIL/PLANT LAB 319	42
43	RECEPTS. - SOIL/PLANT LAB 319	20 A	1	1440...	1800...					1	20 A	RECEPTS. - SOIL/PLANT LAB 319	44
45	RECEPTS. - SOIL/PLANT LAB 319	20 A	1			1800...	1440...			1	20 A	RECEPTS. - SOIL/PLANT LAB 319	46
47	RECEPTS. - SOIL/PLANT LAB 319	20 A	1					1440...	1800...	1	20 A	RECEPTS. - SOIL/PLANT LAB 319	48
49	RECEPTS. - SOIL/PLANT LAB 319	20 A	1	1800...	0 VA					1	20 A	Spare	50
51	RECEPTS. - SOIL/PLANT LAB 319	20 A	1			1080...	0 VA			1	20 A	Spare	52
53	RECEPTS. - SOIL/PLANT LAB 319	20 A	1					1440...	0 VA	1	20 A	Spare	54
			Total Load:	24072 VA		25008 VA		28572 VA					
			Total Amps:	201 A		210 A		239 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	77652 VA
Power	28212 VA	100.00%	28212 VA	Total Est. Demand:	57932 VA
Receptacle	49440 VA	60.11%	29720 VA	Total Conn. Current:	216 A
				Total Est. Demand Current:	161 A

Notes:

Branch Panel: LNPL-32-2

Location: SOIL/PLANT LAB 319 | **Supply From:** | **Mounting:** Flush | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 22kA | **Mains Type:** MLO | **Mains Rating:** 225 A | **MCB Rating:** 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	319G FUME HOOD	20 A	2	2496...	600 VA					1	20 A	VAC PUMP CABINET - LAB 319	2
3	--	--	--			2496...	600 VA			1	20 A	VAC PUMP CABINET - SOIL/PLANT LAB 319	4
5	RECEPTS. - MOLECULAR PLANT 302	20 A	1					360 VA	600 VA	1	20 A	VAC PUMP CABINET - LAB 319	6
7	RECEPTS. - FLEXIBLE 319B	20 A	1	540 VA	540 VA					1	20 A	RECEPTS. - FLEXIBLE 319B	8
9	RECEPTS. - FLEXIBLE 319B	20 A	1			720 VA	360 VA			1	20 A	RECEPTS. - MICROSCOPY 319C	10
11	RECEPTS. - MICROSCOPY 319C	20 A	1					360 VA	360 VA	1	20 A	RECEPTS. - MICROSCOPY 319CA	12
13	RECEPTS. - MICROSCOPY 319CA	20 A	1	540 VA	360 VA					1	20 A	RECEPTS. - EQUIPMENT 319D	14
15	RECEPTS. - EQUIPMENT 319D	20 A	1			360 VA	360 VA			1	20 A	RECEPTS. - EQUIPMENT 319D	16
17	RECEPTS. - EQUIPMENT 319D	20 A	1					360 VA	360 VA	1	20 A	RECEPTS. - EQUIPMENT 319D	18
19	RECEPTS. - SOIL/EQUIPMENT 319E	20 A	1	360 VA	360 VA					1	20 A	RECEPTS. - SOIL/EQUIPMENT 319E	20
21	RECEPTS. - SOIL/EQUIPMENT 319E	20 A	1			360 VA	180 VA			1	20 A	RECEPT. - SOIL/EQUIPMENT 319E	22
23	RECEPTS. - SOIL/EQUIPMENT 319E	20 A	1					360 VA	540 VA	1	20 A	RECEPTS. - TISSUE CULTURE 319F	24
25	RECEPTS. - TISSUE CULTURE 319F	20 A	1	540 VA	720 VA					1	20 A	RECEPTS. - CHEMISTRY 319G	26
27	RECEPTS. - TISSUE CULTURE 319F	20 A	1			720 VA	0 VA			1	20 A	Spare	28
29	RECEPTS. - CHEMISTRY 319G	20 A	1					540 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
43	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	44
45	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	46
47	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	48
49	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	50
51	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	52
53	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	54
			Total Load:	7056 VA		6156 VA		3840 VA					
			Total Amps:	62 A		54 A		32 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	17052 VA
Power	6792 VA	100.00%	6792 VA	Total Est. Demand:	16922 VA
Receptacle	10260 VA	98.73%	10130 VA	Total Conn. Current:	47 A
				Total Est. Demand Current:	47 A

Notes:

D

Branch Panel: EP

Location: ELECTRICAL 20060 | **Supply From:** LNP-DP | **Mounting:** Surface | **Enclosure:** Indoor
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MLO | **Mains Rating:** 50 A | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	ELEV. CAB LIGHTING	20 A	1	3000...	0 VA					1	20 A	ESP-2	2
3	ELEV. COMM.	20 A	1			1500...	180 VA			1	20 A	ELEV. PIT RECEPTACLE	4
5	Spare	20 A	1					0 VA	0 VA	1	20 A	ELEV. SHAFT LIGHTING	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	ELECTRICAL 20060 RECEP	20 A	1	180 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
			Total Load:	3180 VA		1680 VA		0 VA					
			Total Amps:	29 A		16 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	4860 VA
Power	4500 VA	100.00%	4500 VA	Total Est. Demand:	4860 VA
Receptacle	360 VA	100.00%	360 VA	Total Conn. Current:	13 A
				Total Est. Demand Current:	13 A

Notes:

Branch Panel: HNLP-02

Location: ELEC CLO G0086 | **Supply From:** HNLP-DP | **Mounting:** Surface | **Enclosure:** 1
Volts: 480/277 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 250 A | **MCB Rating:** 200 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LIGHTING - G15, G17, G19, G21, G23	20 A	1	0 VA	0 VA					1	20 A	LIGHTING - G27, G29, G31, G33, G35, G37	2
3	LIGHTING - G01, G03, G05	20 A	1			0 VA	0 VA			1	20 A	LIGHTING - G36, G38, G40	4
5	LIGHTING - G02, G04, G0081	20 A	1					0 VA	0 VA	1	20 A	LIGHTING - WRITE-UP SPACE G09	6
7	LIGHTING - SHARED INSTR. SUPPORT ROOM...	20 A	1	0 VA	0 VA					1	20 A	LIGHTING - TOILET/SHOWER G0020, G0021	8
9	LIGHTING - CORRIDOR G0042	20 A	1			0 VA	0 VA			1	20 A	LIGHTING - G28, G20, G32, G34	10
11	LIGHTING - CORRIDOR-EAST G0043	20 A	1					0 VA	0 VA	1	20 A	G20 LIGHTING	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: HNLP-DP

Location: ELEC CLO G0086 | **Supply From:** | **Mounting:** Surface | **Enclosure:** 1
Volts: 480/277 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10kA | **Mains Type:** MCB | **Mains Rating:** 250 A | **MCB Rating:** 200 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	HNLP-02	20 A	3	0 VA	0 VA					3	20 A	HNLP-12	2
3	--	--	--			0 VA	0 VA			--	--	--	4
5	--	--	--					0 VA	0 VA	--	--	--	6
7	HNLP-22	20 A	3	0 VA	0 VA					3	20 A	HNLP-32	8
9	--	--	--			0 VA	0 VA			--	--	--	10
11	--	--	--					0 VA	0 VA	--	--	--	12
13	HNLP-42	20 A	3	0 VA									14
15	--	--	--			0 VA							16
17	--	--	--					0 VA					18
19													20
21													22
23													24
25													26
27													28
29													30
31													32
33													34
35													36
37													38
39													40
41													42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	Total Conn. Load:	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

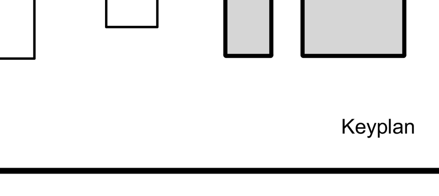
Notes:

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd., Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St., Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S, Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000, Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor, New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill, East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue, New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300, Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

B	Addendum 3	11/04/26
D	Addendum 6	11/19/26

ELECTRICAL SCHEDULES

BID DOCUMENTS
Scale:

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Branch Panel: LEPL-OS-11

Location: FRUIT PRODUCTION LAB 113
Supply From:
Mounting: Surface
Enclosure: Indoor

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10kA
Mains Type: MLO
Mains Rating: 225 A
MCB Rating: 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	6-E18	20 A	2	2080	540 VA	2080	1080			1	20 A	113B RECEPTACLES	2
3	--	--	--							1	20 A	113E RECEPTACLES	4
5	6-E15	20 A	1					1200	0 VA	1	20 A	Other	6
7	118 208V RECEPTACLE	20 A	2	0 VA	0 VA					1	20 A	Spare	8
9	--	--	--			0 VA	0 VA			1	20 A	Spare	10
11	118 208V RECEPTACLE	20 A	2					0 VA	0 VA	1	20 A	Spare	12
13	--	--	--	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
43	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	44
45	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	46
47	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	48
49	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	50
51	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	52
53	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	54
			Total Load:	2620 VA		3160 VA		1200 VA					
			Total Amps:	24 A		28 A		10 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	6980 VA
Power	5360 VA	100.00%	5360 VA	**Total Est. Demand:**	6980 VA
Receptacle	1620 VA	100.00%	1620 VA	**Total Conn. Current:**	19 A
				Total Est. Demand Current:	19 A

Notes:

Branch Panel: LEPL-OS-22

Location:
Supply From:
Mounting: Flush
Enclosure: Indoor

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10kA
Mains Type: MLO
Mains Rating: 50 A
MCB Rating: 50 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	7-E34	20 A	1	600 VA	600 VA					1	20 A	7-E49	2
3	7-E33	20 A	1			600 VA	240 VA			1	20 A	7-E48	4
5	7-E42	20 A	1					600 VA	0 VA	1	20 A	RECEPTS. - FLEX LAB SUPPORT 228	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	14
15	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	16
17	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	18
19	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	20
21	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	22
23	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	24
25	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	26
27	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	28
29	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	30
31	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	32
33	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	34
35	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	36
37	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	38
39	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	1200 VA		840 VA		600 VA					
			Total Amps:	10 A		7 A		5 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	2640 VA
Power	2640 VA	100.00%	2640 VA	**Total Est. Demand:**	2640 VA
				Total Conn. Current:	7 A
				Total Est. Demand Current:	7 A

Notes:

Branch Panel: HELP-LS-02

Location: ELEC CLO G0086
Supply From:
Mounting: Surface
Enclosure: 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10kA
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 200 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EM. LIGHTING - LABS G15, G17, G19, G21, G23	20 A	1	0 VA	0 VA					1	20 A	EM. LIGHTING - CORRIDOR G0042	2
3	EM. LIGHTING - SUSTAINABLE CROP	20 A	1			0 VA	0 VA			1	20 A	EM. LIGHTING - CORRIDOR G0051	4
5	EM. LIGHTING - CORRIDOR - EAST G0043	20 A	1					0 VA	0 VA	1	20 A	EM. LIGHTING - TOILET/SHOWER G0020	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEDP-LR-1

Location: ELEC 10064
Supply From:
Mounting: Surface
Enclosure: Indoor

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10kA
Mains Type: MCB
Mains Rating: 225 A
MCB Rating: 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LEPL-LR-22	50 A	3	0 VA	0 VA					--	--	LEPL-LR-32	2
3	--	--	--			0 VA	0 VA			--	--	--	4
5	--	--	--					0 VA	0 VA	--	--		6
7	LEP-LR-42	50 A	3	0 VA	0 VA					1	20 A	GROUND FLOOR VAV POWER	8
9	--	--	--			0 VA	0 VA			1	20 A	GROUND FLOOR VAV POWER	10
11	--	--	--					0 VA	0 VA	1	20 A	GROUND FLOOR VAV POWER	12
13	GROUND FLOOR VAV POWER	20 A	1	0 VA	0 VA					1	20 A	FIRST FLOOR VAV POWER SUPPLY	14
15	GROUND FLOOR BMS CONNECTION	20 A	1			0 VA	0 VA			1	20 A	FIRST FLOOR VAV POWER SUPPLY	16
17	GROUND FLOOR BMS CONNECTION	20 A	1					0 VA	0 VA	1	20 A	FIRST FLOOR VAV POWER SUPPLY	18
19	FIRST FLOOR VAV POWER SUPPLY	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEP-LR-22

Location: ELECTRICAL 20060
Supply From: LEDP-LR-1
Mounting: Surface
Enclosure: Indoor

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10kA
Mains Type: MLO
Mains Rating: 50 A
MCB Rating: 50 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Other	20 A	1	0 VA	0 VA					1	20 A	SECOND FLOOR VAV POWER SUPPLY	2
3	SECOND FLOOR VAV POWER SUPPLY	20 A	1			0 VA	0 VA			1	20 A	SECOND FLOOR VAV POWER SUPPLY	4
5	SECOND FLOOR VAV POWER SUPPLY	20 A	1					0 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEP-LR-32

Location: ELECTRICAL 30060
Supply From: LEDP-LR-1
Mounting: Surface
Enclosure: Indoor

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10kA
Mains Type: MLO
Mains Rating: 50 A
MCB Rating: 50 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	BMS CONNECTION	20 A	1	0 VA	0 VA					1	20 A	THIRD FLOOR VAV POWER SUPPLY	2
3	BMS CONNECTION	20 A	1			0 VA	0 VA			1	20 A	THIRD FLOOR VAV POWER SUPPLY	4
5	BMS CONNECTION	20 A	1					0 VA	0 VA	1	20 A	THIRD FLOOR VAV POWER SUPPLY	6
7	THIRD FLOOR VAV POWER SUPPLY	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEP-LR-42

Location: MECHANICAL 40060
Supply From: LEDP-LR-1
Mounting: Surface
Enclosure: Indoor

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10kA
Mains Type: MLO
Mains Rating: 50 A
MCB Rating: 50 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	BMS CONNECTION	20 A	1	0 VA	0 VA					1	20 A	THIRD FLOOR VAV POWER SUPPLY	2
3	FOURTH FLOOR VAV POWER SUPPLY	20 A	1			0 VA	0 VA			1	20 A	THIRD FLOOR VAV POWER SUPPLY	4
5	THIRD FLOOR VAV POWER SUPPLY	20 A	1					0 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
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Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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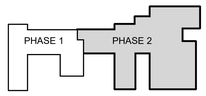
Notes:



Keyplan

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Checked By SAG
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Date August 31, 2026

Revisions

D	Addendum 6	11/19/26

ELECTRICAL SCHEDULES

BID DOCUMENTS
Scale:

E6.14

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