DESIGN & CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 1 TO PROJECT NO. 46103

**CONSTRUCTION, HVAC, PLUMBING, & ELECTRICAL WORK
REHABILITATE ADULT LIVING UNITS &
HEATING SYSTEM UPGRADES, BUILDING 62
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE.
BUFFALO, NY**

May 14, 2026

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

HVAC WORK SPECIFICATIONS

1. SECTION 230523 VALVES: Discard the Section bound in the Project Manual and substitute the Section (pages 230523–1 thru 230523–9) noted "Addendum 01".

2. SECTION 230719 INSULATION: Discard the Section bound in the Project Manual and substitute the Section (pages 230719–1 thru 230719–10) noted "Addendum 01".

3. SECTION 230923 DIRECT DIGITAL BUILDING CONTROL SYSTEMS: Discard the Section bound in the Project Manual and substitute the Section (pages 230923–1 thru 230923–49) noted "Addendum 01".

4. SECTION 232006 HYDRONIC SPECIALTIES, Paragraph 3.2 A: Change subparagraph to read:

   "A. Equipment and systems shall be installed 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, unions, flanges, valves, to allow for easy part removal and maintenance. Offset piping and change elevation as required for coordination with other work. Avoid contact with other mechanical or electrical systems. Provide adequate means of draining and venting units, risers, circuits and systems. Conceal piping unless otherwise called for. 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."

5. SECTION 233113 METAL DUCTWORK, Paragraph 3.6 B: Change subparagraph to read:

   "B. Ductwork designated to operate below 3" wc shall be checked and guaranteed to meet standards of SMACNA Seal Classifications, seal Class A and Leakage Classification 6 (rectangle) or 3 (round). Air balancing and testing shall be used to determine satisfactory operation of duct systems."

6. SECTION 233300 DUCTWORK ACCESSORIES: Discard the Section bound in the Project Manual and substitute the Section (pages 233300–1 thru 233300–15) noted "Addendum 01".

7. SECTION 238325 RADIANT CEILING PANELS: Discard the Section bound in the Project Manual and substitute the Section (pages 238325–1 thru 238325–4) noted "Addendum 01".

ELECTRICAL WORK SPECIFICATIONS

8. SECTION 260000 GENERAL PROVISIONS FOR ELECTRICAL WORK, Paragraph 3.6 A.2: Change subparagraph to read:

   "2. Painting required for touch–up of surfaces damaged due to the installation of Work of this trade related to existing conditions to remain and finish painting work completed by the E–Contract per Specification Section 099101 – Construction Painting."

9. SECTION 281301 SECURITY CONTROL AND MONITORING SYSTEM: Discard the Section bound in the Project Manual and substitute the Section (pages 281301–1 thru 281301–12) noted "Addendum 01".

10. SECTION 282304 VIDEO SURVEILLANCE SYSTEM: Discard the Section bound in the Project Manual and substitute the Section (pages 282304–1 thru 282304–22) noted "Addendum 01".

GENERAL DRAWINGS

11. Revised Drawing
    a. Drawing No. G–301, noted ADDENDUM NO. 01 dated 4/30/2026, accompanies this Addendum and supersedes the same numbered previously issued drawing.

CONSTRUCTION DRAWINGS

12. Drawings Nos. A–010, A–011, A–012, A–013, A–014, A–015, A–016, and A–017, KEYED REMOVAL NOTES D26: Replace this note in its entirety to read:
    "Remove existing carpet flooring, rubber wall base and adhesive/ mastic down to existing concrete slab. Prep slab for finishes per interior finish plans and schedules."

13. Drawings Nos. A–100, A–101, A–102, A–103, A–104, A–105, A–106, A–107, and A–108, KEYED CONSTRUCTION NOTES: Change C1 to read:

    "C1 – Patch portion of existing wall with gypsum board flush with adjacent surfaces (refer to partition type). Prime and paint entire wall surface to corners of room. Provide PNT–1 unless noted otherwise in finish schedules."

14. Drawings Nos. A–100, A–101, A–102, A–103, A–104, A–105, A–106, A–107, and A–108, KEYED CONSTRUCTION NOTES: Change C2 to read:

    "C2 – Patch ceiling flush with existing adjacent and match existing construction. Prime and paint entire ceiling to full extent of room. Provide PNT–3 unless noted otherwise in finish schedules."

15. Revised Drawings:
    a. Drawing Nos. A–018, A–104, A–115, A–116, A–117, A–118, A–402, A–403, A–404, A–405, A–406, A–407, A–408, A–410, A–411, A–412, A–521, A–522, A–601, and I–108, noted ADDENDUM NO. 01 dated 4/30/2026, accompanies this Addendum and supersedes the same numbered previously issued drawings.

HVAC DRAWINGS

16. Revised Drawings:
    a. Drawing Nos. M–018, M–118, and M–601, noted ADDENDUM NO. 01 dated 4/30/2026, accompanies this Addendum and supersedes the same numbered previously issued drawings.

ELECTRICAL DRAWINGS

17. Revised Drawings:
    a. Drawing Nos. E–015, E–016, E–017, E–018, E–125, E–126, E–127, E–128, E–401, and E–508, noted ADDENDUM NO. 01 dated 4/30/2026, accompanies this Addendum and supersedes the same numbered previously issued drawings.

END OF ADDENDUM

Brady M. Sherlock, P.E.
Director, Division of Design
Design & Construction

SECTION 230523

VALVES

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Provide labor, materials, equipment, and services as required for the complete installation and related work designated in contract documents.

1.2 RELATED DOCUMENTS

A. All work under this section is subject to the Contract Documents and this Contractor shall be responsible for and governed by all the requirements therein.

1.3 SUBMITTALS

A. Valves and accessories.

PART 2 – PRODUCTS

2.1 VALVES:

A. General: Valves shall meet the following requirements:

1. Working pressure shall be stamped or cast on bodies.
2. Stem packing shall be serviceable without removing valve from line.
3. To establish a standard of quality and identify features, certain manufacturer's numbers are given in the following paragraphs.
4. Where mechanically coupled valves such as Pro-Press, or Victaulic (or similar) systems are specified / permitted on the project, mechanically coupled valves are specifically not to be used. Flange or thread adapters are to be used in all cases.

B. Gate Valves – HVAC Systems (Non-Potable Water Systems):

1. GV-01 - Bronze 2" and Under (Threaded End Connection):

a. Valves shall be suitable for 125 SWP/200WOG, 150 SWP/300 WOG or 300 SWP/ 1000WOG, solid wedge disc, rising stem, union bonnet.
b. Body and Bonnet: Bronze ASTM B62.
c. Stem: Bronze ASTM B61, ASTM B62, ASTM B371.
d. Seat: Bronze ASTM B62 (Class 125 and Class 150) or Stainless-Steel ASTM A240 Type 304/ASTM A276 Type 410 (Class 300).
e. Wedge Disc: Bronze ASTM B62.
f. Packing: Graphite.

g. Handwheel: Malleable iron.
h. Acceptable Makes: Milwaukee 1152 (Class 125), 1151 (Class 150) or 1184 (Class 300), Hammond IB617 (Class 125), IB629 (Class 150) or IB654 (Class 300), Crane 428UB (Class 125), 431UB (Class 150) or 634E (Class 300), Nibco T-111 (Class 125), T-134 (Class 150) or T-174-SS (Class 300), Jenkins Figure 47CUJ (Class 150) or Figure 2280UJ (Class 300).

2. GV-02 - Cast Iron 2 ½" and Larger (Flanged End Connection):

a. Valves shall be Class 125 or Class 250, outside screw and yoke, rising stem.
b. Body and Bonnet: Cast iron ASTM A126, Class B.
c. Stem: Bronze ASTM B16 or Alloy ASTM B371.
d. Seat: Cast bronze ASTM B62 or Bronze ASTM B61
e. Wedge Disc: Cast iron ASTM B126, Class B, or Bronze ASTM B61, ASTM B62, ASTM B584.
f. Packing: Graphite.
g. Handwheel: Malleable or ductile iron.
h. Acceptable Makes: Milwaukee F-2885A (Class 125) or F-2894A (Class 250), Crane 465½ (Class 125) or 7½E (Class 250), Powell Figure 1793 (Class 125) or Figure 1797 (Class 250), Lunkenheimer Figure 1430 (Class 125) or Figure 1436 IBBM (Class 250), Jenkins Figure 454J (Class 125) or Figure 204J (Class 250), Nibco F-617-O (Class 125) or F-667-O (Class 250).

C. Globe Valves – HVAC Systems (Non-Potable Water Systems):

1. GLV-01 - Bronze 2" and Under (Threaded End Connection):

a. Valves shall be suitable for 150 SWP/300 WOG/200 SWP/400 WOG or 300 SWP/ 1000WOG, solid wedge disc, rising stem, union bonnet, threaded connections.
b. Body and Bonnet: Bronze ASTM B62.
c. Stem: Bronze ASTM B61, ASTM B62, ASTM B371.
d. Seat: Stainless steel ASTM A276.
e. Wedge Disc: Stainless steel ASTM A276.
f. Packing: Graphite.
g. Handwheel: Malleable iron.
h. Acceptable Makes: Milwaukee 591A (150 SWP) or 593A (300 SWP), Hammond IB434 (Class 200) or IB444 (Class 300), Crane 14 ½ P (Class 150) or 382P (Class 300), Nibco T-256-AP (Class 200) or T-276-AP (Class 300), Jenkins Figure 2032J (Class 150) or Figure 592J (Class 300).

2. GLV-02 - Cast Iron 2 ½" and Larger (Flanged End Connection):

a. Valves shall be Class 125 or Class 250, bolted bonnet, outside screw and yoke, rising stem.
b. Body and Bonnet: Cast iron ASTM A126, Class B.
c. Stem: Brass ASTM B16 or Bronze ASTM B584.
d. Seat: Brass ASTM B62, ASTM B61.

e. Disc: Cast iron ASTM A126, Class B, or Bronze ASTM B62, ASTM B584.
f. Packing: Graphite.
g. Handwheel: Malleable or ductile iron.
h. Acceptable Makes: Milwaukee F-2981A (Class 125) or F-2983-M (Class 250), Crane 351 (Class 125) or 21E (Class 250), Powell Figure 241 (Class 125), Lunkenheimer Figure 1123 IBBM (Class 125), Jenkins Figure 2342J (Class 125 or Figure 162J (Class 250), Nibco F-718-B (Class 125) or F-768-B (Class 250).

D. Swing Check Valves – HVAC Systems (Non-Potable Water Systems):

1. CV-01 - Bronze 2" and Under (Threaded and Soldered End Connections):

a. Valves shall be suitable for 125 SWP/200WOG, 150 SWP/300 WOG or 300 SWP/ 1000WOG, renewable disc, T-Pattern or Y-Pattern.
b. Body and Cap: Bronze ASTM B62.
c. Lever: Stainless steel or brass.
d. Disc: Bronze ASTM B16, ASTM B453, or ASTM B61.
e. Acceptable Makes: Milwaukee 509/1509 (Class 125), 515/1515 (Class 150) or 507 (Class 300), Hammond IB904//IB912 (Class 125), IB515Y (Class 150) or IB949 (Class 300), Crane 37/ (Class 125), 137 (Class 150) or 36E (Class 300), Nibco T-413/S-413 (Class 125), T-433/S-433 (Class 150) or T-473 (Class 300), Apollo 161T (Class 125), 164T (Class 150).

2. CV-03 - Cast Iron 2 ½" and Larger (Flanged End Connection):

a. Valves shall be Class 125 or Class 250, bolted cap.
b. Body and Bonnet: Cast iron ASTM A126, Class B.
c. Seat Ring: Bronze ASTM B62
d. Disc: Cast iron ASTM A126, Class B or cast bronze ASTM B62
e. Hinge: Ductile iron ASTM A536 or cast bronze ASTM B62.
f. Acceptable Makes: Milwaukee F-2974A (Class 125) or F-2970-M (Class 250), Crane 373 (Class 125) or 39E (Class 250), Powell Figure 559 (Class 125), Lunkenheimer Figure 1790 IBBM (Class 125), Nibco F-918-B (Class 125) or F-968-B (Class 250).

E. Silent Check Valves – HVAC Systems (Non-Potable Water Systems):

1. SCV-01 - Bronze 1½" and Under (Threaded End Connection):

a. Valves shall be suitable for 400 psi at 150°F, globe style, two piece design, center guided disc.
b. Body and Cap: Bronze ASTM B62 or ASTM B585.
c. Guide Pin: Stainless steel
d. Seat of Seal: EPDM A240 Type 304/ASTM A276 Type 410 (Class 300).
e. Spring: Stainless steel.
f. Acceptable Makes: Mueller 303, Apollo 61-500.

2. SCV-02 - Cast Steel 2" and Larger (Flanged End Connection):

   a. Valves shall be Class 150 (285 psi at 100°F) or Class 300 (740 psi at 100°F), globe body design, guided disc.
   b. Body and Bonnet: Cast steel ASTM A216 WCB.
   c. Spring: Stainless steel ASTM 182, Grade F-316.
   d. Seat: Stainless steel ASTM 351, Grade CF8M.
   e. Disc: Stainless steel ASTM 351, Grade CF8M.
   f. Acceptable Makes: Mueller 105MDT (Class 150) or 109MDT (Class 300), Keckley Style CG (Class 150 and Class 300), Dezurik CSC 600A (Class 150 and Class 300).

F. Ball Valves – HVAC Systems (Non-Potable Water Systems):

1. **BV-01 -** Bronze 2" and Under (Threaded and Soldered End Connections):

   a. Valve shall be suitable for 600 psi WOG non-shock, 150 psi WSP full port with blowout proof stem.
   b. Lead Free.
   c. Body: Bronze.
   d. Stem: Type 316 Stainless Steel ASTM A276.
   e. Ball: Type 316 Stainless Steel ASTM A276.
   f. Seats and Seals Stem Packing and Thrust Washer: PTFE.
   g. Handle: Zinc-plated carbon steel with vinyl insulator. Provide handle with extended stem on insulated piping. Provide locking lever.
   h. Adjustable stem packing.
   i. Acceptable Makes: Watts LFB6080-G2-SS (threaded) and LFB6081-G2-SS (solder); Apollo 77CLF-140-C (threaded) and 77CLF-240-C (solder); Milwaukee UPBA400S (threaded) and UPBA450S (solder); Nibco T-585-66-LF (threaded) and S-585-66-LF (solder); Hammond UP8303A (threaded) and UP8313A (solder).

2. **BV-02 -** Bronze or Brass 2" and Under (Pressure Sealed Fit):

   a. Valve shall be suitable for 200 psig at 250°F, full port with blowout proof stem.
   b. Stem: Type 316 Stainless Steel ASTM A276.
   c. Ball: Type 316 Stainless Steel ASTM A276.
   d. Seats and Seals Stem Packing and Thrust Washer: PTFE.
   e. Handle: Zinc-plated carbon steel with vinyl insulator. Provide handle with extended stem on insulated piping. Provide locking lever.
   f. Adjustable stem packing.
   g. Acceptable Makes: Watts LFB6080-G2-SS (threaded valve with press end adapters); Milwaukee UPBA-480S; Apollo 77WLF-140; Nibco PC-585HP-66-LF; Hammond UP8303A P2 (threaded valve with press end adapters)

3. BV-03 - Bronze 2" and under (Threaded and Soldered End Connections)

   a. Valve shall be suitable for 600 psi WOG non-shock, 150 psi WSP full port with blowout proof stem.

b. Body: Bronze.
c. Stem: 316 Stainless Steel.
d. Ball: 316 Stainless Steel.
e. Seats and Seals Stem Packing and Thrust Washer: PTFE.
f. Handle: Zinc-plated carbon steel with vinyl insulator. Provide handle with extended stem on insulated piping. Provide locking lever.
g. Adjustable stem packing.
h. Acceptable Makes: Watts LFB6080-G2-SS (threaded) and LFB6081-G2-SS (solder), Apollo 77C-140 (threaded) and 77C-240 (solder), Milwaukee BA400S (threaded) and BA450S (solder), Nibco T-585-66 (threaded) and S-585-66 (solder), Hammond 8303A (threaded) and 8313A (solder).

4. BV-04 - Bronze or Brass 2" and under (Pressure Sealed Fit):

a. Valve shall be suitable for 200 psig at 250°F, full port with blowout proof stem.
b. Body: Bronze or brass.
c. Stem: Type 316 Stainless Steel ASTM A276.
d. Ball: Type 316 Stainless Steel ASTM A276.
e. Seats and Seals Stem Packing and Thrust Washer: PTFE.
f. Handle: Zinc-plated carbon steel with vinyl insulator. Provide handle with extended stem on insulated piping. Provide locking lever.
g. Adjustable stem packing.
h. Acceptable Makes: Watts LFB6080-G2-SS (threaded valve with press end adapters), Milwaukee BA-480S, Apollo 77W-140, Nibco PC-585HP-66, Hammond 8303A P2 (threaded valve with press end adapters).

5. **BV-08 -** Carbon Steel 2 1/2" to 12" (Flanged End Connection):

a. Valve shall be Class 150 designed for 285 psi WOG non-shock, 150 psi at 365°F saturated steam or Class 300 designed for 740 psi WOG non-shock, full port, split body, raised face flange, with blowout proof stem conforming to ANSI/ASME B16.34, ANSI/ASME B16.10, ANSI/ASME B16.5, MSS SP-25 and MSS SP-72
b. Body: ASTM A216 GR WCB Carbon Steal.
c. Stem: Stainless steel Type 316 ASTM A276.
d. Ball: Stainless steel Type 316 ASTM A276.
e. Seats and Seals Stem Packing and Thrust Washer: PTFE/RPTFE.
f. Handle: Lever for valves below 6" and gear operators for 6" through 12".
g. Adjustable stem packing (graphite).
h. Acceptable Makes: Milwaukee F20CS; Nibco F-515-CS-F-66-FS (Class 150) or F-535-CS-F-66-FS (Class 300); Jamesbury 9150 (Class 150) or 9300 (Class 300); Apollo 87A-200 Series (Class 150) or 87A-900 (Class 300); Watts G4000 and G4000M1 (Class 125)

G. Valves for Gauges and Instruments – HVAC Systems (Non-Potable Water Systems):

1. Ball valve ½" in size meeting the requirements above for the services specified.

H. Hose Threaded Drain and Manual Vent Valve (Non-Potable Heating Hot Water, Chilled Water, Heating Glycol and Cooling Glycol Systems Operating at a maximum pressure of 125 psi and temperature of 200°F or Below):

1. DBV-01 - Bronze ½" and ¾" (Threaded and Soldered End Connections)

a. Valve shall be suitable for 400 psi CWP, 2-piece, full port ball valve with blowout proof stem, ¾" hose connection.
b. Body: Bronze ASTM B584 or Brass ASTM B283.
c. Stem: Brass ASTM B16, silicon bronze ASTM B371 alloy C69430 or ASTM B99 alloy C65100.
d. Ball: Chrome plated brass ASTM B16 alloy C36000, ASTM B125 alloy C37700 or ASTMB282 alloy C37700.
e. Seats and Seals Stem Packing and Thrust Washer: PTFE and RPTFE.
f. Handle: Zinc-plated carbon steel with vinyl insulator. Provide handle with extended stem on insulated piping. Provide locking lever.
g. Adjustable stem packing.
h. Acceptable Makes: Watts LFFBV-3C-CC (threaded) and LFFBVS-3C-CC (solder), Apollo 70-100-HC (threaded) and 70-200-HC (solder), Milwaukee BA100H (threaded) and BA150H (solder), Nibco T-585-70-HC (threaded) and S-585-70-HC (solder), Hammond 8501H (threaded) and 8511H (solder).

I. Balance Valve:

1. General

a. Where contractor submits "termination kits" with integral balance valve for approval, use does not preclude the need to provide separate equipment isolation valve. Balance valves are NOT to be used for isolation duty. Provide separate isolation valve in compliance with paragraph 2.1 and Exhibit A of this section.

2. BBV-01 - Ball Type Balancing Valves:

a. Balancing and flow meter stations suitable for use on heating and cooling systems. Constructed for 125 psi at 250ºF.
b. Maximum Pressure Drop 5.0 Ft. or less.
c. Quarter turn ball valve operation with calibrated scale for indication of balanced position.
d. Calibrated balance valve with provisions for connecting a portable differential pressure meter suitable as a service valve. Meter connections to have built-in check valves. An integral pointer shall register degree of valve openings. Valve shall have internal seals. Install device in pipe line per manufacturer's instructions for upstream and downstream distances.

e. Balance valve size shall be based upon gpm range rather than pipe size. Select flow balancers such that the range of pipe flow resides in the middle 50% of the manufacturer's recommended operating range for the device.
f. Acceptable Makes: Bell & Gossett, Taco

3. GBV-01 - Globe Type Balancing Valve:

a. Balancing valve and flow meter stations suitable for use on heating and cooling systems. Constructed for 125 psi at 250°F.
b. Maximum Pressure Drop 5.0 Ft. or less.
c. Calibrated balance valve with provisions for connecting a portable differential pressure meter. Meter connections to have built-in check valves.
d. Multi-turn handle for precision adjustment.
e. Balance valve size shall be based upon gpm range rather than pipe size. Select flow balancers such that the range of pipe flow resides in the middle 50% of the manufacturer's recommended operating range for the device.
f. Operating temperature range -4 – 300°F. Suitable for 300psi at 150°F.
g. Brass: Solder or threaded body to match piping system up to 2".
h. Cast Iron: Grooved or flanged bodies to match piping system 2 ½ - 12".
i. Acceptable Makes: Armstrong CBV, Tour & Anderson 780 Series

PART 3 – EXECUTION

3.1 INSTALLATION

A. General:

1. Provide valves of type called for and where required to service equipment.
2. Provide at major building and system sections.
3. Provide chain wheels, guides, and chain loops for valves, where called for or in Mechanical Rooms where valves are mounted higher than 8'-0" AFF.
4. Isolating valves for individual fan convectors, room units, terminal units, or other similar apparatus may be inside cabinet or at connection to branch main where accessible.
5. Locate valves with stems at or above horizontal positions and swing check valves in horizontal position only.
6. Provide hose threaded drain valves at all piping system low points, strainers, equipment, and as called for heating hot water systems, chilled water systems, glycol heating systems and glycol cooling systems operating at or below 125 psi and 200°F. Drain or blowdown valves for water and glycol systems operating above 125 psi and 200°F, and steam systems shall be provided with valves specified in Exhibit 'A'. Provide Cap or plug at valve discharge.

B. Balance Valves:

1. Provide on zone or riser returns, on each hydronic unit and where called for. Meter connection points shall not point downward.

2. Install device in pipe line per manufacturer's instructions for upstream and downstream distances.

3.2 VALVE SELECTION

A. Provide valve types for the specific services as specified in Exhibit 'A'. Valve changes shall be made only as reviewed by Director's Representative.

EXHIBIT - 'A' - VALVE TYPE (HVAC)
Notes are at the end of Exhibit 'A'

Service	Gate	Globe	Check	Ball	Balancing	Special Purpose, Drains and Manual Air Vents	Notes
Hot water heating, operating at 125 psi or below			CV-01 Class 125 and CV-03 Class 125	BV-03, BV-04	GBV-01, BBV-01	DBV-01	Note 1, 3 and 4
Chilled water operating at 125 psi or below			CV-01 Class 125 and CV-03 Class 125	BV-03, BV-04	GBV-01, BBV-01	DBV-01	Note 1, 3 and 4
Steam 15 psi and below	GV-01 Class 125 and GV-02 Class 125	GLV-01 Class 150 and GLV-02 Class 125	CV-01 Class 125 and CV-03 Class 125				

Steam 15 psi and below (Optional)			CV-01 Class 125 and CV-03 Class 125	BV-03			Note 5
Steam condensate, boiler surface blowdown, bottom blowdown, feedwater and drains for steam systems operating at 15 psi and below	GV-01 Class 125 and GV-02 Class 125		CV-01 Class 125 and CV-03 Class 125	BV-03 and BV-08 Class 150			
Make-up water and soft water			CV-01 Class 125	BV-01, BV-02			

NOTES FOR EXHIBIT "A":

NOTE 1: Hose threaded drain and vent valves DBV-01 shall only be used on heating hot water, chilled water systems operating pressure at or below 125 psi and temperature at or below 200°F. Systems operating pressure above 125 psi and operating temperature above 200°F, or sizes above ¾" shall be provided with the listed service valve with the open end of the valve provided with a threaded plug or cap.

NOTE 2: Not Used

NOTE 3: Where options are indicated for the valve connection types (threaded, soldered or welded) in this specification section, refer to Specification Section 232000 for the specific requirement for the connection type for the intended service.

NOTE 4: Silent check valves SCV-01 or SCV-02 shall be used at pump discharges where check valves are show in details or on drawings.

END OF SECTION 230523

SECTION 230719

INSULATION

PART 1 – GENERAL

1.1 WORK INCLUDED

A. All work shall comply with the requirements of the 2020 Energy Construction Conservation Code of New York State, manufacturer's requirements for installation and these specifications. In the event of conflicts between these documents, the more stringent requirements shall govern.

B. Provide labor, materials, equipment and services to perform operations required for the complete installation and related work as required in the Contract Documents. The extent of insulation work is indicated on the drawings and by the requirements of this section.

C. Repair all insulation at points of piping and ductwork system tie in to existing and at locations where existing systems are cut, patched or capped.

D. Insulate all existing piping systems, ductwork systems and equipment after removal of existing insulation whether by this contractor or another, including but not limited to removal of asbestos products.

E. Remove existing insulation where indicated on the drawings or specified here-in.

1.2 RELATED DOCUMENTS

A. All work under this section is subject to the Contract Documents and this Contractor shall be responsible for and governed by all the requirements therein.

1.3 SUBMITTALS

A. Manufacturers' Data. Submit manufacturer's data and installation instructions.

B. Schedule of insulation applications.

C. Certification: Provide certifications as necessary to show compliance with these specifications and governing regulations. Include proof of compliance for test of products for fire rating, corrosiveness, and compressive strength.

1.4 RELATED WORK SPECIFIED ELSEWHERE

A. Section 232000 – HVAC Piping.

B. Section 233113 - Metal Ductwork.

C. Section 233300 – Ductwork Accessories.

PART 2 – PRODUCTS

2.1 GENERAL

A. Insulation, Jackets, Adhesives, and Coatings, shall comply with the following:

1. Treatment of jackets or facings for flame and smoke safety must be permanent. Water soluble treatments are not permitted.
2. Insulation, including 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, as tested by ASTM E84 (NFPA 255) and UL 723 methods, using the specimen preparation and mounting procedures of ASTM E2231.
3. Insulation within plenums, duct coverings and duct linings shall not flame, glow, smolder or smoke when tested in accordance with ASTM C411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250°F. Pipe and duct insulation shall be listed and labeled.
4. All adhesives, coatings and sealants used for the insulation shall comply with the maximum Volatile Organic Compound (VOM) limits as called for in the current version of U.S. Green Building Council LEED Credits.
5. Provide materials which are standard insulation products of manufacturers for piping, ductwork and equipment systems.
6. Provide insulation in accordance of MICA and NAIMA standards.
7. Asbestos or asbestos bearing materials are prohibited.
8. Ducts operating at temperatures above 120 degrees shall have sufficient thermal insulation to limit the exposed surface temperature to 75 degrees.
9. The insulation shall be clearly labelled by the manufacturer with the installed thermal “R” values in accordance to the Energy Conservation Code.
10. UL GREENGUARD Gold Certification.
11. UL Environment Formaldehyde Free Verification. The products shall be formaldehyde free. Product samples shall have a measured emission factor of less than or equal to 5 µg/m²h at 24 elapsed hours or 3 µg/m²h at 336 elapsed hours.

2.2 ACCEPTABLE MANUFACTURERS

A. Fiberglass: Knauf, Manville, Owen-Corning, Certainteed.

B. Adhesives, Coatings, Mastics, Sealants: Childers, Foster, Armacell.

C. Aluminum and Stainless Steel Jacket Material: GIC, GLT, RPR.

D. Pre-Molded PVC Fitting Covers: Zeston, Proto System

2.3 PIPE INSULATION (RIGID FIBERGLASS TYPE)

A. Glass Fiber insulation meeting ASTM C 552, Type II, Class 2, ASTM C 585, ASTM C 795 and ASTM C 1138; rigid, molded, noncombustible.

B. Minimum 'K' Value: ASTM C 335, 0.23 at 75°F mean temperature installed value. Maximum Service Temperature: 1000°F.

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

D. Field-Applied PVC 30 mil Fitting Covers with Flexible Fiberglass Insulation complying with ASTM C 450 and ASTM C 585: Proto Corporation LoSmoke, UV-resistant fittings 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.

2.4 PIPE INSULATION TAPES

A. ASJ Tape: White vapor retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.

1. Width: 4 inches.
2. Thickness Total: 14.3 mil.
3. Adhesion: 90 ounces force/inch in width.
4. Elongation: 2 percent.
5. Tensile Strength: 40 lbf/inch in width.

B. FSK Tape: Foil face, vapor retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.

1. Width: 4 inches.
2. Thickness Total: 13.3 mil.
3. Adhesion: 90 ounces force/inch in width.
4. Elongation: 2 percent.
5. Tensile Strength: 40 lbf/inch in width.

2.5 DUCT INSULATION

A. Duct Liner – Refer to Specification Section 233000.

B. Flexible Fiber Glass Blanket:

1. Insulation Blanket meeting ASTM C 553, Type II, ASTM C 1290, Type III, and ASTM C 1138.
2. 'K' Value of 0.27 at 75°F mean temperature. Maximum Service Temperature (Faced): 250°F.

3. Vapor Retarder Jacket: ASJ conforming to ASTM C 1136 Type I, II, III, IV, VIII or FSK conforming to ASTM C 1136 Type II, IV. Provide ASJ jacket for ductwork to be painted.
4. Installation: Maximum allowable compression is 25%.
5. Density: Minimum 1.0 PCF.
6. For duct wrap, the installed thickness shall be assumed to be 75 percent (25% compression) of nominal thickness.

C. Rigid Fiber Glass Board

1. Insulation Board meeting ASTM C 612 Type IA, IB and II, ASTM C 795 and ASTM C 1138.
2. 'K' Value of 0.23 at 75°F mean temperature. Maximum Service Temperature: 450º F.
3. Vapor Retarder Jacket: ASJ conforming to ASTM C 1136 Type I, or FSK or conforming to ASTM C 1136 Type II, IV. Provide ASJ jacket for ductwork to be painted.
4. Concealed Areas: Minimum 3 lb./ft.^{3}.
5. Exposed Areas: 6 lb./ft.^{3} minimum density for duct less than 8 ft. - 0 in. above finished floor or where indicated in these specifications or on the drawings.

D. Duct Insulation Tapes:

1. ASJ Tape:

   a. White vapor retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.
   b. Width 4 inches.
   c. Thickness 11.5 mil
   d. Adhesion: 90 ounces force/inch in width.
   e. Elongation: 2 percent.
   f. Tensile Strength: 40 lbf/inch in width.

2. FSK Tape:

   a. Foil face, vapor retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.
   b. Width 4 inches.
   c. Thickness 13.3 mil.
   d. Adhesion: 90 ounces force/inch in width.
   e. Elongation: 2 percent.
   f. Tensile Strength: 40 lbf/inch in width.

2.6 PIPE, DUCT AND EQUIPMENT JACKETING

A. Metal Jacketing Material:

1. Aluminum Jacket: Comply with ASTM B 209 (ASTM B 209M), Alloy 3003, Temper H-14. Sheet and roll stock ready for shop or field sizing. Stucco Embossed, 0.020 inch thickness.

a. Moisture Barrier for Indoor Applications: Minimum 1mil thick, heat bonded polyethylene and kraft paper.
b. Moisture Barrier for Outdoor Applications: Minimum 2.5 mil thick polysurlyn.

2. Factory-Fabricated Fitting Covers:

a. Same material, finish, and thickness as jacket.
b. Preformed 2 piece or gore, 45 and 90 degree, short and long radius elbows covers.
c. Flange and union covers.
d. Tee end caps.
e. Beveled collars.
f. Valve covers.
g. Field-fabricate fitting covers only if factory-fabricated fitting covers are not available. Valve covers.

3. Banding: Banding. Aluminum: ASTM B 209 (ASTM B 209M), Alloy 3003, 3005, 3105, or 5005, Temper H-14, 0.020 inch thick, ½ and ¾ inch wide with wing seal.

B. PVC 30 mil Jacket: High impact resistant, UV resistant PVC complying with ASTM D 1784, Class 16354-C. Roll stock ready for shop or field cutting and forming.

1. Color: White

C. Self-Adhesive, Laminated Rubberized Jacket:

1. Multi-ply laminated rubberized bitumen compound system. UV-resistant aluminum foil/polymer or polyester/foil system with acrylic adhesive.
2. 55-60 mil thickness with a low-pressure sensitive adhering system.
3. Stucco-embossed aluminum finish.

2.7 FIELD-APPLIED FABRIC-REINFORCING MESH

A. Woven Glass Fiber Fabric: Approximately 6 oz. /sq. yd. with a thread count of 5 strands by 5 strands/sq. in. for covering ducts and equipment. Childers CHIL-GLAS #5 or equal.

2.8 COATINGS, MASTICS, ADHESIVES AND SEALANTS

A. Vapor Barrier Coatings: Used in conjunction with reinforcing mesh to coat insulation on below ambient services temperatures. Permeance shall be no greater than 0.08 perms at 37 mils dry as tested by ASTM D5590 meeting zero growth rate for mold. Foster 30-80 or approved equal, or approved equal.

B. Lagging Adhesives: Used in conjunction with canvas or glass lagging cloth to protect equipment/piping indoors. Foster 30-36 AF meeting ASTM D 5590 with zero mold growth rating, or approved equal.

C. Weather Barrier Mastic: Used outdoors to protect above ambient insulation from weather. Foster 46-50 Weatherite; Childers CP-10 Vi Cryl, or approved equal.

D. Fiberglass Adhesive: Used bond low density fibrous insulation to metal surfaces. Shall meet ASTM C916 Type II. Foster 85-60; Childers CP-127, or approved equal.

E. Insulation Joint Sealant: Vapor sealant for below ambient piping with polyisocyanurate and cellular glass insulation. Foster 95-50; Childers CP-76, or approved equal.

F. Metal Jacketing Sealant: Used as a sealant on metal jacketing seams to prevent water entry. Foster 95-44; Childers CP-76, or approved equal.

PART 3 – EXECUTION

3.1 GENERAL REQUIREMENTS

A. Provide Thermal Insulation:

1. Insulation is required on ductwork, piping and equipment in compliance with these specifications and referenced codes and standards.
2. Continuous through openings, sleeves and hangers.
3. Install only on clean, dry surfaces and after ductwork has been tested.
4. On cold surfaces provide continuous unbroken vapor seal. Exceptions - Do not cover inspection stampings, nameplate data, openings, petcocks, hand-holes, manholes, access doors, plugged outlets, air vents, plugged openings or petcocks. Provide continuity of insulation system and vapor barrier though partitions, floors, casings, plenums, etc.
5. Piping insulation exposed to the weather shall be protected from damage, including that due to sunlight, moister, equipment maintenance and wind, and shall be provided with a jacketing material as specified in these specifications.

3.2 PIPE INSULATION

A. Insulate piping systems including fittings, valves, flanges, unions, strainers, and other attachments installed in piping system, whether exposed or concealed, with the following exceptions:

1. Factory-installed piping within the HVAC equipment tested and rated in accordance with the 2020 ECCCNYS
2. Factory installed piping within room fan coil Units and unit ventilators tested and rated according to AHRI 440 and AHRI 840, respectively.
3. Piping that conveys fluids that have a design operating temperature range between 60 and 105 degrees.
4. Piping that conveys fluids that have not been heated or cooled through use of fossil fuels or electric power, the surface temperature of which does not risk condensation or occupant / service hazard (between 60°F and 105°F).

B. Piping in exterior walls, spaces, overhangs, attics, or where subject to freezing, double the thickness of the insulation. Piping in wall chases adjacent to an exterior wall shall be packed with type glass fiber batting type insulation.

C. Hanger Shields: Refer to Section "Piping Systems and Accessories."

1. Pre-insulated type: Butt insulation to hanger shields and apply a wet coat of vapor barrier cement to the joints and seal with 3 in. wide vapor barrier tape.
2. Field insulated type: Provide 1-1/2" calcium silicate insulation between pipe and shield.

D. Joints in sections of pipe insulation shall be made as follows:

1. Standard: Longitudinal laps and butt joint shall be fully sealed. Factory applied pressure sensitive adhesive lap seal is acceptable.
2. Vapor barrier: For cold services, all service jacket (ASJ) longitudinal laps and 4 in. vapor barrier strip at butt joints shall be sealed with vapor barrier coating. Seal ends of pipe insulation at valves, flanges, and fittings with vapor barrier coating and reinforcing mesh.

E. Fittings, Valves and Flanges:

1. Hot services: Pre-molded fitting insulation of the same material and insulation value as the adjacent pipe insulation.
2. Hot water shall be coated with weather barrier mastic and reinforcing mesh.
3. Provide PVC fitting covers on all fittings.

3.3 JACKETING ON PIPING

A. Secure jacketing to insulated piping with preformed aluminum band straps or stainless steel band straps.

B. Jacket exposed insulated fittings, valves and flanges with mitered sections of aluminum or stainless steel jacketing or factory fabricated, preformed, sectional aluminum or stainless steel fitting covers shall be fully sealed water tight

C. Provide PVC, aluminum or stainless steel jacket and fitting covers on exposed insulated piping installed in finished rooms including Mechanical Equipment Rooms, Penthouses, and Machine Rooms within eight feet of the finished floor.

D. Lap all joints a minimum of 2 inches.

E. Secure jacketing in place with a continuous longitudinal friction type joint to provide a positive weatherproof seal. Circumferential joints shall be weatherproof sealed with 2 inch x 0.016 inch thick aluminum straps lined with metal jacketing sealant.

F. Install jacketing to avoid trapping condensation and precipitation.

3.4 DUCTWORK INSULATION

A. External thermal insulation for duct. Not required where ducts have internal acoustical insulation, are located inside the conditioned space and lining meets the insulation value of these specifications and the 2020 ECCCNYS. Make special provisions at dampers, damper motors, thermometers, instruments, and access doors. Apply as Follows:

1. Rigid board type: Impale board over mechanical fasteners, welded pins or adhered clips, 12 in. to 18 in. centers; minimum of two rows per side. Secure insulation with washers on clips. Seal breaks and joints in vapor barrier with 4 in. wide matching tape or 4 in. reinforcing mesh applied with Foster 30-65 vapor barrier coating. Apply tape over corner beading where exposed. Flexible blanket type: Joints and seams made with 2 in. lap of vapor barrier. Round ducts: Apply Foster 85-20 adhesive to ducts in 6 in. brush widths at 1 ft. intervals and at each facing edge. Square ducts: Over 18” duct face width, fasten by impaling insulation on adhered or welded clips. Secure insulation with washers on clips. Seal joints and breaks with 4 in. wide matching tape or 4 in. reinforcing mesh applied with Foster 30-65 vapor barrier coating. Cooling ducts shall be covered with a vapor retarder having a maximum permeance of 0.05perm or an aluminum foil jacket with a minimum thickness of 2 mils. All joints and seams shall be sealed to maintain the continuity of the vapor retarder.
2. Insulate the tube bends and all exposed surfaces of duct coils operating in excess of 10 degrees differential from ambient conditions.

B. Service and access openings shall not be concealed by duct coverings unless the exact location of the opening is properly identified.

C. Continuous vapor barriers shall be provided on all ductwork subject to condensation. No gaps or methods for air to permeate the insulation materials below the vapor barrier shall be permitted.

3.5 RECOVERING

A. Field apply glass cloth and applied over standard insulation jacket with lagging adhesive. Properly cut at fittings to avoid wrinkles and coat with lagging adhesive. Leave ready for painting.

3.6 EXISTING INSULATION

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

B. Report any deficiencies in existing insulation systems to the Director's Representative for further action.

3.7 EXISTING WORK

A. Insulate existing piping, ductwork and equipment where called for.

EXHIBIT "I" - PIPE INSULATION MATERIALS

SERVICE	INSULATION MATERIAL	THICKNESS	REMARKS
Hot water and glycol/hot water (200°F and lower)	Glass fiber, (k=.25-.29)	1-1/2 in. and Larger: 2 in. 1-1/4 in. and Smaller: 1-1/2 in.	
Chilled Water, glycol/chilled water (40 deg. F - 60 deg. F)	Glass fiber (k=.21-.27)	1-1/2 in. and Larger: 1 in. 1-1/4 in. and Smaller: 1/2 in.	
Low Pressure Steam (15 psi and less) and condensate; pumped condensate, boiler feed water, vents for PRV safety valves receivers and flash tanks, and related hot pipes.	Glass fiber, Mineral wool (k=.27-.3)	4 in. and Larger: 3 in. 3 in. and Smaller: 2-1/2 in.	
Domestic cold water	Glass fiber,	4 in. and Larger: 1 in. 3 in. and Smaller: 1/2 in.	
Piping in exterior walls, spaces, overhangs, attics, exterior, or where subject to freezing.		Insulate pipe with double the thickness called for above	

EXHIBIT "II" - DUCT INSULATION MATERIALS

SERVICE	INSULATION MATERIAL	THICKNESS	REMARKS
HVAC Supply Note – use duct liner only where specified or called for on drawings to R values to right. Where liner is called for as acoustic measure, provide external insulation to balance of specified R value.	Within mechanical rooms or exposed at 8 feet or less above finished floor or where supply and space are more than 15 degrees apart: Rigid fiberglass, Concealed: Flexible fiberglass	1-1/2 in. 2 in.	Min. installed R value of 6 Min. installed R value of 6
Return-air ducts within heated building envelope		NOT INSULATED	
Air conditioning supply (insulated double wall)		1-1/2 in.	Total insulation value provided to meet R value of 8 where ductwork air stream is more than 15 degrees from ambient.
Outside air ducts and plenums, connections and mixing boxes	Rigid fiberglass,	2 in.	Min. installed R value of 8 Provide neat fit at intake plenum
Exhaust, relief or vent ducts and plenums	Exposed: Rigid fiberglass, Concealed: Flexible fiberglass	1-1/2 in. 2 in.	Min. installed R value of 8 Insulate 15 ft. from exterior opening and plenums

EXHIBIT "III" - EQUIPMENT INSULATION MATERIALS

SERVICE	INSULATION MATERIAL	THICKNESS	REMARKS
Heating system expansion tanks and chemical feed tanks		NOT INSULATED	

END OF SECTION 230719

SECTION 230923

DIRECT DIGITAL BUILDING CONTROL SYSTEMS

PART 1 – GENERAL

1.1 BUIDLING MANAGEMENT CONTROLS VENDOR

A. The work performed herein shall be by Stark Tech/U&S Services LLC under NYS contract PT69752

1.2 FUNCTIONAL INTENT

A. Accessibility: As much as practical, design the system to keep the BACS equipment out of, and above user areas. The maintenance staff must have quick and ready access with sufficient room for operation and maintenance.

B. Reliability: Controls are integral to maintaining reliable conditions throughout the building and as such need to be designed and installed with an appropriate degree of robustness and reliability.

C. Digital Terminal Unit Control - This intent of this standard is to require digital electronic control down to the terminal level. Terminal level controls will typically be cost-effective controllers designed for the specific application. Stand-alone local controls may only be used when specifically approved by the Engineer.

D. Expandability - When configuring the BACS equipment, provision must be made for expansion that may be required in the future. Hardware and software required to implement expansion must be provided via system sizing, configuration, and appropriate license agreements

E. When a portion of an existing building is to be renovated, the new control system should match or integrate seamlessly with the existing control system.

1.3 RELATED SECTIONS

A. All work under this section is subject to the Contract Documents and this Contractor shall be responsible for and governed by all the requirements therein

B. This Contractor shall reference the entirety of the following sections:

1. Section 019113 - Commissioning
2. Section 230594 – Balancing of Systems
3. Section 230889 – Wiring of Mechanical Equipment

1.4 DEFINITIONS

Binary Input (BI)	An on/off indication that has a maximum cycle rate of 1 Hz. This is typically sensing a contact closure [Also referred to as Digital Input (DO)]
Binary Output (BO)	A contact closure on the controller that will cause inaction in the system [Also referred to as Digital Output (DO)]
Binary Value (BV)	A network-visible binary point whose value is determined by a controller computation
Analog Input (AI)	A continuously varying voltage or amperage signal that is varied by a sensor in relation to a sensed variable. This signal is processed in the controller after an analog-to-digital converter on the controller that converts the analog signal to a digital value
Analog Output (AO)	A continuously varying voltage or amperage signal that is generated from the controller after digital-to-analog conversion. The voltage or amperage signal will be used, for instance, to drive a modulating actuator or reset a hardwired set point on a packaged device. 6. Analog Value (AV): A network-visible analog point whose value is determined by a controller computation
Analog Variable (AV)	A network-visible analog point whose value is determined by a controller computation
Building Management System (BMS)	Integrated DDC Temperature control system used both for system operation and troubleshooting meeting the requirements of this specification.
Operator Workstation (OWS)	The computer workstation(s) used by the facilities personnel for interface to / operation of the BMS

1.5 WORK INCLUDED

A. Provide labor, materials, equipment, services and warranty for a complete installation, startup and commissioning of motor control wiring and temperature control wiring as required in Contract Documents.

B. Provide wiring and conduit required to connect devices furnished as a part of, or integral to the automatic temperature control system, and for motor control and interlocks regardless of the source of supply.

1. Control wiring includes, as required, 120 volt and lower voltage wiring for control signals directing equipment operation. Control circuits shall be 24VAC in general, and no more than120 VAC where required.
2. Provide wiring in accordance with the requirements specified and the National Electrical Code.

3. Provide all devices required for proper system operation including electrical switches, transformers, disconnect switches, relays, device controllers and control modules, hubs, routers, temporary servers, actuators, transducers, sensors, safety devices, power supplies, mode selecting switches, enclosures, and circuit breakers.
4. Provide complete wiring and terminations. Provide all assembly, programming and test of all items as necessary to create a coherent system, encompassing all combined intents of design, drawings, specifications, addenda, and professional quality of work.
5. Assembly of all damper linkages and shafts, including extension through duct walls where applicable and mounting of actuators shall be by this contractor.
6. Mounting of all actuators and sensing devices shall be by this contractor.

C. Provide support requirements for Commissioning as described in Specification 019113. The DDC temperature control system is a primary tool for HVAC Commissioning.

D. Coordinate all interface and remote device installation work with factory provided equipment controllers, including communication interface to the BMS and creation of graphics on the operator workstation. This includes, but is not limited to main and sub gas meters, main domestic water meter, VFD's, makeup air unit controller, sump pump controller (high level alarms) and master mixing valve for domestic hot water.

E. Coordination: Contractor shall closely coordinate with OMH ITS for connection to the OMH ITS network for inter-panel communication, remote access and alarm handling.

F. Coordination: Work with the Engineer, Commissioning Agent, air-balancing contractor, ventilation contractor, piping contractor and electrical contractor to provide proper and obstruction free component location, and system commissioning.

1.6 WORK NOT INCLUDED

A. Power wiring for motors, motor starters, variable speed drives, as well as the motors, motor starters, and variable speed drives (except in the case of equipment specified to have packaged controls/starters) are included in Division 26, "Electrical," unless otherwise called for.

B. Electrical wiring, interlocks or components specifically called out in the electrical specifications or drawings shall be included in the Division 26 scope of work.

1.7 ACCEPTABLE MANUFACTURERS

A. Subject to the requirements of the contract documents specific qualifications for the manufacturer, providing contractor and system performance characteristics, the following manufacturers equipment are acceptable for this project:

1. Schneider Electric provided and installed by Stark Tech/U&S Services LLC
2. Contact Stacia Valik email: valiks@staarktech.com ; phone: 716-531-2126

1.8 WORK INCIDENTAL TO TEMPERATURE CONTROL CONTRACTOR

A. Include all necessary installation requirements for the following components of the temperature control system:

B. For piping work -

1. Control valves in piping.
2. Immersion sensing wells in piping systems.
3. Valved pressure taps (typically for pressure switches or sensors)

C. For sheet metal work -

1. Automatic Control Dampers:

a. Control dampers, at the direction of this contractor.

D. Control system manufacturer or their authorized representative shall furnish written details, instructions and supervision to ensure proper installation, size, and location of any equipment furnished for installation by others.

1.9 QUALITY ASSURANCE

A. Acceptable Products: All products shall be proven to be functional and suitable in accordance with this specification for a period of warranty commencing on the day of transfer of each of the completed phases of the project to the Owner. Demonstration of such warranty may be required prior to the submittal approval.

B. It is understood that the start of the warranty for each phase will begin upon the signed off acceptance of the respective components (for that phase) based on completion of the functional testing during commissioning.

C. Building Management Vendor Qualifications: factory-authorized by the respective manufacturer to provide pertinent installation and service.

D. Field Representation: This Building Management Vendor shall staff the project with a field representative that has been factory-trained in the installation, programming and commissioning of the equipment specified. This representative must be directly employed by the Building Management Vendor.

E. Coordination of Work During Construction:

1. Prior to any work or generation of temperature control submittals, a site “pre-construction conference” shall be held which includes the Engineer, Commissioning Authority, Owner and Director’s representatives, the mechanical contractor, and the Building Management Controls Vendor. The purpose of this meeting shall be to clarify requirements and expectations including, but not limited to the following:

a. Coordination of the BMS installation with Owner IT departments
b. Data history / “trending” storage and archiving

c. Alarm / abnormal condition reporting and archiving
d. Coordination of alarm limits
e. Coordination of allowable adjustment ranges of control parameters
f. Scheduling / use of override pushbuttons on thermostats (space sensors) / thermostat (space sensor) type preferences by location. This includes how equipment shall be grouped for override operation and how central equipment responds.
g. Preferences for runtime equalization, lead / lag sequencing and equipment rotation.
h. Coordination of operator access to system control parameters by privilege levels (example, zone level adjustments such as space temperature setpoints versus plant and primary equipment adjustments, such as control reset schedules).

2. This contractor shall repair any damage caused by his work.
3. The Building Management Controls Vendor shall promptly correct all work that Engineer finds as defective or failing to conform to Contract Documents.
4. The Building Management Controls Vendor propose in writing any costs implications for correcting work found defective as described above to the engineer and Director's Representative.

1.10 SHOP DRAWINGS AND SUBMITTALS

A. Product Data: Submit for approval the manufacturer's technical product data for each component furnished as part of the control system. Data shall include dimensions, capacities, performance characteristics, electrical requirements, and material finishes. Data shall also include installation and start-up requirements.

B. Shop Drawings: Submit for approval control drawings detailing the following:

1. Network Block Diagrams and System Riser Diagrams: These diagrams shall depict all DDC components that make up the network. They shall provide specific detail on network terminations, and panel power requirements, including breaker allocation. Each DDC panel within the diagram shall list the equipment that it is controlling.
2. Point-to-point Termination Detail: These drawings shall be created for each unique control application type. Drawings that are typical for similar application shall state the application and quantity of that they represent, and the specifics for each. All wiring and piping required to install and operate the system shall be represented in these details. For terminations that are unknown at the time of submittal, or introduced over the course of project, properly designate these as "Field determined terminations," and include in the As-built Drawings after completion. All wiring and piping shall be number coded on the drawings. These tag numbers shall be used during the installation, and shall appear at both ends of all conductors, including within any junction boxes.
3. Provide individual details for each control type, as described in the Sequence of Operation.
4. List of location of all enclosures, controllers, sensors, transformers and other components. For all remotely located components, provide proposed location on a PDF floorplan for approval.

5. Sequence of operation – Describing in detail the operation of every piece of equipment subject to control by the DDC system. The sequences shall reflect all requirements of the sequences as specified on drawings, clearly denoting any and all deviations from that section for consideration by the Engineer.
6. Provide spreadsheets of schedules for dampers, valves, wiring, fans and other miscellaneous components if they are part of this control contract showing sizes, characteristics, model numbers, actuators and specific locations.
7. Provide sample BMS GUI graphics for each type of scheduled equipment for review and approval.
8. For prefabricated control panels, provide panel's interior and exterior layout details. These details shall depict the equipment layout and shall detail the panel wiring and piping.

C. Product Data: The BACS vendor shall submit manufacturer's technical product data for each control device, panel, controller, and accessory furnished indicating dimensions, capacities, performance and electrical characteristics, and material finishes. Also, include installation, start-up, calibration, and maintenance instructions as well as all cable requirements.

D. Database Information: The submittal package shall contain detailed information on the point naming convention that is to be used.

E. Provide documentation for all sequences of operation that cannot be performed by stand-alone controllers and require non-controller-resident programs, or programs requiring retransmission to be effective on the controller's output. Wherever possible, sequences of operation and associated inputs and outputs shall be contained on a single controller.

F. BACnet Protocol Implementation Conformance Statement (PICS) for each submitted type of controller and operator interface. All controllers and operator interface shall fully conform to ANSI/ASHRAE 135-2016: Data Communication Protocol for Building Automation and Control Systems (BACNET).

G. Refer to equipment specifications for details related to factory provided control sequences and strategies.

H. Each document within the submittal package shall be clearly marked as to what options / components / part numbers are specifically included and excluded.

I. The submittal documentation is to be provided in a single well-ordered document, complete with table of contents referencing correct page / drawing numbers. All electronic submittals shall be in PDF format bookmarked in a tree structure, with the appropriate paragraph number for each component referenced in each title / section.

1.11 OPERATION AND MAINTENANCE MANUALS / CLOSEOUT DOCUMENTATION

A. Upon completion of installation and prior to the training, provide manuals containing the following information for review by the Engineer and Commissioning Authority:

1. Installation and Service Manuals for all products and components
2. Calibration and Troubleshooting Procedures for all installed equipment and components.
3. List of location of all enclosures, controllers, sensors, transformers and other components as specified above
4. Instrumentation Cut sheets – Contains the Manufacturer's original cut sheets for all the instrumentation used on the job. (IE: Well sensor, transformers, enclosures, pressure sensors, etc.).
5. As-built Control Drawings with all modifications, changes and wiring details that depict actual installation. These shall include all final controller and device names, locations for concealed components (pressure sensors, etc.),wire tags, etc.
6. Sequence of operation – Describing in detail the operation of every piece of equipment subject to control by the DDC system. The sequences shall reflect all requirements of the sequences as specified on drawings, clearly denoting any and all deviations from that section for consideration by the Engineer.
7. Listing of the entire DDC controllers with database, software and programs and program locations.
8. Provide spreadsheets of schedules for enclosures, control modules, dampers, valves, wiring, fans, well, tap and other miscellaneous components if they are part of this control contract showing sizes, characteristics, model numbers and specific locations.

B. Formatting of O&M Manual

1. Provide bound hard copies in binder with labeled section dividers and tabs.
2. Table of contents with references to tabs and page numbers
3. Provide PDF copy of manual, paginated and bookmarked tree structure for ease of reference
4. All impertinent data must be crossed out and documents clearly marked as to project-specific applicable information.
5. All data is to be clearly marked as to designation and systems / areas of facility served.
6. Provide supplementary narrative for all systems such that the following tabulated equipment and systems information is clear to the reader and easy to follow.
7. Include copies of all APPROVED shop drawings, reflecting all corrections and changes / notations required by the Director's Representative and Engineer of Record.
8. Provide a section for required maintenance, replacement and calibration of all controls components. This is additionally to be provided in a spreadsheet and / or database format for Director's Representative use (PDF or printed format alone is not acceptable).

C. Proposed training manual to be distributed and used during the training procedures described under paragraph 1.12 of this section.

D. Provide laminated control diagrams in each control panel for each piece of major controlled equipment or system.

E. Backup database information in electronic format (other than resident on computer hard drive) to be left on-site that will allow the Director's Representative to fully download the entire DDC System software, including programming point database, configuration, graphic screens and all library of typically composed objects, and details supporting navigation, screens and graphics.

F. Within five working days from the time of the final system commissioning, one (1) hard copy and one (1) electronic copy in PDF format of Operation and Maintenance Manuals shall be turned directly to the Engineer.

G. A Programmers Manual shall be provided with graphic and text descriptions of all functions required for software modifications and developments. The use and installation of high-level programming language shall be included in this manual. The manual shall include ASCII text (or block diagram printouts for graphical programming language based systems) of all DDC programs with the spreadsheet inventorying the name and location of each program. Each file shall be accompanied by a "plain English" description of the program operation by subroutine to assure that future programmers can easily modify the existing database. The manual shall contain computerized printouts of all data file construction including all point information, physical terminal relationships, scales and offsets, alarm limits, messages, schedules, etc. The manual should also contain:

1. System overview
2. Networking concepts
3. Launching browsers from log in
4. Schedule manipulation
5. Software upload and download instruction, including field devices
6. Trend and alarm creation and maintenance
7. Report generation
8. Backup procedure for entire system and modular controllers
9. Sequence of Operation

H. Section for each Major Piece of equipment – Contains the cutsheets for the controllers, custom programs, and relevant information pertaining to that piece of equipment. (IE: schedules for AHUs showing Equipment Tag, Controller address, serial #, airflow, and pertinent engineering units like MBH, GPM, etc…).

I. Wiring Details – Contains 8-1/2" x 11" drawings of all the wiring details shown throughout the set of drawings.

J. Instrumentation Cut sheets – Contains the Manufacturer's original cut sheets for all the instrumentation used on the job. (IE: Well sensor, transformers, enclosures, pressure sensors, etc.).

K. AutoCAD Drawings – All drawings shall be provided in Auto CAD format (i.e. each file format should have the ".dwg" extension), made as set of both, a set 11"x17" black and white and a set of 24"x36" (1 color set and 3 black and white sets). Drawing Sets consists of the following:

1. System Description Drawing – Shows the overview of the job and what is being controlled.
2. Network Riser Drawings – Shows how the network is connected between all the devices on the job
3. Detail drawing(s) – Shows all the wiring and piping details for the entire job – all other drawings refer to these drawings.
4. Individual Control panel drawings & Schematics (1 or 2 drawings per piece of equipment) Shows the EXACT wiring and layout of each control panel. Also shows the schematic representation of the system that is being controlled. (IE: AHU, HW Plant, Fan Coil, Etc.)
5. Controls Floor plans (at least 1 for each floor) – Shows the approximate location of the control panels, thermostats, equipment, network wiring, thermostat wiring and any specific controls required for the job. All this information is overlaid on top of the mechanical floor plan showing the architectural layout (Wall and room #'s).

L. Warranty information for the entire system, including any specified or vendor provided extended warranty documentation.

M. ONE (1) paper copy of all the above shall be provided. In addition, all above shall be copied to a CD (or another approved electronic format) and released to the Director's Representative.

1.12 SYSTEM PRE-COMMISSIONING

A. In addition to all responsibilities described within section and prior to formal project commissioning (refer to Specification 019113 for requirements), Building Management Controls Vendor(under NYS contract PT69752), shall complete the following Pre-Commissioning requirements to assure operational readiness of equipment prior to conducting commissioning.

B. All pre-funtional checklists provided by the commissioning authority shall be completed and signed off before commencement of functional testing.

C. Equipment Start-up: Upon completion of installation, all equipment being controlled shall be initially started and tested on site using a workstation configured identically to that to be presented for permanent use by the Owner, including graphical user interface. Upon completion of all system pre-commissioning the entire contents of the workstation, including all changes and corrections performed during these phases, shall be re-loaded to the permanent operator workstation, which will be done when all phases are complete.

D. System Pre-Commissioning shall document the following:

1. Measure, calibrate and adjust all analog inputs. This is to be performed in a manner that verifies that sensors meet the accuracy requirements as specified for the device. All measurements shall be taken using an instrument certified for accuracy within a 12 month period.

    a. Where multiple sensors are “in line” within an air handling system – such as VAV leaving air temperature sensors vs an AHU leaving air temperature, or return / mixed / coil discharge sensors (with economizer correctly positioned) within an air handler, only one of the sensors need be directly measured, and the balance may be validated against the reference sensor.
    b. Where multiple sensors are “in line” within a piping system, the system may be manipulated such that only one sensor need be directly measured, and the balance may be validated against the reference sensor.

2. Stroke all analog outputs from 0% to 100%

    a. Visually verify that all linkage adjustments are set properly.
    b. Verify and record range of operation for VFD commands
    c. Verify and calibrate VFD feedback signals to correspond with command signal and actual operating speed in either RPM or HZ.

3. Valves and Dampers shall fully close and provide tight shut-off.

    a. Hydronic coils – verify that no temperature rise / drop occurs with the valve commanded fully closed
    b. Economizers – Verify return air temperature =mixed air temperature at 100% return air position, mixed air temperature = outdoor air temperature at 100% outdoor air position

4. Verify that all binary outputs are properly energizing the controlled device.
5. Verify that all binary inputs are properly calibrated to accurately reflect status of monitored equipment
6. Adjust setpoints so that equipment operates properly. Tune all PID control loops to avoid unnecessary cycling of control equipment, overheating, sub-cooling, tripping of freezestats or other limit switches and safeties. Create trends for review by the Engineer and Commissioning Agent.
7. Provide control and operational assistance to the balancing personnel during testing and balancing procedures.

E. Communication Network Start-up: Verify from a host computer that all configured controllers are engaged in proper communication passing all configured points to viewing stations. Verify communication speed and level of transactions until it is acceptable and meets the requirements of this specification.

F. Software Verification: All programs and software functions shall be verified to be in compliance with the contract documents for proper sequence of operation.

G. Pre-Commissioning Report: A report shall be provided to the Engineer detailing the dates, times and person(s) performing each phase of the specified system pre-commissioning. This report shall detail when and who performed the individual processes described in this section, and documents the results of all testing procedures. Coordinate phasing of work such that this can be completed PRIOR to formal system commissioning.

H. Project commissioning is considered complete only once the following are completed:

1. Pre-commissioning as described under this paragraph 1.11 is performed, the associated report submitted and approved.
2. The project formal commissioning as outlined within Specification 019113 is performed, including completion of all remedial work to correct Issues log items,
3. A physical walk-though of the project, conducted by the Engineer or Commissioning Authority and attended by this contractor, Commissioning Authority, and Director's Representative is concluded
4. The complete set of required closeout documentation is provided by the contractors. The Owner and Engineer shall determine the level of detail required for the walk-through, and may take this to a component level inspection, at their discretion.

1.13 TRAINING

A. The Control System Contractor shall provide (four, four-hour sessions (16 hours total)) for each phase of instruction to the Owner's designated personnel on the operation of the BMS and describe its intended use with respect to the programmed functions specified. Operator orientation of the BMS shall include, but not be limited to; the overall operation program, equipment functions (both individually and as part of the total integrated system), commands, systems generation, advisories, and appropriate operator intervention required in responding to the System's operation. Training sessions to be provided prior to beneficial occupancy for each phase - two at substantial completion, one during warranty, and one at the conclusion of the warranty period, scheduled at the Owner's convenience

B. After Commissioning is complete as specified in 019113, the Building Management Controls Vendor shall provide an on-site session detailing the layout of the BMS. This shall include network wiring routes, control panel locations, transformer locations, etc.

C. The Building Management Controls Vendor shall then provide an on-site session to review the entire Operations and Maintenance manual(s) with the Director's Representative. This session shall also include but not be limited to:

1. Scheduling functionality and configuration
2. Alarming points, configuration and acknowledgement
3. Trending points and configuration and exporting to excel
4. Backing up field controllers
5. Backing up the server
6. Graphical functionality and configuration
7. Programming controllers introduction only, demonstration of software tools provided by contractor.

8. Sequences of operation for each asset
9. Changing modifying setpoints.
10. Controller hardware technical identification and maintenance.
11. Network layout and field point identification and maintenance
12. Demonstration and training of all software tools shall be provided before closeout.

D. Provide telephone support and answer system relevant questions throughout the warranty period.

E. The Building Management Controls Vendor shall submit a preliminary outline of the training agenda to the commissioning authority prior to the training session. See Section 019113 for details.

1.14 WARRANTY

A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace products that fail in materials or workmanship within specified warranty period.

1. Failures shall be adjusted, repaired, or replaced at no additional cost or reduction in service to Owner or Client.
2. Include updates or upgrades to software and firmware.

a. Install updates only after receiving Owner or Client's written authorization.
b. At a frequency of no less than six and twelve months after final warranty start, the Contractor shall update the equipment and any controllers, servers, workstations and HMI web servers with the latest modification and improvements in software, firmware, and hardware that the Manufacturer may have developed for the furnished equipment.
c. The Contractor shall inspect, repair, replace, adjust, and calibrate, as required, the controllers, control devices and associated peripheral units during the warranty period. The Contractor shall then furnish a report describing the status of the equipment, problem areas (if any) noticed during service work, and description of the corrective actions taken. The report shall clearly certify that all software is functioning correctly.
d. Updates or upgrades that result in new software, firmware or hardware to be acquired shall provide these new items as part of the warranty

3. Warranty service: Service calls by the Director’s Representative shall commence within 2 hours following warranty service request and are not to be considered as part of routine maintenance.

4. Routine Maintenance: The Contractor shall provide all OEM recommended preventative maintenance of the installed work as described in the operating and maintenance manuals during the warranty period. In addition, the Contractor shall, during the ensuing four seasons (one year), conduct periodic inspections ,fine-tune all dynamic elements of the system, testing and evaluating the performance of the installed work with all costs of testing to be included in this scope of work. The contractor shall provide a written report of the test and evaluation results. the service visits shall include, but not be limited to:

    a. Checking and, if necessary, calibrating the sensors, transducers, and transmitters for airflow, liquid flow, pressure, and temperature.
    b. Checking and, if necessary, correcting the operation of the dampers and damper actuators.
    c. Checking and, if necessary, correcting the operation (i.e., monitoring and command) of the system points, graphics, and display functions.

5. Warranty period: One-year from date of Final Substantial Completion

    a. Disclose and provide longer warranty periods if provided by components manufacturer at the time of purchasing.

1.15 SPARE PARTS

A. The contractor shall furnish the following spare components to the Owner upon prior to application for substantial completion based on the installed quantities under this project (minimum 1 each):

1. 5% spare for each type of temperature sensor
2. 5% spare for each type of space sensor (temperature, humidity, CO2, etc.)
3. 10% spare for duct humidity sensors
4. 10% spare of each type of pressure sensor (gas and liquid)
5. 5% of each type of control valve (based on body style and flow coefficient)
6. 5% of each type of damper actuator
7. 5% of each unique type of controller

PART 2 – PRODUCTS

2.1 SYSTEM DESCRIPTION

A. General Requirements

1. A distributed logic control system, complete with Direct Digital Control (DDC) software shall be provided. This system is to control all mechanical equipment, as described on the project drawings and sections 230923 of these specifications.
2. All controllers for terminal units, air handlers, central mechanical equipment and the Microsoft Windows-based operator's terminal(s) shall communicate and share data.

3. All controllers shall be fully programmable. Controllers with “canned” or fixed application specific software are specifically prohibited.
4. This contractor shall assume complete responsibility for the entire controls system as a single source, providing installation, program debugging and service of all portions of logic control system. This shall include designated server, operator’s terminal, global controllers, routers, terminal unit controllers, sensors and all other sections of the system.
5. During construction, at least one operator’s terminal shall be equipped to act as a system server / operator interface. This system server shall store copies of all installed software for all field components and shall be capable of automatic or manual reloading of such software into the field components as required. The system server shall also gather and archive system-operating data, such as trends, energy logs, and other historical operating data. Complete energy management firmware, including self-adjusting optimum start, demand limiting, global control strategies and logging routines for use with total control systems shall be supplied. All energy management firmware shall be resident in field hardware and shall not be dependent on the operator’s terminal for operation. Operator’s terminal software is to be used for access to field-based energy management control firmware only. All schedules shall be module resident and shall not be affected in case of interruption network transport between the module and the host station.
6. Secured with tamper-resistant security torx screws.

B. Basic System Features

1. Direct digital logic control of temperature, scheduling, optimum start, equipment alarm reporting and override devices for unoccupied mode of operation.
2. Operator’s terminal software (Graphical User Interface or GUI) shall run under the existing Microsoft Windows V11 operating system. Software shall be multi-tasking, capable of executing and displaying multiple instances in individual windows while running concurrently with other Windows programs such as word processors or database programs. Operation of the terminal software shall be simple and intuitive.
3. Operator’s terminal software shall contain graphical user interface software, allowing configuration of system-wide controllers.
4. Provide all communication media, connectors, repeaters, bridges, switches, and routers necessary for network communications and interface to the internet as required to allow for remote access to system operations.
5. The system shall meet peer-to-peer communication services such that the connection of any operator interface to any one controller shall allow the operator to interface with all other controllers. The software shall provide transparent viewing and editing of all data, control programs, schedules, trends, alarms from any one controller through connection to any other controller on the internet work, regardless of subnetwork routers.
6. Priority password security systems shall prevent unauthorized use. Each user shall have an individual password. The user shall only be given access to the system functions required for individual job performance.
7. Equipment monitoring and alarm functions, including information for diagnosing equipment problems shall be included with the system.

8. The complete system, including, but not limited to terminal unit controllers, higher level controllers and operator's terminals shall auto-restart, without operator intervention, on resumption of power after a power failure. Database stored in any controller's memory shall reside error free for a minimum of 30 days. Logic controllers for all air handlers and all unitary equipment shall utilize EEPROM or battery backup for all variable data storage.
9. System design shall be modular.
10. All software and/or firmware interface equipment for connection to remote monitoring station from field hardware or the operator's terminal shall be provided.
11. System shall be capable of equipment runtime totalization of fans, heaters, boilers, etc.
12. The system shall provide alarm logging to internal files, COV (change of value) logs, to a printer, and to email and / or text. Coordinate all alarm reporting requirements with Owner's needs.
13. All hardware shall be listed Underwriters Laboratory for Open Energy Management Equipment (PAZX) under the UL Standard for Safety 916 in both the US and Canada, with integral labels showing rating.
14. All hardware shall be in compliance with FCC Part 15, Subpart J, Class A.

2.2 SYSTEM PERFORMANCE

A. Performance Standards. System shall conform to the following minimum standards over network connections. Systems shall be tested using manufacturer's recommended hardware and software for operator workstation.

1. Graphic Display. A graphic with a minimum of 20 dynamic points shall display with current data within 10 sec.
2. Graphic Refresh. A graphic with 20 dynamic points shall update with current data within 8 sec.
3. Configuration and Tuning Screens. Screens used for configuring, calibrating, or tuning points, PID loops, and similar control logic shall automatically refresh within 6 sec.
4. Object Command. Devices shall react to command of a binary object within 2 sec. Devices shall begin reacting to command of an analog object within 2 sec.
5. Alarm Response Time. An object that goes into alarm shall be annunciated at the workstation within 15 sec.
6. Program Execution Frequency. Custom and standard applications shall be capable of running as often as once every 1 sec. Select execution times consistent with the mechanical process under control.
7. Performance. Programmable controllers shall be able to completely execute DDC PID control loops at a frequency adjustable down to once per sec. Select execution times consistent with the mechanical process under control.
8. Multiple Alarm Annunciation. Each workstation on the network shall receive alarms within 5 sec of other workstations.
9. Control Stability and Accuracy. Control loops shall maintain measured variable at setpoint within tolerances listed in Table 1.

Table 1 - Control Stability and Accuracy

Controlled Variable	Control Accuracy	Range of Medium
Water Flow	±2% of full scale	
Dew Point (note 1)	±1.5ºF	
Water Temperature	±1.2 ºF	
Air Pressure (note 2)	±0.05 in. w.g.	1-6 in. w.g.
Air Pressure (note 2)	±0.03 in. w.g.	±0.25-1 in. w.g.
Air Pressure (note 2)	±0.005 in. w.g.	±0-0.25 in. w.g.
Airflow	±5% of full scale	
Space Temperature	±1.0ºF	
Duct Temperature	±1.2ºF	
Fluid Pressure (note 2)	±0.5 psi	
Humidity (RH)	+/- 2%	

NOTE 1: Accuracy applies to 10% - 90% of scale
NOTE 2: For both absolute and differential pressure
GENERAL NOTE - Sensors to be selected such that measured media is near middle third of sensor range

2.3 TEMPERATURE SENSORS

A. General

1. Sensors shall have a limited lifetime warranty.
2. All devices shall use precision thermistors unless stated to the contrary in this section.
3. Provide NEMA 1 termination box unless otherwise specified

B. Sensor Specifications

1. Space Sensors:

a. TYPE 1 - Secure / high risk areas – Blank wall plate style sensors, similar to Kele KTP Stainless Steel Flush Mounted Thermistor and RTD Sensors. Secured with temper-resistant security screws.
b. TYPE 2 - Standard Space sensor shall be available in an off-white enclosure for mounting in a standard electrical box. Mount at 48” height.

1) Sensors in public areas shall be provided without local temperature indication, setpoint adjustment or setback override. Range of allowable setpoint adjustment shall be user adjustable, initial value +/- 2 degF from primary setpoint. The operator may also disable user adjustment on a case by case basis. Secured with temper-resistant security screws.
2) Sensors in private / staff only areas shall be provided with local temperature indication, setpoint adjustment and setback override functions. Secured with temper-resistant security screws.

3) (With the exception of blank wall plate style sensors) - Where space sensors are connected to dedicated terminal unit controllers, they shall be equipped with local communication interface for troubleshooting and balancing purposes. Provide all required wiring from the terminal controller to the space sensor to allow for interface to a local laptop interface device. Secured with temper-resistant security screws.

2. Duct Sensors:

a. Single point duct mounted sensors shall have a minimum 8" rigid probe and be used when the duct size is less than 24"or where duct stratification is not present, such as downstream of fans.
b. Averaging duct-mounted sensors shall have a minimum 8’ long averaging element and be used when the duct size is greater than 24". All averaging sensors shall use true averaging elements such as platinum (or equivalent) or balco. Averaging bridges [multi-point sensors] are specifically not permitted. Provide averaging sensors in all locations where specified or where temperature stratification can occur. Minimum element to be provided, 1 ft. per 2. sq ft of area. Securely support all elements to avoid movement in air stream or long term damage at stress / mounting locations. Supports shall provide radius bend support and insulation to avoid thermal bridging

3. Outside Sensors:

a. The sensing element shall mounted inside a ventilated, treated, sun shield to minimize the radiant energy and wind effects. Sensor location shall be selected to minimize effects from sunlight, building heat, exhaust systems, etc. This contractor shall be responsible for selection of an appropriate location. Where sensor location is determined to be adversely affected by outdoor conditions, this contractor shall relocate the sensing devices to a more reliable position.
b. The conduit leading to the outdoor air sensor shall be sealed at the sensor end to avoid migration of indoor air through the conduit leading to erroneous readings.

2.4 THERMOSTATS

A. Low-Voltage Space Thermostats. Low-voltage space thermostats shall be 24 V, bimetal-operated, mercury-switch type, with adjustable or fixed anticipation heater, concealed setpoint adjustment, 13°C-30°C (55°F-85°F) setpoint range, 1°C (2°F) maximum differential, and vented ABS plastic cover. Secured with temper-resistant security screws.

B. Line-Voltage Space Thermostats. Line-voltage space thermostats shall be bimetal-actuated, open-contact type or bellows-actuated, enclosed, snap-switch type or equivalent solid-state type, with heat anticipator, UL listing for electrical rating, concealed setpoint adjustment, 13°C-30°C (55°F-85°F) setpoint range, 1°C (2°F) maximum differential, and vented ABS plastic cover. Secured with temper-resistant security screws.

2.5 HUMIDITY SENSORS

A. Duct and room sensors shall have a sensing range of 20%-80%, minimum accuracy of +/- 2% over this span.

B. Outdoor air humidity sensors shall have a sensing range of 20%-95% RH, minimum accuracy of 2% over this span, and shall be suitable for ambient conditions of 0°F-140°F.

C. Humidity sensors shall not drift more than 1% of full scale annually.

D. Temperature compensation of RH reading.

E. Two-year warranty from date of installation.

2.6 FLOW SWITCHES

A. Flow-proving switches shall be paddle (water service only) or differential pressure type (air or water service). Switches shall be UL listed, SPDT snap-acting, and pilot duty rated (125 VA minimum).

B. Paddle switches shall have adjustable sensitivity and NEMA 1 enclosure unless otherwise specified.

C. Differential pressure switches shall have scale range and differential suitable for intended application and NEMA 1 enclosure unless otherwise specified.

2.7 RELAYS

A. Control Relays. Control relays shall be UL listed, and shall have dust cover and LED "energized" indicator. Contact rating, configuration, and coil voltage shall be suitable for application.

B. Time Delay Relays. Time delay relays shall be solid-state, UL listed, and shall have adjustable time delay. Delay shall be adjustable ±100% from setpoint shown. Contact rating, configuration, and coil voltage shall be suitable for application. Provide NEMA 1 enclosure for relays not installed in local control panel.

2.8 OVERRIDE TIMERS

A. Unless implemented in control software, override timers shall be spring-wound line voltage, UL Listed, with contact rating and configuration required by application. Provide 0-6 hour calibrated dial unless otherwise specified. Flush mount timer on local control panel face or where shown.

2.9 CURRENT TRANSMITTERS

A. AC current transmitters shall be self-powered, combination split-core current transformer type with built-in rectifier and 4-20 mA two-wire output. Full-scale unit ranges shall be 10 A, 20 A, 50 A, 100 A, 150 A, and 200 A, with internal zero and span adjustment. Unit accuracy shall be ±1% full-scale at 500-ohm maximum burden.

B. Transmitter shall meet or exceed ANSI/ISA S50.1 requirements and shall be UL/CSA recognized.

C. Unit shall be split-core type for clamp-on installation on existing wiring.

2.10 CURRENT TRANSFORMERS

A. AC current transformers shall be UL/CSA recognized and shall be completely encased (except for terminals) in approved plastic material.

B. Transformers shall be available in various current ratios and shall be selected for ±1% accuracy at 5 A full-scale output.

C. Use fixed-core transformers for new wiring installation and split-core transformers for existing wiring installation.

2.11 VOLTAGE TRANSMITTERS

A. AC voltage transmitters shall be self-powered single-loop (two-wire) type, 4-20 mA output with zero and span adjustment.

B. Adjustable full-scale unit ranges shall be 100-130 Vac, 200-250 Vac, 250-330 Vac, and 400-600 Vac. Unit accuracy shall be ±1% full-scale at 500-ohm maximum burden.

C. Transmitters shall meet or exceed ANSI/ISA S50.1 requirements and shall be UL/CSA recognized at 600 Vac rating.

2.12 VOLTAGE TRANSFORMERS

A. AC voltage transformers shall be UL/CSA recognized, 600 Vac rated, and shall have built-in fuse protection.

B. Transformers shall be suitable for ambient temperatures of 4°C-55°C (40°F-130°F) and shall provide ±0.5% accuracy at 24 Vac and 5 VA load.

C. Windings (except for terminals) shall be completely enclosed with metal or plastic.

2.13 POWER MONITORS

A. Power monitors shall be three-phase type and shall have three-phase disconnect and shorting switch assembly, UL listed voltage transformers, and UL listed split-core current transformers.

B. Power monitors shall provide selectable output: rate pulse for kWh reading or 4-20 mA for kW reading. Power monitors shall operate with 5 A current inputs and maximum error of ±2% at 1.0 power factor or ±2.5% at 0.5 power factor.

2.14 CURRENT TRANSDUCER / EQUIPMENT INTERFACE RELAY

A. Low voltage, single phase:

1. Combined status sensor, command relay, and hand-off-auto switch.
2. Sized for monitor and control of small motors.
3. Field selectable relay output.
4. High and low voltage isolation.
5. Industrial grade load switching relay.
6. Mountable on single or double gang boxes, flush on starter enclosures, or stand-alone.
7. Adjustable switching setpoint for status feedback – calibrate for equipment specific status indication (belt or coupling loss to indicate failure condition)
8. Approved for installation in the following environmental conditions:

    a. 0-95% relative humidity, non-condensing.
    b. –15° TO 60° C

9. Design equipment: Veris Hawkeye H548.
10. Alternative components combining the total functionality of the specified device may be submitted for approval.

2.15 PRESSURE TRANSMITTERS

A. Pressure transmitters shall be of 2-wire, 4-20 mA / 0-10vdc output type with a capacitance element having an accuracy of +/- 1% over the entire range. Transmitter shall include protection against reverse polarity and supply voltage transients. Accuracy and zero span adjustment shall be provided with each transmitter to allow for recalibration as necessary.

1. Liquid Pressure

    a. The operating range shall be -40.0 to 176.0 F.
    b. Safe overpressure shall be a minimum of 150% of the rated pressure.
    c. Sensor range to be selected so anticipated control setpoint resides in the middle third of the sensor span.

d. Use of two discrete pressure sensors and mathematical determination of system differential pressure is acceptable.
e. Differential pressure sensor shall use a five-valve manifold to allow proper service and removal of air from the sensing lines without damage. Locate such that the lines from the primary piping can be properly drained and vented. Provide isolation at the mains to allow service to the assembly.
f. Shall be contained in an aluminum NEMA-1 enclosure.
g. Design Make: Setra Model 230, Senva, Dwyer

2. Air Pressure

a. The operating range shall be -40.0 to 176.0 F.
b. Safe overpressure shall be a minimum of 150% of the rated pressure.
c. Sensor range to be field selectable so anticipated control setpoint resides in the middle third of the sensor span.
d. Sensor shall have local readout.
e. Sensor shall be equipped with reverse polarity protection.
f. Sensor shall have ability for field zero of reading and output.
g. Shall be contained in an aluminum NEMA-1 enclosure.
h. Not to be provided when Space Pressure Monitor (SPM) / Room Pressure Monitor (RPM) is specified or called out on the drawings.
i. Not to be provided for use with air flow measurement, refer to paragraph 2.18.
j. Sensor warranty shall be 3 years.
k. Design Make – BAPI ZPS series
l. Alternative components combining the total functionality of the specified device may be submitted for approval

2.16 DIFFERENTIAL PRESSURE SWITCHES

A. Differential pressure switches (air or water service) shall be UL listed, SPDT snap-acting, pilot duty rated (125 VA minimum) and shall have scale range and differential suitable for intended application and NEMA 1 enclosure unless otherwise specified.

2.17 PRESSURE-ELECTRIC (PE) SWITCHES.

A. PE switches shall be UL listed, pilot duty rated (125 VA minimum) or motor control rated, metal or neoprene diaphragm actuated, operating pressure rated for 0-175 kPa (0-25 psig), with calibrated scale minimum setpoint range of 14-125 kPa (2-18 psig).

B. Provide one- or two-stage switch action (SPDT, DPST, or DPDT) as required by application.

C. Switches shall be open type (panel-mounted). Exception: switches shall be enclosed type for remote installation. Enclosed type shall be NEMA 1 unless otherwise specified.

D. Each pneumatic signal line to PE switches shall have permanent indicating gauge.

2.18 FLOW TRANSMITTERS

A. Airflow – General

1. Where multiple dampers, such as for outdoor air intake, are furnished by the manufacturer, coordinate the provision of air flow measurement where shown on the control diagrams or called for in the sequences of operation which summate to a single flow measurement in the air stream. Outdoor air measurement shall in all cases meet the performance specifications of this section, but may be a combination damper / air flow measuring "station" meeting the characteristics for both the air flow measurement and damper as an assembly.

B. Airflow – Velocity over 1000 fpm

1. Acceptable for use only in applications where duct velocity will be maintained over 1000fpm over entire operating range of equipment.
2. Air flow monitoring stations requiring the use of "air straighteners" are specifically prohibited.
3. Constructed of 16-gauge galvanized steel casing, extruded aluminum sensors and copper collectors. Measured velocity pressure converted to air flow shall have accuracy within + 2% of the full scale from 700 to 4000 fpm. Sized by manufacture, rectangular, round or oval for application. Provide with volume meter with actual flow display, mounted on adjacent wall. Interface with DDC controllers.
4. Acceptable Makes: Cambridge, Air Monitor, Paragon

C. Airflow – Acceptable for all applications

1. Duct mounted airflow measuring station shall consist of one or more airflow/temperature measuring devices based on size of duct and all required electronics. The complete system shall be factory tested prior to shipment. The airflow measuring station shall not require calibration over the life of the equipment.
2. Fan inlet measurement devices shall not be substituted for duct or plenum measurement devices indicated on the plans without prior approval by the Engineer.
3. Each sensing point shall measure both airflow and temperature using a pair of instrument grade, hermitically sealed, glass encapsulated thermistors, one self-heated and one ambient temperature. Airflow rate sensing device shall utilize thermal dispersion technology. Individual sensor notes shall be individually calibrated at 16 points to NIST calibration standards. Sensors will read and system will compensate for air temperature and impact on velocity or CFM. Provide copy of NIST calibration report for the reference standard to calibration the production tunnels used to calibrate individual sensor nodes. Devices claiming AMCA certification are not acceptable.
4. Provide air flow measuring station transmitter including any 24 VAC transformer to interface with the BAS. Each measurement location shall produce a single, separate linear analog output signal for airflow and temperature where indicated, both of which can be directly interfaced to the BMS.

5. The system shall have the ability to perform self-diagnostics and produce an alarm, which can identify the source of malfunction. In the event of a sensor failure, the system shall ignore failed sensor(s), average remaining sensors and shall continue to operate.
6. Sensor range shall be minimum and maximum system airflow rates with an accuracy of ±2%. Sensors and electronics shall operate over a temperature range of -20° F to 120° F, acceptable for use over a range of 5-95% RH, non-condensing. Size for 125% of anticipated range of air flow. The number of independent sensing points shall be per manufacturer's recommendations for the specified application as shown on drawings.
7. Remote transmitters to be mounted in a location protected from moisture. Provide weatherproof enclosure and mount away from direct sunlight when outdoor mounting is required.
8. The probe body shall be constructed of extruded anodized aluminum alloy.
9. Provide a Bluetooth and Android/IOS software that allows real time airflow and temperature monitoring.
10. Provide required length of cable to location of adjacent transmitter station to be mounted in an accessible, convenient location for operator use. Prior to start-up, a factory trained representative shall visit the site to inspect installation of air flow measuring devices and wiring. A written report shall be submitted to the engineer for the start-up services.
11. Acceptable Make: Ebtron, Air Monitor, Ruskin

D. Fan Array and Single Fan Measurement.

1. For use only where specifically called for or approved in advance by the Engineer
2. Each AMD shall be suitable for installation in fan inlets to determine the airflow rate and velocity weighted temperature of the airstream. Piezo rings are not acceptable.
3. Each sensing point shall measure both airflow and temperature using a pair of instrument grade, hermitically sealed, glass encapsulated thermistors, one self-heated and one ambient temperature. Airflow rate sensing device shall utilize thermal dispersion technology. Individual sensor notes shall be individually calibrated at 16 points to NIST calibration standards. Sensors will read and system will compensate for air temperature and impact on velocity or CFM. Provide copy of NIST calibration report for the reference standard to calibration the production tunnels used to calibrate individual sensor nodes. Devices claiming AMCA certification are not acceptable.
4. Provide face, forward mount adjustable brackets for each sensor node. Mount styles shall not affect the airflow or sound performance of plenum fans.
5. Provide air flow measuring station transmitter including any 24 VAC transformer to interface with the BAS. Each measurement location shall produce a single, separate linear analog output signal for airflow and temperature where indicated, both of which can be directly interfaced to the BMS.

6. Provide the following number of sensor nodes based on fan type. All sensors shall be connected to a single, remote transmitter. Fan array models shall calculate the airflow of each fan individually prior to outputting the total airflow rate and have a built-in alarm capable of removing a failed fan from the total airflow calculation.

   a. SWSI fans – Two
   b. DWDI Fans – Two per inlet
   c. Fan Arrays – One per inlet

E. Liquid Flow

1. Insertion Type - Onicon F3500 or approved equivalent only
2. Ultrasonic Type – GE Aquatrans AT868 Panametrics Liquid Flow Ultrasonic Transmitter or Micronics Greyline Clampon Flowmeter, Ultraflow 2000.
3. Install in compliance with all manufacturers requirements.
4. Provide type as specified on the contract drawings.

F. Remote Readout Unit:

1. Provide only where specified or shown on the drawings.
2. Able to accept signals from meter, temperature transmitter and pressure transducer.
3. Shall provide local display of actual flow rate, totalized flow (counter), and percent of full flow.
4. Shall provide a 4-20 mA DC analog signal to read actual flow and totalized flow at DDC controller.
5. 115V or 230V AC operation (+ 15%).
6. Provide in NEMA 4 enclosure. Mount on adjacent wall.

2.19 ENCLOSURES

A. Enclosures shall be NEMA-1 rated steel, finished to control oxidation in a highly humid atmosphere.

B. Each enclosure shall have a hinged door with handle and keyed lock

C. Shall provide 40% of free space for future expansion of the system.

2.20 DAMPER MOTORS

A. Electronic:

1. Electronic actuators shall be driven directly by 0-10 VDC, supply power: 24 VAC or 30VDC, as acceptable to its controller, and provide adequate torque to meet the application. Actuators using bi-directional actuation (“floating point”) or pulse width modulation (PWM) are specifically prohibited.

2. Where actuators over 30vdc requirement are supplied, coordinate with furnishing contractor for all wiring requirements in compliance with NEC and these specifications.
3. Electronic actuators shall be direct-coupled type.
4. For all actuators, assure execution of the fail-safe position in case of the Freezestat trip or power loss.
5. Actuators to be sized for smooth operation over entire range and a minimum of 150% of required torque for connected components.
6. Design Make: Belimo or approved equal.

2.21 CONTROL DAMPERS

A. Blades are extruded aluminum profiles. Aluminum end caps are press fitted to blade ends in order to seal hollow interior and reduce air leakage rates.

B. Blade and frame seals are extruded silicone and are secured in an integral slot within the aluminum extrusions.

C. Bearings are composed of a Celcon inner bearing fixed to a 7/16" (11.11mm) aluminum hexagon blade pin, rotating within a polycarbonate outer bearing inserted in the frame, resulting in no metal-to-metal or metal-to-plastic contact.

D. Linkage hardware is installed in the frame side and constructed of aluminum and corrosion-resistant, zinc-plated steel, complete with cup-point trunnion screws for a slip-proof grip.

E. Dampers are designed for operation in temperatures ranging between -40°F (-40°C) and 212°F (100°C).

F. Dampers are available with either opposed blade action or parallel blade action.

1. Where dampers both throttle air flow and direct collision of air streams (example, outdoor air and return air in an air handler), parallel blade dampers of appropriate direction of rotation shall be provided.
2. Where dampers are used solely for throttling of an air stream, opposed blade dampers are to be used.
3. Two position dampers may be opposed or parallel arrangement.

G. Leakage class 1A at 1” w.g. Static pressure differential. Standard air leakage data is certified under the AMCA Certified Ratings Program.

H. Two position dampers - Pressure drop not to exceed 0.2” wc as installed. Pressure drop calculations shall account for this installation method.

I. Modulating Control Dampers shall be sized by the temperature control manufacturer. Maximum velocity shall be 1500 fpm and maximum pressure drop shall be 0.15 in w.g, not to exceed 0.2” wc. Dampers shall be of adequate authority and sized and positioned to allow for smooth modulation of controlled air streams.

J. Damper pressure drops shall take into account the as-installed position and be certified for pressure drop per AMCA standard 500-d.

K. Dampers are available in two mounting types: i.e., "Installed in Duct" or "Flanged to Duct".

L. Provide thermally broken frame design for all dampers directly exposed to outdoor air intake conditions.

M. Installation of dampers shall be in accordance with current manufacturer's installation instructions.

N. Dampers over 48 in. In length and height shall be made into multiple sections.

O. Automatic dampers are required at all exterior walls and roof openings. Dampers to open when respective fan starts. Dampers at exterior walls and roof openings shall be insulated blade, thermal break design.

P. Design make: Tamco 1500 series (standard), Tamco 9000 series (outdoor air intake and exhaust / relief locations) or approved equal.

2.22 CONTROL VALVES

A. General:

1. Valves shall be applicable for the rated pressure and temperature service. Close off pressures must be determined in concert with the actuators and valves shall be provided to close off against extreme anticipated conditions. Valves shall be selected such that they are not, as a practice, "oversized."
2. Controls Valves to be selected and submitted with the following selection data:

    a. Cv flow coefficient
    b. Max Flow GPM
    c. Design Flow GPM
    d. Pressure drop for Max and Design Flow
    e. Line size
    f. Control valve size
    g. Control authority

3. Modulating valves shall be carefully selected to control in a smooth and stable fashion across the range of anticipated conditions. "Split ranging" of heating and cooling valves controlled by the BMS is not acceptable. A separate output from the BMS shall be provided for all control valves. When the selection criteria indicated below are not met, flow characteristic analyses shall be submitted to demonstrate reasonable correlation between stroke and flow.
4. Actuators for Primary Equipment (air handlers, etc.) shall be selected for smooth actuation over the entire operating range, use a 24vac power supply, and respond to an electronic input of: 4-20 mA or 0-10 VDC. Actuators using "floating point" (bi-directional) or pulse width modulation (PWM) for positioning are specifically prohibited.

5. Actuators for Terminal Equipment (VAV boxes, unit heaters, etc.) and small primary equipment up to the size of 1500cfm shall be selected for smooth actuation over the entire operating range, use a 24vac power supply, and respond to an electronic input of: 4-20 mA or 0-10 VDC, PWM or bi-directional “floating point” operation.

B. Provide factory fabricated control valves with operators as required by this specification. Provide selection as determined by manufacturer for installation requirements and pressure class, based on maximum pressure and temperature in piping system. Provide valve size in accordance with specified maximum pressure drop across control valve. Equipment control valves with heavy duty actuators, with proper shut off rating for each individual application.

C. Valves shall be selected to perform as specified taking into account inlet and outlet piping geometry correction factors. Temperature control contractor shall instruct mechanical contractor on correct installation technique and verify that installation matches manufacturer’s requirements for proper performance.

D. Design Pressure Drop

1. Water Service Valves - Unless specified to the contrary, valves shall be initially selected for a pressure drop approximately equal to that of the connected equipment, but no greater than 3PSID at design water flow.
2. The Engineer of Record shall, to the extent necessary and at their sole discretion, revise the final valve body selections to correspond with the as-submitted equipment selections OR provide the as-submitted equipment selections to this contractor such that valve sizing accurately corresponds to as-submitted system requirements.

E. Single Seated Valves:

1. Cage type trim, providing seating and guiding surfaces for plug on “top and bottom” guided plugs.
2. Valve Trim and Stems: Polished stainless steel.
3. Packing: Dual O-Ring up to 1 ½”, Spring-loaded Teflon, self-adjusting 2” and up.
4. Bodies, 2" and Smaller: Bronze with screwed end connections, replaceable brass seat. 125 psig rated, minimum
5. Bodies, 2 1/2" and Larger: Cast iron with flanged end connections, replaceable brass seat. 125 psig rated, minimum.

F. Ball Valves:

1. Modulating water valves shall be ball valves with an equal percentage characteristic.
2. Type: Two or three-way as called for, V-port ball valve with characterizing disk, 1/4 turn.
3. Packing: EPDM O-rings, lubricated.
4. Ball & Stem: Stainless steel.
5. Seat: Fiberglass reinforced Teflon.

6. Actuator: Electric, one motor only; valves 4 inches and larger shall have single operator.
7. Flow Characteristic: Equal percentage.

G. Actuator: Electric / Electronic

1. Failure positions shall generally be as follows, contact Director's Representative for special circumstances requiring deviation from these requirements:

   a. Terminal hot water radiation: fail last
   b. Pre-Heat coils in air handling units: normally open spring return
   c. Chilled Water – Normally Closed

2. Input signal: 0-10 VDC, equipped with spring failure position return all heating applications. "Floating point" or PWM (pulse width modulated) "analog" positioning allowed only where specifically noted in the contract documents.
3. PWM and floating point valves shall only be permitted to be used with systems providing automatic end of stroke calibration. Systems which require calibration cycles to maintain accurate operation shall use only 4-20mA or 0-10vdc actuation.
4. The Back-to-back electronic actuations, i.e., where two identical actuators are engaged in operating the rising or rotation of valve stem are not permitted.
5. Valve Closeoff:

   a. Water – 120% of total system (pump) head.
   b. Steam – 200% of system operating (inlet) pressure.
   c. Valves to be used on this project shall be suitable for complete closeoff to the levels stated under modulating duty. In the event that manufacturer's data provides a separate maximum differential pressure under modulating duty, both criteria shall exceed the above requirements.

2.23 SAFTEY/STATUS DEVICES

A. Low Limit Detector ("freezestat"): Electric type, with manual reset and auxiliary contacts to the DDC, set for 37°F for "freeze" protection and 55°F for fan discharge application. Provide a 20' long element for every 25 sq. ft. of coil face area or fraction thereof. Low-Limit Thermostats. Low-limit airstream thermostats shall be UL listed, vapor pressure type. Element shall sense temperature in each 30 cm (1 ft) section and shall respond to lowest sensed temperature. Low-limit thermostat shall be manual reset only.

B. High Limit Detector ("firestat"): Electric type, with manual reset and auxiliary contacts to the DDC, UL Listed for fire, set for 180°F.

C. Pump status through adjustable range current sensing element on pump motor. Calibrate to actual conditions.

D. Fan status through adjustable range current sensing element on the fan motor. Calibrate to actual conditions.

2.24 COMMUNICATIONS

A. Control products, communication media, connectors, repeaters, hubs, and routers shall comprise a BACnet internetwork. Controller and operator interface communication shall conform to ANSI/ASHRAE Standard 135-2016, BACnet.

B. Install new wiring and network devices as required to provide a complete and workable control network.

C. Each controller shall have a communication port for temporary connection to a laptop computer or other operator interface. Connection shall support memory downloads and other commissioning and troubleshooting operations.

D. Internet operator interface and value passing shall be transparent to network architecture.

1. An operator interface connected to a controller shall allow the operator to interface with each internetwork controller as if directly connected. Controller information such as data, status, and control algorithms shall be viewable and editable from each internetwork controller.
2. Inputs, outputs, and control variables used to integrate control strategies across multiple controllers shall be readable by each controller on the internetwork. Program and test all cross-controller links required to execute control strategies specified. An authorized operator shall be able to edit cross-controller links by typing a standard object address or by using a point-and-click interface.

E. System shall automatically synchronize system clocks daily from an operator-designated controller via the network. If applicable, system shall automatically adjust for daylight saving and standard time.

F. System shall be expandable to at least twice the required input and output objects with additional controllers, associated devices, and wiring.

2.25 OPERATOR INTERFACE

A. Communication. Web server or workstation and controllers shall communicate using BACnet protocol. Web server or workstation and control network backbone shall communicate using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol and BACnet/IP addressing as specified in ANSI/ASHRAE 135-2016, BACnet.

B. Hardware. Each newly provided workstation or web server shall consist of the following:

1. Hardware Base. Industry-standard hardware shall meet or exceed DDC system manufacturer's recommended specifications and shall meet response times specified. Hard disk shall have sufficient memory to store system software, one year of data for trended points, and a system database at least twice the size of the existing database at system acceptance. Configure computers and network connections if multiple computers are required to meet specified memory and performance. Workstations shall be Microsoft Windows 10 compatible PCs with minimum performance levels of:

    a. AMD 2300X processor, 3.5 ghz
    b. 8 GB RAM
    c. AMD RX570 Graphics processor, 4mb graphics memory
    d. 500 GB hard disk providing data at 100 MB/sec
    e. 10/100/1000 Ethernet
    f. USB-A / USB-C (minimum 4 ports)
    g. DVI
    h. Minimum 22” monitor
    i. USB, and network communication ports and cables required for proper system operation

C. Operator Functions. Operator interface shall allow each authorized operator to execute the following functions as a minimum:

1. Log In and Log Out. System shall require user name and password to log in to operator interface.

    a. Set up by administrator (top) level operators shall allow assignment of privilege levels for lesser operating personnel log in. The level of privilege shall manage and control access to specific system capabilities and setpoint adjustments.

2. Point-and-click Navigation. Operator interface shall be graphically based and shall allow operators to access graphics for equipment and geographic areas using point-and-click navigation.
3. View and Adjust Equipment Properties. Operators shall be able to view controlled equipment status and to adjust operating parameters such as setpoints, pid gains, on and off controls, and sensor calibration.
4. View and Adjust Operating Schedules. Operators shall be able to view scheduled operating hours of each schedulable piece of equipment on a weekly or monthly calendar-based graphical schedule display, to select and adjust each schedule and time period, and to simultaneously schedule related equipment. System shall clearly show exception schedules and holidays on the schedule display.
5. View and Respond to Alarms. Operators shall be able to view a list of currently active system alarms, to acknowledge each alarm, and to clear (delete) unneeded alarms.

6. View and Configure Trends. Operators shall be able to view a trend graph of each trended point and to edit graph configuration to display a specific time period or data range. Operator shall be able to create custom trend graphs to display on the same page data from multiple trended points.
7. View and Configure Reports. Operators shall be able to run preconfigured reports, to view report results, and to customize report configuration to show data of interest.
8. Manage Control System Hardware. Operators shall be able to view controller status, to restart (reboot) each controller, and to download new control software to each controller.
9. Manage Operator Access. Typically, only a few operators are authorized to manage operator access. Authorized operators shall be able to view a list of operators with system access and of functions they can perform while logged in. Operators shall be able to add operators, to delete operators, and to edit operator function authorization. Operator shall be able to authorize each operator function separately.

D. System Software

1. Existing system software to be used.
2. Operating System. Workstation server shall operate on Microsoft Windows 11.
3. System Graphics. Operator interface shall be graphically based and shall include at least one graphic per piece of equipment or occupied zone, graphics for each chilled water and hot water system, and graphics that summarize conditions on each floor of each building included in this contract. Indicate thermal comfort on floor plan summary graphics using dynamic colors to represent zone temperature relative to zone setpoint.

    a. Functionality. Graphics shall allow operator to monitor system status, to view a summary of the most important data for each controlled zone or piece of equipment, to use point-and-click navigation between zones or equipment, and to edit setpoints and other specified parameters.

        1) Zone level setpoints adjusted by lower level operators shall automatically revert to the prior value after 24 hours or on an Owner determined time period. Specific setpoints subject to this function shall be determined during the control system pre-construction conference. Reference paragraph 1.8.E.1 of this section.

    b. Animation. Graphics shall be able to animate by displaying different image files for changed object status.
    c. Alarm indication. Indicate areas or equipment in an alarm condition using color or other visual indicator.
    d. Format. Graphics shall be saved in an industry-standard format such as BMP, JPEG, PNG, or GIF. Web-based system graphics shall be viewable on browsers compatible with World Wide Web Consortium browser standards. Web graphic format shall require no plug-in (such as HTML and JavaScript) or shall only require widely available no-cost plug-ins (such as Active-X and Macromedia Flash).
    e. Provide a link from each piece of graphically represented equipment to the associated wiring diagram and sequence of operation.

f. Graphical Links – graphic navigation shall be performed via links such that, for example, the operator may navigate from a building plan to a room to an air terminal and to the associated air handling system without need to navigate through a master menu or graphics tree. Navigation shall be performed in a logical manner allowing the operator to easily find systems and sub-systems associated with a space or area.
g. Each graphic associated with a piece of equipment shall have a link to a PDF (or other approved format) containing the equipment CAD drawing and as-built sequence of operation.

E. System tools. System shall provide the following functionality to authorized operators as an integral part of the operator interface or as stand-alone software programs. If furnished as part of the interface, the tool shall be available from each workstation or web browser interface. If furnished as a stand-alone program, software shall be installable on standard IBM-compatible PCs with no limit on the number of copies that can be installed under the system license.

1. Automatic System Database Configuration. Each workstation or web server shall store on its hard disk a copy of the current system database, including controller firmware and software. Stored database shall be automatically updated with each system configuration or controller firmware or software change.
2. Controller Memory Download. Operators shall be able to download memory from the system database to each controller.
3. System Configuration. Operators shall be able to configure the system.
4. Online Help. Context-sensitive online help for each tool shall assist operators in operating and editing the system.
5. Security. System shall require a user name and password to view, edit, add, or delete data.

    a. Operator Access. Each user name and password combination shall define accessible viewing, editing, adding, and deleting functions in each system application, editor, and object.
    b. Automatic Log Out. Automatically log out each operator if no keyboard or mouse activity is detected. Operators shall be able to adjust automatic log out delay.
    c. Encrypted Security Data. Store system security data including operator passwords in an encrypted format. System shall not display operator passwords.

6. System Diagnostics. System shall automatically monitor controller and I/O point operation. System shall annunciate controller failure and I/O point locking (manual overriding to a fixed value).
7. Alarm Processing. System input and status objects shall be configurable to alarm on departing from and on returning to normal state. Operator shall be able to enable or disable each alarm and to configure alarm limits, alarm limit differentials, alarm states, and alarm reactions for each system object.
8. Alarm Messages. Alarm messages shall use an English language descriptor without acronyms or mnemonics to describe alarm source, location, and nature.

9. Alarm Reactions. Operator shall be able to configure (by object) actions workstation or web server shall initiate on receipt of each alarm. As a minimum, workstation or web server shall be able to log, print, start programs, display messages, send e-mail, send page, and audibly annunciate.
10. Alarm Maintenance. Operators shall be able to view system alarms and changes of state chronologically, to acknowledge and delete alarms, and to archive closed alarms to the workstation or web server hard disk from each workstation or web browser interface.
11. Trend Configuration. Operator shall be able to configure trend sample or change of value interval, start time, and stop time for each system data object and shall be able to retrieve data for use in spreadsheets and standard database programs. Controller shall sample and store trend data and shall be able to archive data to the hard disk.
12. Object and Property Status and Control. Operator shall be able to view, and to edit if applicable, the status of each system object and property by menu, on graphics, or through custom programs.
13. Reports and Logs. Operator shall be able to select, to modify, to create, and to print reports and logs. Operator shall be able to store report data in a format accessible by standard spreadsheet and word processing programs.
14. Standard Reports. Furnish the following standard system reports:

    a. Objects. System objects and current values filtered by object type, by status (in alarm, locked, normal), by equipment, by geographic location, or by combination of filter criteria.
    b. Alarm Summary. Current alarms and closed alarms. System shall retain closed alarms for an adjustable period.
    c. Logs. System shall log the following to a database or text file and shall retain data for an adjustable period:

        1) Alarm History.
        2) Trend Data. Operator shall be able to select trends to be logged.
        3) Operator Activity. At a minimum, system shall log operator log in and log out, control parameter changes, schedule changes, and alarm acknowledgment and deletion. System shall date and time stamp logged activity.

15. Graphics Generation. Graphically based tools and documentation shall allow Operator to edit system graphics, to create graphics, and to integrate graphics into the system. Operator shall be able to add analog and binary values, dynamic text, static text, and animation files to a background graphic using a mouse.
16. Graphics Library. Complete library of standard HVAC equipment graphics shall include equipment such as chillers, boilers, air handlers, terminals, fan coils, and unit ventilators. Library shall include standard symbols for other equipment including fans, pumps, coils, valves, piping, dampers, and ductwork. Library graphic file format shall be compatible with graphics generation tools.

17. Custom Application Programming. Operator shall be able to create, edit, debug, and download custom programs. System shall be fully operable while custom programs are edited, compiled, and downloaded. Programming language (or block language equivalent) shall have the following features:

    a. Language. Language shall be graphically based and shall use function blocks arranged in a logic diagram that clearly shows control logic flow. Function blocks shall directly provide functions listed below, and operators shall be able to create custom or compound function blocks.
    b. Debugging and Simulation. Operator shall be able to step through the program observing intermediate values and results. Operator shall be able to adjust input variables to simulate actual operating conditions. Operator shall be able to adjust each step's time increment to observe operation of delays, integrators, and other time-sensitive control logic. Debugger shall provide error messages for syntax and for execution errors.
    c. Conditional Statements. Operator shall be able to program conditional logic using compound Boolean (AND, OR, and NOT) and relational (EQUAL, LESS THAN, GREATER THAN, NOT EQUAL) comparisons.
    d. Mathematical Functions. Language shall support floating-point addition, subtraction, multiplication, division, and square root operations, as well as absolute value calculation and programmatic selection of minimum and maximum values from a list of values.
    e. Variables: Operator shall be able to use variable values in program conditional statements and mathematical functions.

        1) Time Variables. Operator shall be able to use predefined variables to represent time of day, day of the week, month of the year, and date. Other predefined variables or simple control logic shall provide elapsed time in seconds, minutes, hours, and days. Operator shall be able to start, stop, and reset elapsed time variables using the program language.
        2) System Variables. Operator shall be able to use predefined variables to represent status and results of controller software and shall be able to enable, disable, and change setpoints of Controller Software as described in Controller Software section.

    f. Portable Operator's Terminal. Provide all necessary software to configure a compatible laptop computer meeting similar standards as noted for the system workstation for use as a Portable Operator's Terminal. Operator shall be able to connect configured Terminal to the system network or directly to each controller for programming, setting up, and troubleshooting. Provide any necessary software to permit identical functionality as the primary operator workstation.

2.26 CONTROLLER SOFTWARE

A. Building and energy management application software shall reside and operate in system controllers. Applications shall be editable through operator workstation, web browser interface, or engineering workstation.

B. Scheduling. System shall provide the following schedule options as a minimum:

1. Weekly. Provide separate schedules for each day of the week. Each schedule shall be able to include up to 5 occupied periods (5 start-stop pairs or 10 events).
2. Exception. Operator shall be able to designate an exception schedule for each of the next 365 days. After an exception schedule, has executed, system shall discard and replace exception schedule with standard schedule for that day of the week.
3. Holiday. Operator shall be able to define 24 special or holiday schedules of varying length on a scheduling calendar that repeats each year.

C. System Coordination. Operator shall be able to group related equipment based on function and location and to use these groups for scheduling and other applications.

D. Alarm Reporting.

E. Remote Communication. System shall automatically contact operator workstation or server on receipt of critical alarms.

F. Maintenance Management. System shall generate maintenance alarms when equipment exceeds adjustable runtime, equipment starts, or performance limits.

G. PID Control. System shall provide direct- and reverse-acting PID (proportional-integral-derivative) algorithms. Each algorithm shall have anti-windup and selectable controlled variable, setpoint, and PID gains. Each algorithm shall calculate a time-varying analog value that can be used to position an output or to stage a series of outputs.

H. Staggered Start. System shall stagger controlled equipment restart after power outage. Operator shall be able to adjust equipment restart order and time delay between equipment restarts.

I. Startup Optimization – All equipment noted in the sequences of operation to have scheduled operation shall be started on an optimized basis which attempts to reach occupied conditions just prior to the scheduled occupancy time.

J. Pressure control optimization – All equipment noted in the sequences of operation (fans and pumps) shall have reset of pressure control setpoint initiated in the sequence. Typically, for pumps this would cause the software to examine all connected control valves for position, determine the critical valve (defined as the valve at the highest demand position), and reset the pressure setpoint up or down to maintain the critical valve between 80 and 90% open. For fans serving zone air valves / VAV boxes, this would similarly reset the duct pressure setpoint to maintain the critical zone damper between 80 and 90% open.

K. Heating Water Pump Control – Whenever heating demand reaches a minimum controllable threshold; the heating pumps shall be disabled and the heating water system shut down until demand for heating / reheat reaches a controllable level. This shall apply only in non-critical environment, exclusions apply to medical and laboratory application.

L. Energy Calculations.

1. System shall accumulate and convert instantaneous power (kW) or flow rates (L/s [gpm]) to energy usage data.
2. System shall calculate a sliding-window average (rolling average). Operator shall be able to adjust window interval to 15 minutes, 30 minutes, or 60 minutes.

M. Anti-Short Cycling. Binary output objects shall be protected from short cycling by means of adjustable minimum on-time and off-time settings.

N. On and Off Control with Differential. System shall provide direct- and reverse-acting on and off algorithms with adjustable differential to cycle a binary output based on a controlled variable and setpoint.

O. Runtime Totalization. System shall provide an algorithm that can totalize runtime for each binary input and output. Operator shall be able to enable runtime alarm based on exceeded adjustable runtime limit. Configure and enable runtime totalization and alarms as specified.

2.27 CONTROLLERS

A. General. Provide controllers and accessory devices as required to achieve performance specified.

B. BACnet.

1. Building Controllers (BCs). Each BC shall conform to BACnet Building Controller (B-BC) device profile as specified in ANSI/ASHRAE 135-2016, and shall be listed as a certified B-BC in the BACnet Testing Laboratories (BTL) Product Listing.
2. Advanced Application Controllers (AACs). Each AAC shall conform to BACnet Advanced Application Controller (B-AAC) device profile as specified in ANSI/ASHRAE 135-2016, and shall be listed as a certified B-AAC in the BACnet Testing Laboratories (BTL) Product Listing.
3. Application Specific Controllers (ASCs). Each ASC shall conform to BACnet Application Specific Controller (B-ASC) device profile as specified in ANSI/ASHRAE 135-2016, and shall be listed as a certified B-ASC in the BACnet Testing Laboratories (BTL) Product Listing.
4. Smart Actuators (SAs). Each SA shall conform to BACnet Smart Actuator (B-SA) device profile as specified in ANSI/ASHRAE 135-2016, and shall be listed as a certified B-SA in the BACnet Testing Laboratories (BTL) Product Listing.
5. Smart Sensors (SSs). Each SS shall conform to BACnet Smart Sensor (B-SS) device profile as specified in ANSI/ASHRAE 135-2016, and shall be listed as a certified B-SS in the BACnet Testing Laboratories (BTL) Product Listing.
6. BACnet Communication.

    a. Each BC shall reside on or be connected to a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol and BACnet/IP addressing.

b. BACnet routing shall be performed by BCs or other BACnet device routers as necessary to connect BCs to networks of AACs and ASCs.
c. Each AAC shall reside on a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol with BACnet/IP addressing, or it shall reside on a BACnet network using the ARCNET or MS/TP Data Link/Physical layer protocol.
d. Each ASC shall reside on a BACnet network using the ARCNET or MS/TP Data Link/Physical layer protocol.
e. Each SA shall reside on a BACnet network using the ARCNET or MS/TP Data Link/Physical layer protocol.
f. Each SS shall reside on a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol with BACnet/IP addressing, or it shall reside on a BACnet network using ARCNET or MS/TP Data Link/Physical layer protocol.

C. Communication

1. Service Port. Each controller shall provide a service communication port for connection to a Portable Operator's Terminal. Connection shall be extended to space temperature sensor ports where shown on drawings.
2. Signal Management – Master or Global Controller operating systems shall manage input and output communication signals to allow distributed controllers (lower level networks) to share real and virtual object information and to allow for central monitoring and alarms.
3. Data Sharing. Each Master or Global Controller shall share data as required to allow the specified performance and sequence of operation.
4. Stand-Alone Operation. Each piece of equipment specified shall be controlled by a single controller to provide stand-alone control in the event of communication failure. All I/O points specified for a piece of equipment shall be integral to its controller. Provide stable and reliable stand-alone control using default values or other method for values normally read over the network.

D. Environment. Controller hardware shall be suitable for anticipated ambient conditions.

1. Controllers used outdoors or in wet ambient conditions shall be mounted in waterproof enclosures and shall be rated for operation at -29°C to 60°C (-20°F to 140°F).
2. Controllers used in conditioned space shall be mounted in dust-protective enclosures and shall be rated for operation at 0°C to 50°C (32°F to 120°F).

E. Real-Time Clock. Controllers that perform scheduling shall have a real-time clock.

F. Serviceability

1. Controllers shall have diagnostic LEDs for power, communication, and processor.
2. Wires shall be connected to a field-removable modular terminal strip or to a termination card to allow service without rewiring the controller.

3. Each controller shall continually check its processor and memory circuit status and shall generate an alarm on abnormal operation. System shall continuously check controller network and generate alarm for each controller that fails to respond.

G. Immunity to Power and Noise. Controllers shall be able to operate at 90% to 110% of nominal voltage rating and shall perform an orderly shutdown below 80% nominal voltage. Operation shall be protected against electrical noise of 5 to 120 hz and from keyed radios up to 5 W at 1 m (3 ft).

H. Transformer. ASC power supply shall be fused or current limiting and shall be rated at a minimum of 125% of ASC power consumption.

2.28 INPUT AND OUTPUT INTERFACE

A. General. Hard-wire input and output points to all controller hardware.

B. Protection. Shorting an input or output point to itself, to another point, or to ground shall cause no controller damage. Input or output point contact with up to 24 V for any duration shall cause no controller damage.

C. Binary Inputs. Binary inputs shall monitor the on and off signal from a remote device. Binary inputs shall provide a wetting current of at least 12 mA and shall be protected against contact bounce and noise. Binary inputs shall sense dry contact closure without application of power external to the controller.

D. Pulse Accumulation Inputs. Pulse accumulation inputs shall conform to binary input requirements and shall accumulate up to 10 pulses per second.

E. Analog Inputs. Analog inputs shall monitor low-voltage (0-10 Vdc), current (4-20 mA), or resistance (thermistor or RTD) signals. Analog inputs shall be compatible with and field configurable to commonly available sensing devices.

F. Binary Outputs. Binary outputs shall send an on-or-off signal for on and off control. Building Controller binary outputs shall have three-position (on-off-auto) override switches and status lights. Outputs shall be selectable for normally open or normally closed operation.

G. Analog Outputs. Analog outputs shall send a modulating 0-10 Vdc or 4-20 mA signal as required to properly control output devices. Each Building Controller analog output shall have a two-position (auto-manual) switch, a manually adjustable potentiometer, and status lights. Analog outputs shall not drift more than 0.4% of range annually.

H. Tri-State Outputs. Control three-point floating electronic actuators without feedback with tri-state outputs (two coordinated binary outputs). Tri-State outputs may be used to provide analog output control in zone control and terminal unit control applications such as VAV terminal units, duct-mounted heating coils, and zone dampers.

I. Universal Inputs and Outputs. Inputs and outputs that can be designated as either binary or analog in software shall conform to the provisions of this section that are appropriate for their designated use.

2.29 POWER SUPPLIES AND LINE FILTERING

A. Power Supplies. Control transformers shall be UL listed. Furnish Class 2 current-limiting type or furnish over-current protection in primary and secondary circuits for Class 2 service in accordance with NEC requirements. Limit connected loads to 80% of rated capacity.

1. DC power supply output shall match output current and voltage requirements. Unit shall be full-wave rectifier type with output ripple of 5.0 mV maximum peak-to-peak. Regulation shall be 1.0% line and load combined, with 100-microsecond response time for 50% load changes. Unit shall have built-in over-voltage and over-current protection and shall be able to withstand 150% current overload for at least three seconds without trip-out or failure.

    a. Unit shall operate between 0°C and 50°C (32°F and 120°F). EM/RF shall meet FCC Class B and VDE 0871 for Class B and MILSTD 810C for shock and vibration.
    b. Line voltage units shall be UL recognized and CSA listed.

B. Power Line Filtering

1. Provide internal or external transient voltage and surge suppression for workstations and controllers. Surge protection shall have:

    a. Dielectric strength of 1000 V minimum
    b. Response time of 10 nanoseconds or less
    c. Transverse mode noise attenuation of 65 dB or greater
    d. Common mode noise attenuation of 150 dB or greater at 40-100 Hz

2.30 PNEUMATIC TUBING

A. Existing segments of pneumatics shall be retained for service to equipment not component to this project.

B. Existing portions of the pneumatic distribution to these areas must be retained, repaired and / or replaced at the contractor’s discretion.

1. Repairs shall be performed in materials to match.
2. Work within mechanical spaces, with the exception of final connections not to exceed 12”. Shall be performed using copper tubing. Connections may be Brazed, soldered or fasted with compression fittings.
3. All concealed work and final connection “whips” shall be performed using plenum rated poly tubing which conforms to the requirements of NFPA 90A as tested under UL 1820.

PART 3 - EXECUTION

3.1 WIRING

A. All wiring shall comply with these specifications, Specification Section 230889, and the NEC. Deviations are only permitted where manufacturer's requirements specifically conflict with gauge and wiring type specified within this section.

B. Communication wiring shall be installed using the particular system recommended, plenum rated, jacket shielded cable. The communication network wiring shall be clearly marked with a specific color code. Communication wiring shall not be installed near noise producing equipment, such as ballasts, magnetic starters, etc. Communication wiring shall comply with the optimum requirements necessary to assure communication integrity and speed.

C. All analog inputs and analog outputs shall be wired using 18 gauge stranded shielded cable. All Analog inputs and analog outputs wiring shall not be installed near noise producing equipment, such as ballasts, magnetic starters, etc.

D. All digital outputs shall be wired using 18 gauge stranded wire.

E. All wiring in mechanical rooms, walls shall be installed in EMT conduit. Concealed conduit and wiring is required in all finished spaces.

F. Power Supplies

1. Transformers – Each w/ low voltage fuse holder/disconnect
2. Actuators and relays shall use separate transformers from those powering microprocessor control panels.
3. Transformers shall be sized for a minimum of 150% of the connected load.
4. Convenience Outlet –

    a. 110vac combination outlet w/ switch to kill 110vac to panel

5. Switched 110vac to panel is fused before transformers (after outlet).
6. Provide at all control panels excepting those for terminal equipment (exclude reheats, cabinet heaters, fan coils, etc.)
7. Wiring Panduit

    a. Wire ducts between controllers (vertical and horizontal)
    b. Wire ducts around exterior of panel for cables entering panel
    c. Wire ducts as necessary to route hookup wires from terminals to controllers and other devices
    d. Panduit wire ducts to be selected to allow for all specified expansion requirements and easily allow closure with all necessary wiring contained
    e. NOTE – <u>Splicing of wires within the Panduit wire ducts is specifically prohibited.</u>

8. Panel Construction (sized to provide 25% future expansion w/ removable back panel)

    a. Indoors – Johnson M8100 series
    b. Outdoors – Hoffman fiberglass Nema 4x

9. Wire Labeling

    a. All DDC system wiring shall be individually labeled and permanently tagged at both ends of the conductors, including within all junction boxes between panels.
    b. All submittal and as-built drawings shall reflect the field installed wire tag numbers.
    c. All wire numbers shall be unique throughout the system installation.

3.2 DDC EQUIPMENT

A. All components shall be installed in protective enclosures. All wiring within the DDC enclosure shall be number coded. Both the enclosure and the controller shall be properly grounded in accordance with manufacturer's recommendation. Documentation shall be firmly attached to the enclosure within a plastic envelope. Documentation shall state point-to-point termination detail, description of each individual point, location of power source for the controller and ID number or address within the network.

B. All DDC Controllers shall be mounted on walls within equipment rooms, custodial closets or electrical rooms. Only application-specific controllers for rooftop units or package units may be mounted on the equipment.

3.3 EXAMINATION

A. Thoroughly examine project plans for control device and equipment locations. Report discrepancies, conflicts, or omissions to Architect or Engineer for resolution before starting rough-in work.

B. Inspect site to verify that equipment can be installed as shown. Report discrepancies, conflicts, or omissions to Engineer for resolution before starting rough-in work.

C. Examine drawings and specifications for work of others. Report inadequate headroom or space conditions or other discrepancies to Engineer and obtain written instructions for changes necessary to accommodate work of others. This contractor shall perform at his expense necessary changes in specified work caused by failure or neglect to report discrepancies.

3.4 PROTECTION

A. This contractor shall protect against and be liable for damage to work and to material caused by Contractor's work or employees.

B. This contractor shall be responsible for work and equipment until inspected, tested, and accepted. Protect material not immediately installed. Close open ends of work with temporary covers or plugs during storage and construction to prevent entry of foreign objects.

3.5 COORDINATION

A. Site.

1. Assist in coordinating space conditions to accommodate the work of each trade where work will be installed near or will interfere with work of other trades. If installation without coordination causes interference with work of other trades, Contractor shall correct conditions without extra charge.
2. Coordinate and schedule work with other work in the same area and with work dependent upon other work to facilitate mutual progress.

B. Test and Balance.

1. Furnish Test and Balance Contractor a single set of necessary tools to interface to control system for testing and balancing for the duration of TAB activity.
2. Train Test and Balance Contractor to use control system interface tools.
3. Provide a qualified technician to assist with testing and balancing of all air handling equipment and terminal units.
4. Test and Balance Contractor shall return tools undamaged and in working condition at completion of testing and balancing.

C. Life Safety.

1. Duct smoke detectors required for air handler shutdown are furnished and installed by E-Contract. Interlock smoke detectors to air handlers for shutdown as specified Sequence of Operations for HVAC Controls.
2. Smoke dampers and actuators required for duct smoke isolation are furnished and installed by H-Contract. Interlock smoke dampers to air handlers as specified in Sequence of Operations for HVAC Controls.

D. Coordination with Other Controls. Integrate with and coordinate controls and control devices furnished or installed by others as follows.

1. Each supplier of a controls product shall configure, program, start up, and test that product to meet the required sequences of operation regardless of where within the contract documents those products are described.
2. Coordinate and resolve incompatibility issues that arise between control products provided under this section and those provided under other sections or divisions of this specification.
3. This contractor shall be responsible for integration of control products provided by multiple suppliers regardless of where integration is described within the contract documents.

3.6 GENERAL WORKMANSHIP

A. Install equipment, piping, and wiring or raceway horizontally, vertically, and parallel to walls wherever possible.

B. Independently support all temperature control wiring from other systems. Do NOT support from conduits, piping or hangers for equipment.

C. Provide sufficient slack and flexible connections to allow for piping and equipment vibration isolation.

D. Install equipment in readily accessible locations as defined by National Electrical Code (NEC) Chapter 1 Article 100 Part A.

E. Verify wiring integrity to ensure continuity and freedom from shorts and ground faults.

F. Equipment, installation, and wiring shall comply with industry specifications and standards and local codes for performance, reliability, and compatibility.

3.7 FIELD QUALITY CONTROL

A. Work, materials, and equipment shall comply with rules and regulations of applicable local, state, and federal codes and ordinances.

B. Continually monitor field installation for code compliance and workmanship quality.

C. Contractor shall arrange for work inspection by local or state authorities having jurisdiction over the work.

3.8 COMMUNICATION WIRING

A. Install communication wiring in separate raceways and enclosures from other Class 2 wiring.

B. During installation do not exceed maximum cable pulling, tension, or bend radius specified by the cable manufacturer.

C. Verify entire network's integrity following cable installation using appropriate tests for each cable.

D. Install lightning arrestor according to manufacturer's recommendations between cable and ground where a cable enters or exits a building.

E. Each run of communication wiring shall be a continuous length without splices when that length is commercially available. Runs longer than commercially available lengths shall have as few splices as possible using commercially available lengths.

F. Label communication wiring to indicate origination and destination.

3.9 INSTALLATION OF SENSORS

A. Install sensors according to manufacturer's recommendations.

B. Mount sensors rigidly and adequately for operating environment.

C. Install room temperature sensors on concealed junction boxes properly supported by wall framing. Where sensor locations can be effected by wall surface temperature, pack junction box with insulation and provide insulated back plate for sensor. Install all space sensors so they are not affected by direct sunlight, appliances / equipment, or air currents. Consult with the Engineer prior to installing device if the location shown on the project drawings does not meet these criteria.

D. Air seal wires attached to sensors in their raceways or in the wall to prevent sensor readings from being affected by air transmitted from other areas. Use of Silicon or similar sealant is prohibited. Use Fiberglass or poly fill in the junction boxes.

E. Use averaging sensors in mixing plenums and hot and cold decks, and all duct locations which may be subject to stratification. Install averaging sensors in a serpentine manner vertically across duct. Support each bend with a mechanically fastened capillary clip. “Stick on” type fasteners are specifically prohibited.

F. Install mixing plenum low-limit sensors in a serpentine manner horizontally across duct. Support each bend with a mechanically fastened capillary clip. “Stick on” type fasteners are specifically prohibited.

G. Install pipe-mounted temperature sensors in wells. Install liquid temperature sensors with heat-conducting fluid in thermal wells. Wells shall be installed such that the entire sensing element is within the measured media, and the entire well stem is fully within the insulation. Wells in piping 2” or smaller shall be installed in an oversize T or elbow to allow for minimal flow restriction and optimum measurement accuracy.

H. Install outdoor air temperature sensors on north wall with sun shield. Sensor to be located where thermal characteristics of the building and solar load do not effect readings.

I. All sensors to be mounted on externally insulated ductwork or plenums shall be provided with standoff brackets. Insulation and vapor barriers shall be carried continuously beneath the sensor enclosure. Coordinate installation with mechanical and insulation contractors.

J. Differential Air Static Pressure.

1. Piping to pressure transducer pressure ports shall contain a capped test port adjacent to transducer.
2. Air pressure transducers shall be located in control panels, not on monitored equipment or on ductwork. Mount transducers in a vibration-free location accessible for service without use of ladders or special equipment.
3. Mount gauge tees adjacent to air and water differential pressure taps. Install shut-off valves before tee for water gauges.

K. Smoke detectors, freezestats, high-pressure cut-offs, and other safety switches shall be hard-wired to de-energize equipment as described in the sequence of operation. Switches shall require manual reset. Provide contacts that allow DDC software to monitor safety switch status. Interlock shall be provided such that the unit cannot be restarted in either hand or auto modes without manual reset of the safety device.

3.10 FLOW SWITCH INSTALLATION

A. Use correct paddle for pipe diameter.

B. Adjust flow switch according to manufacturer's instructions.

3.11 FLOW TRANSMITTER INSTALLATION

A. Airflow and Liquid Flow

1. Provide meter probe size, type and arrangement per manufacturers recommendations to obtain accuracy and performance specified.
2. Verify calibration of Remote Readout Unit (where specified to be provided) over operating range in conjunction with TAB contractor. Perform all necessary field calibration to obtain readout accuracy within specified limits.
3. Provide specified interface to DDC system.
4. Verify accuracy of DDC system reading against Remote Readout Unit (where specified) and balancer readings over operating range of device.
5. Provide installation in strict compliance with manufacturer’s requirements.

3.12 ACTUATORS

A. General. Mount actuators and adapters according to manufacturer's recommendations.

B. Electric and Electronic Damper Actuators. Mount actuators directly on damper shaft or jackshaft unless shown as a linkage installation. Link actuators according to manufacturer's recommendations.

1. For low-leakage dampers with seals, mount actuator with a minimum 5° travel available for damper seal tightening.
2. To compress seals when spring-return actuators are used on normally closed dampers, power actuator to approximately 5° open position, manually close the damper, then tighten linkage.
3. Check operation of damper-actuator combination to confirm that actuator modulates damper smoothly throughout stroke to both open and closed positions.
4. Provide necessary mounting hardware and linkages for actuator installation.

C. Valve Actuators. Connect actuators to valves with adapters approved by actuator manufacturer.

D. Where actuators are mounted to the side of insulated ductwork or equipment, provide insulation standoffs and repair insulation and vapor barrier.

E. PWM (pulse width modulation) and floating point valves shall only be permitted to be used specifically where called out or approved by the Engineer and only with systems providing automatic end of stroke calibration. Systems which require calibration cycles to maintain accurate operation shall use only 4-20mA or 0-10vdc actuation.

3.13 WARNING LABELS

A. Affix permanent warning labels to equipment that can be automatically started by the control system.

1. Labels shall use white lettering (12-point type or larger) on a red background.
2. Warning labels shall read as follows.

C A U T I O N
This equipment is operating under automatic control and may start or stop at any time without warning. Switch disconnect to "Off" position before servicing.

B. Affix permanent warning labels to motor starters and control panels that are connected to multiple power sources utilizing separate disconnects.

1. Labels shall use white lettering (12-point type or larger) on a red background.
2. Warning labels shall read as follows.

C A U T I O N
This equipment is fed from more than one power source with separate disconnects. Disconnect all power sources before servicing.

3.14 IDENTIFICATION OF HARDWARE AND WIRING

A. Label wiring and cabling, including that within factory-fabricated panels, with control system address or termination number at each end within 2 in. of termination.

B. Permanently label or code each point of field terminal strips to show instrument or item served.

C. Label control panels with minimum ½ in. letters on laminated plastic nameplates.

D. Label each control component with a permanent label. Label plug-in components such that label remains stationary during component replacement.

E. Label room sensors related to terminal boxes or valves with nameplates.

F. Manufacturers' nameplates and UL or CSA labels shall be visible and legible after equipment is installed.

G. Label identifiers shall match record documents.

H. Provide laminated control diagrams in each control panel for each piece of major controlled equipment or system.

3.15 OPERATOR INTERFACE

A. Standard Graphics. Provide graphics as specified. Show on each equipment graphic input and output points and relevant calculated points such as indicated on the applicable Points List / diagram. Point information on graphics shall dynamically update.

B. Install, initialize, start up, and troubleshoot operator interface software and functions (including operating system software, operator interface database, and third-party software installation and integration required for successful operator interface operation).

C. Provide logical descriptions and engineering units on all data displays. Example: percentage position shall be easily discernable as percent open or closed.

D. Provide logical linking between graphics. For example, direct penetration from building to floor to air handler to air terminal and back is to be provided without need to resort to a menu tree to navigate the building.

E. Graphical user interface shall be reviewed by the Commissioning Authority, Director's Representative and / or Engineer. If in their sole opinion the graphics are inaccurate, incomplete, or improperly represent the systems, the graphics shall be updated as no additional cost to the project.

3.16 CONTROL SYSTEM DEMONSTRATION AND ACCEPTANCE

A. Prior to demonstration and acceptance, the contractor shall:

1. Complete all Pre-Commissioning requirements as described in paragraph 1.11 of this section.
2. Complete system commissioning requirements per Specification 019113.
3. Correct all deficiencies in control system hardware and software noted in engineer's punchlists, field observations, and commissioning issues logs / reports.

B. Demonstration. Prior to acceptance, perform the following to demonstrate system operation and compliance.

1. Engineer, Construction Manager, Facility's representative, Commissioning Authority, and / or Director's Representative will be present to observe and review system demonstration. Notify Engineer at least 10 business days before system demonstration begins.

2. Demonstrate actual field operation of sequence of operation. Provide at least two persons equipped with two-way communication (if required). Demonstrate calibration and response of any input and output points requested by Engineer. Provide and operate test equipment required to prove proper system operation. Engineer may, at their discretion, perform these tests on a “spot check” basis.
3. Demonstrate complete operation of operator interface.
4. Demonstrate each of the following.

    a. DDC loop response. Supply graphical trend data output showing each DDC loop's response to a setpoint change representing an actuator position change of at least 25% of full range. Trend sampling rate shall be from 10 seconds to 3 minutes, depending on loop speed. Each sample's trend data shall show setpoint, actuator position, and controlled variable values. Engineer will require further tuning of each loop that displays unreasonably under- or over-damped control.
    b. Demand limiting (where applicable). Supply trend data output showing demand-limiting algorithm action. Trend data shall document action sampled each minute over at least a 30-minute period and shall show building kW, demand-limiting setpoint, and status of setpoints and other affected equipment parameters.
    c. Building fire alarm system interface.
    d. Trend logs for each system. Trend data shall indicate setpoints, operating points, valve positions, and other data as specified in the points list provided with each sequence of operation.. Each log shall cover three 48-hour periods and shall have a sample frequency not less than 10 minutes or as specified on its points list. Logs shall be accessible through system's operator interface and shall be retrievable for use in other software programs.

5. Tests that fail to demonstrate proper system operation shall be repeated after Contractor makes necessary repairs or revisions to hardware or software to successfully complete each test.

C. Acceptance.

1. After tests described in these specifications are performed to the satisfaction of the Engineer, Commissioning Authority, and Director’s Representative , Engineer will accept control system as meeting completion requirements. Engineer may exempt tests from completion requirements that cannot be performed due to circumstances beyond Contractor's control, such as seasonal requirements or construction progress issues. Engineer will provide written statement of each exempted test. Exempted tests shall be performed as part of warranty.

3.17 CLEANING

A. Each day clean up debris resulting from work. Remove packaging material as soon as its contents have been removed. Collect waste and place in designated location.

B. On completion of work in each area, clean work debris and equipment. Keep areas free from dust, dirt, and debris.

C. On completion of work, check equipment furnished under this section for paint damage. Repair damaged factory-finished paint to match adjacent areas. Replace deformed cabinets and enclosures with new material and repaint to match adjacent areas.

END OF SECTION 230923

SECTION 233300

DUCTWORK ACCESSORIES

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 RELATED SECTIONS

A. All work under this section is subject to the Contract Documents and this Contractor shall be responsible for and governed by all the requirements therein.

1.3 QUALITY ASSURANCE

A. Ductwork shall be fabricated and installed in compliance with latest edition of the following standards:

1. SMACNA Duct Construction Standards - Metal and Flexible Ductwork.
2. SMACNA Duct Liner Application Standard.
3. NFPA Standards, Bulletin 90A, 96, 101.
4. 2020 Mechanical Code of New York State
5. 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 is to be shipped to the job site with ends covered in plastic and all open ends are to be maintained covered through the progress of construction to maintain cleanliness. Duct contaminated due to failure to maintain these standards shall be cleaned to the satisfaction of the Director’s Representative and Engineer at the cost of this contractor.

D. Provide work in accordance with latest requirements of the New York State Building Code, NFPA 90A, NFPA 101 and UL 555 (Seventh Edition), UL 555S (Fifth Edition). Fire dampers shall be Underwriter's Laboratories classified.

E. All Dampers shall be rated for protection at 350°F and shall be Leakage Class I.

F. Smoke dampers and operator assemblies shall be Underwriter's Laboratories classified as an assembly.

1.4 SUBMITTALS

A. Shop drawings of all sheet metal equipment and materials being provided.

B. Submit a complete shop standard manual including construction details for all shop fabricated materials.

C. Ductwork detail drawings.

1.5 FIRE AND SMOKE DAMPERS (SUBMITTALS REQUIREMENTS)

A. Types, schedule of sizes, locations, and installation arrangements of all dampers.

B. Manufacturers UL listed installation details for each mounting arrangement.

C. Installation certification per paragraph 3.3 of this section.

D. Identification chart for dampers per paragraph 3.4 of this section.

1.6 DUCTWORK CLASSIFICATION

A. Duct systems are classified and constructed per the SMACNA pressure classification as follows:

1. All ductwork shall be constructed for a minimum pressure class of 3 in. w.g. unless stated otherwise.
2. Ductwork shall meet requirements for Seal Class A.

1.7 DUCTWORK SHOP DRAWINGS

A. Prepare minimum 1/4 in. scale drawings:

1. Constructed from actual field inspections and measurements so as to assure a complete job.
2. Incorporating dimensions of actual equipment proposed for use on the project.
3. Showing adequate sections, elevations, and plan views and indicating the bottom of ductwork elevations from the finished floor.
4. Indicating all volume dampers, damper access doors, air balance test plugs, and other accessories required for a complete project.

B. Call to the attention of the Engineers, immediately, any major deviations from the Contract Drawings which must be made. All deviations shall be documented in writing.

C. Submit roof, wall and floor opening dimensions and locations shown on shop drawings.

D. Submit prints to each Contractor of other trades for review for interferences and coordination with their work.

E. Refer to 230100 for further information related to Sheet Metal Shop and Coordination Drawings.

1.8 DAMPERS

A. Provide volume dampers at all air outlets, diffusers, grilles. Dampers to be located at branch takeoff collar or as close as practical. Use of register dampers in return or exhaust inlets shall be strictly limited and approved by the Engineer in advance.

PART 2 – PRODUCTS

2.1 DUCTWORK MATERIALS

A. Unless otherwise called for, provide materials in accordance with Exhibit I in Specification 233113.

2.2 DUCTWORK SEALING

A. Ductwork sealing shall comply with paragraphs 4.3.11 of the ECCCNYS and paragraph 603.9the MCNYS.

B. SMACNA duct sealing classification shall be used for duct systems using the following criteria:

1. Seal Class A, shall include transverse and longitudinal joints and duct wall penetrations, grommets at damper shafts for all ductwork to be provided.

C. Approved ductwork sealing materials shall include the following Hardcast products or approved equivalents when and where applied per manufacturer's recommendations and requirements:

1. Water Based Sealants - Versa-grip 181
2. Mastic Tapes – To be used only where specifically approved in writing by the Engineer for pressure class under 2". Foil-grip 1402 or Aluma-grip 701

D. Tapes and mastics used to seal metallic and flexible air connectors shall comply with UL 181B and be marked 181 B-FX for pressure sensitive tape or 181-B-M for mastic.

2.3 TURNING VANES

A. Standard Type:

1. Provided in square elbows as shown on contract drawings. Vanes for ducts with areas greater than 100 sq. in. shall be "double" type having dimensions and spacing as detailed.
2. Provide turning vanes in all rectangular "T" and "L" fittings throughout.
3. Provide turning vanes in radius fittings where called for on drawings or details.

4. Make: Elgen, or contractor fabricated.

2.4 DAMPERS IN DUCTWORK

A. Single 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. Single blade volume dampers shall be equal to Rossi 300 for medium and low pressure systems **OR** Rossi 330 for high and negative pressure systems. Provide quadrant locking handle on standoff for ductwork to be externally insulated. Wing nut friction screw type are specifically prohibited.

B. Provide multi-blade dampers above 12 in. duct dimension in width or depth. Where multi-blade dampers are required, they shall be equal to Ruskin Model CD35. Provide quadrant locking handle on air volume dampers, wing nut friction screw type are specifically prohibited. Provide quadrant locking handle on standoff for ductwork to be externally insulated.

C. Dampers to be tested and certified to AMCA 500 with maximum leakage of 2.7% of maximum airflow at 1500fpm and 1inch of differential.

D. Remote Damper Regulators – Where specifically called for on the drawings

1. Concealed locking regulator specifically designed to control dampers from the ceiling line
2. Provide optional 301-SS stainless steel cover plate and #980 tamper proof screw option. Furnish one tamper proof tool #982 for each 5 regulators provided on this project.
3. Provide in conjunction with 1200 series damper regulator and flexible shaft option.
4. Regulator to be embedded into the ceiling such that the unit is dead flush with the finished surface. Provide all necessary miscellaneous materials and attachments to properly install the regulator into the ceiling system (no gaps) which meet all manufacturer's installation requirements.
5. Furnish one type 04 factory wrench for damper adjustment for each 5 regulators provided on this project.
6. No substitutions are allowed without prior approval from the Engineer and NYS OMH.

E. Automatic Air Dampers: Furnished as part of "Control Systems" Section 230923 installed by this Contractor. All dampers provided component to equipment or by vendors as part of equipment packages shall be the requirements of 230923.

F. Self-Operating (Backdraft): 26 gauge aluminum blades with felted edges. Substantial steel frameworks, .05" w.g. maximum pressure drop at rated cfm, guaranteed not to rattle.

2.5 FLEXIBLE DUCTWORK

A. Shall be constructed in compliance with NFPA Bulletin 90A, and UL Standard 181, Class I Air Duct:

1. Consisting of corrosion resistant galvanized steel helix mechanically locked to fabric. Fabric to be a tri-laminate of aluminum foil, fiberglass and aluminized polyester.
2. Factory applied, fiberglass exterior insulation, sheathed in a seamless reinforced exterior vapor barrier jacket. Refer to Specification 230700 Insulation for required R-Value and insulation thickness.
3. Flexible ductwork shall be rated for 20" w.g. positive pressure, 10" w.g. negative pressure thru 12" dia.; 5" w.g. negative pressure, 14-16" dia.; 1" w.g. negative pressure 18"-20" dia., 5500 fpm, operating temperature range -20°F to 250°F.

B. Design Equipment: Flexmaster Type 6B (insulated acoustic flex duct), Flexmaster Type N1-35 (uninsulated).

C. Make: Clevaflex, Flexmaster, Genflex, Thermaflex.

2.6 FLEXIBLE CONNECTIONS TO FANS AND EQUIPMENT

A. Materials for flexible connections shall be fire retardant, water and mildew resistant, and comply with UL Standard 214:

1. Systems up to 2" w.g. s.p.: approximately 20 oz. of fabric per sq. yd. Ventfabrics, Inc., "Ventfab".
2. Systems greater than 2" w.g. s.p., and watertight systems: Of heavy glass fabric, double neoprene coated, approximately 30 oz. per sq. yd. Ventfabrics Inc., "Ventglas".

B. Flexible connections as installed must meet the insulation requirements of 230700.

2.7 ACCESS DOORS

A. In Ductwork: Shall be double panel construction, 1" rigid insulation when in insulated ducts; SMACNA construction, hinged type. Double cam type only acceptable where hinged type will not fit or where swing, such as ceiling grid interferences, will not allow. Clearly note on submittal all locations requiring double cam type to engineer for approval. Same metal as duct, or factory fabricated. Doors airtight to fit system static pressure, sized and placed to allow access to duct interior for intended purpose (visual confirmation, repair or testing of fire / smoke dampers, etc.).

B. When Installed In Kitchen Hood Exhaust Systems: Shall be in accordance with NFPA 96, latest edition, grease tight bolted and flanged.

C. When installed in intake or exhaust plenums, access doors will be sized to allow for full access to plenum.

D. Where plenums are greater than 4 feet wide or deep, the access door is to be at least 2 ft. wide by 4 ft. tall to allow for personnel entry.

E. Door Hardware:

1. Hinges: Full length “piano hinge”, Ventlok #157 / #167 or equal based on application.
2. Latches: As manufactured by Ventfabrics, Inc. or equivalent. Metal window sash latch not acceptable.

   a. Cam type (where submitted and approved) Ventlok #95
   b. Access doors up to 2” w.g.: Ventlok #100/#102.
   c. Walk-in doors up to 2” w.g.: Ventlok #260.
   d. Access or walk-in above 2” w.g.: Ventlok #310.

F. Make: Air Balance, Ruskin, Ventlok, Elgen.

2.8 ACOUSTIC-THERMAL DUCT LINING IN DUCTWORK

A. Duct Liner (Fiberglass):

1. To be provided only where specifically shown or called for in the contract documents.
2. General: Comply with NFPA Standard 90 and NAIMA Standard AHC-101.
3. General: Comply with UL181 (air erosion, mold growth, humidity), ASTM C 665 (Fungi Resistance)
4. Materials: ASTM C 1071, Type I. Acrylic coated glass fiber insulation coated with an anti-microbial EPA registered coating that seals the airstream surface fibers into a smooth, low-friction surface acoustic ductliner shall be of thickness shown in the table. Maximum "K" value to be 0.16 btu/in./sq. ft./degrees F./hr. when tested in accordance to ASTM C518. Absolute roughness per foot not to exceed 0.004 ft. Acoustic duct liner to be suitable for use up to 6000 feet per minute air velocity and temperatures up to 250 degrees F. The acoustic duct liner shall not contribute to the corrosion of steel, copper or aluminum. The liner shall not absorb greater than 0.5% moisture by volume when exposed to air of 120 degrees F., 96% RH. Acoustic duct liner shall provide the minimum sound absorption coefficients shown below when tested per ASTM C423-90 and ASTM E795, Mounting Type A.

OCTAVE BAND FREQUENCIES HZ							
Thickness	125	250	500	1000	2000	4000	NRC
1-1/2 in.	.16	.51	.90	1.05	1.06	1.01	.90
2 in.	.23	.73	1.05	1.13	1.06	1.07	1.00

5. Thickness: Unless otherwise noted, all ductwork indicated to be acoustically lined, shall have 1" thick liner.

6. Fire Hazard Classification: Flame spread rating of not more than 25 without evidence of continued progressive combustion and a smoke developed rating of no higher than 50, when tested in accordance with ASTM E84 and UL 723.
7. Liner Adhesive: Comply with NFPA Standard 90A and ASTM C919.
8. Mechanical Fasteners: Galvanized steel, suitable for adhesive attachment, mechanical attachment, or welding attachment to duct. Provide fasteners that do not damage the liner when applied as recommended by the manufacturer, that do not cause leakage in the duct, and will indefinitely sustain a 50 pound tensile dead load test perpendicular to the duct wall.
9. Fastener Pin Length: As required for thickness of insulation, and without projecting more than 1/8 inch into the airstream.
10. Adhesive for attachment of mechanical fasteners: Comply with the "Fire Hazard Classification" of duct liner system.

2.9 INSTRUMENT TEST HOLES

A. Suitable for insertion pitot tubes and other test instruments:

B. Fabricated with heavy screw cap and gasket.

C. With sufficient extension to accommodate exterior insulation where required.

D. Design Basis: Ventlok #699.

E. Acceptable Make: Hardcast (PTP-1), Durodyne (IP-4)

2.10 FIRE DAMPERS

A. Curtain type damper of galvanized steel (stainless steel for corrosive fume exhaust) construction with fusible link, roll formed frame and stainless steel closure spring. UL listed and labeled.

B. Maintain no less than 80% free area for velocities up to 2000 fpm; 100% free area with welded head for velocities above 2000 fpm. Provide necessary duct transitions, sleeves and supports to maintain assembly rating and these free area requirements.

C. Square, rectangular, round or oval duct connection as required by duct connections.

D. 1-1/2 hour rated dampers for assemblies with rating three hours or less. Three-hour rated dampers for assemblies with rating of 3 hours or greater.

E. Provide with “break away” duct connections which comply with rated assembly construction details.

F. Fusible link temperature rating of 165°F.

G. Type B or C. As required to meet installation, free area and performance requirements.

H. Design Equipment:

1. Static, 1 ½ hour, Ruskin Model IBD2
2. Static, 3 hour, Ruskin Model IBD23
3. Dynamic, 1 ½ hour, up to 4000fpm and 4”wc, Ruskin DIBD2
4. Dynamic, 3 hour, up to 4000fpm and 4”wc, Ruskin DIBD23

I. Make: Air Balance, Greenheck, National Controlled Air, Prefco, Ruskin, Safe Air, Inc., Venco.

2.13 SMOKE DAMPERS

A. Airfoil multi-blade type damper of aluminum construction suitable for installation in high velocity air systems up to 4000 fpm and 8 in. s.p. Inflatable blade end seals and stainless steel bearings. UL listed and labeled. Frame thickness .125" minimum.

B. UL listed 120 volt electric motor operator as scheduled or called out on the contract drawings. Operator to be mounted outside of the airstream. Power to open spring to close. Provide with open indication end switch for monitoring by the BMS.

C. Square or rectangular as required. Duct transitions for dampers in round or oval ducts.

D. Class I leak rating of 4.0 cfm/ft^2 at 1” w.g.

E. Design Equipment: Ruskin SD-50.

F. Make: Greenheck, Air Balance, Prefco, Ruskin.

2.14 COMBINATION FIRE/SMOKE DAMPERS

A. Airfoil multi-blade type damper of aluminum construction suitable for installation in high velocity air systems up to 4000 fpm and 4 in. s.p. UL listed fusible link. Frame thickness 16 gauge minimum.

B. UL listed 120 volt electric motor operator as scheduled or called out on the contract drawings. Operator to be mounted outside of the airstream. Power to open spring to close.

C. Square, rectangular or round as required. Duct transitions for dampers in oval ducts.

D. Class I leak rating of 4.0 cfm/ft^2 at 1” w.g.

E. Design Equipment: Ruskin FSD-60.

F. Make: Greenheck, Air Balance, Prefco, Ruskin.

2.15 FIRE RATED ACCESS DOORS

A. Fire doors shall be designed specifically for application rated wall openings and shall bear an Underwriters' Laboratories fire door label to match adjacent construction

B. Design Equipment:

1. Refer to specification 083113 for requirements.

PART 3 – EXECUTION

3.1 REQUIREMENTS

A. Equipment and systems shall be installed in accordance with local and state codes and regulations having jurisdiction.

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 interference. 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. Keep openings closed with protective caps or blanks during construction to prevent entrance of dirt and debris.

D. Provide sheet metal sleeves at each floor and wall duct opening.

E. Extend access openings, damper rods and levers, to outside of external insulation make systems airtight.

F. No piping, conduit or other obstruction to airflow is permitted in ductwork. Where shown on the drawings or permitted through approved shop drawings, provide with airtight streamlined sleeve, soldered or brazed joint between sleeve and ductwork. Increase size of ductwork to maintain proper cross-sectional area.

G. Provide necessary openings, sleeves, hanger inserts, framing, chases, and recesses, not provided by other trades.

H. 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.

I. Provide sleeves for ducts passing through walls or floors. Use 14 gauge sleeve with framing through structural surfaces; 18 gauge sheet metal for other cases. Set sleeves 4” above finished floor in Mechanical Rooms, seal watertight to floor.

J. Provide means for cleanout at each vertical riser of clothes dryer exhaust systems.

3.2 FLEXIBLE CONNECTIONS

A. Provide flexible connections for the intake and discharge connections of duct connected to fans and air handling equipment:

1. Round connections made with adhesive and metal drawbands with ends tightly bolted.
2. Rectangular connections made with material securely held in grooved seam between flanges, tightly clipped or riveted on 6” centers.

B. Connections made with a minimum of 2” space between duct and equipment collars, installed in line, and with 1” excess material folded so as not to interfere with airflow through connection.

3.3 FLEXIBLE DUCTWORK

A. Joints made with Minnesota 3M adhesive applied to duct end or collar.

B. Duct slid on depth of collar and 2” on duct end and secured with sheet metal screws and drawband, Wraplock 5900.

C. For round-to-oval connections, provide round-oval flexible adapter.

D. Maximum length 48”, not to penetrate any wall, ceiling or floor.

E. Maximum one 90º angle wide radius bend from ductwork to outlet. Where a wide radius cannot be maintained, provide hard duct elbow at outlet.

3.4 TURNING VANES

A. Install only in square elbows of equal dimensions.

B. Use large size vanes, 2-1/4” spacing when ducts are 20” or wider.

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” w.g.

3.5 CLEANING DUCTWORK AFTER INSTALLATION

A. All ductwork segments and interiors of all newly installed HVAC equipment shall be cleaned with a clean, dry, oil-free cloth and HEPA vacuumed prior to installation.

B. Clean rubbish and dirt from system before fans are turned on.

C. Keep openings closed during construction period.

D. Pay damages resulting from dirt blown on painted or other finished surfaces.

E. Repair or replace damaged fan wheels, dampers, or other system parts damaged as a result of dirt.

F. If in the sole opinion of the Director's Representative , Architect or Engineer the interior cleanliness of equipment or ductwork is inadequate, the contractor shall be directed to clean the system as many times as required until the entire system is dirt free. In the event that dirt adhesion is found to be due to a non-water based substance, the contractor shall be direct to mechanically clean the system or sub-system in compliance with specification 230130.

3.6 INSTALLATION ROUND AND FLAT-OVAL DUCTWORK

A. Use factory fabricated couplings for joints.

B. After the joint is slipped together, sheet metal screws are placed ½" 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.

3.7 LEAKAGE TEST OF DUCTWORK

A. New Construction Areas – Supply ductwork upstream of air terminals, all return and exhaust system ductwork

1. Conduct duct leakage tests per SMACNA "HVAC Air Duct Leakage Test Manual", latest edition. When leakage above stated limits occurs, ascertain location of leaks and repair 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. All renovation spaces and ductwork downstream of air terminals –

1. Ductwork shall be tested and verified to meet standards of SMACNA Seal and Leakage Classifications, seal Class A. Air balancing and testing shall be used to determine satisfactory operation of duct systems. Typically, this shall involve comparison of the sum of the system inlets / outlets to a traverse reading as close to the primary equipment as possible.

C. Duct testing shall provide for a complete testing of all newly installed ductwork systems. Where leakage testing paragraph 3.7a is performed for the segments 3" and above pressure class, a main traverse or traverses shall be performed as close to the primary equipment as possible and compared to the sum of the inlets / outlets to determine the separate leakage of the sections below 2" and calculate and verify the 2" segments meet Class A requirements.

3.8 DAMPERS AND AIR CONTROL DEVICES

A. 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.

B. When dampers are installed in acoustically lined ductwork, install with insulated "build-outs" per SMACNA.

C. Where dampers are installed above inaccessible ceiling, provide remote damper regulators (Young Regulator with ceiling access and cap, 1200-896c or approved equal) or access door to allow system balance.

D. Install fire and smoke dampers in accordance with "Fire and Smoke Dampers" Section, applicable codes, and manufacturer's requirements to maintain the UL listing of the as-installed assembly.

E. Install all dampers furnished as part of "Control Systems" Section.

F. Install grease exhaust balancing dampers in accordance with manufacturer's recommendations.

G. Grease exhaust balancing dampers shall be welded liquid tight to duct connection at both ends.

H. Grease exhaust balancing dampers shall be installed in either the vertical position or within fifteen degrees of the horizontal position as needed for the specific application and in compliance with the manufacturer's recommendations.

3.9 ACCESS DOORS

A. Provide as required for maintenance and service access at:

1. Control dampers
2. Damper motors
3. Fire dampers for replacement of fire damper link
4. Smoke dampers for inspection and service.
5. Smoke detectors
6. Control instruments
7. Fan bearings
8. Inlet of terminal heating and/or cooling coils
9. Intake or exhaust plenums
10. Any other equipment requiring periodic inspection or service, complete with angle iron frame.

B. Provide service openings grease duct systems in accordance and as required by NFPA 96 along horizontal ducts and at each vertical riser for kitchen hood exhaust.

3.10 DUCT SUPPORTS

A. Provide per SMACNA, same material as duct. Hanger bands to extend down sides and turn under bottom 2" Minimum two metal screws per hanger. Angle iron on larger duct. Spaced per building structural system but not greater than 8 ft. Provide extra support angles as required.

B. Provide supports per manufacturers requirements for factory fabricated duct systems.

3.11 AIR AND WATERTIGHT METAL WORK

A. Where water or snow may accumulate and 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. The following ductwork shall be constructed air and watertight:

1. Shower Room exhaust ductwork.
2. Intake and exhaust plenums.
3. Dryer exhaust ductwork.

B. Test for water-tightness: Before concealment, apply water by hose to check for leaks, witnessed by Director's Representative.

3.12 ACOUSTIC-THERMAL DUCT LINING

A. Where called for, increase metal duct dimensions to accommodate lining. Adhere lining to interior side of duct; minimum 90% coverage of Benjamin Foster 85-20 fire retardant adhesive, UL approved. Stapling method of attaching will not be permitted. Mechanical fasteners shall not pierce the sheet metal. Installing fasteners with spacing as per SMACNA Standards. Multiple layers of liner to achieve indicated thickness is prohibited.

B. Butting edges of acoustic linings shall be sealed with a fire-resistant neoprene coating, and exposed edges of acoustic linings shall be installed with sheet metal nosing to prevent erosion.

C. Lining shall not impart odor to the air, delaminate or be loosened by the airstream under normal operating conditions. Lining which is damaged during fabrication or shipment shall not be installed.

D. Linings shall be interrupted at the area of operation of a fire damper and at not less than 6 inches upstream and downstream of electric-resistance and fuel burning heaters in duct systems.

E. Metal nosings or sleeves shall be installed over exposed duct liner edges that face the opposite direction of the air flow.

F. Where a duct liner has been interrupted, a duct covering of equal thermal performance shall be installed.

G. Thermal acoustic duct liner shall not be used to line ducts or plenums from the exit of a cooling coil to the downstream end of the drain pan.

3.13 SMOKE DETECTION

A. Smoke detectors shall be furnished by E-Contract. 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 E-Contract.

3.14 LOCATIONS – OPENING PROTECTIVES

A. Provide Fire and Smoke Dampers where called for on the contract drawings and as required per Section 607 of the New York State Mechanical Code.

3.15 INSTALLATION – FIRE AND SMOKE DAMPERS

A. Provide sleeves, angles, and access doors for installation in accordance requirements of NFPA, UL and damper manufacturer. Provide sheet metal access doors in ductwork for dampers and accessories. Provide ceiling or wall access doors for dampers and accessories. Provide rated access doors where required in shafts and other rated assemblies. Provide label/signage at all damper access doors per Section 607 of the New York State Mechanical Code. E-Contract will provide signal wiring and power wiring for smoke dampers. Refer to Sections 230923 and / or 230993 for additional requirements. Smoke detectors shall be furnished by E-Contract. Install detectors located in ductwork. Increase duct size at smoke detectors, where required for proper installation, per smoke detector manufacturer's recommendations. Coordinate minimum duct size and length required with E-Contract. Provide insulation end seal fittings for double wall ductwork where same connects to damper assembly. Fire doors in fire wall openings and shall be installed on both sides of a fire wall. Install in accordance with UL and the manufacturer's instructions. Provide thermal blanket in accordance to NFPA requirements at diffusers, register and grille penetrations of fire rated ceilings where fire dampers are required.

3.16 FIELD QUALITY CONTROL

A. Contractor shall certify that dampers are accessible for servicing, are installed properly, and are operational. Submit three copies of signed certification to the Director's Representative for review.

B. Tests and Inspections:

1. Operate all Smoke, Fire and Combination Smoke/Fire Dampers to verify full range of movement and verify that proper heat response device is installed.
2. Inspect locations of access doors and verify that purpose of access door can be performed.
3. Contractor and Director's Representative shall record all relevant inspection information for each damper installation. Complete a tracking chart for Smoke, Fire and Combination Smoke/Fire Damper installations. A sample chart is shown at the end of this section; other chart formats may be used of approved by the Director's Representative.
4. Submit completed tracking chart for Director's Representative review and approval.

EXHIBIT I - DUCTWORK MATERIALS
(Notes are at the end of Exhibit "I")

SERVICE	MATERIAL	SPECIAL REQUIREMENTS
Air plenums at roof or wall, intake or exhaust	Type 302 stainless steel	Braze or weld watertight. SEE NOTE 2
Accessories, dampers and air turns	Same or better as parent duct	------

NOTES FOR EXHIBIT I:

NOTE 1: Wall plenums that are likely to see moisture collection due to rain or snow are to be provided with a sloped floor and trapped drain to indirect waste connection.

END OF SECTION 233000

SECTION 238325

RADIANT CEILING PANELS

PART 1 - GENERAL

1.1 DESCRIPTION

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

B. This section includes security grade hydronic radiant ceiling panels.

1.2 SUBMITTALS

A. Contractor to install a complete mock-up on site for (1) Secure RCP application and (1) Non-Secure RCP application prior to installation of the remainder if the RCP's.

B. Submit shop drawings on Product data: includes rated capacities, specialties and accessories for each product indicated.

C. Submit certification by independent agency of panel performance curves and capacity ratings.

D. Shop drawings to be completed prior to release. Include plans, elevations, sections, details and attachments to other work. Indicate dimensions, weights, loads, required clearances, method of field assembly, components and location and size of each field connection.

1. Include schedule showing panel circuiting, model designation, size, room location and accessories furnished.
2. Installation and Operation Manual

1.3 QUALITY

A. Manufacturer of the radiant heating and cooling ceiling system shall have a minimum of 5 years of similar installations.

B. Radiant ceiling panels shall be shipped with an adhesive film protective coating on each individual element on the visual side.

C. Radiant ceiling manufacturer to supply 5 year warranty from date of installation.

D. Panels to be manufactured US and in a certified ISO9001:2015 facility.

E. Radiant ceiling panels and accessories shall be rated and tested for pressures as shown on drawings and manufacturers technical documentation.

F. Use same brand of Manufacturer throughout, unless otherwise specified.

1.4 COORDINATION

A. Coordinate layout and installation of radiant panels and suspension components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire suppression system and partition assemblies.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. All equipment shall be free from expansion, noises and strains. Exposed parts to be cleaned and parkerized or phosphate coated before prime coating or baked enameling. Finish colors as selected from manufacturers standard colors during the submittal process. Factory-boxed and tagged by room numbers. Verify at site, the space available for each piece of equipment. Refer to Director's Representative at once, any correction, discrepancy or suggested change in size or location.

B. Contractor shall provide complete radiant ceiling system including ceiling flush frame mounting suspension system, flexible hoses and radiant panels as required.

C. Contractor shall include mock up room for architect and engineers approval prior to release of product.

D. Testing Requirements

E. Heating performance capacity shall be tested accordance with DIN 14037 or ASHRAE 138-2013

2.2 RADIANT CEILING PANELS

A. General Requirements:

1. Provide complete system including all required accessories for installation without visible warp or deflection.
2. Enclosures to run continuous unless otherwise called. Size to accommodate thermal movement of the radiant system.

B. Material:

1. Radiant ceiling panels to be constructed from 14 gauge steel material. Extruded aluminum with interlocking tongue and groove not acceptable.
2. Radiant panel edges shall be supplied as shown on drawings and available for recessed flush mount hard lid applications.
3. Radiant panel shall hinge down for plenum access.
4. Tamper-resistant fasteners shall be utilized for all fasteners exposed to view.

C. Activation of ceiling panel to include graphite activation with ½‘‘ copper tubing embedded in the sandwich. Cooper tubing shall be single continuous tube and factory pressure tested prior to shipment. Soldered u-bends are not acceptable. Copper tubing with .020" wall thickness.

1. Panels to have solid smooth panel face.
2. Radiant ceiling panel surface to be coated with highly emissive powder coat paint for optimal radiative properties. Color to be selected by architect.
3. Radiant panels shall be 2-pipe and supplied per piping drawings with same end or opposite end connections
4. Max panel length shall be 5’ and include engineered expansion slots.
5. Panel to be supplied with factory installed 1’’ insulation. Ship loose insulation is not acceptable.
6. Zehnder Stainless Steel Braided Hoses with Brass Fittings, flexible corrugated SS with EVOH O2 barrier, 1/2-inch PTC , 48-inch length, 195 F max operating temperature, lifetime test min 500,000 cycles. Panel connection by means of brazing or pro-press is not acceptable.
7. Flexible hoses shall have max operating pressure of 435 psi and burst pressure of 1,600 psi.
8. Panel assembly, including frame and trims, shall be 14ga with no exposed gaps. Exposed gaps will not be accepted.
9. Multiple panels in series shall be installed in single frame assembly.
10. Radiant panels shall ship with protective film.

D. Suspension System:

1. Conform to ASTM C635 for heavy duty systems.
2. Hanger wire: minimum 12 gauge galvanized, soft-annealed, steel wire.
3. For Modular Panels, panels shall be installed by ceiling grid. Provide panels as appropriate for regular or slimline grid systems.

E. Radiant panels in the following rooms shall be installed according to the manufacturer's recommendations for security installations.

1. All Patient areas on 5th. 6th, 7th, and 8th floors.

F. Design Equipment: Zhender Rittling

1. Make: Zehnder Rittling, Barcol-Air, Armstrong

PART 3 - EXECUTION

3.1 INSTALLATION

A. Each unit isolated with shut-off ball valves to permit servicing. Provide flow balancer for each unit as detailed. Contractor responsible for correct end connections and arrangements. Arrange piping accessories and valving fully accessible for servicing.

B. Connections to piping mains shall be made with 48'' flexible hoses supplied by radiant manufacturer to avoid imposing thermal expansion stress of piping onto radiant panel system.

C. Main hot water system shall be flushed completely prior to flowing water through panel systems.

D. To ensure proper installation and handling of the radiant panels, a complete IOM shall be supplied and reviewed before installation has begun.

E. Complete installation and startup checks according to manufacturer's written instructions and perform the following:

1. Verify that controls and control enclosure are accessible.
2. Verify that control connections are complete to control valves as needed.
3. Verify that any identification tags are visible.
4. Verify that controls respond to inputs as specified.
5. Removal of protective film coating before system startup.
6. Release of stabilization profiles on panel edges.

F. Piping installation requirements are specified in other Division 23 Sections. Drawings indicated general arrangement of piping, fittings, and specialties.

G. Install piping adjacent to radiant panels to allow for service and maintenance.

H. In addition to Division 23 Section "Hydronic Piping", connect copper tubing to supply with shut-off valve, strainer, control valve, and union or flange, and to return with balancing valve and union or flange.

3.2 FIELD QUALITY CONTROL

A. Perform the following field tests and inspections and prepare test reports:

B. Leak Test: After installation, fill water tubes and test for leaks. Repair leaks and retest until no leaks exist.

3.3 CLEANING AND PROTECTION

A. Remove protective film coating before startup of the system.

B. Clean all visible surfaces of equipment; touch up as required.

C. Protect all units before, during and after installation. Damaged materials due to improper protection shall be cause for rejection.

END OF SECTION 238325

SECTION 281301

SECURITY CONTROL AND MONITORING SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 REFERENCE

A. UL (Underwriters Laboratories, Inc.) 305 – Standard for Panic Hardware

B. UL (Underwriters Laboratories, Inc.) 294 – Standard for Access Control System Units

C. FCIA (Firestop Contractors International Association) – Manual of Practice

D. FM (Factory Mutual) Global – Class 4991 – FM Approval Standard of Firestop Contractors

E. IEEE (Institute of Electrical and Electronics Engineers) C62.41 – Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits

F. NFPA (National Fire Protection Association) 262 – Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces

G. NFPA 70 (National Fire Protection Association) - National Electrical Code

H. UL Qualified Contractor Program for Firestop Systems and Spray-Applied Fire Resistive Materials (SFRM's)

1.3 DEFINITIONS

A. Alarm: Any of the possible normal system transactions or conditions produced by each respective Door Exit Alarm Annunciator.

B. Key Bypass: A remote keyed switch which is wired directly to an electronic locking device or Door monitoring device at door location used by emergency personnel to disable door lock or alarm annunciation for emergency access through door.

1.4 SYSTEM DESCRIPTION

A. The Door Alarm Annunciation system monitors doors of the designated stairwell entries.

1. The Door Alarm Annunciator shall be powered from a stand-alone power supply, meaning the function of said power supply will be to provide power for only the door exit alarms.

2. The door shall be outfitted with a surface mounted industrial grade door status monitoring contact with its individual conductors protected by armored clad cable.
3. The aforementioned door status monitoring contact shall wire directly to the door alarm annunciator to produce only local alarms.
4. When a key is utilized by authorized personnel, the door alarm annunciator will be silenced, or bypassed for a pre-determined amount of time to allow for the passage of authorized and, or escorted individual(s) through said doors.
5. If passage through the door is forced, the door alarm annunciator will have its respective siren actuated to alerts staff and personnel that the door is been breached.
6. Status of doors that are controlled by readers and doors that are monitored via a door position switch are continually monitored.
7. An alarm is generated if one of the monitored doors is opened without a valid reader request or exit request.

1.5 SUBMITTALS

A. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.

B. Submittal Requirements:

1. Submittals required by this section are to be submitted in packages as follows:

a. Submittals Package 1: Quality Control Submittals (Company Field Advisor information) specified below at the same time as a package.

1) Submit Submittals Package 1 within 15 days of Contract award.

b. Submittals Package 2: Submit Product Data, Shop Drawings and Quality Control Submittals specified below.

1) Submit Submittals Package 2 within 60 days of receipt of approval of Submittals Package 1.

c. Submittals Package 3: Submit Point-to-Point Wiring Diagrams specified below at the same time as a package.

1) Submit Submittals Package 3 within 30 days of receipt of approval of Submittals Package 2.

d. Submittals Package 4: Submit Contract Closeout Submittals specified below at the same time as a package.

1) Submit Submittals Package 4 within 14 days after completion of the System Acceptance Test, and its acceptance by the Director’s Representative.

2. It is the Contractor's responsibility to review and verify that all information required for each submittal package is included. Errors or omissions found by the Contractor are to be corrected prior to the Submittals Package submission. Incomplete Submittal Packages will be returned.

    a. It is the Contractor's responsibility to verify that all submittal packages are complete, sub-contractor or contractor.
    b. The Company Field Advisor shall be responsible for reviewing each complete submittal package prior to its submission for review and approval.

        1) This review and sign-off by the Company Field Advisor shall include review of portions of the Submittal Package assembled and inserted into the Submittals Package by the Contractor (or Sub- Contractors).
        2) If said devices do not quantify the need or have a Company Field Advisor that can be obtained as a result of the technology or specification not having that requirement available, then a knowledgeable representative of the installing company shall be acceptable to fulfill the requested items.
        3) Errors or omissions found by the Company Field Advisor are to be corrected prior to the Submittals Package's resubmission for approval.

C. Quality Control Submittals (Submittals Package 1):

1. Company Field Advisor Data, provided through Johnson Controls Security Solutions, shall include the following:

    a. Name, business address and telephone number of Company Field Advisor secured for the required services.
    b. Certified statement (letter) from the Company that produced the system listing the qualifications of the Company Field Advisor. The certification statements from the Companies shall include the following:

        1) Information stating that the Company Field Advisor is experienced in the engineering, design and installation of the equipment being proposed for use.
        2) Each product for which the Company gives authorization for the Company Field Advisor to oversee installation of and each service the Company Field Advisor can perform in their behalf, listed specifically for this project.
        3) The certification shall include statements from the person providing the certification, stating:

            a) That they have read the requirements for the Company Field Advisor as written in this section of the Project Manual and certify that the proposed individual is capable of performing the duties of the Company Field Advisor in the Company's behalf.
            b) That the person providing certification of the Company Field Advisor is authorized by their company to provide this certification in the Company's behalf.
            c) Telephone number and email address of the person providing certification.

c. Listing of similar projects that the Company Field Advisor has worked on in the past 3 years.

D. Product Data (Submittals Package 2):

1. Bill of Materials: Provide a Bill of Materials identifying each system device or component proposed to be used for this system as listed in PART 2 PRODUCTS of this section.
   a. The Bill of Materials shall provide the following information:

      1) Identify each item by name and model number.
      2) Indicate the page number(s) in the Submittal Package where information required for that item can be found.

2. Catalog sheets, specifications, and installation instructions.

   a. Catalog sheets shall be marked up by the Contractor to clearly identify exactly what item is being submitted for approval and marked up clearly indicating what options the item will have to meet of the contract requirements.

E. Shop Drawings (Submittals Package 2):

1. Composite wiring and/or schematic diagrams of the complete system as proposed to be installed (standard diagrams will not be accepted), including interconnections surge protection, etc. required for a complete system.

F. Quality Control Submittals (Submittals Package 2):

1. Copy of license for installing Security Systems.

   a. Also include copy of identification card issued by the Licensee for each person who will be performing the Work.

2. Installers' Qualifications Data: Include a completed INSTALLER'S QUALIFICATION DATA FORM for each person who will be performing the work.

   a. Forms must be completely filled out. Incomplete forms will be returned for correction with no action taken.
   b. Forms must include all information required by this section of the Project Manual, showing that the experience criteria have been met.
   c. Each form must be signed by the Installer. Forms without signatures shall not be approved.

      1) Submit forms with original Installer signatures to the Director’s Representative.
      2) Work Plan:

         a) Include in the Work Plan required by section 015634 all work associated with the modifications to this system.
         b) Submit a Work Plan of how the work relating to this system shall be performed. Schedule shall include:

(1) A brief description of the work to be performed at each phase.
(2) Estimated time durations required to perform each phase of the work.
(3) Delivery dates of materials being provided under this Contract.

3. Battery and Uninterruptible Power Supply (UPS) Data shall include the following:

a. Load Calculations: Provide load calculations proving that the proposed battery back-up and UPS shall provide full power for the required maximum time.

4. Name, address and telephone number of nearest fully equipped service organization.

a. Letter from the Company Field Advisor: Accompanying the Submittals Package there shall be a letter from the Company Field Advisor, stating that the Company Field Advisor has reviewed the Submittals Package for accuracy and completeness and approves all materials and installation methods included in the Submittals Package
b. The accompanying letter shall also include statements as follows:

1) State that the Company Field Advisor has reviewed the Bill of Materials for accuracy and completeness and approves all items listed on the Bill of Materials for use.
2) State that the Company Field Advisor has reviewed the System Description for accuracy and completeness and approves the System Description for use.
3) State that the Company Field Advisor has reviewed the Shop Drawings for accuracy and completeness and approves the Shop Drawings for use.

a) Letter shall list each drawing by designation Number and Drawing Title that the Company Field Advisor has reviewed and approved.

c. Submit letter with original Company Field Advisor signature to the Director's Representative within three days of submission of Submittal Package 2.

G. Point-to-Point Wiring Diagrams (Submittals Package 3):

1. Submit complete Point-to-Point wiring diagrams of the entire system as it is to be installed.

a. Point-to-Point wiring diagrams shall show the following:

1) All components in the system.
2) All cables and conductors between each component.
3) Identify all cables and conductors and show all terminations and splices (identification shall correspond to markers to be installed on each conductor).

b. Point-to-Point wiring diagrams shall have an accompanying letter from the Company's Field Advisor stating that the Company's Field Advisor has reviewed the Point-to-Point wiring diagrams for accuracy and completeness and approves the Point-to-Point wiring diagrams for use.

1) Letter shall list each drawing by designation Number and Drawing Title that the Company Field Advisor has reviewed and approved.
2) Submit letter with original Company Field Advisor signature to the Director's Representative within three days of submission of Submittal Package 3.

H. Contract Closeout Submittals (Submittal Package 4):

1. System acceptance test report.
2. Certificate: Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.
3. Operation and Maintenance Data:

a. Deliver 2 paper copies and 2 removable storage media, covering the installed products, to the Director's Representative. Include:

1) Operation and maintenance data for each product.
2) Complete Point-to-Point wiring diagrams (As-Built Drawings) of entire system as installed. Identify all conductors and show all terminations and splices (identification shall correspond to markers installed on each conductor).
3) Name, address, and telephone number of nearest fully equipped service organization.

1.6 QUALITY ASSURANCE

A. UL Listing: The system shall be listed in the UL Security Equipment Product Directory under product category "ALVY-Access Control System Units Section BP5721".

B. Test Facility: The Company producing the system shall have test facilities available, which can demonstrate that the proposed system meets contract requirements.

1. If brand names or model numbers other than those specified are proposed for use, Director's Representative to witness test demonstration of all the equipment components integrated into the system layout similar to this system design.

C. Qualifications: The person(s) installing the Work of this Section and their supervisor shall be personally experienced and certified by the equipment manufacturer in access control/facility monitoring systems and shall have been engaged in the installation of access control/facility monitoring systems for a minimum of 3 years.

1. Furnish the names and addresses of 5 similar projects which the foregoing people have worked on during the past 3 years.

D. Company Field Advisor: Secure the services of a Company Field Advisor to:

1. Assist in the preparation of the submittal package.
2. Review the submittals package for accuracy and completeness and approve.

a. Conduct a pre-installation training meeting at the contract site with the nstallers who will be performing the work.
b. Rendering advice regarding installation and final adjustment of the system.
c. Assisting in initial programming of the system.
d. Witnessing final system test and then certify with an affidavit that the system is installed in accordance with the contract documents and is operating properly.

1.7 WARRANTIES

A. Special Warranty: The one-year period required by paragraph 9.8 of the General Conditions (Section 007213) is extended to (1) years for the Work of this Section when approved. Refer to Supplementary Conditions.

B. Manufacturer’s Warranty: Product and component specific manufacturer’s standard warranty where greater than the 2 years required by the special warranty.

C. Equipment integrator and contractor shall respond to warranty service requests within 4 hours of initiation of call to the facility location.

1.8 MAINTENANCE

A. Service Availability: A fully equipped service organization capable of guaranteeing response time within 8 hours to service calls shall be available 24 hours a day, 7 days a week to service the on-going installation and the completed system.

PART 2 - PRODUCTS

2.1 DOOR ALARM ANNUNCIATION

A. Power Supplies

1. Input

a. Input 115VAC, 60Hz, 3.5A.

b. Input fuse rated @ 3.5A/250V.

2. Output

a. 12VDC or 24VDC selectable output.
b. 12VDC @ 4A or 24VDC @ 3A supply current.
c. Sixteen (16) Class 2 Rated PTC protected powerlimited outputs (auto-resettable).
d. Outputs are rated @ 2.5A.
e. Filtered and electronically regulated outputs.

3. Short circuit and thermal overload protection.

a. Battery Charging
b. Built-in charger for sealed lead acid or gel type batteries.
c. Automatic switch over to stand-by battery when AC fails.
d. Maximum charge current: 0.7A.
e. Zero voltage drop when switched over to battery backup.
f. (Batteries are sold separately).
g. Supervision
h. AC fail supervision (form "C" contacts).
i. Notification trigger is selectable for 30 seconds (factory set) or 6 hours.
j. Low battery supervision (form "C" contacts).
k. Battery presence supervision (form "C" contacts).
l. Visual Indicators
m. AC input and DC output LED indicators.
n. Temperature
o. Operating: 0° C to 49° C (32° F to 120° F).
p. Storage: - 20° C to 70°C (- 4° F to 158° F).
q. Relative Humidity: 85% +/- 5%.
r. BTU/Hr. (approx.):
s. 12VDC: 25 BTU/Hr.
t. 24VDC: 37 BTU/Hr.

1) System AC input VA requirement: 402.5VA.
Make Model AL400ULXPD16CB
2) Provide a quantity of 2, 12 volts DC, 7 A.H. batteries, model BT126 as manufactured by Altronix

B. Exit Alarms and Key Bypass

1. Provide DSI ES4300 K4 self-contained door alarms with reset only switch for local alarm indication of project specified stairwell doors.
2. Connect local door contact to input of door alarm unit.
3. Facility standard keyed cylinder to be provided through the facility, general contractor or other means and not the responsibility of specification section 281300 approved contractor.

C. Door Status Monitoring Switch

1. The contact shall be a hermetically sealed reed switch nominally 3" L x 1" H x 0.50" D with matching actuating magnet. Mounting holes shall be on 2" centers. Contact and

magnets shall be in brushed anodized aluminum tube housing. Contact shall be sealed in our exclusive polyurethane potting compound. Right angle mounting bracket shall be furnished with contact, #1912.

2. Make Model 2507A-L by Edwards Signaling

2.2 DOOR HARDWARE

A. Door Status Switches: Refer to Part 2-Products of this, 281301 Specification Section.

2.3 COMMUNICATION CABLES

A. All electrical characteristics shall meet the requirements of the Company producing the system (attenuation, conductor to conductor capacitance, crosstalk, DC resistance, velocity of propagation, etc.). All cables within the buildings shall be plenum rated cable unless otherwise specified and approved.

B. Contractor shall refer to the Contract Drawings for specific cable sizes.

C. Cable types (NFPA 70 types CMP, CMR, and CMG) shall be selected in accordance with all applicable codes and regulations.

D. All conductors shall be twisted copper pair, shielded and jacketed as recommended by the Company producing the system.

E. Other types of cables may be used in accordance with NFPA 70 Table 800.53 “Cable Uses and Permitted Substitutions”, as approved, if listed as being suitable for the purpose.

F. Indoor Cables:

1) Cabling to Door Alarm annuciators: Jacketed, 18-gauge, insulated copper, (6) conductor, shielded; Belden Corp. s 6304FE cable.
2) Cabling from Door Alarm annunciators to Door Status Switches: Jacketed, 18-gauge, insulated copper, (4) conductor, shielded; Belden Corp. s 6322UE cable.

2.4 CONNECTORS

A. Connectors for Cables: As produced by Amphenol Corp. (Weatherproof type where installed in exterior locations.

2.5 WIRE-PULLING COMPOUNDS

A. To suit type of insulation; American Polywater Corp.'s Polywater Series, Electric Products Div./3M's WL, WLX, or WLW, Greenlee Textron Inc.'s Y-ER-EAS, Cable Cream, Cable Gel, Winter Gel, Ideal Industries Inc.'s Yellow 77, Aqua-Gel II, Agua- Gel CW, or Thomas & Betts Corp.'s Series 15-230 Cable Pulling Lubricants, or Series 15-631 Wire Slick.

2.6 SIGNS, LABELS, MARKERS, AND NAMEPLATES

A. Wiring Diagram: Provide detailed One line diagram showing interconnection of all major components associated with the system within the Operation and Maintenance Manuals and As-Built wiring diagrams.

B. Markers:

1. Premarked self-adhesive; W.H. Brady Co.'s B292, B708, Ideal Industries' Mylar/Cloth wire markers, or Markwick Corp.'s permanent wire markers, Plastic Extruded Parts Inc.'s Flexible Sleeve or ID Band Markers, or Thomas and Betts Co.'s E-Z Code WSL self-laminating.
2. Other Styles: To suit application by W.H. Brady Co., Ideal Industries, Marwick Corp., Plastic Extruded Parts, Inc., or Thomas and Betts Co.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install system in accordance with the Company's printed instructions unless otherwise indicated.

1. Coordinate with the Facility Representative for placement of the controllers in secured locations as shown on the drawings. Detail and configure the system to specific site conditions with the Facilities help and approval.

B. Wiring:

1. Install conductors in raceways after the raceway system is completed. Exception: Conductor types specifically indicated on the drawings not to be installed in raceways.

a. No grease, oil, or lubricant other than wire-pulling compounds specified may be used to facilitate the installation of conductors.

2. Connect system components requiring a primary power supply to dedicated branch circuits.
3. Make connections and splices at system components, AC/FMS interconnection cabinets,

terminal strip cabinets, and console only. Connections or splices will not be allowed at any other location in the system.

4. Use wire management products to bundle, route, and support wiring in junction boxes, pullboxes, wireways, gutters, channels, and other locations where wiring is accessible.

C. Mounting Hardware:

1. Mount all exposed equipment with security grade tamper proof center pin reject style Allen type mounting screws.

D. Earth ground of equipment as required by equipment manufacturer.

1. Do not use telephone ground connections as earth grounds.
2. Do not use connections to building structural steel as earth grounds.
3. Provide equipment-grounding conductors supplied from an established earth ground source or from a grounding bus in a panelboard.

E. Identification, Labeling, Marking:

1. Identification of Circuits: Identify wires and cables by system and function in cabinets with premarked, self-adhesive, wraparound type markers. Designations shall correspond with Point-to-Point wiring diagrams.
2. Battery Data: Mark date on batteries the date placed in service.

3.2 FIELD QUALITY CONTROL

A. Cable Test: Electronically meter test and documents all cables, control wiring, and twisted cables prior to installing new equipment and electronically test and document all new cables under the supervision of Company Field Advisor. Test for open, grounds, and shorts.

B. Make corrections to wiring prior to proceeding. Advise the Director’s Representative of any cable that cannot be repaired.

C. Provide written test results for all cables and certify operation.

D. Test all cables after installation and prior to connecting new equipment.

E. Preliminary System Test:

1. Preparation: Have the Company Field Advisor adjust the completed system and then operate it long enough to assure that it is performing properly:
2. Run a preliminary test for the purpose of:

   a. Determining whether the system is in suitable condition to conduct the acceptance test.
   b. Checking and adjusting equipment.
   c. Test each system function step by step as summarized under system description.
   d. Test audible alarm.

F. System Acceptance Test:

1. Preparation: Notify the Director's Representative at least 3 working days prior to the test so arrangements can be made to have a Facility Representative witness the test. Supply equipment necessary for system adjustment and testing.
2. Make the following tests:

    a. Test each system function step by step as summarized under SYSTEM DESCRIPTION.
    b. Individually test each door (Alarm and Bypassing).

3. Submit written report of test results signed by Integrators experienced representative and Director's Representative.

3.3 INSULATED CONDUCTOR SCHEDULE – TYPES AND USE

A. Communication Circuits:

1. For interior wiring (in raceways), use communication and power cable types specified in PART 2.
2. Where wiring is specifically indicated on the drawings not to be run in raceway use plenum rated cable (concealed unless otherwise indicated).

B. Remote-Control, Signaling, and Power-Limited Circuits.

C. Primary Supply Circuits and Secondary Supply Wiring.

END OF SECTION 281301

SECTION 282304

VIDEO SURVEILLANCE SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 GENERAL REQUIREMENTS

A. The work to be done under this section of the Specifications shall include the furnishing of labor, material, equipment and tools required for the complete installation of the work indicated on the Drawings, as specified herein, or as noted in other sections of Division 28 – Electronic Safety and Security.

B. All materials a part of the electronic security infrastructure and necessary to its proper operation, but not specifically mentioned or shown on the Drawings, shall be furnished and installed without additional charge.

C. The Drawings and Specifications are complementary to each other and what is called for by one shall be as binding as if called for by both. If a discrepancy exists between the Drawings and Specifications, the higher level of functionality shall be included to meet the design intent.

1.2 REFERENCE

A. UL (Underwriters Laboratories, Inc.)

B. NEC

1.3 DEFINITIONS

A. Approved: Acceptable to the Owner’s Representative and the Engineer.

B. Furnish: Supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar operations.

C. Install: Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

D. Provide: Furnish and install, complete and ready for the intended use. Deliver to the project site all required equipment and accessories, install and interconnect all required equipment and accessories for a complete and operational VSS.

E. Integrator's Field Advisor:

1. An individual employed by an organization (other than the company producing the system), certified in writing by the company producing the system, that the individual is technically qualified in design, installation and servicing of the required products and is capable to act as a field advisor in their behalf. Personnel involved solely in sales do not qualify.

F. Manufacturers' Technical Advisor:

1. An employee of the company producing the system (or a company which lists and markets the primary components of the system under their name) who is certified in writing by the company to be technically qualified in design, installation, and servicing of the required products. Personnel involved solely in sales do not qualify.

G. The term "Director's Representative" means the employee or agent of the Design and Construction Group designated in writing by the Director as such. Under the general supervision of the Director, the Director's Representative shall have complete charge of the Work and shall exercise full supervision and direction of the Work. Where the Contract Documents specifically designate a person to perform a function or duty, that person shall be the Director's Representative but only for the performance of that function or duty. Where the work "directed" appears in the Contract Documents, the words "by the Director's Representative" shall be deemed inserted thereafter in each case except where it is obviously inappropriate in context.

1.4 DESCRIPTION OF EXISTING SYSTEM

A. The indoor and outdoor perimeter VSS consists of recording equipment provisions for camera stations located throughout the interior of the building and camera stations located around the perimeter of the facility which are operated in conjunction with a Networked-based Video Surveillance System (NVSS) consisting of encoders, decoders, network storage managers, system managers, PC work stations, keyboard control units, network switch, and monitors. The video surveillance system equipment is located in the main security console, along with a viewing station located in the control room and the adjacent server room in Building No. 62.

1. The existing video surveillance system equipment is manufactured by Pelco (VideoXpert).

B. An attendant at the control room operates the system with a workstation. The workstation allows viewing monitors to survey and evaluate the status of personnel in the areas within range of the camera stations.

C. Scenes are viewed by camera stations:

1. Zoom-pan/tilt camera stations contain equipment required for completely adjustable viewing of scenes (remotely controlled from the keyboard control unit).
2. Fixed camera stations contain equipment required for viewing a fixed scene (not remotely adjustable).

D. The video signal from each camera station can be transmitted to a dedicated monitor for that camera station.

1. The video signal is transmitted to the dedicated monitor from the camera via a security network and workstation.
2. Each dedicated monitor continuously displays the scene viewed by the camera station to which it is dedicated.
3. Dedicated monitors are not controlled by the workstation and/or decoders.
4. The scenes displayed by dedicated monitors are also displayed on selected monitors which are connected to the output of the workstation/decoders.

E. Camera stations transmit video signals to dedicated monitors. Each monitor continuously displays the scene viewed by the camera station to which it is dedicated. Dedicated monitors are not controlled by the NVSS.

F. A keyboard control unit, connected to the workstation, allows the attendant to control the following:

1. Camera station functions including addressing, pan and tilt (joy stick control), zoom, and focus. (Iris is automatically controlled, not manually controlled through TVCPU).
2. Alarm closure arm and clear.
3. Camera station automatic sequencing run and hold.
   a. The programmed sequence may either be continuously repeated until the hold button is depressed or the sequence may be programmed to stop on a selected camera station until the run button is pushed.
4. Single “quick look” sequence.
5. Call up of prepositioned scenes.
6. Call up of any camera station to any monitor connected to the system.

G. The following can be programmed by the system manager via the keyboard control unit:

1. Dwell time (2 to 60 seconds) that each camera station scene is displayed in sequence on the monitor.
2. Time and date.
3. On screen camera station identification (2 or 3 digit numeric plus up to 8 alphanumerics for each individual camera). The positioning and brightness is independently adjustable for each monitor.
4. Eight prepositioned scenes for each zoom-pan/tilt camera station.

H. Access to the system functions are controlled thru at least 2 levels of access security to prevent program modifications or use by unauthorized personnel.

1. At the lowest level of access, the keyboard programming functions are disabled. The attendant has minimum access to the system functions (camera switching and remote control).
2. At the highest level of access, programs may be modified by the system manager.

I. When camera station signals are displayed on monitors connected to the workstation and/or decoders, camera station identification, date, and time are also displayed.

1.5 MODIFICATIONS TO EXISTING SYSTEM

A. Remove and Re-install camera stations.

1.6 SYSTEM DESCRIPTION

A. The Internet protocol IP video management system consists of VideoXpert™ Management software and components which includes power supplies, network storage managers, Power Over Ethernet Switches, PC workstations, keyboard control units, network switch, universal device interface, and monitors.

B. The IP video management system is Microsoft® Windows® -based for easy setup and maintenance.

C. The IP video management system will support browser-based administration interface which provides management capabilities, locally and remote, without an Installed Desktop.

D. The IP video management system will support the ability of modular plug-ins.

E. The network storage manager is to use RAID 6 parity across the storage drives to protect recorded data against a hard disk drive failure. The network storage manager will only use enterprise-level hard disk drives specifically rated for operation in RAID systems. Data will be stored for a minimum of 30 days.

F. Video monitoring of all cameras shall be possible from any workstation as set up per client's request. Review capabilities for the digitally recorded video via the secure network specified without interruption to recording capabilities.

G. The IP video management system will be designed for reliability through fault-tolerant, distributed architecture, and multiple levels of redundancy.

H. The IP video management system will provide predictable scalability and modular design.

I. The IP video management system is to support up to 6 monitors per workstation, each driven by independent CPUs, displaying up to 16HD streams per monitor.

J. The IP video management system workstations must be capable to utilize a 3D mouse and programmable keyboard accessories, and keyboard shortcuts for common operations, to maximize operator control.

K. The IP video management system needs to provide an open interface that facilitates the creation and deployment of User Interface plug-ins including mapping, video information overlays (eConnect), Access control, and license plate recognition (PlateSmart – US only).

L. The IP video management system must support recording of MJPEG, MPEG-4 and H.264 IP streams.

M. The IP video management system shall support Pelco and third-party H.264 Megapixel video streams up to 28 Megapixel.

N. The IP video management system is to have a fully open architecture with support for both IP-specific camera as well as cameras with ONIVIF S.

O. The IP video management system shall provide migration paths for VideoXpert.

P. The IP video management system must be capable to Aggregate independent VMS deployments across networks and manage all video through a single system while preserving local operation (VideoExpert Ultimate distributions).

Q. The IP video management system will be able to be viewed, managed, and played back through a single user interface.

R. The IP video management system will run on standard commercial off-the-shelf processors and hardware with predictable performance characterized by benchmark information on manufacturer supplied specifications.

S. The IP video management system will support Pelco Sarix Analytics at no additional licensing cost.

T. The IP video management system shall indicate system performance and operation status utilizing a variety of reports including csv and pdf formats.

U. Client software shall create and assign tags, organizing system resources as administrators or operators decide.

V. Client software shall provide the capability of running a client application in addition to the video management system.

W. Client software, at minimum, to include advanced search capabilities for camera and recordings.

1. Client software will utilize an Investigation mode which enables operators to synchronize video playback and export investigative playlists covering scenes of interest in forward or reverse at speeds up to 128 times normal playback.
2. A client computer with system compatible software will be the user interface for viewing one or more systems. Live and recorded video and current event video shall be displayed on any client computer using a proper login and password. The client computer shall be able to connect to an unlimited number of recorders simultaneously to display live and recorded video.
3. Client Software will not require a license and be available to be installed on as many clients as required by the user.
4. Client Software must be compatible with existing VideoXpert storage systems.
5. Client Software access will be User Account Controlled such that an operator must enter their credentials and will only have functionality prescribed to by the set of Roles assigned to their user account by their administrator. User Roles shall limit the ability to access live or recorded video as well as the ability to export video and other standard client operations.
6. Client Software to allow multiple monitor support for up to 8 displays per client workstation, providing virtual matrix functionality with the use of shared display decoders.
7. Client Software must allow video streams to be selectable from a system tree on an individual camera, individual system, client defined local groups, or from pre- defined recorder based groups.
8. Client cells, at minimum, have the ability to include system management, live, and search options. Tabs can be displayed simultaneously on the client.
9. Systems cells will, at minimum, display connection status, system names, and custom categories. This tab at minimum will additionally allow:

    a. Mapping plug-ins
    b. Card Access plug-ins

c. Web Browser plug-ins
d. Live video
e. Recorded video
f. Mission control console
g. eConnect plug-ins
h. PlateSmart plug-ins (US only)
i. Synchronized video live and recorded (investigations)
j. Screen layout select 1, 4, 9, 16 etc.
k. Digital Zoom
l. User selectable in-video PTZ control
m. Quick review from 30 sec, 1 min, 30 min and 1 hour (through keyboard hot buttons)
n. Virtual matrix capabilities
o. Display recorded video with full VCR controls with an active overlay, (play, fast forward and reverse, and frame by frame).
p. Playback available on a time lime format for ease of use.

10. Video export to any system-accessible media including locally to HDD, Flash USB device, or to network storage.
11. Video authentication of exported video via check sum verification.
12. Client, at minimum, will support simultaneous playback for up to (9) 1080P cameras all synchronized with each other. Also have the capability to playback non-synchronized cameras at one time in different cells.
13. Modular Window Based Client: the client shall be comprised of 1 main control panel, which can be hidden, working in unison with a series of windows, each providing a tab based experience.
14. Savable Tabs: any layout of video can be saved as TAB to be later recalled by on operator.
15. Dockable Mission Control: the main control panel can be hidden, free floating or dynamically docked to any open VMS client Window.
16. Mission Control Sort: the device list in mission control can be sorted by device name or device ID.
17. Mission Control Filter: the device list in mission control can be filtered by the following terms:
    a. Simple text based filter (matching the device name or device ID)
    b. Tag based filtering (shows devices matching the intersection of all assigned tags
    c. Status based Filtering: show devices with a particular status:
        1) Online
        2) Offline
        3) Recording
        4) Not recording
        5) on screen
        6) not on screen
18. Saved Investigations: operators are able to save a current investigation, preserving the associated device list and any created clips for later recall. Saved investigations can be shared with other operator's similar tabs.
19. Remote Workspace Push: an operator with appropriate permissions can choose to have a saved workspace sent to one or more operators' clients, causing their system to launch the saved workspace.
20. Remote Tab Push: an operator with appropriate permissions can choose to send a saved tab one or more operators' clients, causing their system to launch the saved tab.
21. Thumbnail on timebar: when hovering over the timebar, an operator will see a thumbnail representing the contents of the video stream at that point in time.

22. Information popup: when hovering over a device, an operator will see a popup that shows the following:
    a. Device state
    b. Device name
    c. Device ID
    d. Thumbnail
    e. Associated tags
    f. IP Address
23. Snapshot: an operator will be able to create a quick JPG image of the current frame of video in a cell.
24. Digital Zoom: the operator will be able to digitally zoom in on a video stream on live or playback.
25. Optical Zoom and Pan Tilt Control: operators will be able to use the mouse, 3D mouse or KBD5000 joystick to send commands to cameras that support PTZ mechanism, thereby controlling where the camera is pointing.
26. Preset Trigger: operators will be able to trigger a preset action on cameras that are storing presets.
27. Drag to Swap: an operator will be able to select the video in one cell, drag that video over another cell and have the system swap the streams.
28. Dynamic call-up by ID: operators will be able to start typing a camera ID while having a cell selected to immediately see an input box. Hitting enter will load the associated camera to the cell.
29. Last Workspace Recall: the operator will be presented with the last workspace they had opened when they logged back into the system.

1.7 SUBMITTALS

A. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.

B. Submittal Requirements:

1. Submittals required by this section are to be submitted in packages as follows:
    a. Submittals Package 1: Quality Control Submittals (Integrators Field Advisor information) specified below at the same time as a package.
        1) Submit Submittals Package 1 within 15 days of Contract award.
    b. Submittals Package 2: Submit Product Data, Shop Drawings and Quality Control Submittals specified below.
        1) Submit Submittals Package 2 within 60 days of receipt of approval of Submittals Package 1.

c. Submittals Package 3: Submit Point-to-Point Wiring Diagrams specified below at the same time as a package.
   1) Submit Submittals Package 3 within 30 days of receipt of approval of Submittals Package 2.
d. Submittals Package 4: Submit Contract Closeout Submittals specified below at the same time as a package.
   1) Submit Submittals Package 4 within 14 days after completion of the System Acceptance Test, and its acceptance by the Director's Representative.

2. It is the Contractor's responsibility to review and verify that all information required for each submittal package is included. Errors or omissions found by the Contractor are to be corrected prior to the Submittals Package submission. Incomplete Submittal Packages will be returned.
   a. It is the Contractor's responsibility to verify that all submittal packages are complete, sub-contractor or contractor.
   b. The Integrators Field Advisor shall be responsible for reviewing each complete submittal package prior to its submission for review and approval.
      1) This review and sign-off by the Integrators Field Advisor shall include review of portions of the Submittal Package assembled and inserted into the Submittals Package by the Contractor (or Sub- Contractors).
      2) Errors or omissions found by the Integrators Field Advisor are to be corrected prior to the Submittals Package's resubmission for approval.

C. Quality Control Submittals (Submittals Package 1):

1. Integrators Field Advisor Data, shall include the following:
   a. Name, business address and telephone number of Integrators Field Advisor secured for the required services.
   b. Certified statement (letter) from the Company that produced the system listing the qualifications of the Integrators Field Advisor. The certification statements from the Companies shall include the following:
      1) Information stating that the Integrators Field Advisor is experienced in the engineering, design and installation of the equipment being proposed for use.
      2) Each product for which the Company gives authorization for the Integrators Field Advisor to oversee installation of and each service the Integrators Field Advisor can perform in their behalf, listed specifically for this project.
      3) The certification shall include statements from the person providing the certification, stating:
         a) That they have read the requirements for the Integrators Field Advisor as written in this section of the Project Manual and certify that the proposed individual is capable of performing the duties of the Company Field Advisor in the Company's behalf.
         b) That the person providing certification of the Integrators Field Advisor is authorized by their company to provide this certification in the Company's behalf.
         c) Telephone number and email address of the person providing certification.
      4) Listing of similar projects that the Integrators Field Advisor has worked on in the past 3 years.
      5) Listing of training that the Integrators Field Advisor has received on the equipment being provided for this project.

a) Provide copies of training certificates received for completion of training courses.

D. Product Data (Submittals Package 2):

1. Bill of Materials: Provide a Bill of Materials identifying each system device or component proposed to be used for this system as listed in PART 2 PRODUCTS of this section.
   a. The Bill of Materials shall provide the following information:
      1) Identify each item by name and model number.
      2) Indicate the page number(s) in the Submittal Package where information required for that item can be found.
   b. Catalog sheets, specifications and installation instructions.
   c. Catalog sheets shall be marked up by the Contractor to clearly identify exactly what item is being submitted for approval and marked up clearly indicating what options the item will have to meet of the contract requirements.

E. Shop Drawing (Submittals Package 2):

1. Composite wiring and/or schematic diagrams of the complete system as proposed to be installed (standard diagrams will not be accepted), including interconnections surge protection, etc. required for a complete system.
2. Scaled drawings showing mounting of camera stations.

F. Quality Control Submittals (Submittals Package 2):

1. Copy of license for installing Security Systems.
   a. Also include copy of identification card issued by the Licensee for each person who will be performing the Work.

2. Installers' Qualifications Data: Include a completed INSTALLER'S QUALIFICATION DATA FORM for each person who will be performing the work.
   a. Forms must be completely filled out. Incomplete forms will be returned for correction with no action taken.
   b. Forms must include all information required by this section of the Project Manual, showing that the experience criteria have been met.
   c. Each form must be signed by the Installer. Forms without signatures shall not be approved.
      1) Submit forms with original Installer signatures to the Director’s Representative.
      2) Work Plan:
         a) Include in the Work Plan required by section 015634 all work associated with the modifications to this system.
         b) Submit a Work Plan of how the work relating to this system shall be performed. Schedule shall include:
            (1) A brief description of the work to be performed at each phase.
            (2) Estimated time durations required to perform each phase of the work.
            (3) Date that Pre-Installation Meeting will be held.
               (a) Pre-Installation Meeting should not be held more than 1 week prior to the start of the installation of any system component listed in PART 2 PRODUCTS unless an earlier time is agreed upon by the Director’s Representative.
            (4) Delivery dates of materials being provided under this Contract.

3. Name, address, and telephone number of nearest fully equipped service organization.
4. Letter from the Integrators Field Advisor: Accompanying the Submittals Package there shall be a letter from the Company Field Advisor, stating that the Integrators Field Advisor has reviewed the Submittals Package for accuracy and completeness and approves all materials and installation methods included in the Submittals Package.
    a. The accompanying letter shall also include statements as follows:
        1) State that the Integrators Field Advisor has reviewed the Bill of Materials for accuracy and completeness and approves all items listed on the Bill of Materials for use.
        2) State that the Integrators Field Advisor has reviewed the System Description for accuracy and completeness and approves the System Description for use.
        3) State that the Integrators Field Advisor has reviewed the Shop Drawings for accuracy and completeness and approves the Shop Drawings for use.
            a) Letter shall list each drawing by designation Number and Drawing Title that the Integrators Field Advisor has reviewed and approved.
    b. Submit letter with original Integrators Field Advisor signature to the Director's Representative within three days of submission of Submittal Package 2.

G. Point-to-Point Wiring Diagrams (Submittal Package 3):

1. Submit complete Point-to-Point wiring diagrams of the entire system as it is to be installed.
    a. Point-to-Point wiring diagrams shall show the following:
        1) All components in the system only of the devices being re-installed.
        2) All cables and conductors between each component.
        3) Identify all cables and conductors and show all terminations and splices (identification shall correspond to markers to be installed on each conductor).
    b. Point-to-Point wiring diagrams shall have an accompanying letter from the Integrators Field Advisor stating that the Integrators Field Advisor has reviewed the Point-to-Point wiring diagrams for accuracy and completeness and approves the Point-to-Point wiring diagrams for use.
        1) Letter shall list each drawing by designation Number and Drawing Title that the Integrators Field Advisor has reviewed and approved.
        2) Submit letter with original Integrators Field Advisor signature to the Director's Representative within three days of submission of Submittal Package 3.

H. Contract Closeout Submittals (Submittal Package 4):

1. System acceptance test report.
2. Certificate: Affidavit, signed by the Integrators Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.

3. Operation and Maintenance Data:
   a. Deliver 2 paper copies and 2 removable storage media, covering the installed products, to the Director's Representative. Include:
      1) Operation and maintenance data for each product.
      2) Complete Point-to-Point wiring diagrams (As-Built Drawings) of entire system as installed. Identify all conductors and show all terminations and splices (identification shall correspond to markers installed on each conductor).
      3) Name, address, and telephone number of nearest fully equipped service organization.

1.8 QUALITY ASSURANCE

A. Equipment Qualifications:

1. Products other than those specified:

   a. If products other than those specified, are proposed for use, furnish the name, address, and telephone number of at least 5 comparable installations that can prove the proposed products have operated satisfactorily for 1 year.
      1) Reference information required above must be that of the End-User of the equipment, no other references will be accepted (i.e., Installers, Sales Reps, etc.).
      2) Pay travel expense for the Director's Representative to inspect two of these installations.
   b. The Company producing the product shall have test facilities available, which can demonstrate that the proposed product meets contract requirements.
      1) Pay all costs, including travel expenses to the test facility for the Director's Representative to witness test demonstration.

B. Installer's Qualifications: The persons installing the Work of this Section and their supervisor shall be personally experienced in closed circuit television systems and shall have been engaged in the installation of video surveillance systems for a minimum of 3 years.

1. Qualifying experience must be in the installation of VSS similar in operation and construction of the system being specified by this section.
2. Furnish to the Director completed INSTALLER'S QUALIFICATION DATA FORM for each person who will be performing the Work. Each form shall include:
   a. Installer's name.
   b. Employer's Name and Address.
   c. Qualifying Experience: Project information of 5 similar projects, which the installer, had worked on during the past 3 years. Information shall include for each project:
      1) Name and Address of project.
      2) Dates installer worked on project.
      3) Name and telephone Number of installer's supervisor for the project.
      4) Types of security installation work installer performed on project.

C. Manufacturers' Technical Advisor: Secure the services of a Manufacturers' Technical Advisor from the Company producing the NVSS for the following:

1. Assist in the formation of the Submittals Packages and review the Submittal Packages for accuracy and completeness.

2. Engineering associated with interconnections between the Video Surveillance System (VSS) (Section 282304) and the perimeter alarm system (Section 281605).
3. Engineering associated with interconnections between the NVSS and the cameras.
4. Render advice regarding installation and final adjustment of the system.
5. Coordinate installation of the system and the related work with the other systems.
6. Conduct a pre-installation meeting at the contract site with the installers (and their supervisor) who will be performing the work, the Director's Representatives and facility supervisory and maintenance personnel. The meeting shall be a minimum of 8 hours in duration (held in four 2-hour increments). The topics covered shall include, but shall not be limited to the following:
    a. Manufacturers' Technical Advisor shall present an overview of the system as it is to be installed.
    b. Manufacturers' Technical Advisor shall lead a discussion of installation concerns and coordination issues on this system and related systems and related work being installed under this project.
    c. Manufacturers' Technical Advisor shall provide training on procedures for installing system components and precautionary measures installers should be aware of while performing the work.
        1) Manufacturers' Technical Advisor shall review Point-to-Point wiring diagrams with the installers and provide training on termination, bonding and grounding procedures required for proper installation of the system wiring and components.
7. Provide supervision of the installation at the contract site for a minimum of 16 hours and for the following:
    a. Supervise the installation of the NVSS.
    b. Render advice regarding installation and final adjustment of the system.
    c. Coordinate installation of the system and the related work with the other systems.
    d. Perform programming of the system.
    e. Perform preliminary tests of the system.
    f. Train facility security personnel, security supervisory personnel and maintenance personnel in operation and routine (weekly) testing of the system (minimum of four 3-hour sessions).
    g. Train facility maintenance personnel in adjustments, programming, routine maintenance and annual testing of the system (minimum of 8 hours of training – held in four 2-hour increments).
    h. Witness final system test and certify with an affidavit that the system is installed in accordance with the contract documents and is operating properly.
    i. Explain available service programs to facility supervisory personnel for their consideration.

D. Integrators Technical Advisor (Camera Stations): Secure the services of a Manufacturers' Technical Advisor from the Company producing the camera stations for the following:

1. Assist in the formation of the Submittals Packages and review the Submittal Packages for accuracy and completeness.
2. Engineering associated with interconnections between the NVSS and camera stations.

3. Assist the Integrators Technical Advisor of the NVSS with conducting the pre-installation meeting at the contract site. The Integrators Technical Advisor for the camera stations shall conduct a portion of the pre-installation meeting. This portion of the meeting shall be a minimum of 2 hours in duration and cover the following topics (but shall not be limited to the following):
    a. Integrators Technical Advisor for the camera stations shall present an overview of each type of camera station as they are to be installed.
    b. Integrators Technical Advisor for the camera stations shall lead a discussion of installation concerns and coordination issues on the installation of the camera stations with the NVSS.
    c. Integrators Technical Advisor for the cameras shall provide training on procedures for installing the camera stations and precautionary measures installers should be aware of while performing the work.
        1) Manufacturers' Technical Advisor shall review Point-to-Point wiring diagrams with the installers and provide training on termination, bonding and grounding procedures required for proper installation of the system wiring and components.
4. Provide supervision of the installation at the contract site for a minimum of 8 hours and for the following:
    a. Supervise the installation of the camera stations.
    b. Render advice regarding installation of the cameras.
    c. Assist in initial and final adjustments to the cameras.
    d. Perform preliminary tests of the system.
    e. Train facility security personnel in operation, and routine (weekly) testing of the cameras (minimum of two 2-hour sessions).
    f. Assist in performing final system test and certify with an affidavit that the cameras are installed in accordance with the contract documents and are operating properly.
    g. Explain available service programs to facility supervisory personnel for their consideration.

1.9 WARRANTY

A. Special Warranty: The one-year period required by the General Conditions is extended to (2) years for the Work of this Section when approved. Refer to Supplementary Conditions.

1.10 MAINTENANCE

A. Service Availability: A fully equipped service organization capable of guaranteeing response time within 8 hours to service calls shall be available 24 hours a day, 7 days a week to service the on-going installation and the completed system.

PART 2 - PRODUCTS

2.1 GENERAL

A. All equipment and materials used shall be standard components, manufactured and regularly utilized in Video Surveillance Systems.

B. Furnish only VSS equipment that has been thoroughly tested before shipment to the project site

C. Provide all equipment listed in the following Product Specification sub-sections but not limited to Section 2 of this Specification or Contract Drawings for a complete and operational VSS.

D. The system design is based on Pelco's VideoXpert Platform; a Network Video Management System.

2.2 CAMERA STATIONS

A. 3.0 MEGAPIXEL WIDE ANGLE INFRARED IP CAMERA: Pelco model IBD332.

1. Basis of Design Product: IBD332-1, by Pelco.
2. Performance:
    a. Image Sensor: 1/2.8 inch progressive scan CMOS.
    b. Maximum Resolution:
        1) Aspect Ratio: 16:9: 1920 x 1080.
        2) Aspect Ratio: 4:3: 2048 x 1536.
    c. Imaging Rate:
        1) WDR Off: (50 Hz/60 Hz): 25 fps/30 fps.
        2) WDR On: (50 Hz/60 Hz): 20 fps/20 fps.
    d. Dynamic Range:
        1) WDR Off: 83 dB.
        2) WDR On: 126 dB.
    e. Minimum Illumination:
        1) Color: 0.027 lux.
        2) Monochrome: 0.014 lux.
        3) IR: 0.0 lux.
    f. Field of View:
        1) Horizontal angle: 16:9: 133 degrees.
        2) Horizontal angle: 4:3: 135 degrees.
        3) Vertical angle: 16:9: 74 degrees.
        4) Vertical angle: 4:3: 95 degrees.

B. A. 2.0 MP Fixed Dome Camera, with microphone, 2.8 - 12.0 mm lens

1. Basis of Design Product: Pelco Sarix SRXE4-2V12-IMD-1 Enhanced 4 Series Dome Camera.
2. Microphone: Built-in microphone for audio analytics, for certain variants, with physical disable switch.
3. Performance:
   a. Image Sensor: 1/2.8 inch progressive scan CMOS.
   b. Maximum Aperture: F1.4.
   c. Aspect Ratio: 16:9.
      1) Horizontal Field of View: 27 to 118 degrees.
      2) Vertical Field of View: 15 to 64 degrees.
   d. Max Resolution (16:9):
      1) Primary Stream: 1920x1080.
      2) Secondary Stream: 1920x1080, 1280x720, 768x432, 640x360, 512x288.
      3) Tertiary Stream: 1280x720, 768x432, 640x360, 512x288, 384x216.
      4) Quaternary Stream: 640x360, 512x288.
   e. Maximum Imaging Rate: (50 Hz/60 Hz): 50 fps/60 fps in High Frame Rate Mode; otherwise 25 fps/30 fps.
   f. Dynamic Range:
      1) WDR off: Up to 83 dB.
      2) WDR on: Up to 130 dB (dual exposure, 30 fps) Up to 150 dB (triple exposure, 20 fps or less).
      3) WDR on (IEC 62676): Up to 126 dB (dual exposure, 30 fps) Up to 144 dB (triple exposure, 20 fps or less).
   g. Minimum Illumination:
      1) Color without IR: 0.01 lux.
      2) Monochrome without IR: 0.003 lux.
      3) Monochrome with IR: 0 lux.
   h. IR Illumination Maximum Distance (high power 850 nm LEDs):

C. 12MP Multisensor Camera; four 3MP sensors, wide dynamic range (WDR), 3.3mm - 5.7mm lens:

1. Basis of Design Product: SMLE1-12V5-4H – Sarix Multi Enhanced Camera, by Pelco.
2. Performance:
   a. Image Sensors: 1/2.8 inch progressive scan CMOS.
   b. Field of View:
      1) Aspect Ratio: 4:3.
         a) Horizontal: 53 degrees to 99 degrees per sensor; up to 360 degrees combined.
         b) Vertical: 39 degrees to 69 degrees per sensor.
      2) Aspect Ratio: 16:9.
         a) Horizontal: 53 degrees to 97 degrees per sensor; up to 270 degrees combined.
         b) Vertical: 29 degrees to 50 degrees per sensor.
   c. Active Pixels (H x V): 2048 x 1536 per sensor.
   d. Imaging Rate:
      1) With WDR on: 30 fps at 60Hz and 25 fps at 50Hz.
      2) With WDR off: 40 fps at 60Hz and 33 fps at 50Hz.
   e. IR Illumination:
      1) Color Mode: 0.02 lux (F1.5).
      2) Mono Mode 0.018 lux (F1.5).

3) With IR Illuminator: 0 lux.

f. Dynamic Range: 120 dB with WDR active.

D. 12MP Fisheye Camera;

1. Basis of Design Product: IMF82-1ERS – Sarix Fisheye Camera, by Pelco
   a. Image Sensor 1/1.6" progressive scan CMOS
   b. 180° Video Streaming Resolutions Primary Stream 3520 x 1920, Secondary Stream 704 x 384; 512 x 280, Tertiary Stream 512 x 280
   c. 360° Video Streaming Resolutions Primary Stream 3520 x 3520, Secondary Stream 720 x 720; 512 x 512; 384 x 384
   d. Dewarped 180° Video Streaming Resolutions Primary Stream 180x2: 3072 x 1248 120x3: 2048 x 1248, 90x4: 1536 x 1248, Secondary Stream 180x2: 768 x 312 120x3: 512 x 312, 90x4: 384 x 312
   e. Dewarped 360° Video Streaming Resolutions Primary Stream 180x2: 3072 x 1248 120x3: 2048 x 1248, 90x4: 1536 x 1248 Secondary Stream 180x2: 768 x 312 120x3: 512 x 312, 90x4: 384 x 312
   f. Horizontal Angle of View (HFOV) 180°; 188°, 360°; 182°
   g. Vertical Angle of View (VFOV) 180°; 104°, 360°; 182°
   h. Max Image Rate*
      1) Full feature 25fps/30fps
      2) No Video Analytics 25fps/30fps
      3) Dewarp video 25fps/30fps
      4) High Framerate 180° N/A
      5) High Framerate 360° N/A
   i. Dynamic Range
      1) WDR Off Up to 83 dB
      2) WDR On Up to 120 dB
   j. Camera Operating Modes
      1) Full feature No Video Analytics (full feature with video analytics disabled) Dewarp video
   k. Bandwidth Management HDSM SmartCodec technology; Idle scene mode
   l. 3D Noise Reduction Filter Yes

2.3 WIRING

A. Cables:

1. All electrical characteristics shall meet the requirements of the Company producing the system (attenuation, conductor to conductor capacitance, crosstalk, DC resistance, velocity of propagation, etc.).
2. Exterior Cameras:
   a. For Connections between the Power Over Ethernet Switch (POE) and Camera Stations, provide CAT6 suitable for direct burial and plenum rated.

3. Interior Cameras Plenum Rated:
   a. For connection to Fixed Camera Stations located within the building, provide CAT 6 cable; Paige TIA/EIA certified category 6, unless otherwise recommended by camera manufacturers.
   b. For connection to PTZ Camera Stations located within the building, provide CAT 6 cable; Paige TIA/EIA certified category 6, unless otherwise recommended by camera manufacturers.

4. Miscellaneous Cables: provide additional cables as required for System to function as summarized in SYSTEM DESCRIPTION and indicated on the drawings:
   a. Number, size, and type of conductors as recommended by the Company producing the equipment.
   b. Conductors shall be enclosed in a cable with a jacket suitable for the environment that they are to be installed.
   c. Conductors shall be enclosed in a cable with a jacket suitable for the environment that they are to be installed.

2.4 CONNECTORS

A. Connectors: As produced by Amphenol Corp. (Weatherproof type where installed in exterior locations.)

2.5 MARKERS AND NAMEPLATES

A. Station Locator: Flip type bound file, indexed with tabs and equipped with 8-l/2 x 11 inch (minimum) plans showing location of each card reader and location of all major equipment associated with the system. Enclose each plan in clear plastic envelope so that plans can be removed and updated.

B. Wiring Diagram: One line diagram showing interconnection of all major components associated with the system. Encase with aluminum or stainless steel frame, and plexiglass front. Provide detailed One line diagram showing interconnection of all major components associated with the system within the Operation and Maintenance Manuals and As-Built wiring diagrams.

C. Provide Nameplates: Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inch high.

1. Phenolic: Two color laminated engraver’s stock, 1/16-inch minimum thickness, machine engraved to expose inner core color (white).
2. Materials for Outdoor Applications: As recommended by nameplate manufacturer to suit environmental conditions.

D. Markers:

1. Premarked self-adhesive; W.H. Brady Co.'s B940, Thomas and Betts Co.'s E-Z code WSL self-laminating, Ideal Industries' Mylar/Cloth wire markers, or Markwick Corp.'s permanent wire markers.
2. Flexible sleeve markers; Plastic Extruded Parts Inc.'s FS series.
3. Snap-on markers; Plastic Extruded Parts Inc.'s RS series.
4. Thermal transfer (non-smearing), Brady's ID PAL hand held labeling tool, portable thermal transfer printer or equal.

2.6 ACCESSORIES

A. Include accessories required to perform the functions summarized in SYSTEM DESCRIPTION and indicated on the drawings.

2.7 COPPER PATCH PANELS (CPP)

A. UTP Coupler Patch Panel

1. Exceeds channel requirements of ANSI/TIA-568-C.2 Category 6 and ISO 11801 Class E standards at swept frequencies 1 to 250 MHz.
2. Meets ANSI/TIA-1096-A; contacts plated with 50 microinches of gold for superior performance.
3. Industry Standard interface provides a quick and easy plug and play connection to RJ45 patch cords; backwards compatible.
4. Factory installed 24-port patch panel mounts
5. As manufactured by Panduit, model CP24688BL.

B. Cable Management System (CMS)

1. 1RU
2. Hinged cover
3. As manufactured by Panduit

2.8 WIRE-PULLING COMPONDS

A. To suit type of insulation; American Polywater Corp.'s Polywater Series, Electric Products Div./3M's WL, WLX, or WLW, Greenlee Textron Inc.'s Y-ER-EAS, Cable Cream, Cable Gel, Winter Gel, Ideal Industries Inc.'s Yellow 77, Aqua-Gel II, Agua- Gel CW, or Thomas & Betts Corp.'s Series 15-230 Cable Pulling Lubricants, or Series 15-631 Wire Slick.

2.9 WIRE MANAGEMENT PRODUCTS

A. Cable Clamps and Clips, Cable Ties, Spiral Wraps, Velcro etc.: as manufactured by Catamount/T&B Corp., or Ideal Industries Inc.

PART 3 - EXECUTION

3.1 INTERRUPTION TO EXISTING VIDEO SURVELLANCE SYSTEM

A. Maintain the existing system in its present condition to the extent possible while installing new Work.

B. Prior to making changes or removals relative to the existing system, notify the Director's Representative and have procedures approved.

1. Install nameplate stating monitor function over each monitor that is connected to the output of the NVSS.

3.2 INSTALLATION

A. Pre-Installation Meeting:

1. After approval of Submittals Package 1, conduct Pre-Installation Meeting.

a. Provide a minimum of 1 week notice to the Director's Representative, so that a Pre- Installation meeting schedule can be set up with facility personnel and arrangements can be made for a location to hold the meeting.
b. Provide all materials necessary for training (training aides, handouts, overhead projector, etc.).

B. Install closed circuit television system in accordance with the Company's printed instructions:

1. Terminations and connections to devices are not to be made until Point-to-Point Wiring Diagrams (required to be submitted in Submittals Package 2) have been submitted and approved.

C. Cables:

1. Optical Fiber cables shall be continuous and un-spliced between the security equipment racks and the camera stations.
2. Install conductors in raceways after the raceway system is completed. Exception: Conductor types specifically indicated on the drawings not to be installed in raceways.
3. No grease, oil, or lubricant other than wire pulling compounds specified may be used to facilitate the installation of conductors.
4. Connect system components requiring a primary power supply to dedicated emergency power branch circuits.
5. Make connections and splices at system components, terminal strip cabinets, and console only. Connections or splices will not be allowed at any other location in the system.
6. Use wire management products to bundle, route, and support wiring in junction boxes, pull boxes, wire ways, gutters, channels, and other locations where wiring is accessible.
7. The security vendor will be responsible for final calculations of power and signal runs to ensure the wiring supplies a non-degraded signal and power requirements that meets manufactures specifications for equipment based on final device location and routing back to security headend equipment.
8. Bending and pulling tensions will not be exceeded per the cable manufacturer specifications. Contact manufacturer for specific requirements of the cable to be pulled.

D. Mounting Hardware:

1. Mount all exposed equipment with security grade tamper proof center pin reject style Allen type mounting screws.

E. Earth ground of equipment as required by equipment manufacturer.

1. Do not use telephone ground connections as earth grounds.
2. Do not use connections to building structural steel as earth grounds.
3. Provide equipment-grounding conductors to ground bar.

F. Identification, Labeling, Marking:

1. Station Locators: Install adjacent to each workstation.
2. Wiring Diagram: Install adjacent to equipment in hub router OITS room computer closet.
3. Nameplates:
   a. Install nameplate with monitor designation over each monitor.
   b. Install
   c. Install phenolic nameplates for camera station number on all exterior cameras. Mount on wall below camera 10' AFG.

d. Install phenolic nameplates for all equipment racks.
e. Install phenolic nameplates for all equipment mounted in equipment racks.

4. Identification of Circuits: Identify wires and cables by system and function in cabinets with premarked, self-adhesive, wraparound type markers. Designations shall correspond with Point-to-Point wiring diagrams.
5. Battery Data: Insert a copy of the battery warranty in each battery compartment and mark on batteries the date placed in service.

3.3 FIELD QUALITY CONTROL

A. Cable Test: Electronically meter test and documents all cables, control wiring, and twisted cables prior to installing new equipment and electronically test and document all new cables under the supervision of Company Field Advisor. Test for open, grounds, and shorts.

B. Make corrections to wiring prior to proceeding. Advise the Director’s Representative of any cable that cannot be repaired.

C. Provide written test results for all cables and certify operation.

D. Test all cables after installation and prior to connecting new equipment.

1. Cable Testing: The following tests will be performed to ensure that the cable is installed correctly:
   a. Wire map.
   b. Length.
   c. Insertion loss (attenuation).
   d. NEXT loss (Near-End Crosstalk)
   e. PSNEXT loss (Power Sum Near-End Crosstalk).
   f. ELFEXT loss.
   g. PSELFEXT loss (power Sum Equal Level Far-End Crosstalk)
   h. Return loss.
   i. ACR (Attenuation to Crosstalk Ratio)
   j. PSACR (Power Sum Version of ACR)
   k. Propagation Delay
   l. Delay Skew
   m. Model Number: Fluke Networks DTX-1800 Cable Analyzer.

E. Preliminary System Test:

1. Preparation: Have the Integrators Field Advisor adjust the completed system and then operate it long enough to assure that it is performing properly:
   a. Adjust each camera's imaging device position ("Back Focus Adjustment") in relationship with its lens to maximize the camera performance. Make adjustments at night (or during the day using a filter). Iris shall be fully open while adjusting the position of the imaging device in the camera. Exact method for adjustments shall be in accordance with the camera and lens manufacturers' printed instructions.
   b. Make adjustments for clear, sharp, distortion free scenes and roll-free vertical interval switching to the satisfaction of the Director's Representative.
   c. Program system, including salvo call-up of camera stations upon alarm as indicated on the drawings and their pre-position programming of each camera station to view the zone in alarm.

1) Pre-position Tour: Pre-position No. 99 for each camera station shall be set so that with all camera stations set at pre-position No. 99 a complete tour of the facility's perimeter fences associated with the perimeter alarm system is made.
   a) In pre-position No. 99, the entire perimeter shall be covered and automatic sequencing of cameras stations simulates a tour of the perimeter alarm system fence.

2. Run a preliminary test for the purpose of:
   a. Determining whether the system is in suitable condition to conduct the acceptance test.
   b. Checking and adjusting VSS equipment.
   c. Training facility personnel.

F. Digital Test Recordings (Scenes):

1. After completion of the preliminary system test and prior to system acceptance test, make digital recordings of the following scenes recorded from the cameras installed under this project:
   a. During daylight with the cameras positioned in pre-position No. 99, consecutively sequence all cameras (with the dwell time set for each camera at 30 seconds) for a minimum period of 15 minutes or until all cameras have been viewed twice.
   b. Same as item "a." above except recording shall be done at night.
   c. Activate a test of each perimeter alarm system zone and record the following:
      1) Record in quad view the salvo (4 camera stations) called up when the zone goes into alarm.
         a) After 30 seconds of recording, and while still recording, pan each camera station covering the zone a minimum 90 degrees away from the zone being tested, clear and re-test the zone and record for another 30 seconds in quad view.
         b) Without moving the camera stations record for a minimum of 15 seconds each of the camera stations at full screen covering the zone being tested.

2. Include written description to accompany tape to identify each recorded scene.
3. Digital recordings shall be suitable for playback on a standard digital MPEG video playback system.

G. System Acceptance Test:

1. Prerequisite: Digital Test Recording of camera scenes must be approved prior to scheduling of the System Acceptance Test.
   a. Any recorded video must be reviewed and approved by the Chief Safety Officer to avoid any HIPPA violations for patient privacy.
2. Preparation: Notify the Director's Representative at least 3 working days prior to the test so arrangements can be made to have a Facility Representative witness the test.
3. Make the following tests:
   a. Test each system function step by step as summarized under SYSTEM DESCRIPTION.
   b. Demonstrate that:
      1) Each camera station provides sharp, clear, distortion free scenes on the associated monitors for the lighting conditions.
      2) Each indoor camera station operates through full range of lighting

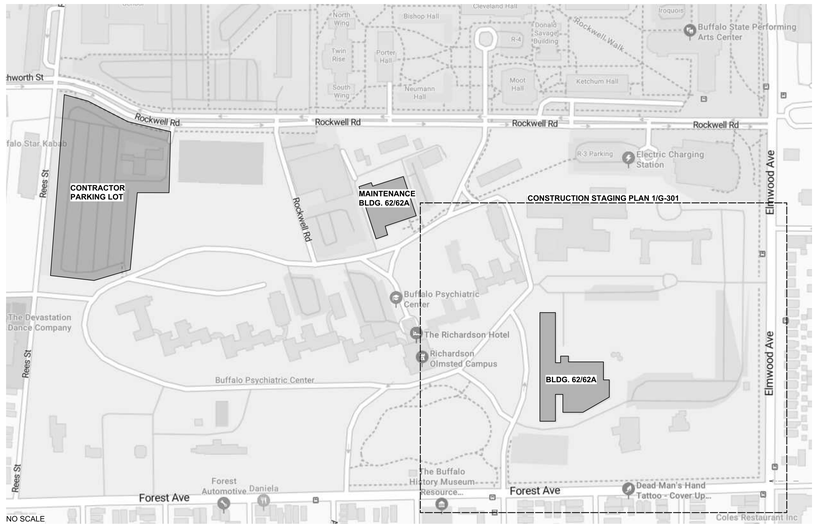
conditions including daylight (all fixtures off), general lighting on (at night), and night lights only (at night).

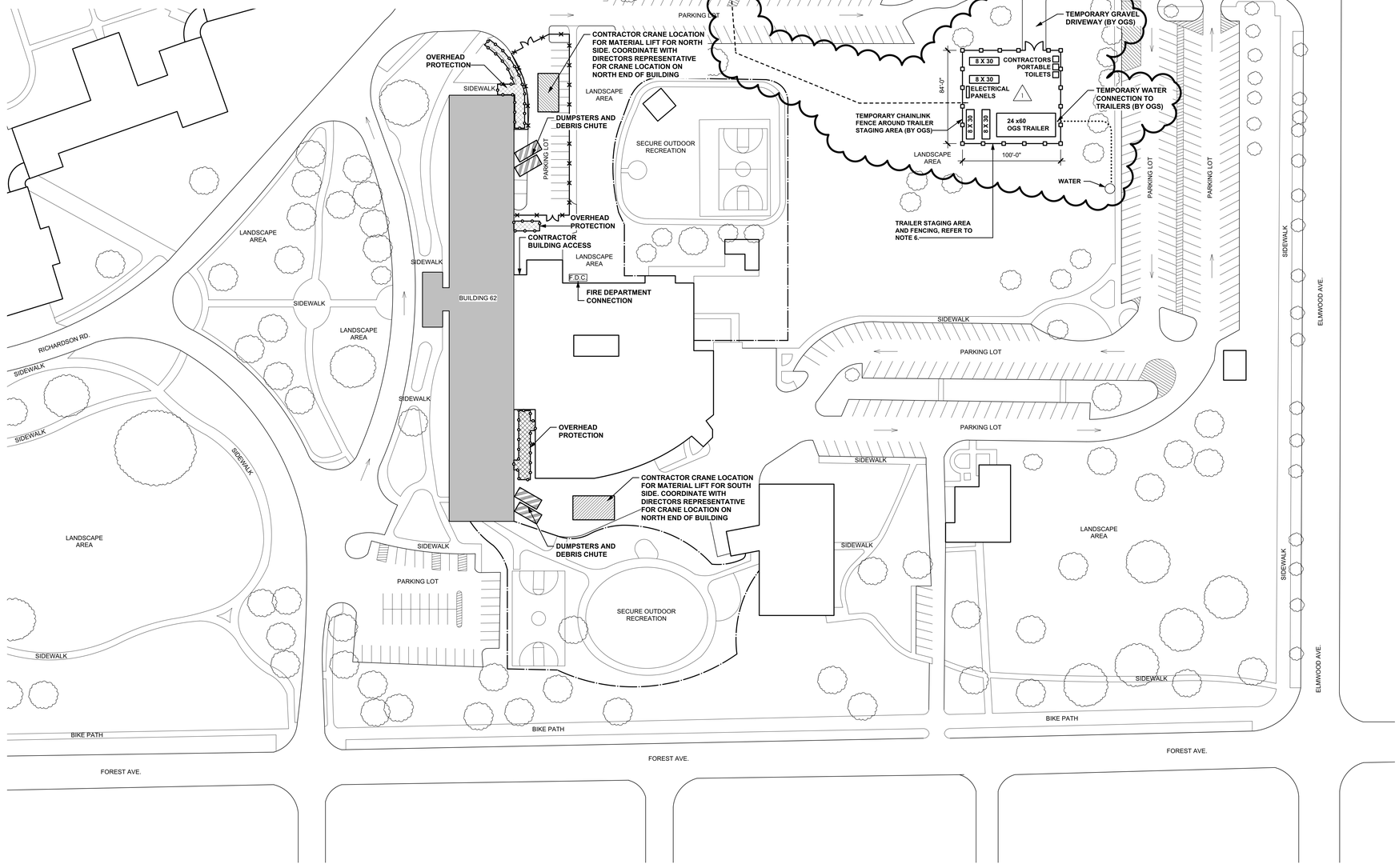
3) Each outdoor camera station operates through a full range of lighting conditions including low lighting levels. A portion of this test must be performed at night.
4) Each camera operates through the full range of zoom lens.
5) Each camera housing operates through the full range of its pan and tilt capabilities.
6) Outdoor camera station mountings are stable in wind conditions at the site.

4. Supply equipment necessary for system adjustment and testing.

5. Submit written report of test results signed by Integrators Field Advisor and Director's Representative. Mount a copy of the final report in a plexiglass enclosed frame assembly adjacent to the security equipment rack.

END OF SECTION 282304





1 G-301 CONSTRUCTION STAGING PLAN
Scale: 1" = 50'-0"

GENERAL PROJECT STAGING AND LOGISTIC PLAN NOTES

1. C-CONTRACT TO PROVIDE TEMPORARY SCAFFOLDING PROTECTION FOR PEDESTRIANS AT ALL BUILDING ENTERANCES AND PEDESTRIAN PATHWAYS ADJACENT / NEAR CONSTRUCTION ACTIVITIES. COORDINATE WITH THE DIRECTORS REPRESENTATIVE / ARCHITECT FOR LOCATIONS OF ALL TEMPORARY PROTECTION AND/OR SCAFFOLDING PRIOR TO SUBMISSION OF SUBMITTAL.

   AREA OF SCAFFOLDING AT ALL ENTRENCES/ EXITS AND PEDESTRIAN WALKWAYS.

   PROVIDE SCAFFOLDING PROTECTION SYSTEM, WITH STEEL FRAMING TO ALLOW MINIMUM HEIGHT OF 8'-6" CLEARENCE TO THE UNDERSIDE. PROVIDE WOOD PLANK BOARDS FOR OVERHEAD COVERING.

   PROVIDE SUPPORT BASE FOR STRUCTURAL FRAMING TO LEVEL AND BRACE SYSTEM.
2. C-CONTRACT TO PROVIDE 8'-0" HIGH CONSTRUCTION FENCING TO INCLUDE ACCESS GATES FOR DURATION OF CONSTRUCTION. COORDINATE TO PROVIDE ACCESS KEY TO LOCKS WITH OTHER CONTACTS, FACILITY.

   
3. ALL EXITS AND ENTRANCES FOR THE BUILDING SHALL BE MAINTAINED CLEAR FOR THERE INTENDED USE. CONTRACTOR SHALL NOT BLOCK AND/ OR BARRICADE THESE UNDER ANY CIRCUMSTANCE.
4. C-CONTRACT TO PROVIDE TEMPORARY PROTECTION OF TREES/ LANDSCAPE AROUND CONSTRUCTION AREA.
5. EXISTING SECURITY FENCE: ——·——·——·——·——·——

   ALL CONTRACTS WILL NOT BE ALLOWED WITHIN EXISTING SECURITY FENCING OF THE PATIENTS OUTDOOR RECREATION AREA WITHOUT PRIOR REVIEW AND APPROVALS FROM THE DIRECTORS REPRESENTITIVE.
6. STAGING AREA INCLUDING EXCAVATION, STONE, FENCING, OGS TRAILER, POWER AND WATER CONNECTIONS, REMOVALS AND RESTORATION OF THESTAGING AREA BY OGS. CONTRACTOR MAY PLACE (1) 8'x30' OFFICE TRAILER FOR USE DURING THE PROJECT WITHIN THE STAGING AREA. CONTRACTORS ARE RESPONSIBLE FOR THEIR OWN UTILITIES (POWER/ DATA/ PHONE/ WATER) FROM THE TERMINATION POINT NEAR THE OGS TRAILER TO THEIR TRAILERS. CONTRACTORS ARE ALSO RESPONSIBLE FOR THE PROVISION AND MAINTENANCE OF THEIR OWN TEMPORARY TOILETS. THE OGS TRAILER TOILET ROOM IS NOT FOR CONTRACTOR USE. COORDINATE WITH THE DIRECTORS REPRESENTATIVE.
7. C-CONTRACT
   SHALL PROVIDE CONSTRUCTION FENCING ON-SITE AND AT MATERIAL STAGING AREA AND FENCING/OVERHEAD PROTECTION AT BUILDING. PROVIDE GATES WITH LOCKS AND KEY TO EACH CONTRACT FOR ACCESS.
   - MAY PROVIDE (1) 8X30 CONSTRUCTION TRAILER
   -CONTRACTORS ARE RESPONSIBLE FOR THEIR OWN UTILITIES (POWER/ DATA/ PHONE/ WATER) FROM THE TERMINATION POINT NEAR THE OGS TRAILER TO THEIR TRAILERS. CONTRACTORS ARE ALSO RESPONSIBLE FOR THE PROVISION AND MAINTENANCE OF THEIR OWN TEMPORARY TOILETS.
8. P-CONTRACT
   -PROVIDE (1) 8X30 CONSTRUCTION TRAILER
   -CONTRACTORS ARE RESPONSIBLE FOR THEIR OWN UTILITIES (POWER/ DATA/ PHONE/ WATER) FROM THE TERMINATION POINT NEAR THE OGS TRAILER TO THEIR TRAILERS. CONTRACTORS ARE ALSO RESPONSIBLE FOR THE PROVISION AND MAINTENANCE OF THEIR OWN TEMPORARY TOILETS.
9. H-CONTRACT
   -PROVIDE (1) 8X30 CONSTRUCTION TRAILER
   -CONTRACTORS ARE RESPONSIBLE FOR THEIR OWN UTILITIES (POWER/ DATA/ PHONE/ WATER) FROM THE TERMINATION POINT NEAR THE OGS TRAILER TO THEIR TRAILERS. CONTRACTORS ARE ALSO RESPONSIBLE FOR THE PROVISION AND MAINTENANCE OF THEIR OWN TEMPORARY TOILETS.
10. E-CONTRACT
    -PROVIDE (1) 8X30 CONSTRUCTION TRAILER
    -CONTRACTORS ARE RESPONSIBLE FOR THEIR OWN UTILITIES (POWER/ DATA/ PHONE/ WATER) FROM THE TERMINATION POINT NEAR THE OGS TRAILER TO THEIR TRAILERS. CONTRACTORS ARE ALSO RESPONSIBLE FOR THE PROVISION AND MAINTENANCE OF THEIR OWN TEMPORARY TOILETS.

GENERAL SITE NOTES

1. PER CITY OF BUFFALO REGULATION, CONTRACTOR SHALL LIMIT MAXIMUM SITE DISTRUBANCE TO .23 ACRES.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODWARD VI 030712 STATE OF NEW YORK

CONTRACT: C, H, P & E

TITLE: REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION: BUFFALO PSYCHIATRIC CENTER 400 FOREST AVE, BUFFALO, NEW YORK

CLIENT: NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS

PROJECT NUMBER:	46103 - C, H, P & E
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE: **CONSTRUCTION STAGING PLAN**

DRAWING NUMBER: **G-301**

SHEET 12 OF 212

Date: 5/11/26 Time: 12:39:14 PM

KEYED REMOVAL NOTES

WALLS

D1 REMOVE EXISTING (1 LAYER) GYPSUM BOARD, (1) LAYER MASONITE, BATT INSULATION AND FASTENERS AT/ALONG EXTERIOR WALL. EXISTING METAL STUDS OF PARTITION TO REMAIN IN PLACE.

D2 REMOVE EXISTING (1 LAYER) GYPSUM BOARD, (1) LAYER MASONITE (BOTH SIDES), ACOUSTIC INSULATION AND FASTENERS. REFER TO WALL REMOVAL LEGEND FOR LOCATIONS OF METAL STUD REMOVAL. EXISTING FLOOR AND CEILING STUD TRACKS TO REMAIN.

D3 REMOVE EXISTING METAL STUD PARTITION WITH (1 LAYER) GYPSUM BOARD, (1) LAYER MASONITE (BOTH SIDES), ACOUSTIC INSULATION AND FASTENERS COMPLETELY. PATCH FIREPROOFING ALONG ENTIRE LENGTH OF REMOVAL.

D4 REMOVE EXISTING FURRING HAT CHANNELS WITH (1 LAYER) GYPSUM BOARD, (1) LAYER MASONITE AND FASTENERS AROUND EXISTING CONCRETE COLUMN COMPLETELY.

D5 REMOVE EXISTING FURRING HAT CHANNELS WITH (1 LAYER) GYPSUM BOARD, (1) LAYER MASONITE PARTITION AND ALL FASTENERS COMPLETELY.

D6 REMOVE ALL EXISTING CERAMIC WALL TILE (APPROX. 32 LINEAR FEET, FULL HEIGHT) IN THIS ROOM COMPLETELY.

D7 REMOVE EXISTING FIBERGLASS REINFORCED PANELS AND TRIM AROUND ENTIRE SPACE INCLUDING (1 LAYER) GYPSUM BOARD, (1) LAYER MASONITE, BATT INSULATION AND FASTENERS. EXISTING FLOOR AND CEILING STUD TRACKS TO REMAIN.

D8 REMOVE PORTION OF EXISTING METAL STUDS WITH (1 LAYER) GYPSUM BOARD, (1) LAYER MASONITE (BOTH SIDES) FOR INSTALLATION OF DOOR, FRAME AND HARDWARE, REFER TO DOOR SCHEDULE.

WALLS - CONTINUED

D9 AT BEDROOMS, REMOVE EXISTING METAL STUD PARTITION (1 LAYER) GYPSUM BOARD, (1) LAYER MASONITE, AND P. LAM SHELVING IN CLOSET ALCOVE.

D10 REMOVE PORTION OF EXISTING (1 LAYER) GYPSUM BOARD AND (1 LAYER) MASONITE ON EXISTING STUDS AND PORTION OF GYPSUM BOARD CEILING FOR ACCESS TO VERTICAL PIPING RISERS. COORDINATE WITH H, P & E CONTRACTS.

D11 REMOVE EXISTING (1 LAYER) GYPSUM BOARD AND (1 LAYER) MASONITE ON EXISTING STUDS FROM EACH CORNER OF ROOM AND PORTION OF GYPSUM BOARD CEILING FOR PIPING ACCESS AND VERTICAL RISER ACCESS. COORDINATE WITH H, P & E CONTRACTS.

D12 REMOVE EXISTING (1 LAYER) GYPSUM BOARD, (1) LAYER MASONITE, BATT INSULATION AND FASTENERS AT/ALONG INTERIOR WALL. EXISTING METAL STUDS OF PARTITION TO REMAIN IN PLACE.

D13 REMOVE EXISTING OSB WITH BONDED SYNTHETIC RESIN PADDING AND (1 LAYER) GYPSUM BOARD ON EXISTING STUDS FROM EACH CORNER OF ROOM AND PORTION OF GYPSUM BOARD CEILING FOR PIPING ACCESS AND VERTICAL RISER ACCESS. COORDINATE WITH H, P & E CONTRACTS.

CEILINGS

D15 REMOVE EXISTING SUSPENDED GYPSUM BOARD CEILING SYSTEM, INCLUDING GYPSUM BOARD, METAL FRAMING AND ALL ASSOCIATED HANGERS, SUPPORTS AND ANCHORS AND ACCESS DOORS COMPLETELY. COORDINATE WITH H, P & E CONTRACT DRAWINGS FOR REMOVAL OF MEP CEILING MOUNTED EQUIPMENT.

CEILINGS - CONTINUED

D16 REMOVE EXISTING SUSPENDED ACOUSTICAL CEILING SYSTEM (ACT), INCLUDING ACOUSTICAL PANELS, METAL GRID, AND ALL ASSOCIATED HANGERS, SUPPORTS AND ANCHORS COMPLETELY. COORDINATE WITH H, P & E CONTRACT DRAWINGS FOR REMOVAL OF MEP CEILING MOUNTED EQUIPMENT.

D17 REMOVE PORTION OF EXISTING ACOUSTICAL CEILING TILE FOR ACCESS TO MECHANICAL WORK ABOVE AND SALVAGE FOR REINSTALLATION. COORDINATE WITH H, P & E CONTRACT DRAWINGS FOR REMOVAL OF MEP CEILING MOUNTED EQUIPMENT.

D18 REMOVE EXISTING METAL STUD FRAMING AND GYPSUM BOARD SOFFITS COMPLETELY, INCLUDING ALL FASTENERS.

D19 REMOVE EXISTING SUSPENDED GYPSUM BOARD CEILING SYSTEM COMPLETELY FOR ABOVE CEILING PLUMBING WORK. COORDINATE WITH H, P & E CONTRACT DRAWINGS FOR REMOVAL OF MEP CEILING MOUNTED EQUIPMENT.

D20 REMOVE PORTION OF EXISTING SUSPENDED GYPSUM BOARD CEILING SYSTEM FOR ABOVE CEILING PLUMBING WORK. COORDINATE WITH H, P & E CONTRACT DRAWINGS FOR REMOVAL OF MEP CEILING MOUNTED EQUIPMENT.

D21 REMOVE PORTION OF EXISTING SUSPENDED GYPSUM BOARD CEILING SYSTEM FOR ABOVE CEILING MECHANICAL WORK. COORDINATE WITH H, P & E CONTRACT DRAWINGS FOR REMOVAL OF MEP CEILING MOUNTED EQUIPMENT.

FLOORS

D24 REMOVE EXISTING VCT FLOORING, RUBBER WALL BASE AND ADHESIVE/MASTIC DOWN TO EXISTING CONCRETE SLAB. PREP SLAB FOR FINISHES PER INTERIOR FINISH PLANS AND SCHEDULES.

FLOORS - CONTINUED

D25 REMOVE EXISTING CERAMIC TILE FLOORING, TILE BASE AND GROUT DOWN TO EXISTING CONCRETE SLAB. PREP SLAB FOR FINISHES PER INTERIOR FINISH PLANS AND SCHEDULES.

D26 REMOVE EXISTING CARPET FLOORING, RUBBER WALL BASE AND ADHESIVE/MASTIC DOWN TO EXISTING CONCRETE SLAB. PREP SLAB FOR FINISHES PER INTERIOR FINISH PLANS AND SCHEDULES.

MILLWORK/CASEWORK

D30 REMOVE EXISTING MILLWORK COMPLETELY, INCLUDING COUNTERS, BACKSPLASH, BASE AND WALL CABINETS AND ALL ACCESSORIES. AND FASTENERS.

D31 REMOVE EXISTING P. LAM NURSE STATION, SUPPORT BRACKETS, FASTENERS AND ANCHORS COMPLETELY.

D32 REMOVE EXISTING ADJUSTABLE P. LAM SHELVING, SUPPORTS. AND ANCHORS COMPLETELY.

D33 EXISTING WOOD WINDOW SILL TO REMAIN, SAND AND REMOVE EXISTING POLY FINISH, PREP EXISTING SILL FOR STAIN FINISH AND SEALER.

D34 REMOVE EXISTING METAL LOCKERS, BASE AND ALL ANCHORS COMPLETELY, PATCH ALL HOLES IN CONCRETE SLAB.

D35 EXISTING TERRAZZO FLOOR BASIN TO REMAIN, PREP SURFACE TO BE REFINISHED/PAINTED.

D36 REMOVE EXISTING HANDRAIL AND WOOD TRIM BACKING ALONG ENTIRE LENGTH OF CORRIDOR INCLUDING ALL ASSOCIATED HARDWARE AND ANCHORS.

D37 REMOVE EXISTING HANDRAIL ALONG LENGTH OF CORRIDOR INCLUDING ALL ASSOCIATED HARDWARE AND ANCHORS. EXISTING WOOD TRIM TO REMAIN, PATCH HOLES FROM HANDRAIL ANCHORS.

OPENINGS (WINDOWS & DOORS)

D40 REMOVE EXISTING WOOD DOOR, HARDWARE, HOLLOW METAL FRAME AND STAINLESS-STEEL FRAME PROTECTION AND ANCHORS COMPLETELY.

D41 REMOVE EXISTING WOOD DOOR, HARDWARE, HOLLOW METAL FRAME AND STAINLESS-STEEL FRAME PROTECTION AND ANCHORS COMPLETELY. PREP OPENING FOR INSTALLATION OF DOOR, FRAME AND HARDWARE PER SCHEDULE.

D42 REMOVE EXISTING HOLLOW METAL DOOR, FRAME AND HARDWARE AND STAINLESS STEEL FRAME PROTECTION AND ANCHORS COMPLETELY.

D43 REMOVE EXISTING HOLLOW METAL WINDOWS FRAMES, GLAZING AND ASSOCIATED ANCHORS COMPLETELY.

D44 REMOVE EXISTING OVERHEAD COILING DOOR, FRAMING, SUPPORT AND HARDWARE COMPLETELY.

D45 REMOVE EXISTING DOUBLE SLIDING WOOD DOORS, HARDWARE, FRAME, TRACK AND ASSOCIATED ANCHORS COMPLETELY.

D46 REMOVE AND SALVAGE EXISTING HOLLOW METAL ACCESS DOOR, FRAME AND HARDWARE. STORE AND PROTECT FOR REINSTALLATION.

D47 REMOVE SECTION OF EXISTING 44"W x 74"H ALUMINUM EXTERIOR WINDOW AT EACH LEVEL FOR EACH PHASE FOR CONTRACTOR MATERIAL ACCESS AND/OR DEBRIS CHUTE TO DUMPSTER. COORDINATE WITH FACILITY ON LOCATION DUE TO PATIENTS ON THE LOWER FLOORS. SALVAGE, PROTECT AND STORE WINDOW FOR REINSTALLATION. PROVIDE A TEMPORARY PROTECTION BARRIER ON THE OUTSIDE TO PROTECT FROM THE WEATHER AND LOCKABLE AT THE END OF EACH DAY OF WORK.

MISCELLANEOUS

D50 TOILET/ BATHROOMS (PATIENT/STAFF): REMOVE EXISTING FULL HEIGHT CERAMIC WALL TILE AROUND ENTIRE PERIMETER OF ROOM INCLUDING SHOWER AREA AND COORDINATE WITH PARTITION/ WALL NOTES FOR EXTENT OF WALL REMOVAL.

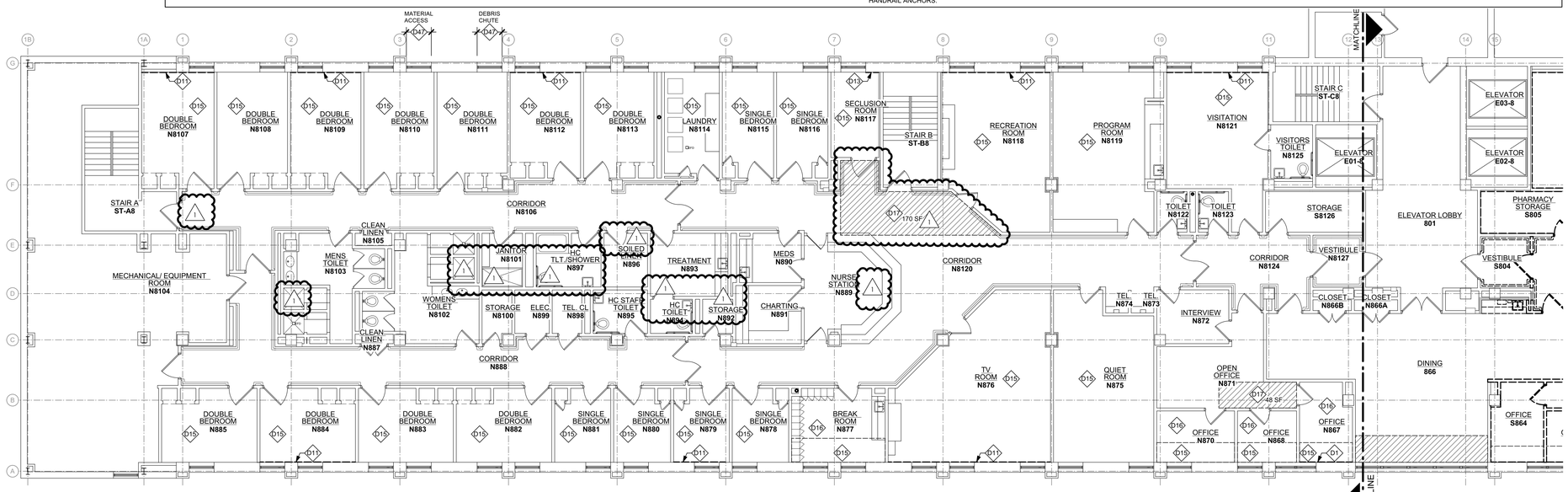
REMOVE EXISTING P. LAM. COUNTER, BACKSPLASH AND P. LAM CABINETS, INCLUDING ALL SUPPORTS, FASTENERS, ANCHORS AND ADHESIVES.

REMOVE ALL EXISTING TOILET ROOM FIXTURES ACCESSORIES INCLUDING BUT NOT LIMITED TO MIRRORS, SOAP DISPENSERS, TOILET PAPER DISPENSERS, ACCESS DOORS, TOILET PARTITIONS AND ALL ASSOCIATED ANCHORS/HARDWARE COMPLETELY.

AT SHOWER AREAS, REMOVE EXISTING WOOD BENCHES, SUPPORTS AND ANCHORS AND SOLID SURFACE SHOWER CURBS.

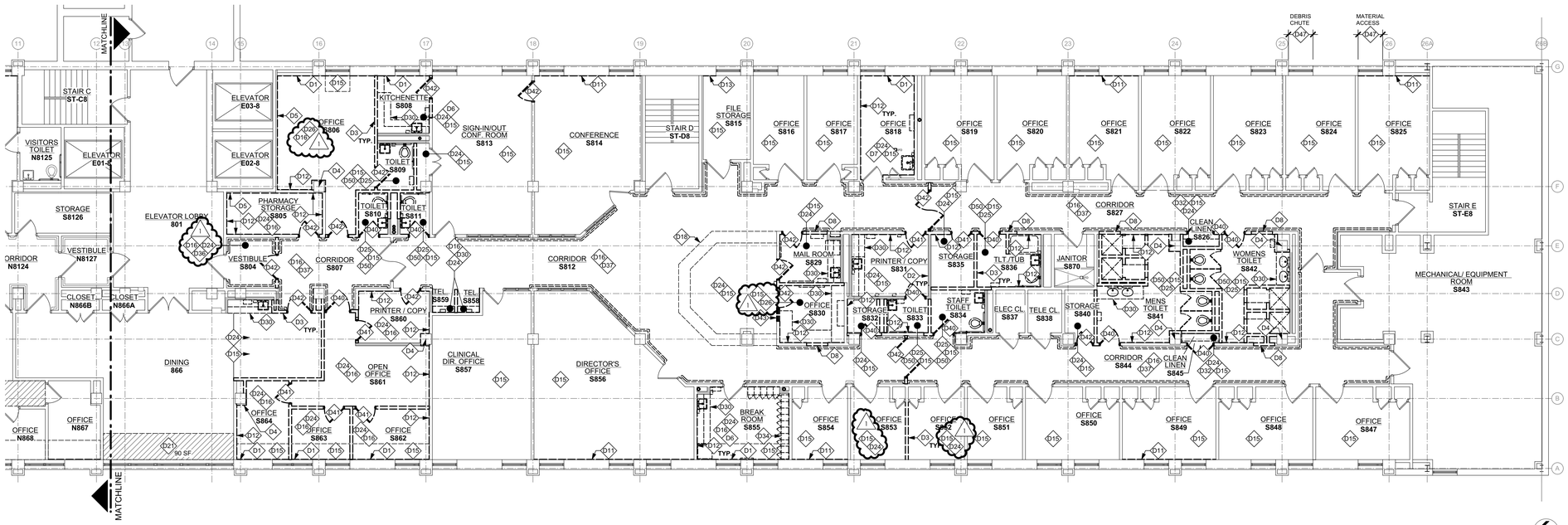
COORDINATE WITH P CONTRACT FOR PLUMBING FIXTURE REMOVALS.

D51 AT EXISTING LENGTH OF WALL BETWEEN EACH COLUMN FOR REMOVAL OF PARTITION, CUT GYPSUM BOARD AND STUDS JUST ABOVE CEILING AND SUPPORT. EXISTING PORTION OF WALL ABOVE CEILING TO REMAIN DUE TO EXISTING PIPING ADJACENT TO MAINTAIN SMOKE PARTITION SEPARATION AT CORRIDOR. SUPPORT WALL ABOVE AND PROVIDE HEADER AND FRAMING OF PARTITION AT CEILING TO FLOOR BELOW. REFER TO DETAIL 2/A-105 FOR DETAIL.



2 A-018 EIGHTH FLOOR REMOVAL PLAN (NORTH)
Scale: 1/8" = 1'-0"

NORTH



1 A-018 EIGHTH FLOOR REMOVAL PLAN (SOUTH)
Scale: 1/8" = 1'-0"

NORTH

GENERAL REMOVAL NOTES

1. COORDINATE REMOVALS WORK PRIOR TO THE STARTING OF CONSTRUCTION AND TO FAMILIARIZE THEMSELVES WITH ALL DETAILS AND CONSTRUCTION PHASING. COORDINATE ALL ROUGH-IN AND PATCHING WORK WITH THE WORK OF ALL TRADES.
2. WORK AFFECTING AND/OR PERFORMED OUTSIDE OF THE PROJECT AREA MUST BE COORDINATED WITH THE DIRECTOR'S REPRESENTATIVE AND FACILITY AND SCHEDULED PRIOR TO THE START OF WORK. ALL WORK AREAS OUTSIDE OF PROJECT AREA SHALL BE CLEANED AND RETURNED TO PREVIOUS CONDITION AT THE END OF EACH DAY.
3. PROVIDE TEMPORARY SUPPORT AS REQUIRED. WHERE OPENINGS ARE CUT INTO EXISTING WALLS, PROVIDE LINTELS AND/RECONSTRUCT OPENING TO MATCH ADJACENT EXISTING OPENINGS.
4. PROVIDE CUTTING AND PATCHING OF EXISTING WALLS, CEILINGS, AND FLOOR TO FACILITATE REMOVALS AND/OR INSTALLATION OF WORK AS REQUIRED PER DRAWINGS AND SPECIFICATIONS.
5. PATCH REMAINING WALLS, FLOORS, SILLS, SOFFITS, CEILINGS AND OTHER MISCELLANEOUS ITEMS TO MATCH ADJACENT SURFACES WHERE EXISTING CONSTRUCTION HAS BEEN AFFECTED BY REMOVALS – UNLESS OTHERWISE NOTED. INFILL VOIDS AND OPENINGS IN EXISTING FLOOR, WALL AND CEILING SUBSTRATES DISCOVERED OR INCURRED DURING REMOVALS. COORDINATE PATCH/INFILL WITH THE WORK OF ALL TRADE REMOVALS.
6. IMMEDIATELY NOTIFY THE DIRECTOR'S REPRESENTATIVE OF ANY ENCOUNTERS WITH SUSPECT HAZARDOUS MATERIALS.
7. TEMPORARY FIRE. EXTINGUISHERS TO BE PROVIDED AND MAINTAINED PER NYS FIRE CODE SECTION 1415.1.
8. ALL EXISTING ELEMENTS TO REMAIN INCLUDING BUT NOT LIMITED TO FLOORS, WALLS, CEILING GRID AND PANELS SHALL BE PROTECTED THROUGHOUT THE DURATION OF THE PROJECT.
9. MINOR AREAS OF CEILING REMOVAL AND REPLACEMENT NOT SHOWN. COORDINATE REMOVALS WITH DRAWINGS AND WORK OF ALL TRADES.
10. REPAIR FIREPROOFING AT UNDERSIDE OF FLOOR SLAB ASSEMBLIES DISTURBED BY CONSTRUCTION EITHER FROM REMOVAL OF ELEMENTS AND/OR INSTALLATION OF ELEMENTS. REPAIR / PATCH FIREPROOFING TO MATCH EXISTING 2 HOUR RATED ASSEMBLY.
11. REMOVAL DRAWINGS NOTES ARE INCLUDED TO ASSIST IN ASCERTAINING THE TYPES OF MATERIALS REQUIRED TO BE REMOVED. THE INFORMATION INCLUDED IN NO WAY RELIEVES THE CONTRACTOR OF THEIR RESPONSIBILITY TO PERFORM ALL REQUIRED REMOVAL WORK. IT IS INTENT OF THE CONTRACT THAT ALL CONSTRUCTION, MATERIALS, FINISHES AND APPURTENANT ITEMS BE REMOVED AS REQUIRED TO PERFORM THE CONSTRUCTION WORK AS INDICATED ON ALL THE CONTRACT DOCUMENTS FOR ALL TRADES.
12. REFER TO G-200 SERIES DRAWINGS FOR PHASING DIAGRAMS.

REMOVAL LEGEND

- EXISTING PARTITION TO REMAIN
- REMOVE PARTITION IN ITS ENTIRETY, REFER TO KEYED NOTES
- **EXISTING FLOOR & CEILING STUD TRACKS TO REMAIN.** REMOVE METAL STUDS, LAYER OF GWB, MASONITE AND WALL FINISH ON BOTH SIDES OF EXISTING STUDS
- **EXISTING STUDS TO REMAIN.** REMOVE LAYER OF GWB, MASONITE AND WALL FINISH ON DASHED SIDE OF EXISTING STUDS TO REMAIN
- EXISTING DOOR AND FRAME TO REMAIN
- REMOVE AND DISPOSE OF DOOR, FRAME AND HARDWARE
- REMOVE FLOOR SLAB TO EXTENTS SHOWN, COORDINATE W/ STRUCTURAL
- REMOVE CEILING TO EXTENTS SHOWN

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS "A" MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODWARD STATE OF NEW YORK 030712

CONTRACT: CONSTRUCTION

TITLE: REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION: BUFFALO PSYCHIATRIC CENTER 400 FOREST AVE, BUFFALO, NEW YORK

CLIENT: NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APRIL 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE: EIGHTH FLOOR REMOVAL PLANS - NORTH AND SOUTH

DRAWING NUMBER: A-018

SHEET 24 OF 212

Date: 5/11/26 Time: 12:40:12 PM





3 A-104 TYPICAL BUILT-IN DESK AND BED (FOR REFERENCE ONLY)
Scale: Actual Size

PARTITION LEGEND

- EXISTING PARTITION TO REMAIN
- XX — PROVIDE AND INSTALL 3 5/8" 20 GA. METAL STUDS AT 16" O.C. IN SAME LOCATION TO ALIGN WITH ETR METAL STUD FLOOR TRACK AND HEAD TRACK. REFER TO BOARDING SCHEDULE FOR GYPSUM WALL BOARD LAYERS AND TYPE.
- XX — PROVIDE AND INSTALL 3 5/8" 20 GA. METAL STUDS AT 16" O.C. UNLESS OTHERWISE NOTED BY PARTITION TAG. REFER TO BOARDING SCHEDULE FOR GYPSUM WALL BOARD LAYERS AND TYPE.
- XX — PARTITION TAG - WHERE NOTED, REFER TO SHEET A-002 FOR DETAILED PARTITION TYPES.

GENERAL CONSTRUCTION NOTES

1. UNLESS OTHERWISE NOTED ALL NEW WALL TYPES ARE TO BE TYPE M3. SEE SHEET A-002 FOR PARTITION TYPES, AND PARTITION LEGEND THIS SHEET.
2. ALL DIMENSIONS SHOWN ON THESE PLANS ARE FROM FACE OF FINISHED WALL TO FACE OF FINISHED WALL. NOTIFY DIRECTOR'S REPRESENTATIVE IF DIMENSIONS VARY GREATER THAN 6 INCHES.
3. REFER TO A-400 SERIES SHEETS FOR EQUIPMENT, WALL MOUNTED ACCESSORIES, AND TYPICAL MOUNTING HEIGHTS.
4. REFER TO I-000 SERIES FOR FOR FINISH SCHEDULES, FINISH LEGEND, AND NOTES.
5. REFER TO I-100 SERIES SHEETS FOR FLOOR FINISH PLANS.
6. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT INCLUDING, BUT NOT LIMITED TO, TV'S, RAILINGS, LOCKERS, TOILET ACCESSORIES, ETC. CONTRACTOR TO COORDINATE WITH P-CONTRACT FOR PROVIDING AND INSTALLING BLOCKING WITHIN THE WALL FOR ADDITIONAL SUPPORT FOR PLUMBING FIXTURES (WATER CLOSETS AND DRINKING FOUNTAIN/BOTTLE FILLERS) AND APPROVED EQUIPMENT.
7. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
8. FINISHED DOOR OPENINGS SHALL BE NOMINAL 6" FROM FINISHED CORNER OF ROOM AT HINGE SIDE, EXCEPT WHERE DIMENSIONED OTHERWISE ON THE PULL SIDE OF A DOOR OPENING.
9. REFER TO G200 SERIES DRAWINGS FOR PHASING DIAGRAMS.
10. AREAS OF CERAMIC FLOOR TILE REMOVAL ARE INDICATED WITH A [ ] HATCH FOR REFERENCE ONLY.
11. REFER TO DRAWING 9/A-522 FOR TYPICAL FIRE EXTINGUISHER CABINET DETAIL.

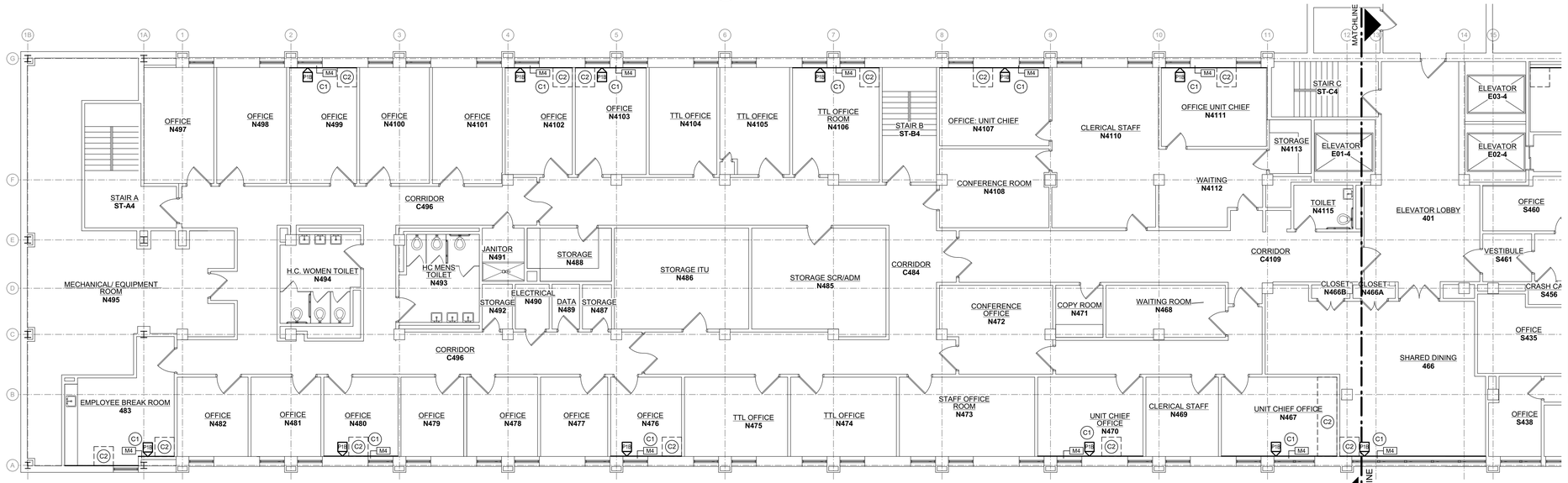
KEYED CONSTRUCTION NOTES

- C1 PATCH PORTION OF EXISTING WALL WITH GYPSUM BOARD FLUSH WITH ADJACENT SURFACES (REFER TO PARTITION TYPE). PRIME AND PAINT ENTIRE WALL SURFACE TO CORNERS OF ROOM. PROVIDE PNT-1 UNLESS NOTED OTHERWISE IN FINISH SCHEDULES.
- C2 PATCH CEILING FLUSH WITH EXISTING ADJACENT AND MATCH EXISTING CONSTRUCTION. PRIME AND PAINT ENTIRE CEILING SURFACE TO FULL EXTENTS OF ROOM. PROVIDE PNT-3 UNLESS NOTED OTHERWISE IN FINISH SHEDULES.
- C3 EXISTING BUILT-IN (NON-MOVEABLE) BED FRAME AND/OR DESK TO REMAIN IN ROOM DURING THE WORK. PROVIDE TEMPORARY PROTECTION FOR BUILT-IN FURNITURE DURING THE WORK. SEE REFERENCE PHOTOS ON SHEETS A-103 & A-104.
- C4 EXISTING WOOD SILL, PROVIDE STAIN AND SEALER.
- C5 PRIOR TO SUBSTANTIAL COMPLETION, REMOVE TEMPORARY PROTECTION BARRIER AND REINSTALL SALVAGED ALUMUMN WINDOW. TEST TO CONFIRM OPERATION OF WINDOW AND CAULK SEAL INTERIOR AND EXTERIOR JOINTS. PATCH ANY HOLES IN THE EXISTING ON THE EXTERIOR FROM ANCHORS / FASTNERS.
- C6 AT LENGTH OF WALL BETWEEN EACH COLUMN OF PARTITION EXISTING PORTION OF WALL ABOVE CEILING TO REMAIN DUE TO EXISTING PIPING ADJACENT TO MAINTAIN SMOKE PARTITION SEPARATION AT CORRIDOR. , CONSTRUCTION WALL PER DESIGNATION ON CONSTRUCTION PLANS PROVIDE HEADER AND FRAMING OF PARTITION AT CEILING TO FLOOR BELOW. REFER TO DETAIL 2/A-105 FOR DETAIL.

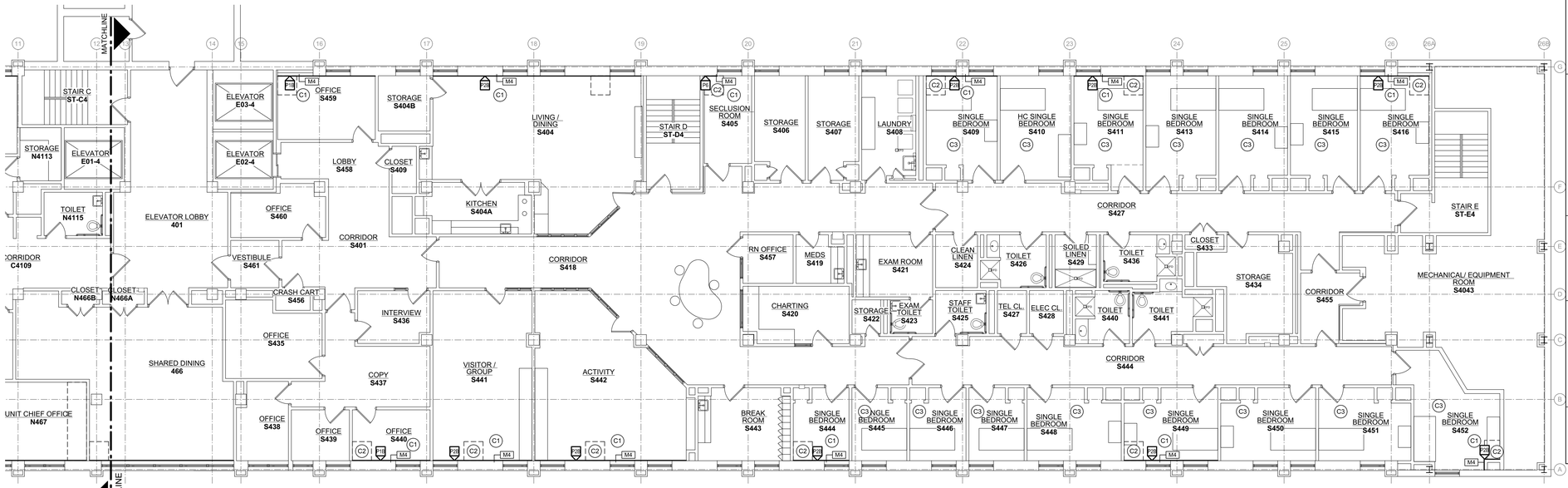
ROOM BOARDING SCHEDULE

XX SYMBOL INDICATES TYPICAL AND SPECIFIC WALL BOARDING LOCATIONS BY SPACE

P1	(1) LAYER 5/8" TYPE 'X' GYPSUM BOARD FROM FLOOR TO UNDERSIDE OF DECK; SCHEDULED WALL FINISH
P1A	(1) LAYER 5/8" TYPE 'X' GYPSUM BOARD FROM FLOOR TO 8" ABOVE FINISHED CEILING; SCHEDULED WALL FINISH
P1B	(1) LAYER 1/4" GYPSUM BOARD FROM FLOOR TO 8" ABOVE FINISHED CEILING + (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD FROM FLOOR TO 8" ABOVE FINISHED CEILING; SCHEDULED WALL FINISH
P2	(2) LAYERS 5/8" TYPE 'X' IMPACT RESISTANT GYPSUM BOARD FROM FLOOR TO UNDERSIDE OF DECK; SCHEDULED WALL FINISH
P2A	(2) LAYERS 5/8" TYPE 'X' IMPACT RESISTANT GYPSUM BOARD TO 8" ABOVE FINISHED CEILING; SCHEDULED WALL FINISH
P2B	(1) LAYER 1/4" GYPSUM BOARD TO 8" ABOVE FINISHED CEILING + (1) LAYER 5/8" TYPE 'X' IMPACT RESISTANT GYPSUM BOARD TO 8" ABOVE FINISHED CEILING; SCHEDULED WALL FINISH
P3	(1) LAYER 5/8" TYPE 'X' IMPACT RESISTANT GYPSUM BOARD FROM FLOOR TO 4'-0" AFF. (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD FROM 4'-0" AFF TO UNDERSIDE OF DECK; (1) LAYER 5/8" TYPE 'X' IMPACT RESISTANT GYPSUM BOARD TO UNDERSIDE OF DECK; SCHEDULED WALL FINISH
P3A	(1) LAYER 5/8" TYPE 'X' IMPACT RESISTANT GYPSUM BOARD FROM FLOOR TO 4'-0" AFF. (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD FROM 4'-0" AFF TO 8" ABOVE FINISHED CEILING; (1) LAYER 5/8" TYPE 'X' IMPACT RESISTANT GYPSUM BOARD TO 8" ABOVE FINISHED CEILING; SCHEDULED WALL FINISH
P3B	(1) LAYER 1/4" GYPSUM BOARD TO 8" ABOVE FINISHED CEILING + (1) LAYER 5/8" TYPE 'X' IMPACT RESISTANT GYPSUM BOARD TO 8" ABOVE FINISHED CEILING; SCHEDULED WALL FINISH
P4	(1) LAYER 5/8" GLASS MAT WATER-RESISTANT BACKING BOARD FROM FLOOR TO 4'-0" AFF. (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD FROM 4'-0" AFF TO UNDERSIDE OF DECK; SCHEDULED WALL FINISH
P4A	(1) LAYER 5/8" GLASS MAT WATER-RESISTANT BACKING BOARD FROM FLOOR TO 4'-0" AFF. (1) LAYER 5/8" TYPE 'X' GYPSUM BOARD FROM 4'-0" AFF TO 8" ABOVE FINISHED CEILING; SCHEDULED WALL FINISH
P5	(1) LAYER MOLD-RESISTANT GYPSUM BOARD FROM FLOOR TO UNDERSIDE OF DECK; (1) LAYER 5/8" IMPACT RESISTANT GLASS MAT WATER-RESISTANT BACKING BOARD OR 5/8" CEMENTITIOUS BACKER BOARD FROM FLOOR TO UNDERSIDE OF DECK; SCHEDULED WALL FINISH
P5A	(1) LAYER MOLD-RESISTANT GYPSUM BOARD FROM FLOOR TO 8" ABOVE FINISHED CEILING + (1) LAYER 5/8" IMPACT RESISTANT GLASS MAT WATER-RESISTANT BACKING BOARD FROM FLOOR TO 8" ABOVE FINISHED CEILING; SCHEDULED WALL FINISH
P6	(1) LAYER 1/4" GYPSUM BOARD TO 8" ABOVE FINISHED CEILING + (1) LAYER 5/8" TYPE 'X' IMPACT RESISTANT GYPSUM BOARD TO 8" ABOVE FINISHED CEILING; PADDING SYSTEM: 1/2" OSB WITH 1/2" BONDED SYNTHETIC RESIN PADDING (THICKNESS TO MATCH EXISTING ADJACENT)



2 A-104 FOURTH FLOOR CONSTRUCTION PLAN (NORTH)
Scale: 1/8" = 1'-0"



1 A-104 FOURTH FLOOR CONSTRUCTION PLAN (SOUTH)
Scale: 1/8" = 1'-0"

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT — JEFFREY J. WOODCOCK — 030713 — STATE OF NEW YORK

CONTRACT: CONSTRUCTION

TITLE: REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION: BUFFALO PSYCHIATRIC CENTER 400 FOREST AVE, BUFFALO, NEW YORK

CLIENT: NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS

PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE: FOURTH FLOOR CONSTRUCTION PLANS - NORTH AND SOUTH

DRAWING NUMBER: A-104

SHEET 29 OF 212

Date: 5/11/26 Time: 12:43:01 PM

NOTE:

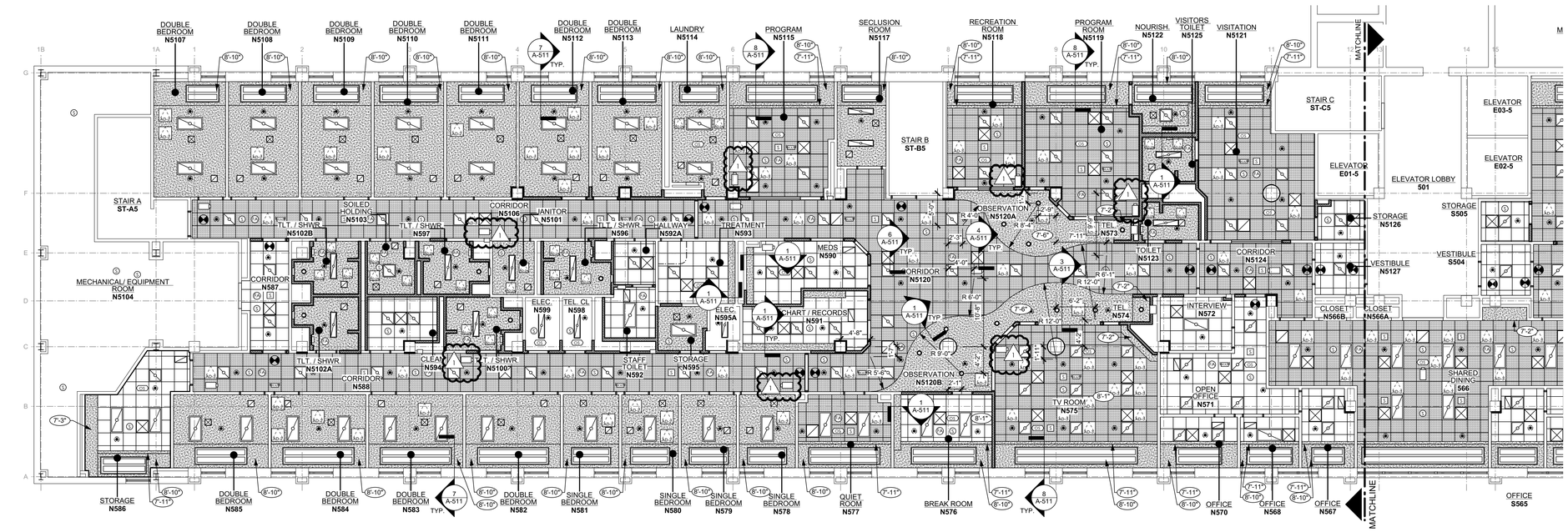
FINAL ACCESS DOOR LOCATIONS TO BE COORDINATED IN FIELD PRIOR TO CEILING INSTALLATION.
PROVIDE AND INSTALL WITHIN CEILING SYSTEM FOR NORTH UNIT AND SOUTH UNIT:

- AD-1 (24"x24") ACCESS DOORS IN GYPSUM BOARD (LOW RISK / STAFF ONLY)

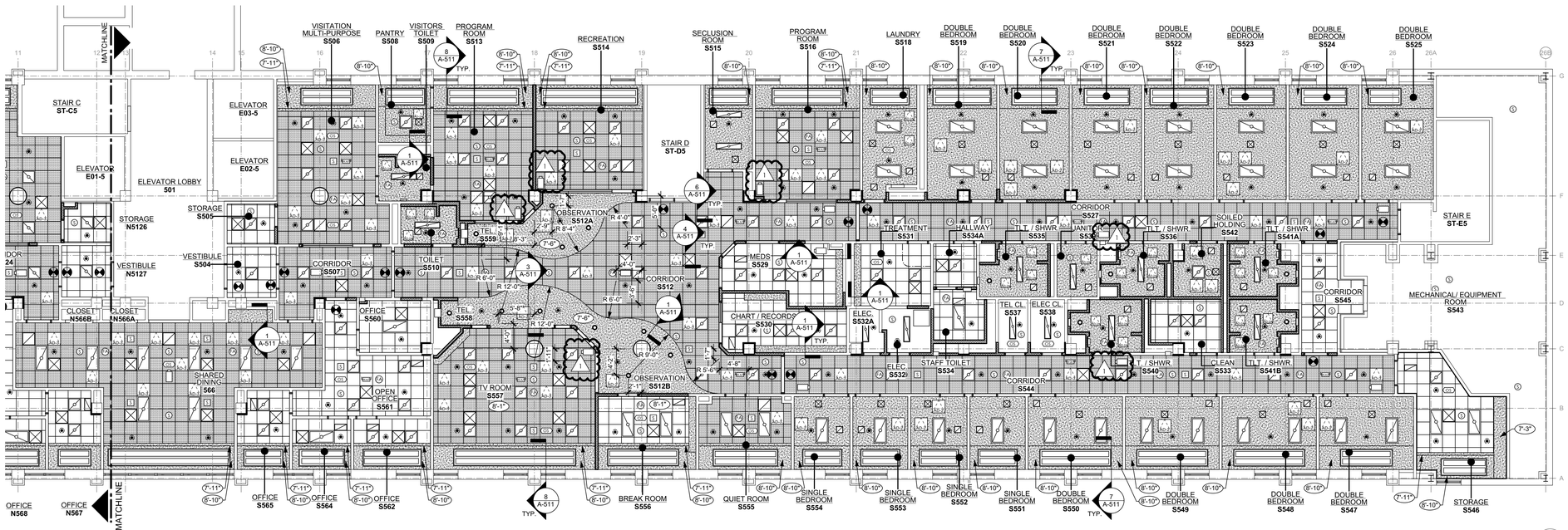
- AD-2 (24"x24") ACCESS DOORS IN GYPSUM BOARD (MEDIUM / HIGH RISK AREAS)

- AD-2A (18"x18") ACCESS DOORS IN GYPSUM BOARD (MEDIUM / HIGH RISK WET AREAS (TOILET, LAUNDRY, SHOWER, ETC.))

- AD-3 (24"x24") ACCESS DOORS IN 2'x2' SECURITY CEILINGS (MEDIUM / HIGH RISK COMMON AREAS)



2 A-115 FIFTH FLOOR REFLECTED CEILING PLAN (NORTH)
Scale: 1/8" = 1'-0"



1 A-115 FIFTH FLOOR REFLECTED CEILING PLAN (SOUTH)
Scale: 1/8" = 1'-0"

GENERAL CEILING NOTES

1. LOCATION OF MECHANICAL, ELECTRICAL AND PLUMBING ACCESSORIES SHALL BE COORDINATED WITH MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS.
2. **UNLESS OTHERWISE NOTED ALL CEILINGS SHALL BE INSTALLED AT 8'-0" A.F.F.**
3. VERIFY LOCATIONS OF ALL EXISTING OVERHEAD UTILITIES PRIOR TO INSTALLATION OF CEILING SYSTEMS AND SOFFITS. NOTIFY ARCHITECT.
4. ALL EXISTING SUSPENDED GYPSUM CEILING TO REMAIN SHALL BE FINISHED, PRIMED AND PAINTED.
5. ALL SUSPENDED CEILING TILE SYSTEMS SHALL BE CENTERED IN SPACE OR WALL AND SOFFITS UNLESS OTHERWISE NOTED. ALL DEVICES TO BE CENTERED IN TILE UNLESS OTHERWISE NOTED.
6. COORDINATE FINAL LOCATION OF ACCESS DOORS IN SECURITY METAL CEILINGS AND SUSPENDED GYPSUM CEILINGS WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
7. REFER TO G-200 SERIES DRAWINGS FOR PHASING DIAGRAMS.

CEILING SYMBOLS

- 2x2 ACOUSTIC CEILING TILE
- 2x2 SECURITY CEILING
- GWB CEILING OR SOFFIT
- 0'-0" CEILING HEIGHT INDICATOR
- 0'-0" (E) EXISTING TO REMAIN CEILING HEIGHT INDICATOR (VERIFY IN FIELD)
- RECESSED LIGHT FIXTURE
- 1x4 RECESSED LIGHT FIXTURE
- 2x4 RECESSED LIGHT FIXTURE
- 2x2 RECESSED LIGHT FIXTURE
- EXIT SIGN
- SUPPLY DIFFUSER
- RETURN DIFFUSER
- SPRINKLER HEAD
- S SMOKE DETECTOR
- FA FIRE ALARM
- S CEILING MOUNTED SPEAKER
- OS CEILING MOUNTED OCCUPANCY SENSOR
- WAP WIRELESS ACCESS POINT
- ACCESS DOOR
- CCTV CAMERA

KEYED CEILING NOTES

1. EXISTING GWB CEILING TO REMAIN
2. REINSTALL SALVAGED CEILING TILES IN EXISTING GRID
3. PATCH SUSPENDED GYPSUM BOARD CEILING SYSTEM, FINISH FLUSH WITH EXISTING ADJACENT SURFACES, PRIME AND PAINT ENTIRE GYPSUM CEILING
4. EXISTING CEILING TRANSITION TO REMAIN

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODSIDE 030712 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APRIL 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

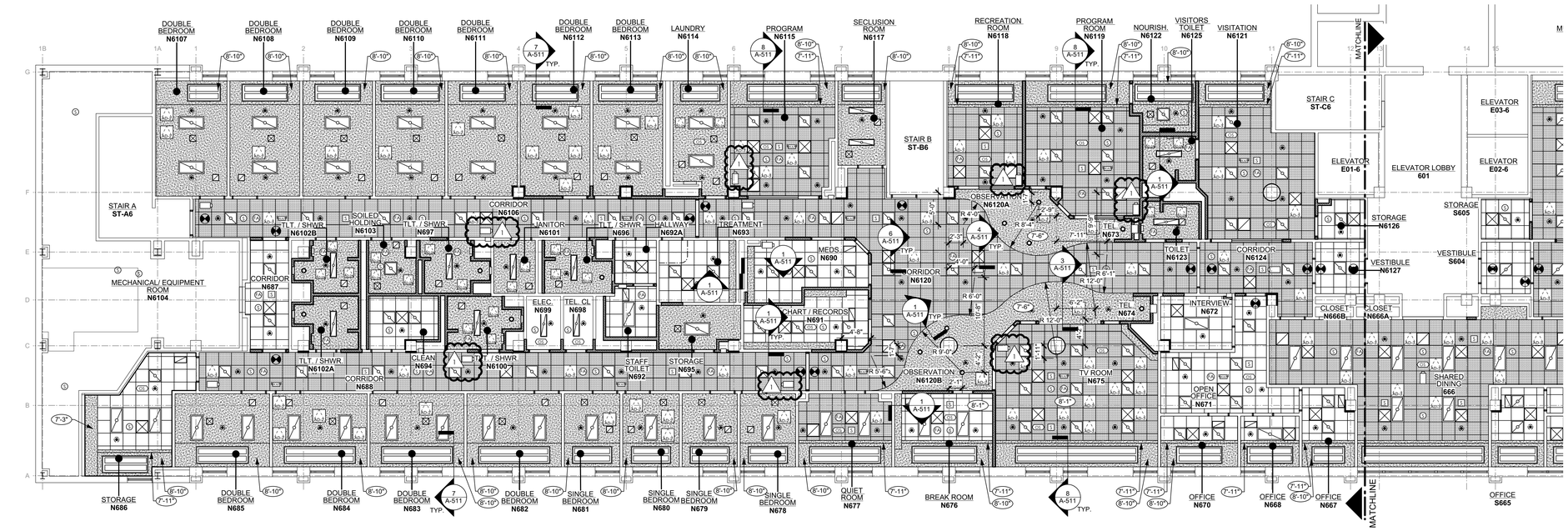
PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE:
FIFTH FLOOR REFLECTED CEILING PLANS - NORTH AND SOUTH

DRAWING NUMBER:
A-115

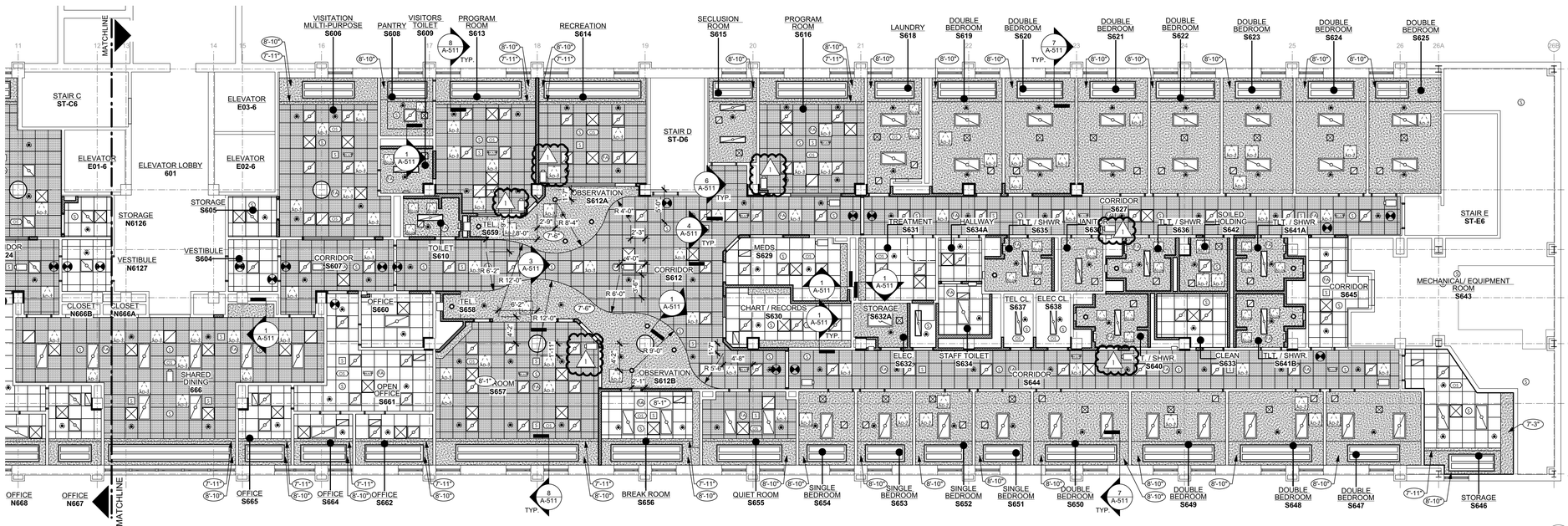
SHEET 37 OF 212

Date: 5/11/26
Time: 12:44:07 PM



2 A-116 SIXTH FLOOR REFLECTED CEILING PLAN (NORTH)
Scale: 1/8" = 1'-0"

NORTH



1 A-116 SIXTH FLOOR REFLECTED CEILING PLAN (SOUTH)
Scale: 1/8" = 1'-0"

NORTH

NOTE:

FINAL ACCESS DOOR LOCATIONS TO BE COORDINATED IN FIELD PRIOR TO CEILING INSTALLATION.
PROVIDE AND INSTALL WITHIN CEILING SYSTEM FOR NORTH UNIT AND SOUTH UNIT:

- AD-1 (24"x24") ACCESS DOORS IN GYPSUM BOARD (LOW RISK / STAFF ONLY)

- AD-2 (24"x24") ACCESS DOORS IN GYPSUM BOARD (MEDIUM / HIGH RISK AREAS)

- AD-2A (18"x18") ACCESS DOORS IN GYPSUM BOARD (MEDIUM / HIGH RISK WET AREAS (TOILET, LAUNDRY, SHOWER, ETC.))

- AD-3 (24"x24") ACCESS DOORS IN 2'x2' SECURITY CEILINGS (MEDIUM / HIGH RISK COMMON AREAS)

GENERAL CEILING NOTES

1. LOCATION OF MECHANICAL, ELECTRICAL AND PLUMBING ACCESSORIES SHALL BE COORDINATED WITH MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS.
2. **UNLESS OTHERWISE NOTED ALL CEILINGS SHALL BE INSTALLED AT 8'-0" A.F.F.**
3. VERIFY LOCATIONS OF ALL EXISTING OVERHEAD UTILITIES PRIOR TO INSTALLATION OF CEILING SYSTEMS AND SOFFITS. NOTIFY ARCHITECT.
4. ALL EXISTING SUSPENDED GYPSUM CEILING TO REMAIN SHALL BE FINISHED, PRIMED AND PAINTED.
5. ALL SUSPENDED CEILING TILE SYSTEMS SHALL BE CENTERED IN SPACE OR WALL AND SOFFITS UNLESS OTHERWISE NOTED. ALL DEVICES TO BE CENTERED IN TILE UNLESS OTHERWISE NOTED.
6. COORDINATE FINAL LOCATION OF ACCESS DOORS IN SECURITY METAL CEILINGS AND SUSPENDED GYPSUM CEILINGS WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
7. REFER TO G-200 SERIES DRAWINGS FOR PHASING DIAGRAMS.

CEILING SYMBOLS

- 2x2 ACOUSTIC CEILING TILE
- 2x2 SECURITY CEILING
- GWB CEILING OR SOFFIT
- 0'-0" CEILING HEIGHT INDICATOR
- 0'-0" (E) EXISTING TO REMAIN CEILING HEIGHT INDICATOR (VERIFY IN FIELD)
- RECESSED LIGHT FIXTURE
- 1x4 RECESSED LIGHT FIXTURE
- 2x4 RECESSED LIGHT FIXTURE
- 2x2 RECESSED LIGHT FIXTURE
- EXIT SIGN
- SUPPLY DIFFUSER
- RETURN DIFFUSER
- SPRINKLER HEAD
- S SMOKE DETECTOR
- FA FIRE ALARM
- S CEILING MOUNTED SPEAKER
- OS CEILING MOUNTED OCCUPANCY SENSOR
- WAP WIRELESS ACCESS POINT
- ACCESS DOOR
- CCTV CAMERA

KEYED CEILING NOTES

1. EXISTING GWB CEILING TO REMAIN
2. REINSTALL SALVAGED CEILING TILES IN EXISTING GRID
3. PATCH SUSPENDED GYPSUM BOARD CEILING SYSTEM, FINISH FLUSH WITH EXISTING ADJACENT SURFACES, PRIME AND PAINT ENTIRE GYPSUM CEILING
4. EXISTING CEILING TRANSITION TO REMAIN

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODSON 030712 STATE OF NEW YORK

CONTRACT:

CONSTRUCTION

TITLE:

REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:

BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:

NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APRIL 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE:

SIXTH FLOOR REFLECTED CEILING PLANS - NORTH AND SOUTH

DRAWING NUMBER:

A-116

SHEET 38 OF 212

Date: 5/11/26 Time: 12:46:28 PM

NOTE:

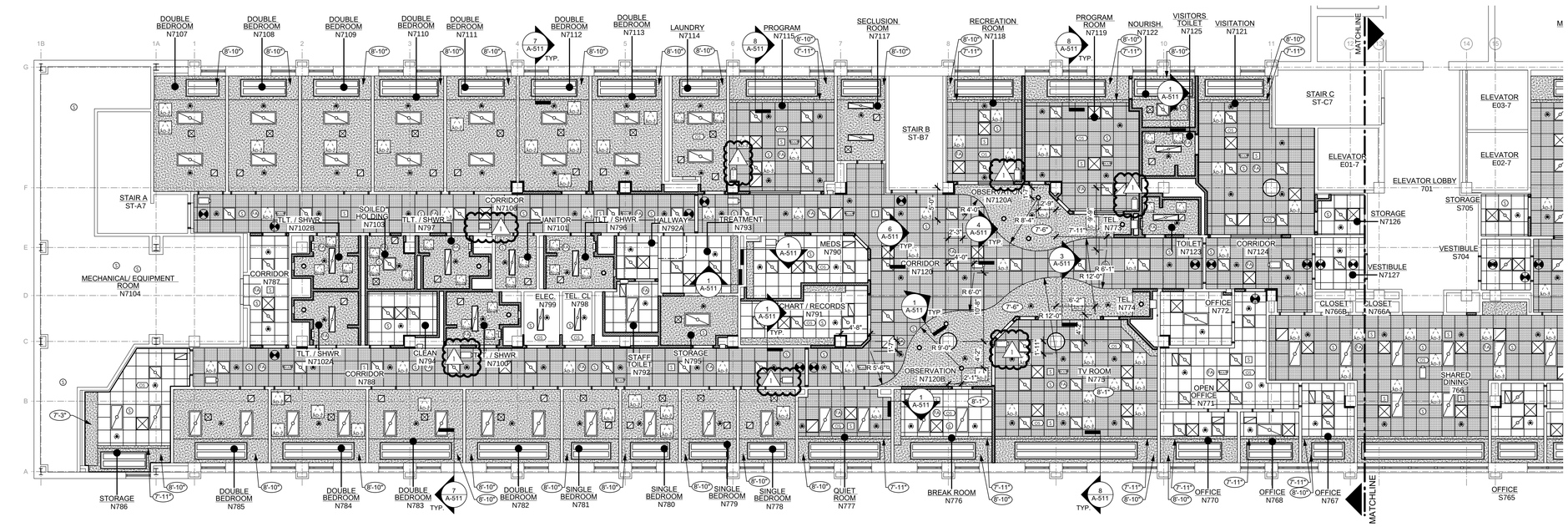
FINAL ACCESS DOOR LOCATIONS TO BE COORDINATED IN FIELD PRIOR TO CEILING INSTALLATION.
PROVIDE AND INSTALL WITHIN CEILING SYSTEM FOR NORTH UNIT AND SOUTH UNIT:

- AD-1 (24"x24") ACCESS DOORS IN GYPSUM BOARD (LOW RISK / STAFF ONLY)

- AD-2 (24"x24") ACCESS DOORS IN GYPSUM BOARD (MEDIUM / HIGH RISK AREAS)

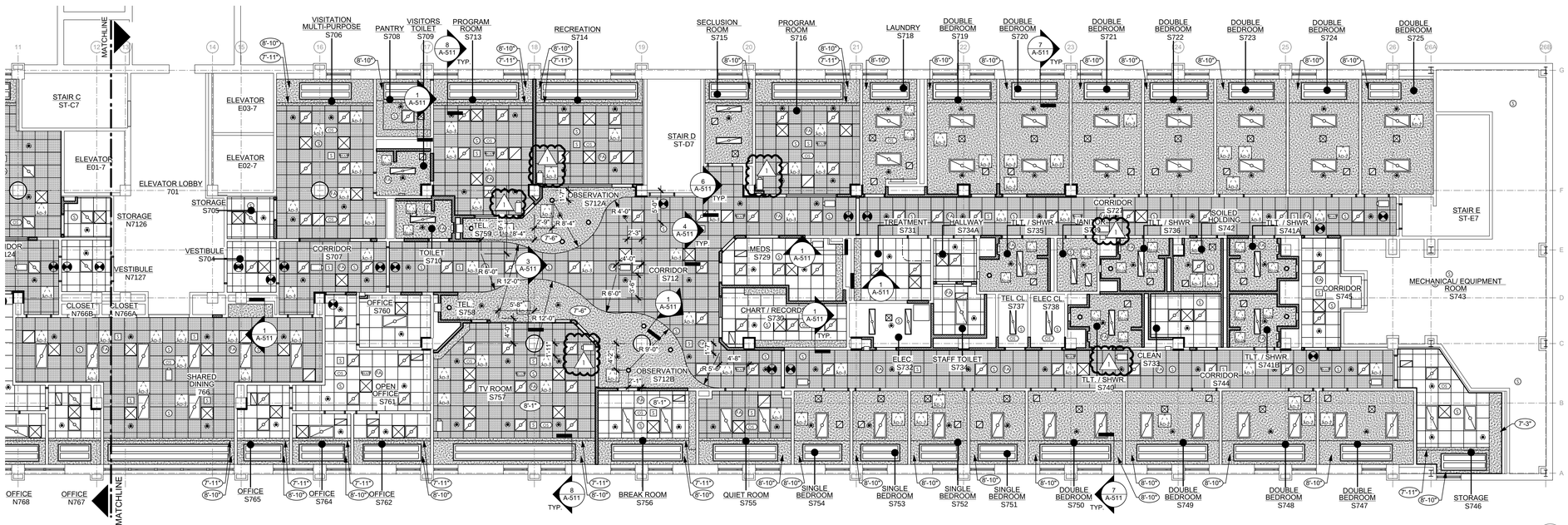
- AD-2A (18"x18") ACCESS DOORS IN GYPSUM BOARD (MEDIUM / HIGH RISK WET AREAS [TOILET, LAUNDRY, SHOWER, ETC.])

- AD-3 (24"x24") ACCESS DOORS IN 2'x2' SECURITY CEILINGS (MEDIUM / HIGH RISK COMMON AREAS)



2 A-117 SEVENTH FLOOR REFLECTED CEILING PLAN (NORTH)
Scale: 1/8" = 1'-0"

NORTH



1 A-117 SEVENTH FLOOR REFLECTED CEILING PLAN (SOUTH)
Scale: 1/8" = 1'-0"

NORTH

GENERAL CEILING NOTES

1. LOCATION OF MECHANICAL, ELECTRICAL AND PLUMBING ACCESSORIES SHALL BE COORDINATED WITH MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS.
2. UNLESS OTHERWISE NOTED ALL CEILINGS SHALL BE INSTALLED AT 8'-0, A.F.F.
3. VERIFY LOCATIONS OF ALL EXISTING OVERHEAD UTILITIES PRIOR TO INSTALLATION OF CEILING SYSTEMS AND SOFFITS. NOTIFY ARCHITECT.
4. ALL EXISTING SUSPENDED GYPSUM CEILING TO REMAIN SHALL BE FINISHED, PRIMED AND PAINTED.
5. ALL SUSPENDED CEILING TILE SYSTEMS SHALL BE CENTERED IN SPACE OR WALL AND SOFFITS UNLESS OTHERWISE NOTED. ALL DEVICES TO BE CENTERED IN TILE UNLESS OTHERWISE NOTED.
6. COORDINATE FINAL LOCATION OF ACCESS DOORS IN SECURITY METAL CEILINGS AND SUSPENDED GYPSUM CEILINGS WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
7. REFER TO G-200 SERIES DRAWINGS FOR PHASING DIAGRAMS.

CEILING SYMBOLS

- 2x2 ACOUSTIC CEILING TILE
- 2x2 SECURITY CEILING
- GWB CEILING OR SOFFIT
- 0'-0" CEILING HEIGHT INDICATOR
- 0'-0" (E) EXISTING TO REMAIN CEILING HEIGHT INDICATOR (VERIFY IN FIELD)
- RECESSED LIGHT FIXTURE
- 1x4 RECESSED LIGHT FIXTURE
- 2x4 RECESSED LIGHT FIXTURE
- 2x2 RECESSED LIGHT FIXTURE
- EXIT SIGN
- SUPPLY DIFFUSER
- RETURN DIFFUSER
- SPRINKLER HEAD
- S SMOKE DETECTOR
- FA FIRE ALARM
- S CEILING MOUNTED SPEAKER
- OS CEILING MOUNTED OCCUPANCY SENSOR
- WAP WIRELESS ACCESS POINT
- ACCESS DOOR
- CCTV CAMERA

KEYED CEILING NOTES

1. EXISTING GWB CEILING TO REMAIN
2. REINSTALL SALVAGED CEILING TILES IN EXISTING GRID
3. PATCH SUSPENDED GYPSUM BOARD CEILING SYSTEM, FINISH FLUSH WITH EXISTING ADJACENT SURFACES, PRIME AND PAINT ENTIRE GYPSUM CEILING
4. EXISTING CEILING TRANSITION TO REMAIN

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODYARD 030710 STATE OF NEW YORK

CONTRACT:

CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

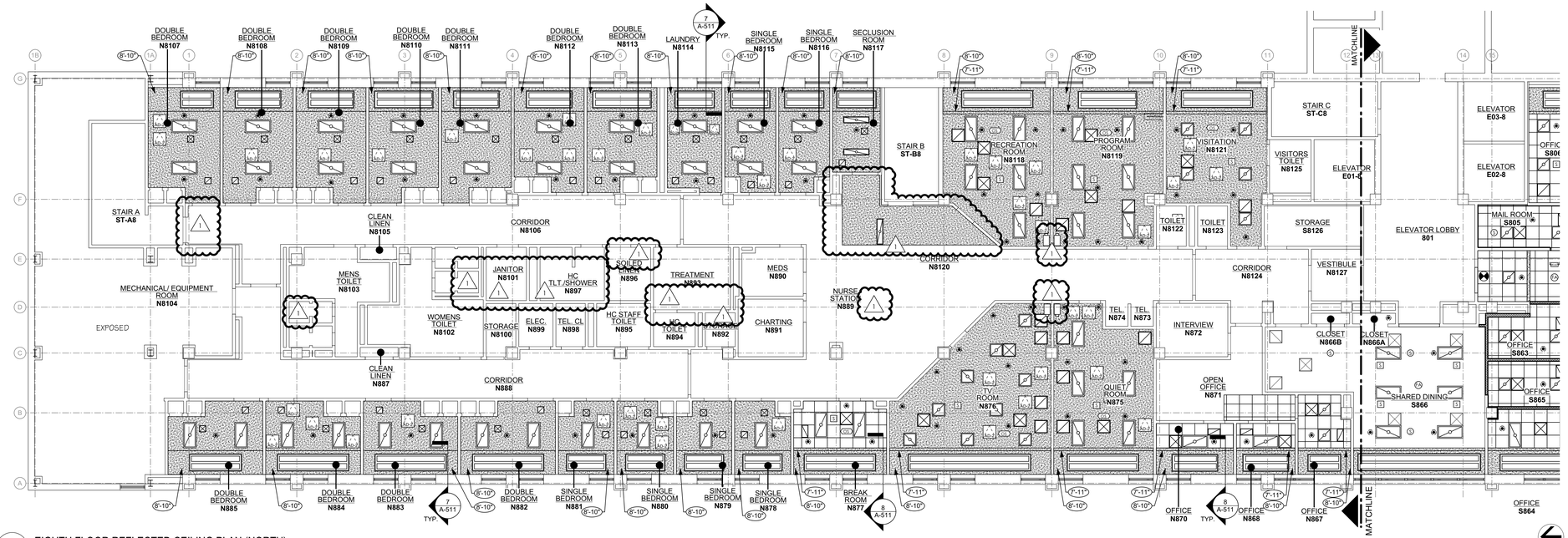
MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
PROJECT NUMBER:		46103 - C
DESIGNED BY:		
DRAWN BY:		KK
FIELD CHECK:		
APPROVED BY:		CD

SHEET TITLE:
SEVENTH FLOOR REFLECTED CEILING PLANS - NORTH AND SOUTH

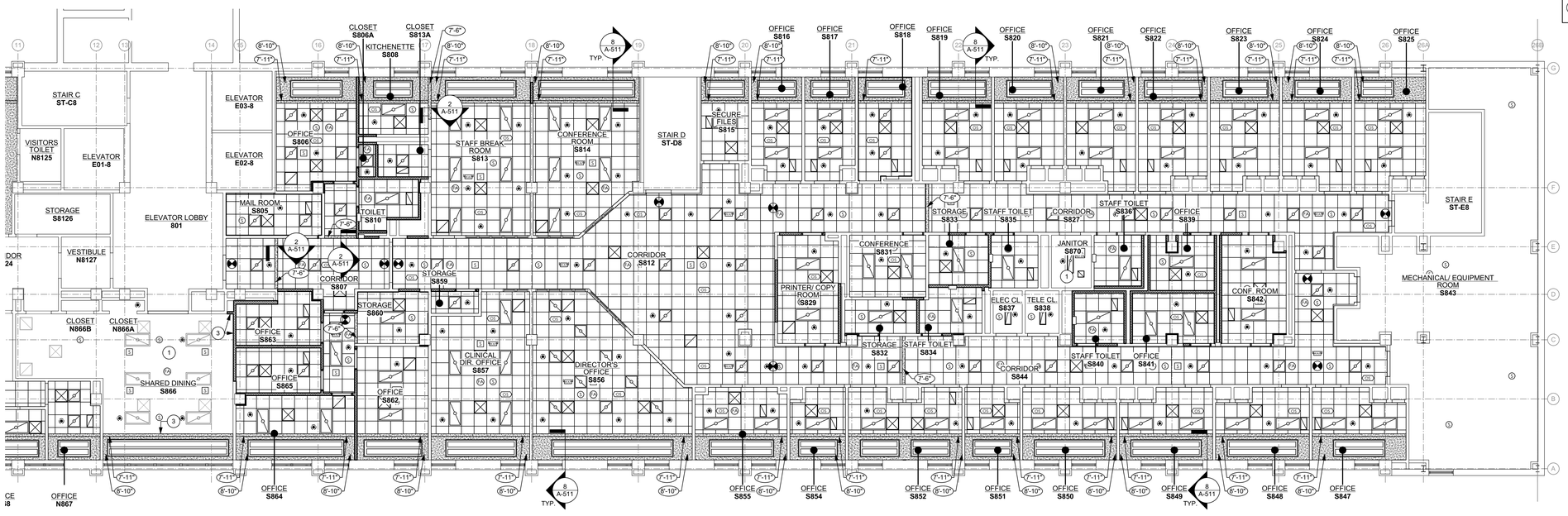
DRAWING NUMBER:
A-117

SHEET 39 OF 212

Date: 5/11/26
Time: 12:45:40 PM



3 A-118 EIGHTH FLOOR REFLECTED CEILING PLAN (NORTH)
Scale: 1/8" = 1'-0"



1 A-118 EIGHTH FLOOR REFLECTED CEILING PLAN (SOUTH)
Scale: 1/8" = 1'-0"

NOTE:

FINAL ACCESS DOOR LOCATIONS TO BE COORDINATED IN FIELD PRIOR TO CEILING INSTALLATION.
PROVIDE AND INSTALL WITHIN CEILING SYSTEM FOR NORTH UNIT AND SOUTH UNIT:

- AD-1 (24"x24") ACCESS DOORS IN GYPSUM BOARD (LOW RISK / STAFF ONLY)

- AD-2 (24"x24") ACCESS DOORS IN GYPSUM BOARD (MEDIUM / HIGH RISK AREAS)

- AD-2A (18"x18") ACCESS DOORS IN GYPSUM BOARD (MEDIUM / HIGH RISK WET AREAS (TOILET, LAUNDRY, SHOWER, ETC.))

- AD-3 (24"x24") ACCESS DOORS IN 2'x2' SECURITY CEILINGS (MEDIUM / HIGH RISK COMMON AREAS)

GENERAL CEILING NOTES

1. LOCATION OF MECHANICAL, ELECTRICAL AND PLUMBING ACCESSORIES SHALL BE COORDINATED WITH MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS.
2. **UNLESS OTHERWISE NOTED ALL CEILINGS SHALL BE INSTALLED AT 8'-0" A.F.F.**
3. VERIFY LOCATIONS OF ALL EXISTING OVERHEAD UTILITIES PRIOR TO INSTALLATION OF CEILING SYSTEMS AND SOFFITS. NOTIFY ARCHITECT.
4. ALL EXISTING SUSPENDED GYPSUM CEILING TO REMAIN SHALL BE FINISHED, PRIMED AND PAINTED.
5. ALL SUSPENDED CEILING TILE SYSTEMS SHALL BE CENTERED IN SPACE OR WALL AND SOFFITS UNLESS OTHERWISE NOTED. ALL DEVICES TO BE CENTERED IN TILE UNLESS OTHERWISE NOTED.
6. COORDINATE FINAL LOCATION OF ACCESS DOORS IN SECURITY METAL CEILINGS AND SUSPENDED GYPSUM CEILINGS WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
7. REFER TO G-200 SERIES DRAWINGS FOR PHASING DIAGRAMS.

CEILING SYMBOLS

- 2x2 ACOUSTIC CEILING TILE
- 2x2 SECURITY CEILING
- GWB CEILING OR SOFFIT
- 0'-0" CEILING HEIGHT INDICATOR
- 0'-0" (E) EXISTING TO REMAIN CEILING HEIGHT INDICATOR (VERIFY IN FIELD)
- RECESSED LIGHT FIXTURE
- 1x4 RECESSED LIGHT FIXTURE
- 2x4 RECESSED LIGHT FIXTURE
- 2x2 RECESSED LIGHT FIXTURE
- EXIT SIGN
- SUPPLY DIFFUSER
- RETURN DIFFUSER
- SPRINKLER HEAD
- S SMOKE DETECTOR
- FA FIRE ALARM
- S CEILING MOUNTED SPEAKER
- OS CEILING MOUNTED OCCUPANCY SENSOR
- WAP WIRELESS ACCESS POINT
- ACCESS DOOR
- CCTV CAMERA

KEYED CEILING NOTES

1. EXISTING GWB CEILING TO REMAIN
2. REINSTALL SALVAGED CEILING TILES IN EXISTING GRID
3. PATCH SUSPENDED GYPSUM BOARD CEILING SYSTEM. FINISH FLUSH WITH EXISTING ADJACENT SURFACES, PRIME AND PAINT ENTIRE GYPSUM CEILING
4. EXISTING CEILING TRANSITION TO REMAIN

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT CHARLES J. WOODCOCK 030712 STATE OF NEW YORK

CONTRACT: CONSTRUCTION

TITLE: REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION: BUFFALO PSYCHIATRIC CENTER 400 FOREST AVE, BUFFALO, NEW YORK

CLIENT: NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS

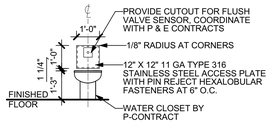
PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE: EIGHTH FLOOR REFLECTED CEILING PLAN NORTH AND SOUTH

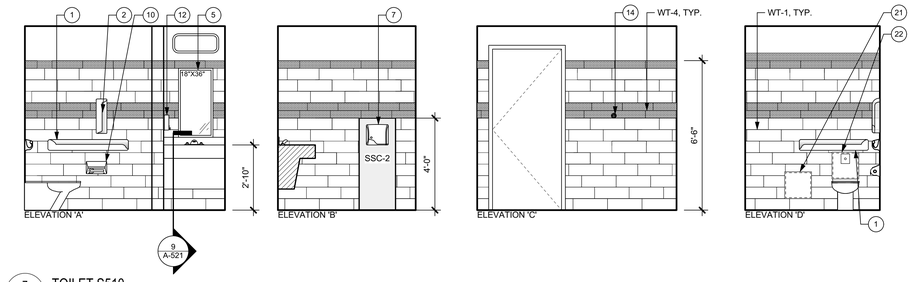
DRAWING NUMBER: A-118

SHEET 40 OF 212

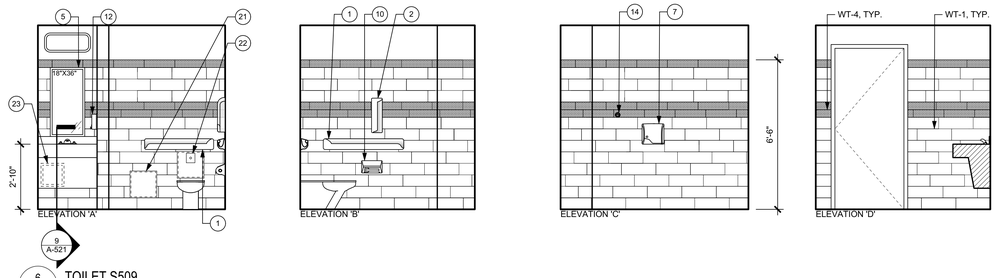
Date: 5/11/26 Time: 12:47:24 PM



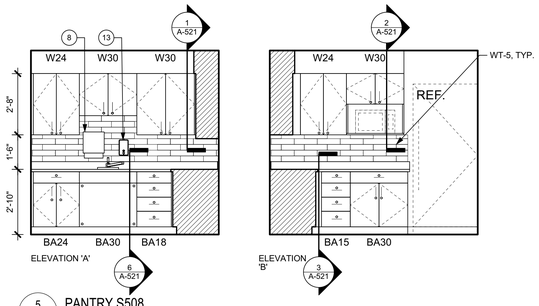
9 A-402 TOILET ACCESS DOOR AND PLATE DETAIL
Scale: 3/8" = 1'-0"



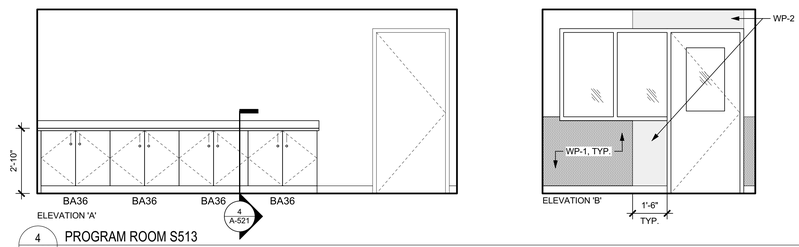
7 A-402 TOILET S510
Scale: 3/8" = 1'-0"
NOTE: TOILET S609 & S709 ELEVATIONS SIMILAR



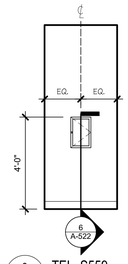
6 A-402 TOILET S509
Scale: 3/8" = 1'-0"
NOTE: TOILET S609 & S709 ELEVATIONS SIMILAR



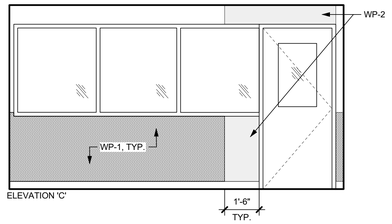
5 A-402 PANTRY S508
Scale: 3/8" = 1'-0"
NOTE: PANTRY S608 & S708 ELEVATIONS SIMILAR
WALL TILE: WT-5

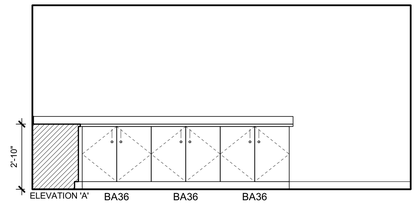


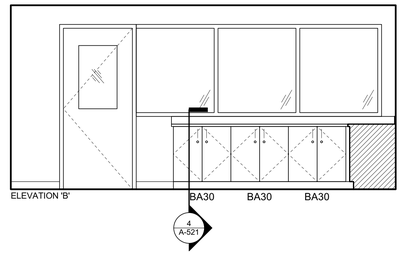
4 A-402 PROGRAM ROOM S513
Scale: 3/8" = 1'-0"
NOTE: PROGRAM ROOMS S613 & S713 ELEVATIONS SIMILAR



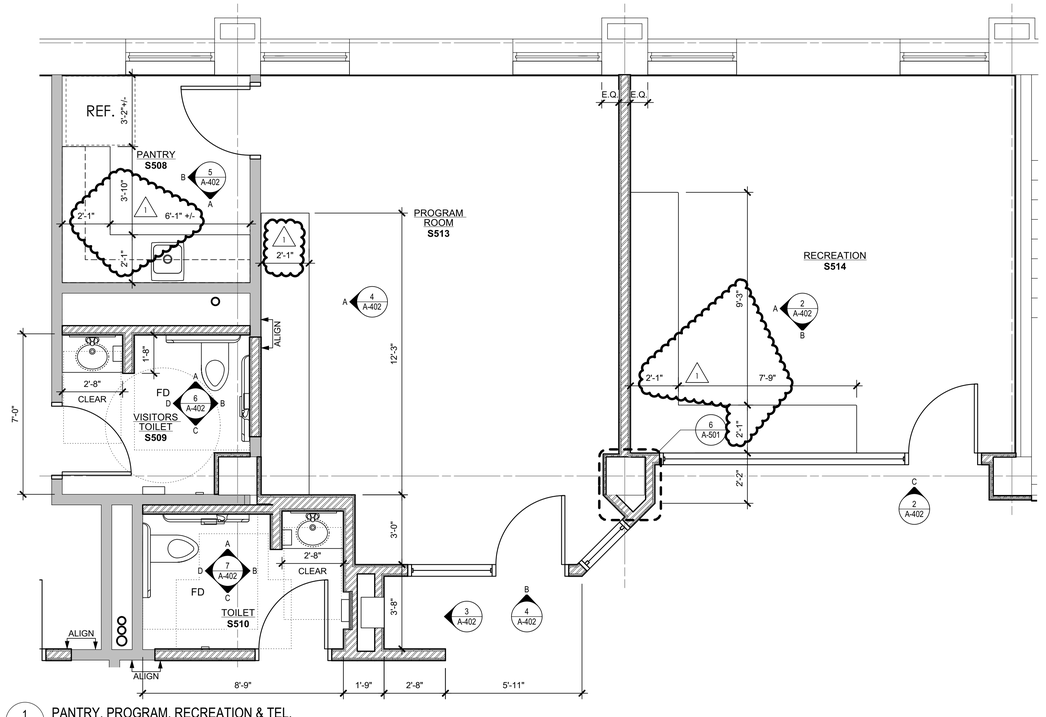
3 A-402 TEL. S559
Scale: 3/8" = 1'-0"
NOTE: TEL. S659 & S759 ELEVATIONS SIMILAR







2 A-402 RECREATION ROOM S514
Scale: 3/8" = 1'-0"
NOTE: RECREATION ROOMS S614 & S714 ELEVATIONS SIMILAR



1 A-402 PANTRY, PROGRAM, RECREATION & TEL.
Scale: 3/8" = 1'-0"

GENERAL ELEVATION NOTES

GENERAL CONSTRUCTION NOTES:

1. REFER TO SHEET A-401, FOR EQUIPMENT, FURNITURE, ALL WALL MOUNTED ACCESSORIES, AND TYPICAL HEIGHTS.
2. PROVIDE PAPER TOWEL DISPENSER AND SOAP DISPENSER AT EVERY SINK, TYP. (CFCI) REFER TO SHEET A-401 FOR MOUNTING HEIGHTS.
3. REFER TO I-SERIES SHEETS FOR FINISH SCHEDULE, LEGEND, AND FINISH PLANS.
4. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT AND ACCESSORIES (INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, MILLWORK, TVS AND MONITORS, LOCKERS, ACOUSTICAL WALL PANELS. ETC.). PROVIDE CONTINUOUS WOOD FIRE TREATED WOOD BLOCKING AT ALL HORIZONTAL AND VERTICAL GRAB BARS.
5. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
6. COORDINATE FLOOR SLOPING REQUIREMENTS TO FLOOR DRAINS WITH FLOOR SLOPING PLANS ON SHEET I-001. COORDINATE ALL NEW FLOOR SLABS AND SLAB DEPRESSIONS WITH STRUCTURAL DRAWINGS.
7. AT ALL PATIENT TOILET AND TOILET/ SHOWER ROOM PROVIDE WATERPROOFING SYSTEM OVER ENTIRE FLOOR AND FULL HEIGHT OF WALL TILE.

GENERAL INTERIOR ELEVATION NOTES:

1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
2. PROVIDE FILLER PANELS AS REQUIRED WHERE CABINETS MEET ADJACENT WALLS.
3. COORDINATE CABINET OPENING SIZES WITH OWNER SUPPLIED EQUIPMENT.
4. REFER TO FINISH LEGEND ON SHEET I-001 FOR CABINET, COUNTERTOP, AND OTHER FINISH DESIGNATIONS.
5. TYPICAL DETAILS ARE MARKED AS SHOWN. DETAILS NOT SPECIFICALLY MARKED SHALL BE SIMILAR TO THOSE MARKED AS TYPICAL IN THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT.
6. ALL MILLWORK TO BE LOCKABLE, UNLESS OTHERWISE NOTED.
7. TILE PATTERN IS FOR STYLE REFERENCE ONLY. REFER TO SPECIFICATIONS FOR DETAILS. TYPICAL OF ALL TILE.
8. REFER TO ELEVATION DETAIL 9/A-402 FOR TOILET ACCESS DOOR AND ACCESS PLATE INFORMATION.
9. IN LOCATIONS WHERE TILE IS APPLIED ON WALL/FLOOR PROVIDE EDGE PROTECTION ON ALL INSIDE & OUTSIDE CORNERS, BASE AND TOP CAP AS REQUIRED. REFER TO THE FINISH LEGEND ON I-001 AND DETAIL 11/I-001.

(#) EQUIPMENT AND ACCESSORIES LEGEND

- ALL ITEMS ARE CFCI, UNLESS NOTED OTHERWISE, COORDINATE WITH SPECS
- COORDINATE MOUNTING HEIGHTS WITH ELEVATIONS ON SHEET A-401

(1) HORIZONTAL GRAB BARS, ANTI-LIGATURE (GB-1)
(2) VERTICAL GRAB BARS, ANTI-LIGATURE (GB-1)
(3) HORIZONTAL GRAB BARS (GB-2)
(4) VERTICAL GRAB BARS (GB-2)
(5) MIRROR, ANTI-LIGATURE (MU-1)
(6) MIRROR, 18x36 (MU-2)
(7) HAND DRIER (HD-1)
(8) PAPER TOWEL DISPENSER (PTD-3)
(9) COMBO PAPER TOWEL DISPENSER (PTD-3)
(10) TOILET TISSUE DISPENSER, ANTI-LIGATURE (TTD-1)
(11) TOILET TISSUE DISPENSER (TTD-2)
(12) SOAP DISPENSER, ANTI-LIGATURE (SD-1)
(13) SOAP DISPENSER (SD-2)
(14) COAT HOOK, ANTI-LIGATURE (CH-1)
(15) COAT HOOK (CH-2)
(16) NOT USED
(17) MOP AND BROOM HOLDER (MBH-1)
(18) NOT USED
(19) NOT USED
(20) RECESSED WASHROOM SHELF (RWS-1)
(21) 14" x 14" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT
(22) 12" X 12" 11 GA. STAINLESS STEEL ACCESS PLATE COORDINATE WITH P-CONTRACT FOR AUTOMATIC FLUSH SENSOR. SEE DETAIL 9/A-402.
(23) 10" X 10" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT

NEW YORK STATE OF OPPORTUNITY. Office of General Services
DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL
IBC Engineering, P.C.

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT PHILIP J. WOODWORTH 030712 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

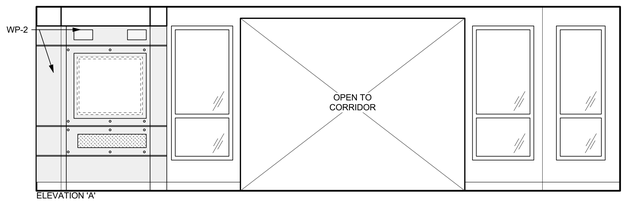
PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

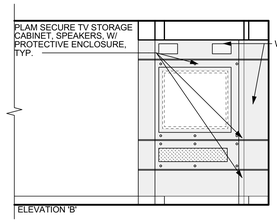
SHEET TITLE:
ENLARGED PLANS AND INTERIOR ELEVATIONS

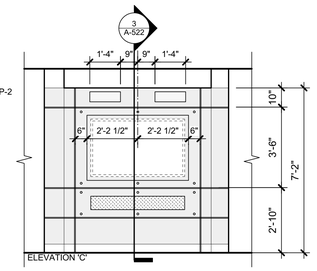
DRAWING NUMBER:
A-402

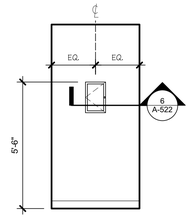
SHEET 42 OF 212

Date: 5/11/26 Time: 12:48:39 PM

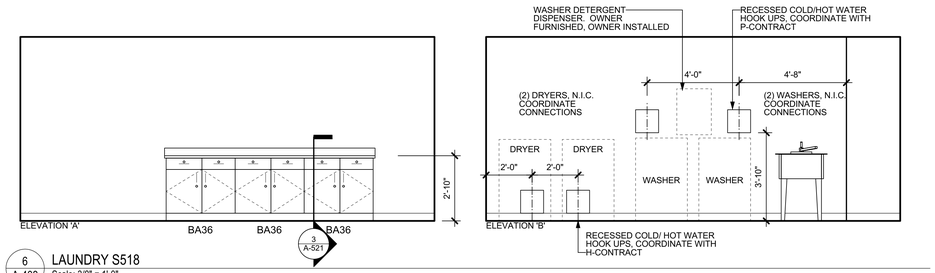






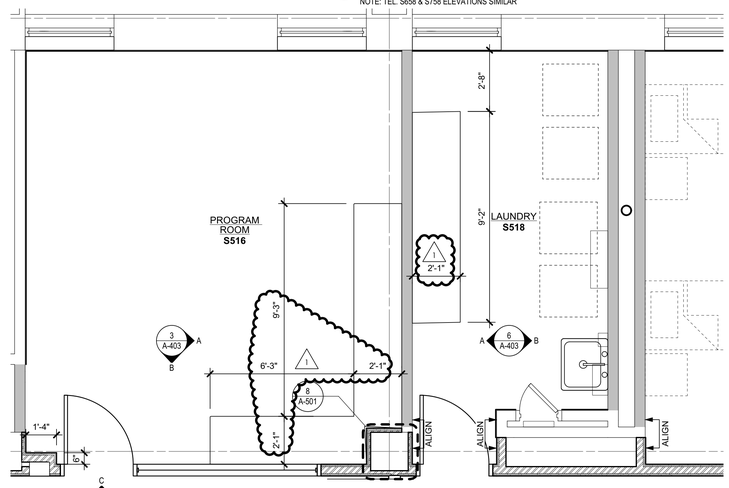


7 A-403 **TV ROOM S557**
Scale: 3/8" = 1'-0"
NOTE: TV ROOMS S657 & S757 ELEVATIONS SIMILAR

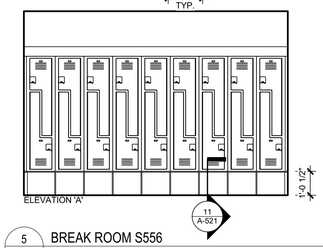


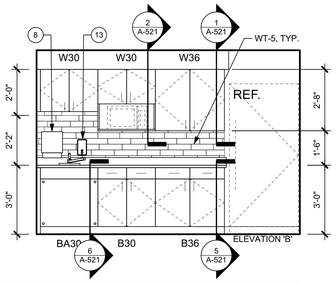
6 A-403 **LAUNDRY S518**
Scale: 3/8" = 1'-0"
NOTE: LAUNDRY S618 & S718 ELEVATIONS SIMILAR

3 A-403 **TEL. S558**
Scale: 3/8" = 1'-0"
NOTE: TEL. S658 & S758 ELEVATIONS SIMILAR

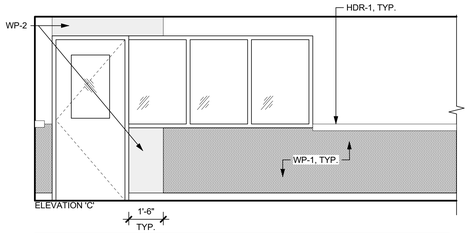


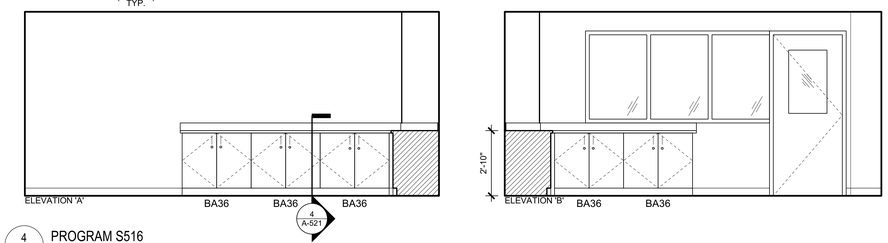
2 A-403 **PROGRAM ROOM & LAUNDRY**
Scale: 3/8" = 1'-0"





5 A-403 **BREAK ROOM S556**
Scale: 3/8" = 1'-0"
NOTE: BREAK ROOMS S656 & S756 ELEVATIONS SIMILAR
WALL TILE: WT-5





4 A-403 **PROGRAM S516**
Scale: 3/8" = 1'-0"
NOTE: LAUNDRY S618 & S718 ELEVATIONS SIMILAR

1 A-403 **BREAK ROOM, TV ROOM & TEL.**
Scale: 3/8" = 1'-0"

GENERAL ELEVATION NOTES

GENERAL CONSTRUCTION NOTES:

1. REFER TO SHEET A-401, FOR EQUIPMENT, FURNITURE, ALL WALL MOUNTED ACCESSORIES, AND TYPICAL HEIGHTS.
2. PROVIDE PAPER TOWEL DISPENSER AND SOAP DISPENSER AT EVERY SINK, TYP. (CFCI) REFER TO SHEET A-401 FOR MOUNTING HEIGHTS.
3. REFER TO I-SERIES SHEETS FOR FINISH SCHEDULE, LEGEND, AND FINISH PLANS.
4. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT AND ACCESSORIES (INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, MILLWORK, TV'S AND MONITORS, LOCKERS, ACOUSTICAL WALL PANELS. ETC.). PROVIDE CONTINUOUS WOOD FIRE TREATED WOOD BLOCKING AT ALL HORIZONTAL AND VERTICAL GRAB BARS.
5. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
6. COORDINATE FLOOR SLOPING REQUIREMENTS TO FLOOR DRAINS WITH FLOOR SLOPING PLANS ON SHEET I-001. COORDINATE ALL NEW FLOOR SLABS AND SLAB DEPRESSIONS WITH STRUCTURAL DRAWINGS.
7. AT ALL PATIENT TOILET AND TOILET/ SHOWER ROOM PROVIDE WATERPROOFING SYSTEM OVER ENTIRE FLOOR AND FULL HEIGHT OF WALL TILE.

GENERAL INTERIOR ELEVATION NOTES:

1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
2. PROVIDE FILLER PANELS AS REQUIRED WHERE CABINETS MEET ADJACENT WALLS.
3. COORDINATE CABINET OPENING SIZES WITH OWNER SUPPLIED EQUIPMENT.
4. REFER TO FINISH LEGEND ON SHEET I-001 FOR CABINET, COUNTERTOP, AND OTHER FINISH DESIGNATIONS.
5. TYPICAL DETAILS ARE MARKED AS SHOWN. DETAILS NOT SPECIFICALLY MARKED SHALL BE SIMILAR TO THOSE MARKED AS TYPICAL IN THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT.
6. ALL MILLWORK TO BE LOCKABLE, UNLESS OTHERWISE NOTED.
7. TILE PATTERN IS FOR STYLE REFERENCE ONLY. REFER TO SPECIFICATIONS FOR DETAILS. TYPICAL OF ALL TILE.
8. REFER TO ELEVATION DETAIL 9/A-402 FOR TOILET ACCESS DOOR AND ACCESS PLATE INFORMATION.
9. IN LOCATIONS WHERE TILE IS APPLIED ON WALL/FLOOR PROVIDE EDGE PROTECTION ON ALL INSIDE & OUTSIDE CORNERS, BASE AND TOP CAP AS REQUIRED. REFER TO THE FINISH LEGEND ON I-001 AND DETAIL 11/I-001.

(#) EQUIPMENT AND ACCESSORIES LEGEND

- ALL ITEMS ARE CFCI, UNLESS NOTED OTHERWISE, COORDINATE WITH SPECS
- COORDINATE MOUNTING HEIGHTS WITH ELEVATIONS ON SHEET A-401

1. HORIZONTAL GRAB BARS, ANTI-LIGATURE (GB-1)
2. VERTICAL GRAB BARS, ANTI-LIGATURE (GB-1)
3. HORIZONTAL GRAB BARS (GB-2)
4. VERTICAL GRAB BARS (GB-2)
5. MIRROR, ANTI-LIGATURE (MU-1)
6. MIRROR, 18x36 (MU-2)
7. HAND DRIER (HD-1)
8. PAPER TOWEL DISPENSER (PTD-3)
9. COMBO PAPER TOWEL DISPENSER (PTD-3)
10. TOILET TISSUE DISPENSER, ANTI-LIGATURE (TTD-1)
11. TOILET TISSUE DISPENSER (TTD-2)
12. SOAP DISPENSER, ANTI-LIGATURE (SD-1)
13. SOAP DISPENSER (SD-2)
14. COAT HOOK, ANTI-LIGATURE (CH-1)
15. COAT HOOK (CH-2)
16. NOT USED
17. MOP AND BROOM HOLDER (MBH-1)
18. NOT USED
19. NOT USED
20. RECESSED WASHROOM SHELF (RWS-1)
21. 14" x 14" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT
22. 12" X 12" 11 GA. STAINLESS STEEL ACCESS PLATE COORDINATE WITH P-CONTRACT FOR AUTOMATIC FLUSH SENSOR. SEE DETAIL 9/A-402.
23. 10" X 10" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT

NEW YORK STATE OF OPPORTUNITY. **Office of General Services**

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT — ROBERT J. WOODWORTH — 030712 — STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

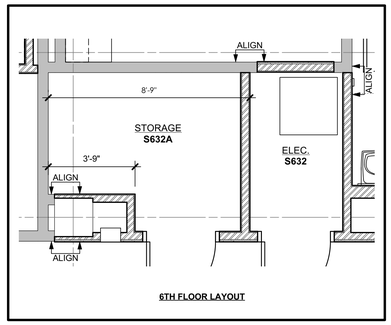
PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE:
ENLARGED PLANS AND INTERIOR ELEVATIONS

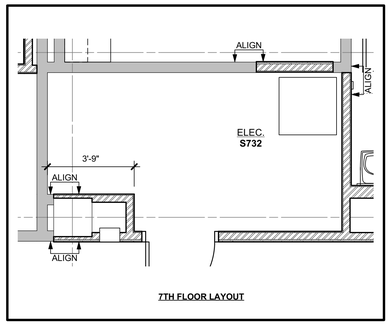
DRAWING NUMBER:
A-403

SHEET 43 OF 212

Date: 5/11/26 Time: 12:50:19 PM

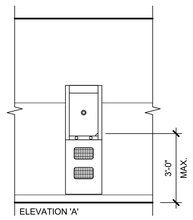


6TH FLOOR LAYOUT

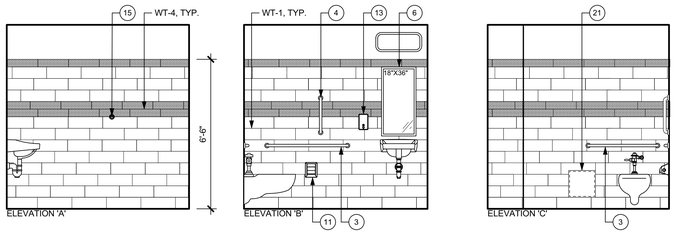


7TH FLOOR LAYOUT

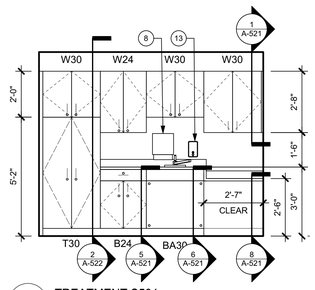
8 / A-404 — 6TH & 7TH FLOORS STORAGE / ELEC.
Scale: 3/8" = 1'-0"



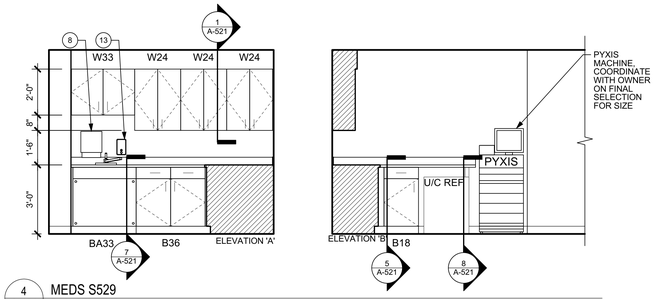
7 / A-404 — DRINKING FOUNTAIN FIFTH FLOOR
Scale: 3/8" = 1'-0"
NOTE: DRINKING FOUNTAINS ON NORTH AND SOUTH WINGS OF SIXTH AND SEVENTH FLOOR ELEVATIONS SIMILAR



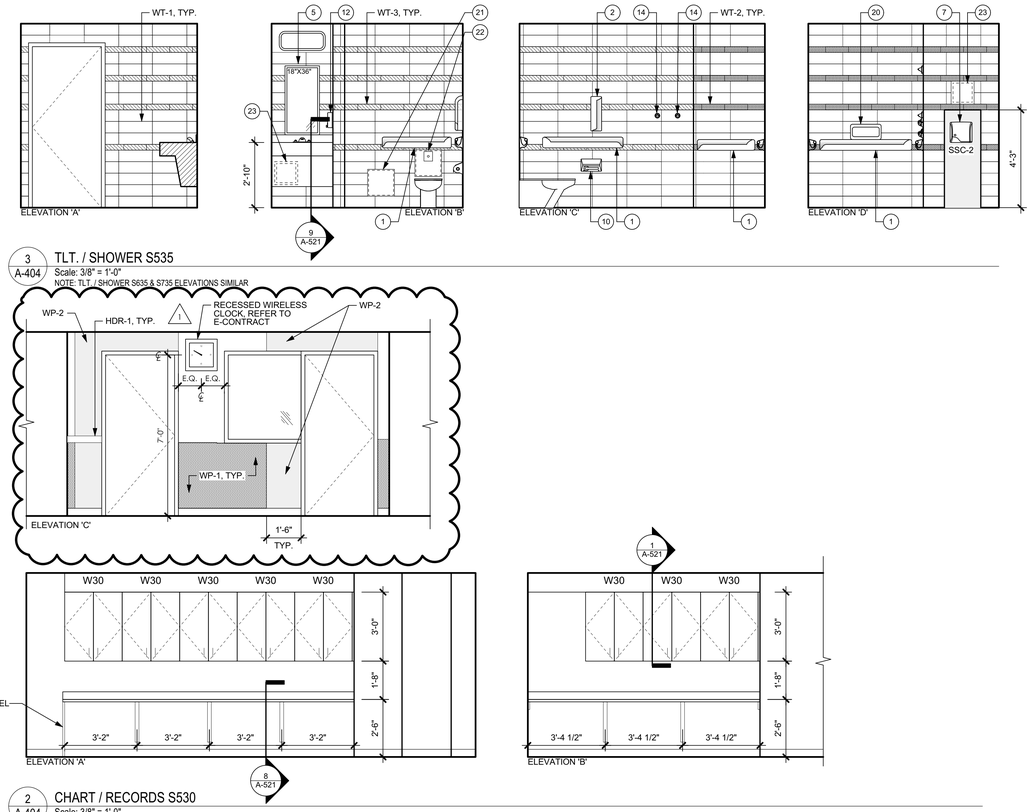
6 / A-404 — STAFF TOILET S534
Scale: 3/8" = 1'-0"
NOTE: STAFF TOILET S634 & S734 ELEVATIONS SIMILAR



5 / A-404 — TREATMENT S531
Scale: 3/8" = 1'-0"
NOTE: TREATMENT S631& S731 ELEVATIONS SIMILAR



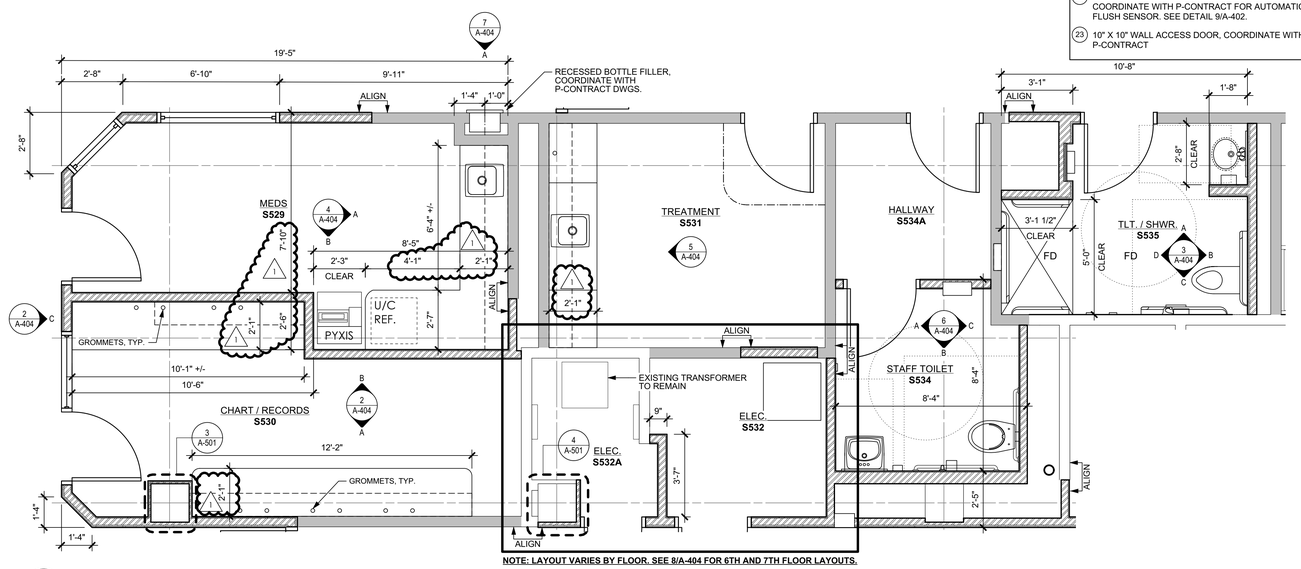
4 / A-404 — MEDS S529
Scale: 3/8" = 1'-0"
NOTE: MEDS S629 & S729 ELEVATIONS SIMILAR



3 / A-404 — TLT. / SHOWER S535
Scale: 3/8" = 1'-0"
NOTE: TLT. / SHOWER S635 & S735 ELEVATIONS SIMILAR

2 / A-404 — CHART / RECORDS S530
Scale: 3/8" = 1'-0"
NOTE: CHART / RECORDS S630 & S730 ELEVATIONS SIMILAR

1 / A-404 — MEDS, CHART/RECORDS, TREATMENT, STORAGE & STAFF TOILET
Scale: 3/8" = 1'-0"



NOTE: LAYOUT VARIES BY FLOOR. SEE 8/A-404 FOR 6TH AND 7TH FLOOR LAYOUTS.

GENERAL ELEVATION NOTES

GENERAL CONSTRUCTION NOTES:

1. REFER TO SHEET A-401, FOR EQUIPMENT, FURNITURE, ALL WALL MOUNTED ACCESSORIES, AND TYPICAL HEIGHTS.
2. PROVIDE PAPER TOWEL DISPENSER AND SOAP DISPENSER AT EVERY SINK, TYP. (CFCI) REFER TO SHEET A-401 FOR MOUNTING HEIGHTS.
3. REFER TO I-SERIES SHEETS FOR FINISH SCHEDULE, LEGEND, AND FINISH PLANS.
4. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT AND ACCESSORIES (INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, MILLWORK, TV'S AND MONITORS, LOCKERS, ACOUSTICAL WALL PANELS. ETC.). PROVIDE CONTINUOUS WOOD FIRE TREATED WOOD BLOCKING AT ALL HORIZONTAL AND VERTICAL GRAB BARS.
5. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
6. COORDINATE FLOOR SLOPING REQUIREMENTS TO FLOOR DRAINS WITH FLOOR SLOPING PLANS ON SHEET I-001. COORDINATE ALL NEW FLOOR SLABS AND SLAB DEPRESSIONS WITH STRUCTURAL DRAWINGS.
7. AT ALL PATIENT TOILET AND TOILET/ SHOWER ROOM PROVIDE WATERPROOFING SYSTEM OVER ENTIRE FLOOR AND FULL HEIGHT OF WALL TILE.

GENERAL INTERIOR ELEVATION NOTES:

1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
2. PROVIDE FILLER PANELS AS REQUIRED WHERE CABINETS MEET ADJACENT WALLS.
3. COORDINATE CABINET OPENING SIZES WITH OWNER SUPPLIED EQUIPMENT.
4. REFER TO FINISH LEGEND ON SHEET I-001 FOR CABINET, COUNTERTOP, AND OTHER FINISH DESIGNATIONS.
5. TYPICAL DETAILS ARE MARKED AS SHOWN. DETAILS NOT SPECIFICALLY MARKED SHALL BE SIMILAR TO THOSE MARKED AS TYPICAL IN THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT.
6. ALL MILLWORK TO BE LOCKABLE, UNLESS OTHERWISE NOTED.
7. TILE PATTERN IS FOR STYLE REFERENCE ONLY. REFER TO SPECIFICATIONS FOR DETAILS. TYPICAL OF ALL TILE.
8. REFER TO ELEVATION DETAIL 9/A-402 FOR TOILET ACCESS DOOR AND ACCESS PLATE INFORMATION.
9. IN LOCATIONS WHERE TILE IS APPLIED ON WALL/FLOOR PROVIDE EDGE PROTECTION ON ALL INSIDE & OUTSIDE CORNERS, BASE AND TOP CAP AS REQUIRED. REFER TO THE FINISH LEGEND ON I-001 AND DETAIL 11/I-001.

EQUIPMENT AND ACCESSORIES LEGEND

- ALL ITEMS ARE CFCI, UNLESS NOTED OTHERWISE, COORDINATE WITH SPECS
- COORDINATE MOUNTING HEIGHTS WITH ELEVATIONS ON SHEET A-401

1. HORIZONTAL GRAB BARS, ANTI-LIGATURE (GB-1)
2. VERTICAL GRAB BARS, ANTI-LIGATURE (GB-1)
3. HORIZONTAL GRAB BARS (GB-2)
4. VERTICAL GRAB BARS (GB-2)
5. MIRROR, ANTI-LIGATURE (MU-1)
6. MIRROR, 18x36 (MU-2)
7. HAND DRIER (HD-1)
8. PAPER TOWEL DISPENSER (PTD-3)
9. COMBO PAPER TOWEL DISPENSER (PTD-3)
10. TOILET TISSUE DISPENSER, ANTI-LIGATURE (TTD-1)
11. TOILET TISSUE DISPENSER (TTD-2)
12. SOAP DISPENSER, ANTI-LIGATURE (SD-1)
13. SOAP DISPENSER (SD-2)
14. COAT HOOK, ANTI-LIGATURE (CH-1)
15. COAT HOOK (CH-2)
16. NOT USED
17. MOP AND BROOM HOLDER (MBH-1)
18. NOT USED
19. NOT USED
20. RECESSED WASHROOM SHELF (RWS-1)
21. 14" x 14" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT
22. 12" X 12" 11 GA. STAINLESS STEEL ACCESS PLATE COORDINATE WITH P-CONTRACT FOR AUTOMATIC FLUSH SENSOR. SEE DETAIL 9/A-402.
23. 10" X 10" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODRICH 030710 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
PROJECT NUMBER:		46103 - C
DESIGNED BY:		
DRAWN BY:		KK
FIELD CHECK:		
APPROVED BY:		CD

SHEET TITLE:
ENLARGED PLANS AND INTERIOR ELEVATIONS

DRAWING NUMBER:
A-404

SHEET 44 OF 212

Date: 5/11/26 Time: 12:53:16 PM

GENERAL ELEVATION NOTES

GENERAL CONSTRUCTION NOTES:

1. REFER TO SHEET A-401, FOR EQUIPMENT, FURNITURE, ALL WALL MOUNTED ACCESSORIES, AND TYPICAL HEIGHTS.
2. PROVIDE PAPER TOWEL DISPENSER AND SOAP DISPENSER AT EVERY SINK, TYP. (CFCI) REFER TO SHEET A-401 FOR MOUNTING HEIGHTS.
3. REFER TO I-SERIES SHEETS FOR FINISH SCHEDULE, LEGEND, AND FINISH PLANS.
4. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT AND ACCESSORIES (INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, MILLWORK, TVS AND MONITORS, LOCKERS, ACOUSTICAL WALL PANELS. ETC.). PROVIDE CONTINUOUS WOOD FIRE TREATED WOOD BLOCKING AT ALL HORIZONTAL AND VERTICAL GRAB BARS.
5. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
6. COORDINATE FLOOR SLOPING REQUIREMENTS TO FLOOR DRAINS WITH FLOOR SLOPING PLANS ON SHEET I-001. COORDINATE ALL NEW FLOOR SLABS AND SLAB DEPRESSIONS WITH STRUCTURAL DRAWINGS.
7. AT ALL PATIENT TOILET AND TOILET/ SHOWER ROOM PROVIDE WATERPROOFING SYSTEM OVER ENTIRE FLOOR AND FULL HEIGHT OF WALL TILE.

GENERAL INTERIOR ELEVATION NOTES:

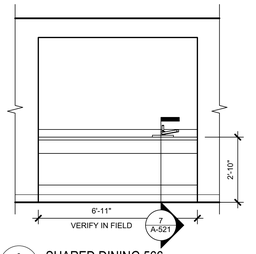
1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
2. PROVIDE FILLER PANELS AS REQUIRED WHERE CABINETS MEET ADJACENT WALLS.
3. COORDINATE CABINET OPENING SIZES WITH OWNER SUPPLIED EQUIPMENT.
4. REFER TO FINISH LEGEND ON SHEET I-001 FOR CABINET, COUNTERTOP, AND OTHER FINISH DESIGNATIONS.
5. TYPICAL DETAILS ARE MARKED AS SHOWN. DETAILS NOT SPECIFICALLY MARKED SHALL BE SIMILAR TO THOSE MARKED AS TYPICAL IN THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT.
6. ALL MILLWORK TO BE LOCKABLE, UNLESS OTHERWISE NOTED.
7. TILE PATTERN IS FOR STYLE REFERENCE ONLY. REFER TO SPECIFICATIONS FOR DETAILS. TYPICAL OF ALL TILE.

8. REFER TO ELEVATION DETAIL 9/A-402 FOR TOILET ACCESS DOOR AND ACCESS PLATE INFORMATION.
9. IN LOCATIONS WHERE TILE IS APPLIED ON WALL/FLOOR PROVIDE EDGE PROTECTION ON ALL INSIDE & OUTSIDE CORNERS, BASE AND TOP CAP AS REQUIRED. REFER TO THE FINISH LEGEND ON I-001 AND DETAIL 11/I-001.

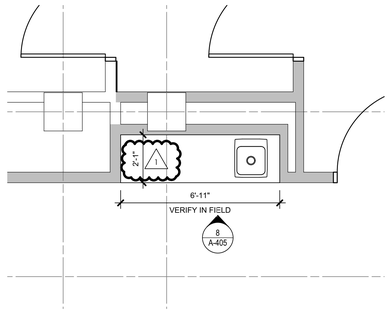
(#) EQUIPMENT AND ACCESSORIES LEGEND

- ALL ITEMS ARE CFCI, UNLESS NOTED OTHERWISE, COORDINATE WITH SPECS
- COORDINATE MOUNTING HEIGHTS WITH ELEVATIONS ON SHEET A-401

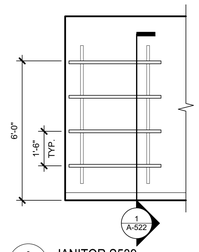
1. HORIZONTAL GRAB BARS, ANTI-LIGATURE (GB-1)
2. VERTICAL GRAB BARS, ANTI-LIGATURE (GB-1)
3. HORIZONTAL GRAB BARS (GB-2)
4. VERTICAL GRAB BARS (GB-2)
5. MIRROR, ANTI-LIGATURE (MU-1)
6. MIRROR, 18x36 (MU-2)
7. HAND DRIER (HD-1)
8. PAPER TOWEL DISPENSER (PTD-3)
9. COMBO PAPER TOWEL DISPENSER (PTD-3)
10. TOILET TISSUE DISPENSER, ANTI-LIGATURE (TTD-1)
11. TOILET TISSUE DISPENSER (TTD-2)
12. SOAP DISPENSER, ANTI-LIGATURE (SD-1)
13. SOAP DISPENSER (SD-2)
14. COAT HOOK, ANTI-LIGATURE (CH-1)
15. COAT HOOK (CH-2)
16. NOT USED
17. MOP AND BROOM HOLDER (MBH-1)
18. NOT USED
19. NOT USED
20. RECESSED WASHROOM SHELF (RWS-1)
21. 14" x 14" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT
22. 12" X 12" 11 GA. STAINLESS STEEL ACCESS PLATE COORDINATE WITH P-CONTRACT FOR AUTOMATIC FLUSH SENSOR. SEE DETAIL 9/A-402.
23. 10" X 10" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT



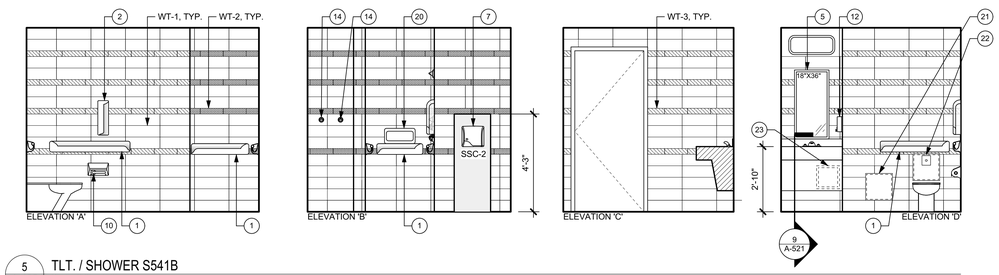
8 / A-405 SHARED DINING 566
Scale: 3/8" = 1'-0"
NOTE: SHARED DINING 666, 766 ELEVATIONS SIMILAR



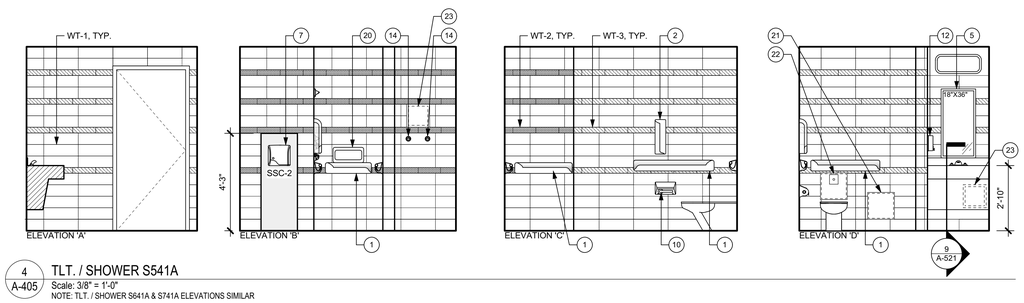
7 / A-405 SHARED DINING 566
Scale: 3/8" = 1'-0"



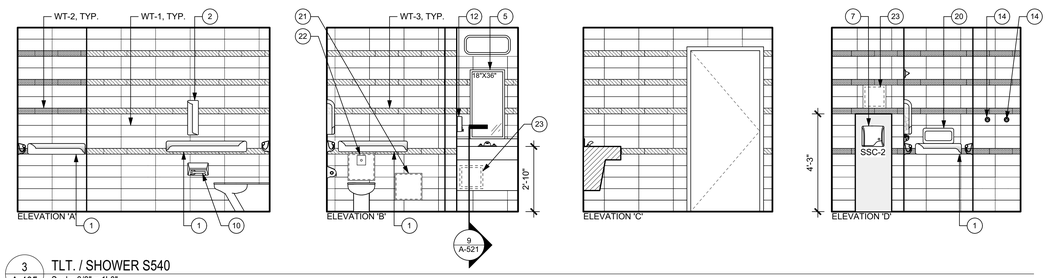
6 / A-405 JANITOR S539
Scale: 3/8" = 1'-0"
NOTE: JANITOR S639, S739 ELEVATIONS SIMILAR



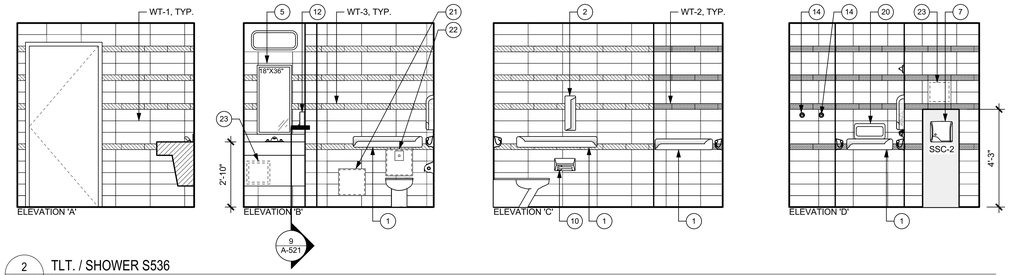
5 / A-405 TLT. / SHOWER S541B
Scale: 3/8" = 1'-0"
NOTE: TLT. / SHOWER S641B & S741B ELEVATIONS SIMILAR



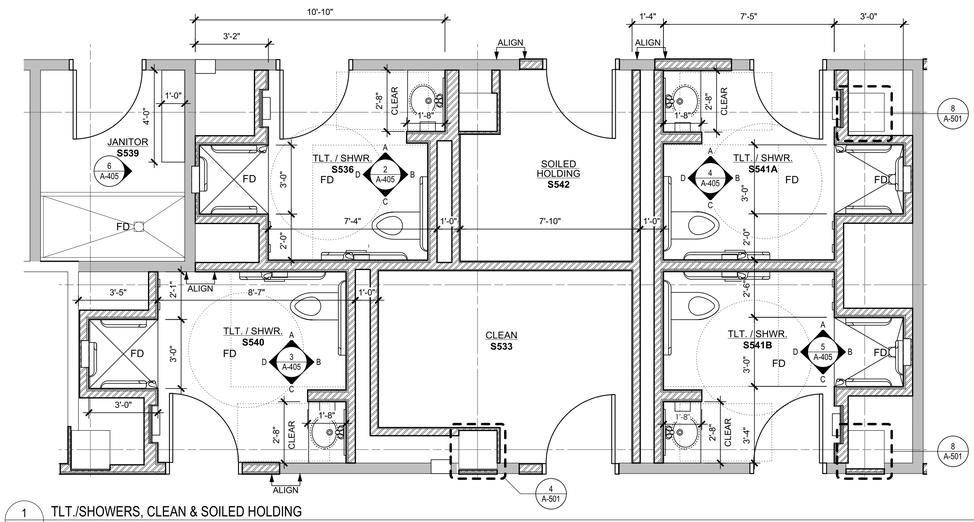
4 / A-405 TLT. / SHOWER S541A
Scale: 3/8" = 1'-0"
NOTE: TLT. / SHOWER S641A & S741A ELEVATIONS SIMILAR



3 / A-405 TLT. / SHOWER S540
Scale: 3/8" = 1'-0"
NOTE: TLT. / SHOWER S640 & S740 ELEVATIONS SIMILAR



2 / A-405 TLT. / SHOWER S536
Scale: 3/8" = 1'-0"
NOTE: TLT. / SHOWER S636 & S736 ELEVATIONS SIMILAR



1 / A-405 TLT./SHOWERS, CLEAN & SOILED HOLDING
Scale: 3/8" = 1'-0"

Date: 5/11/26
Time: 12:53:02 PM

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT THOMAS S. WOODSIDE 030715 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

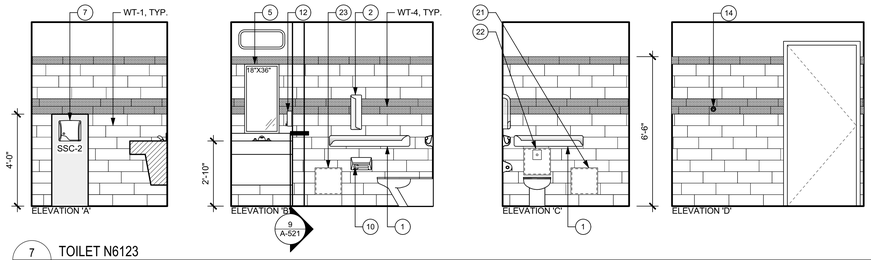
CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS
PROJECT NUMBER:		46103 - C
DESIGNED BY:		
DRAWN BY:		KK
FIELD CHECK:		
APPROVED BY:		CD

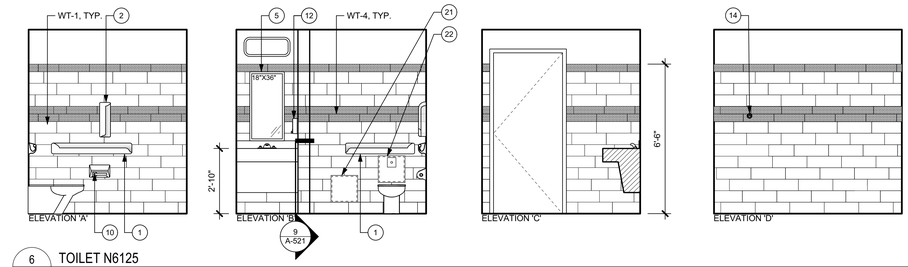
SHEET TITLE:
ENLARGED PLANS AND INTERIOR ELEVATIONS

DRAWING NUMBER:
A-405

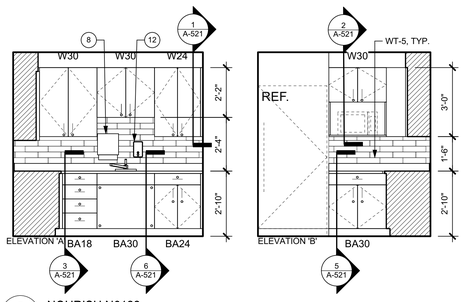
SHEET 45 OF 212



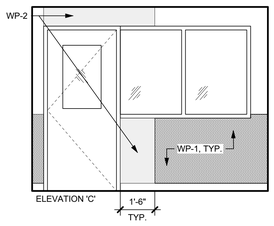
7 A-406 TOILET N6123
Scale: 3/8" = 1'-0"
NOTE: TOILET N7123 ELEVATIONS SIMILAR

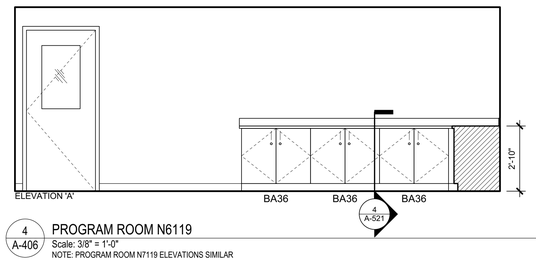


6 A-406 TOILET N6125
Scale: 3/8" = 1'-0"
NOTE: TOILET N7125 ELEVATIONS SIMILAR

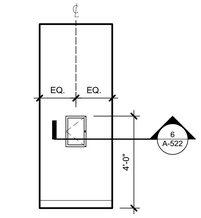


5 A-406 NOURISH N6122
Scale: 3/8" = 1'-0"
NOTE: PANTRY N7122 ELEVATIONS SIMILAR
WALL TILE: WT-5

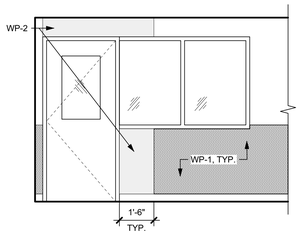


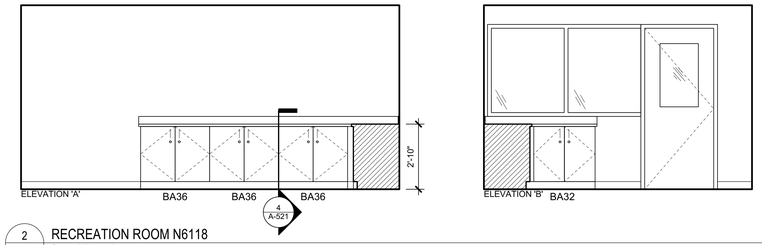


4 A-406 PROGRAM ROOM N6119
Scale: 3/8" = 1'-0"
NOTE: PROGRAM ROOM N7119 ELEVATIONS SIMILAR

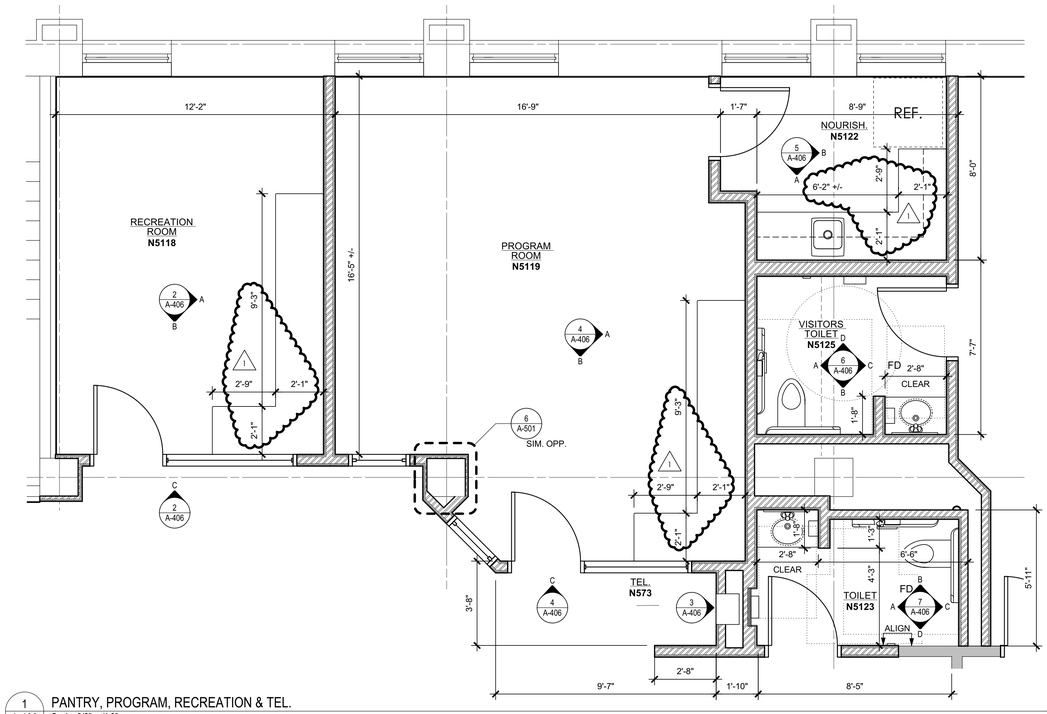


3 A-406 TEL. N673
Scale: 3/8" = 1'-0"
NOTE: TEL. N773 ELEVATIONS SIMILAR





2 A-406 RECREATION ROOM N6118
Scale: 3/8" = 1'-0"
NOTE: RECREATION ROOM N7118 ELEVATIONS SIMILAR



1 A-406 PANTRY, PROGRAM, RECREATION & TEL.
Scale: 3/8" = 1'-0"

GENERAL ELEVATION NOTES

GENERAL CONSTRUCTION NOTES:

1. REFER TO SHEET A-401, FOR EQUIPMENT, FURNITURE, ALL WALL MOUNTED ACCESSORIES, AND TYPICAL HEIGHTS.
2. PROVIDE PAPER TOWEL DISPENSER AND SOAP DISPENSER AT EVERY SINK, TYP. (CFCI) REFER TO SHEET A-401 FOR MOUNTING HEIGHTS.
3. REFER TO I-SERIES SHEETS FOR FINISH SCHEDULE, LEGEND, AND FINISH PLANS.
4. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT AND ACCESSORIES (INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, MILLWORK, TV'S AND MONITORS, LOCKERS, ACOUSTICAL WALL PANELS. ETC.). PROVIDE CONTINUOUS WOOD FIRE TREATED WOOD BLOCKING AT ALL HORIZONTAL AND VERTICAL GRAB BARS.
5. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
6. COORDINATE FLOOR SLOPING REQUIREMENTS TO FLOOR DRAINS WITH FLOOR SLOPING PLANS ON SHEET I-001. COORDINATE ALL NEW FLOOR SLABS AND SLAB DEPRESSIONS WITH STRUCTURAL DRAWINGS.
7. AT ALL PATIENT TOILET AND TOILET/ SHOWER ROOM PROVIDE WATERPROOFING SYSTEM OVER ENTIRE FLOOR AND FULL HEIGHT OF WALL TILE.

GENERAL INTERIOR ELEVATION NOTES:

1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
2. PROVIDE FILLER PANELS AS REQUIRED WHERE CABINETS MEET ADJACENT WALLS.
3. COORDINATE CABINET OPENING SIZES WITH OWNER SUPPLIED EQUIPMENT.
4. REFER TO FINISH LEGEND ON SHEET I-001 FOR CABINET, COUNTERTOP, AND OTHER FINISH DESIGNATIONS.
5. TYPICAL DETAILS ARE MARKED AS SHOWN. DETAILS NOT SPECIFICALLY MARKED SHALL BE SIMILAR TO THOSE MARKED AS TYPICAL IN THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT.
6. ALL MILLWORK TO BE LOCKABLE, UNLESS OTHERWISE NOTED.
7. TILE PATTERN IS FOR STYLE REFERENCE ONLY. REFER TO SPECIFICATIONS FOR DETAILS. TYPICAL OF ALL TILE.
8. REFER TO ELEVATION DETAIL 9/A-402 FOR TOILET ACCESS DOOR AND ACCESS PLATE INFORMATION.
9. IN LOCATIONS WHERE TILE IS APPLIED ON WALL/FLOOR PROVIDE EDGE PROTECTION ON ALL INSIDE & OUTSIDE CORNERS, BASE AND TOP CAP AS REQUIRED. REFER TO THE FINISH LEGEND ON I-001 AND DETAIL 11/I-001.

EQUIPMENT AND ACCESSORIES LEGEND

- ALL ITEMS ARE CFCI, UNLESS NOTED OTHERWISE, COORDINATE WITH SPECS
- COORDINATE MOUNTING HEIGHTS WITH ELEVATIONS ON SHEET A-401

1. HORIZONTAL GRAB BARS, ANTI-LIGATURE (GB-1)
2. VERTICAL GRAB BARS, ANTI-LIGATURE (GB-1)
3. HORIZONTAL GRAB BARS (GB-2)
4. VERTICAL GRAB BARS (GB-2)
5. MIRROR, ANTI-LIGATURE (MU-1)
6. MIRROR, 18x36 (MU-2)
7. HAND DRIER (HD-1)
8. PAPER TOWEL DISPENSER (PTD-3)
9. COMBO PAPER TOWEL DISPENSER (PTD-3)
10. TOILET TISSUE DISPENSER, ANTI-LIGATURE (TTD-1)
11. TOILET TISSUE DISPENSER (TTD-2)
12. SOAP DISPENSER, ANTI-LIGATURE (SD-1)
13. SOAP DISPENSER (SD-2)
14. COAT HOOK, ANTI-LIGATURE (CH-1)
15. COAT HOOK (CH-2)
16. NOT USED
17. MOP AND BROOM HOLDER (MBH-1)
18. NOT USED
19. NOT USED
20. RECESSED WASHROOM SHELF (RWS-1)
21. 14" x 14" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT
22. 12" X 12" 11 GA. STAINLESS STEEL ACCESS PLATE COORDINATE WITH P-CONTRACT FOR AUTOMATIC FLUSH SENSOR. SEE DETAIL 9/A-402.
23. 10" X 10" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODCOCK 030712 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

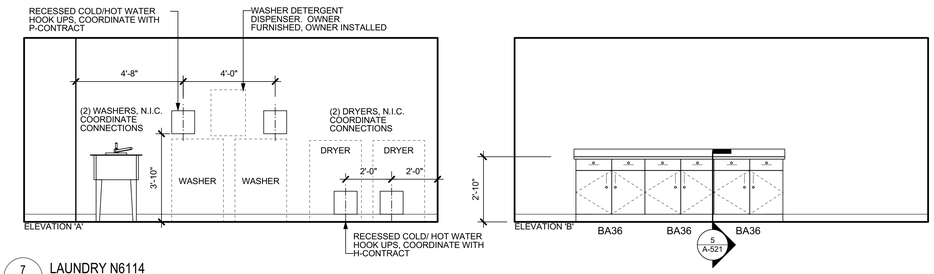
MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS
PROJECT NUMBER:		46103 - C
DESIGNED BY:		
DRAWN BY:		KK
FIELD CHECK:		
APPROVED BY:		CD

SHEET TITLE:
ENLARGED PLANS AND INTERIOR ELEVATIONS

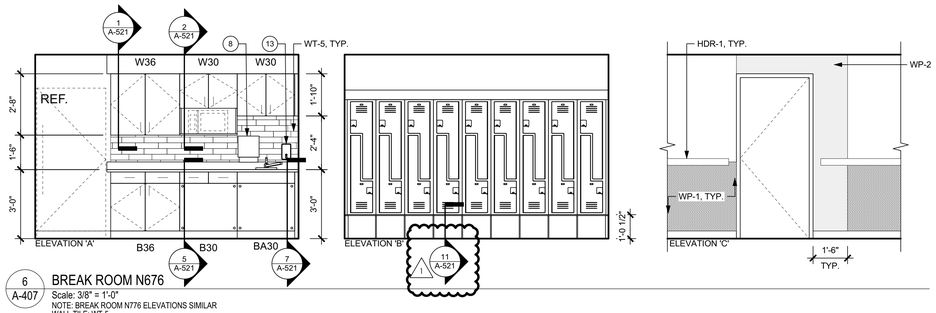
DRAWING NUMBER:
A-406

SHEET 46 OF 212

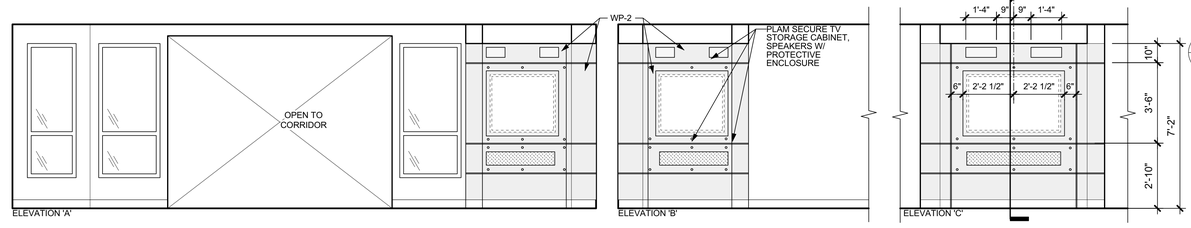
Date: 5/11/26 Time: 12:54:42 PM



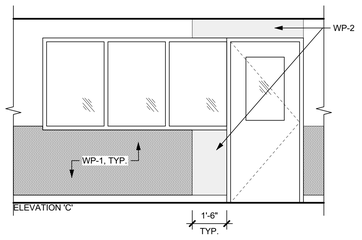
7 A-407 LAUNDRY N6114
Scale: 3/8" = 1'-0"
NOTE: LAUNDRY N7114 ELEVATIONS SIMILAR

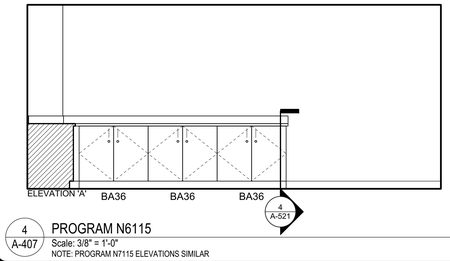


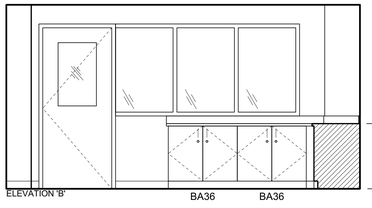
6 A-407 BREAK ROOM N676
Scale: 3/8" = 1'-0"
NOTE: BREAK ROOM N776 ELEVATIONS SIMILAR
WALL TILE: WT-5



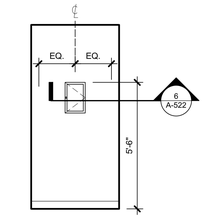
5 A-407 TV ROOM N675
Scale: 3/8" = 1'-0"
NOTE: TV ROOM N775 ELEVATIONS SIMILAR



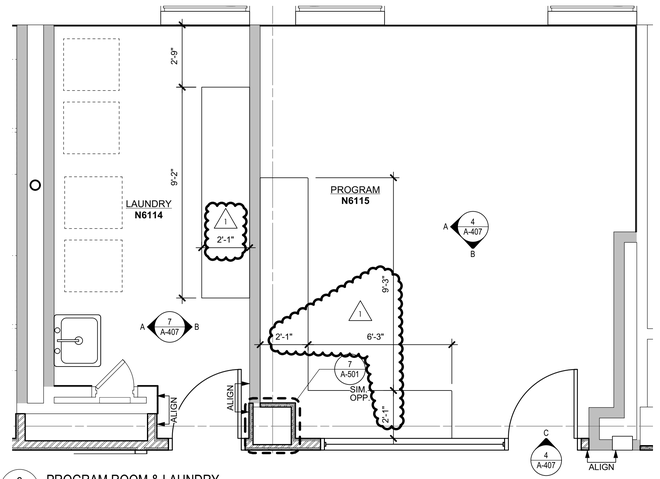




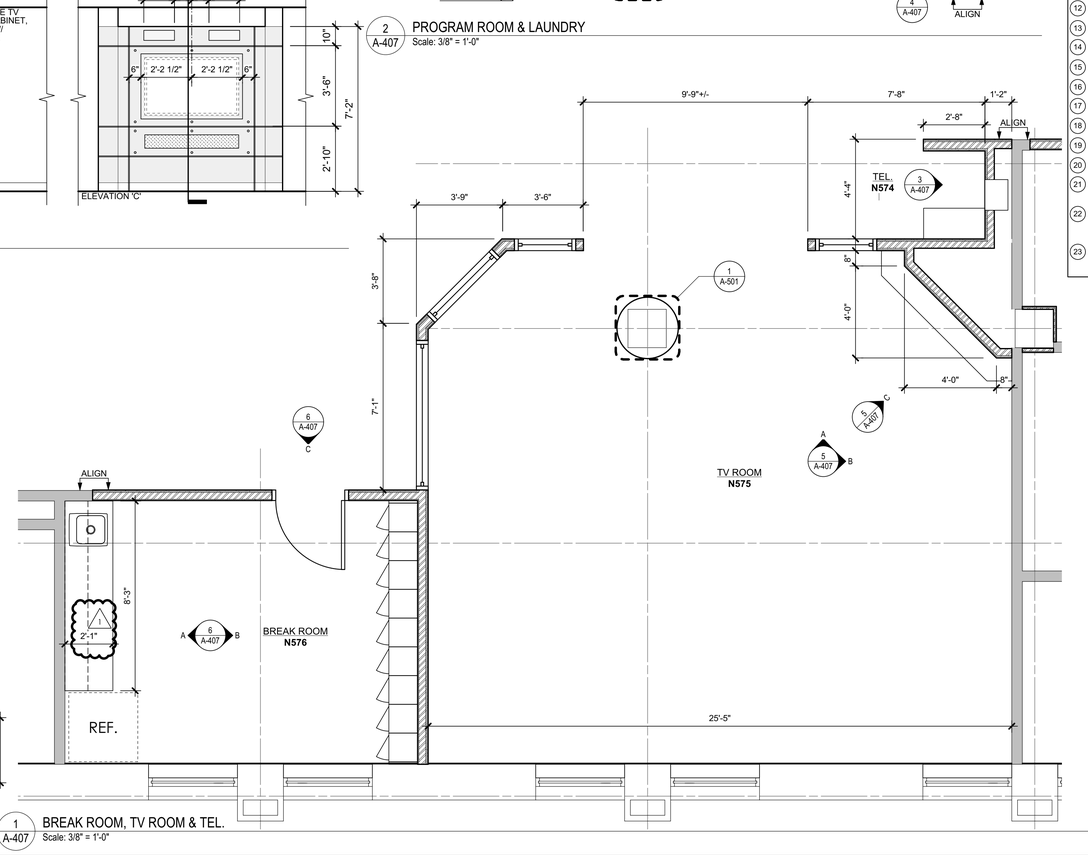
4 A-407 PROGRAM N6115
Scale: 3/8" = 1'-0"
NOTE: PROGRAM N7115 ELEVATIONS SIMILAR



3 A-407 TEL. N674
Scale: 3/8" = 1'-0"
NOTE: TEL. N774 ELEVATIONS SIMILAR



2 A-407 PROGRAM ROOM & LAUNDRY
Scale: 3/8" = 1'-0"



1 A-407 BREAK ROOM, TV ROOM & TEL.
Scale: 3/8" = 1'-0"

GENERAL ELEVATION NOTES

GENERAL CONSTRUCTION NOTES:

1. REFER TO SHEET A-401, FOR EQUIPMENT, FURNITURE, ALL WALL MOUNTED ACCESSORIES, AND TYPICAL HEIGHTS.
2. PROVIDE PAPER TOWEL DISPENSER AND SOAP DISPENSER AT EVERY SINK, TYP. (CFCI) REFER TO SHEET A-401 FOR MOUNTING HEIGHTS.
3. REFER TO I-SERIES SHEETS FOR FINISH SCHEDULE, LEGEND, AND FINISH PLANS.
4. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT AND ACCESSORIES (INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, MILLWORK, TV'S AND MONITORS, LOCKERS, ACOUSTICAL WALL PANELS, ETC.). PROVIDE CONTINUOUS WOOD FIRE TREATED WOOD BLOCKING AT ALL HORIZONTAL AND VERTICAL GRAB BARS.
5. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
6. COORDINATE FLOOR SLOPING REQUIREMENTS TO FLOOR DRAINS WITH FLOOR SLOPING PLANS ON SHEET I-001. COORDINATE ALL NEW FLOOR SLABS AND SLAB DEPRESSIONS WITH STRUCTURAL DRAWINGS.
7. AT ALL PATIENT TOILET AND TOILET/ SHOWER ROOM PROVIDE WATERPROOFING SYSTEM OVER ENTIRE FLOOR AND FULL HEIGHT OF WALL TILE.

GENERAL INTERIOR ELEVATION NOTES:

1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
2. PROVIDE FILLER PANELS AS REQUIRED WHERE CABINETS MEET ADJACENT WALLS.
3. COORDINATE CABINET OPENING SIZES WITH OWNER SUPPLIED EQUIPMENT.
4. REFER TO FINISH LEGEND ON SHEET I-001 FOR CABINET, COUNTERTOP, AND OTHER FINISH DESIGNATIONS.
5. TYPICAL DETAILS ARE MARKED AS SHOWN. DETAILS NOT SPECIFICALLY MARKED SHALL BE SIMILAR TO THOSE MARKED AS TYPICAL IN THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT.
6. ALL MILLWORK TO BE LOCKABLE, UNLESS OTHERWISE NOTED.
7. TILE PATTERN IS FOR STYLE REFERENCE ONLY. REFER TO SPECIFICATIONS FOR DETAILS. TYPICAL OF ALL TILE.
8. REFER TO ELEVATION DETAIL 9/A-402 FOR TOILET ACCESS DOOR AND ACCESS PLATE INFORMATION.
9. IN LOCATIONS WHERE TILE IS APPLIED ON WALL/FLOOR PROVIDE EDGE PROTECTION ON ALL INSIDE & OUTSIDE CORNERS, BASE AND TOP CAP AS REQUIRED. REFER TO THE FINISH LEGEND ON I-001 AND DETAIL 11/I-001.

(#) EQUIPMENT AND ACCESSORIES LEGEND

- ALL ITEMS ARE CFCI, UNLESS NOTED OTHERWISE, COORDINATE WITH SPECS
- COORDINATE MOUNTING HEIGHTS WITH ELEVATIONS ON SHEET A-401

1. HORIZONTAL GRAB BARS, ANTI-LIGATURE (GB-1)
2. VERTICAL GRAB BARS, ANTI-LIGATURE (GB-1)
3. HORIZONTAL GRAB BARS (GB-2)
4. VERTICAL GRAB BARS (GB-2)
5. MIRROR, ANTI-LIGATURE (MU-1)
6. MIRROR, 18x36 (MU-2)
7. HAND DRIER (HD-1)
8. PAPER TOWEL DISPENSER (PTD-3)
9. COMBO PAPER TOWEL DISPENSER (PTD-3)
10. TOILET TISSUE DISPENSER, ANTI-LIGATURE (TTD-1)
11. TOILET TISSUE DISPENSER (TTD-2)
12. SOAP DISPENSER, ANTI-LIGATURE (SD-1)
13. SOAP DISPENSER (SD-2)
14. COAT HOOK, ANTI-LIGATURE (CH-1)
15. COAT HOOK (CH-2)
16. NOT USED
17. MOP AND BROOM HOLDER (MBH-1)
18. NOT USED
19. NOT USED
20. RECESSED WASHROOM SHELF (RWS-1)
21. 14" x 14" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT
22. 12" X 12" 11 GA. STAINLESS STEEL ACCESS PLATE COORDINATE WITH P-CONTRACT FOR AUTOMATIC FLUSH SENSOR. SEE DETAIL 9/A-402.
23. 10" X 10" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODRICK 030710 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS

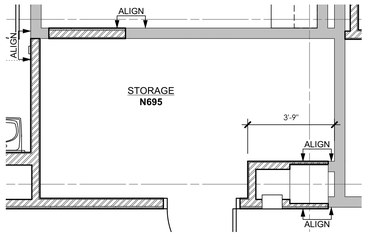
PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE:
ENLARGED PLANS AND INTERIOR ELEVATIONS

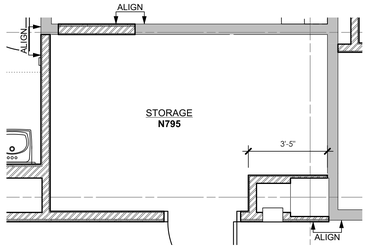
DRAWING NUMBER:
A-407

SHEET 47 OF 212

Date: 5/11/26 Time: 12:55:38 PM

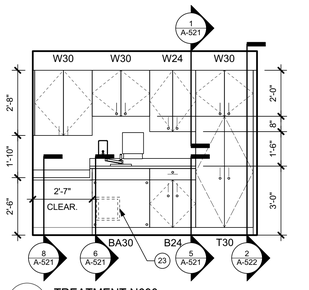


6TH FLOOR LAYOUT

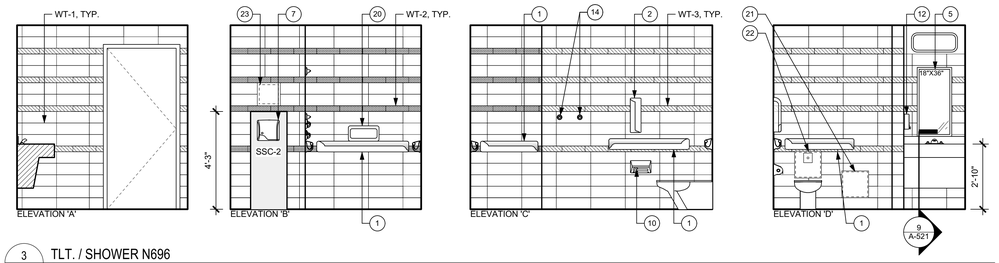


6TH FLOOR LAYOUT

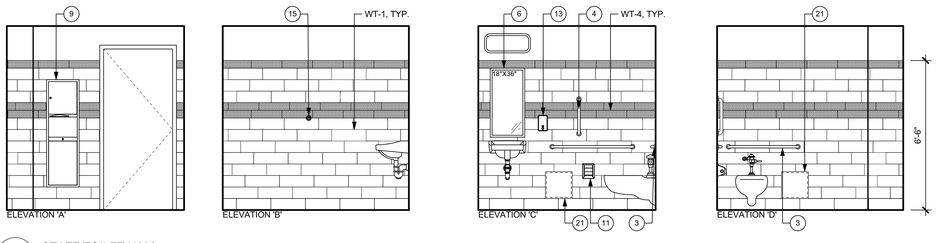
7 / A-408 — 6TH & 7TH FLOORS STORAGE
Scale: 3/8" = 1'-0"



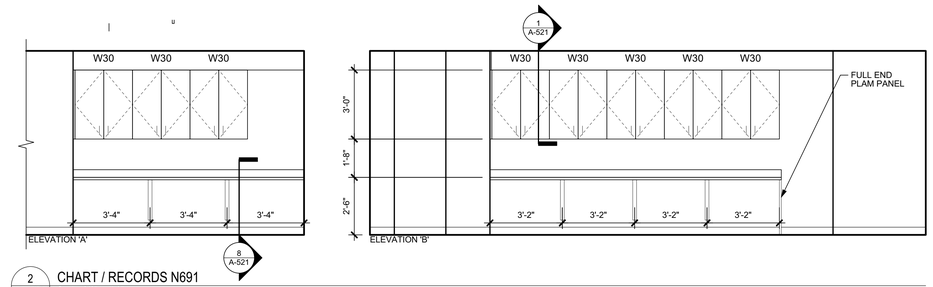
4 / A-408 — TREATMENT N693
Scale: 3/8" = 1'-0"
NOTE: TREATMENT N793 ELEVATIONS SIMILAR



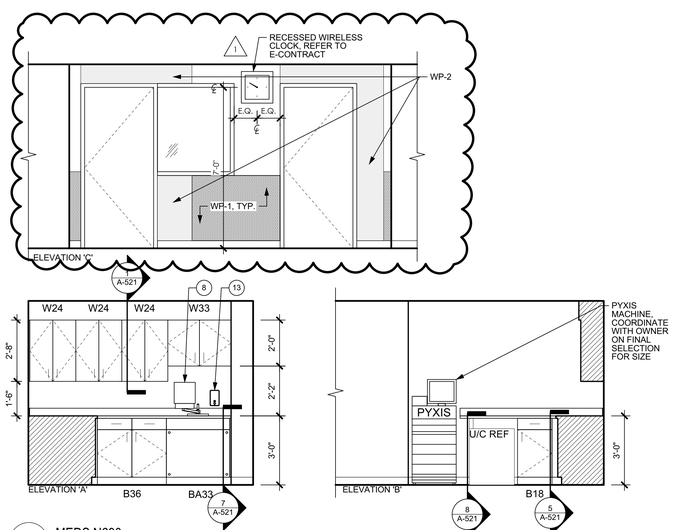
3 / A-408 — TLT. / SHOWER N696
Scale: 3/8" = 1'-0"
NOTE: TLT. / SHOWER N796 ELEVATIONS SIMILAR



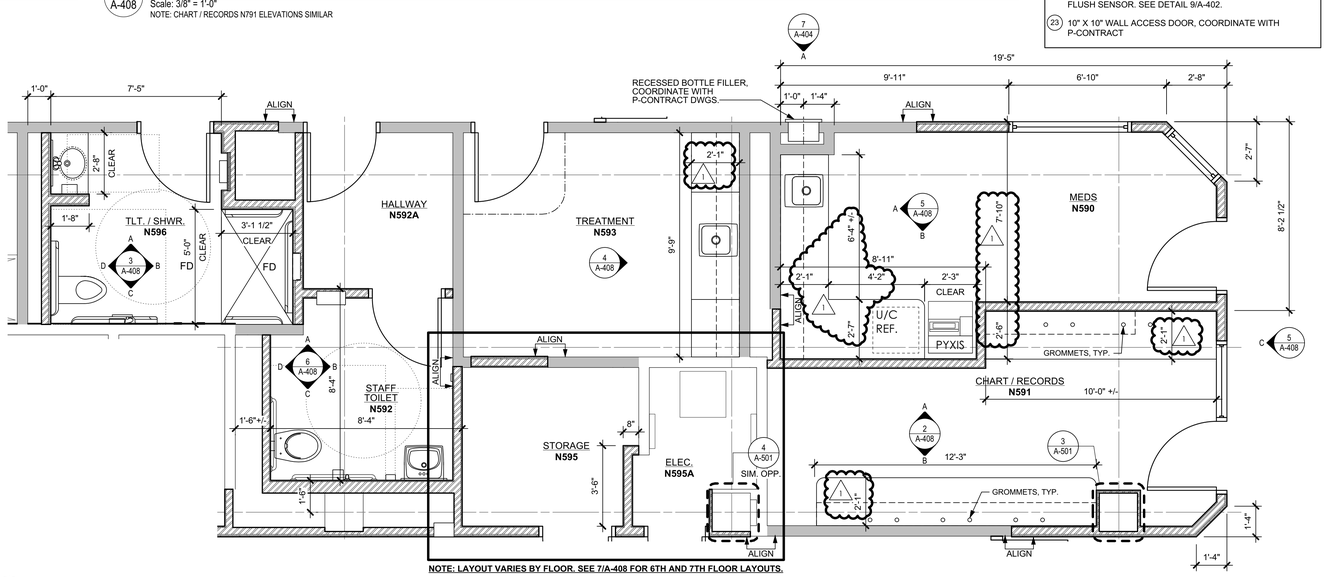
6 / A-408 — STAFF TOILET N692
Scale: 3/8" = 1'-0"
NOTE: STAFF TOILET N792 ELEVATIONS SIMILAR



2 / A-408 — CHART / RECORDS N691
Scale: 3/8" = 1'-0"
NOTE: CHART / RECORDS N791 ELEVATIONS SIMILAR



5 / A-408 — MEDS N690
Scale: 3/8" = 1'-0"
NOTE: MEDS N790 ELEVATIONS SIMILAR



NOTE: LAYOUT VARIES BY FLOOR. SEE 7/A-408 FOR 6TH AND 7TH FLOOR LAYOUTS.

1 / A-408 — MEDS, CHART/RECORDS, TREATMENT, STORAGE & STAFF TOILET
Scale: 3/8" = 1'-0"

GENERAL ELEVATION NOTES

GENERAL CONSTRUCTION NOTES:

1. REFER TO SHEET A-401, FOR EQUIPMENT, FURNITURE, ALL WALL MOUNTED ACCESSORIES, AND TYPICAL HEIGHTS.
2. PROVIDE PAPER TOWEL DISPENSER AND SOAP DISPENSER AT EVERY SINK, TYP. (CFCI) REFER TO SHEET A-401 FOR MOUNTING HEIGHTS.
3. REFER TO I-SERIES SHEETS FOR FINISH SCHEDULE, LEGEND, AND FINISH PLANS.
4. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT AND ACCESSORIES (INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, MILLWORK, TV'S AND MONITORS, LOCKERS, ACOUSTICAL WALL PANELS. ETC.). PROVIDE CONTINUOUS WOOD FIRE TREATED WOOD BLOCKING AT ALL HORIZONTAL AND VERTICAL GRAB BARS.
5. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
6. COORDINATE FLOOR SLOPING REQUIREMENTS TO FLOOR DRAINS WITH FLOOR SLOPING PLANS ON SHEET I-001. COORDINATE ALL NEW FLOOR SLABS AND SLAB DEPRESSIONS WITH STRUCTURAL DRAWINGS.
7. AT ALL PATIENT TOILET AND TOILET/ SHOWER ROOM PROVIDE WATERPROOFING SYSTEM OVER ENTIRE FLOOR AND FULL HEIGHT OF WALL TILE.

GENERAL INTERIOR ELEVATION NOTES:

1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
2. PROVIDE FILLER PANELS AS REQUIRED WHERE CABINETS MEET ADJACENT WALLS.
3. COORDINATE CABINET OPENING SIZES WITH OWNER SUPPLIED EQUIPMENT.
4. REFER TO FINISH LEGEND ON SHEET I-001 FOR CABINET, COUNTERTOP, AND OTHER FINISH DESIGNATIONS.
5. TYPICAL DETAILS ARE MARKED AS SHOWN. DETAILS NOT SPECIFICALLY MARKED SHALL BE SIMILAR TO THOSE MARKED AS TYPICAL IN THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT.
6. ALL MILLWORK TO BE LOCKABLE, UNLESS OTHERWISE NOTED.
7. TILE PATTERN IS FOR STYLE REFERENCE ONLY. REFER TO SPECIFICATIONS FOR DETAILS. TYPICAL OF ALL TILE.
8. REFER TO ELEVATION DETAIL 9/A-402 FOR TOILET ACCESS DOOR AND ACCESS PLATE INFORMATION.
9. IN LOCATIONS WHERE TILE IS APPLIED ON WALL/FLOOR PROVIDE EDGE PROTECTION ON ALL INSIDE & OUTSIDE CORNERS, BASE AND TOP CAP AS REQUIRED. REFER TO THE FINISH LEGEND ON I-001 AND DETAIL 11/I-001.

(#) EQUIPMENT AND ACCESSORIES LEGEND

- ALL ITEMS ARE CFCI, UNLESS NOTED OTHERWISE, COORDINATE WITH SPECS
- COORDINATE MOUNTING HEIGHTS WITH ELEVATIONS ON SHEET A-401

1. HORIZONTAL GRAB BARS, ANTI-LIGATURE (GB-1)
2. VERTICAL GRAB BARS, ANTI-LIGATURE (GB-1)
3. HORIZONTAL GRAB BARS (GB-2)
4. VERTICAL GRAB BARS (GB-2)
5. MIRROR, ANTI-LIGATURE (MU-1)
6. MIRROR, 18x36 (MU-2)
7. HAND DRIER (HD-1)
8. PAPER TOWEL DISPENSER (PTD-3)
9. COMBO PAPER TOWEL DISPENSER (PTD-3)
10. TOILET TISSUE DISPENSER, ANTI-LIGATURE (TTD-1)
11. TOILET TISSUE DISPENSER (TTD-2)
12. SOAP DISPENSER, ANTI-LIGATURE (SD-1)
13. SOAP DISPENSER (SD-2)
14. COAT HOOK, ANTI-LIGATURE (CH-1)
15. COAT HOOK (CH-2)
16. NOT USED
17. MOP AND BROOM HOLDER (MBH-1)
18. NOT USED
19. NOT USED
20. RECESSED WASHROOM SHELF (RWS-1)
21. 14" x 14" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT
22. 12" X 12" 11 GA. STAINLESS STEEL ACCESS PLATE COORDINATE WITH P-CONTRACT FOR AUTOMATIC FLUSH SENSOR. SEE DETAIL 9/A-402.
23. 10" X 10" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.



CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

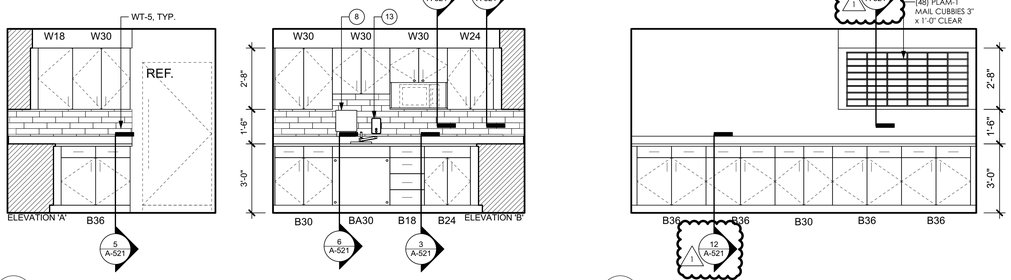
MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
PROJECT NUMBER:		46103 - C
DESIGNED BY:		
DRAWN BY:		KK
FIELD CHECK:		
APPROVED BY:		CD

SHEET TITLE:
ENLARGED PLANS AND INTERIOR ELEVATIONS

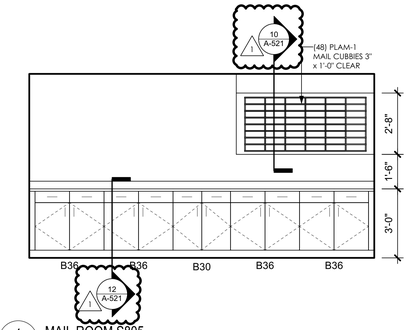
DRAWING NUMBER:
A-408

SHEET 48 OF 212

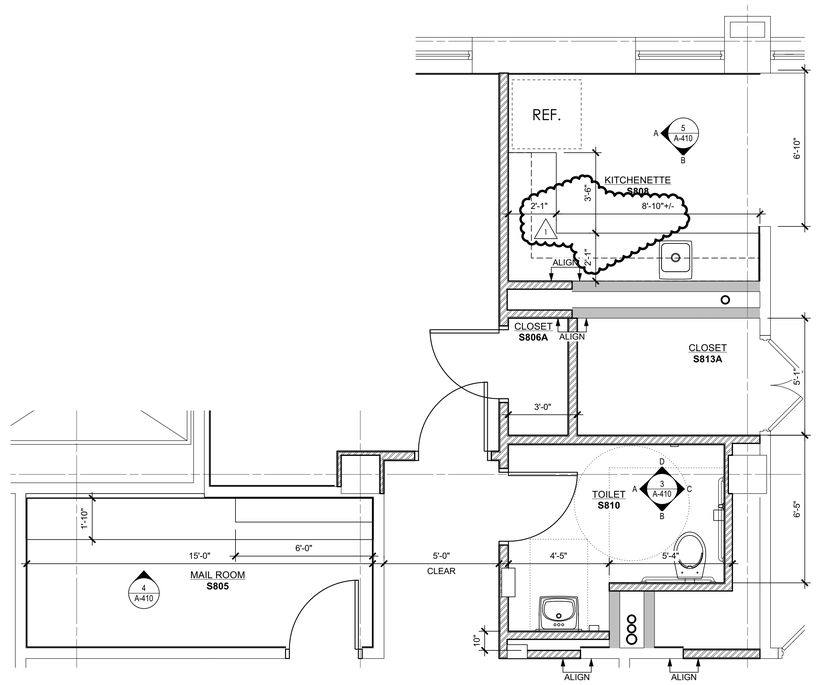
Date: 5/11/26 Time: 12:55:47 PM



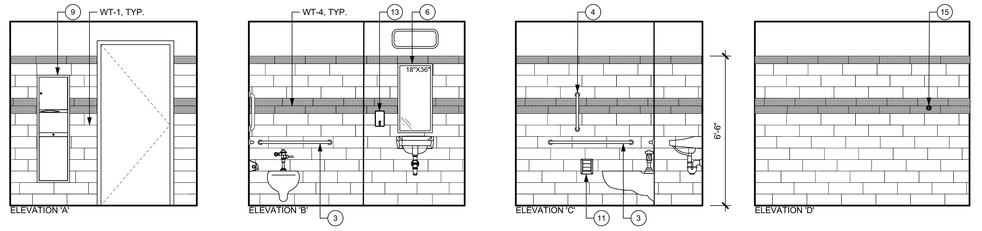
5 / A-410 KITCHENETTE S808
Scale: 3/8" = 1'-0"
WALL TILE: WT-5



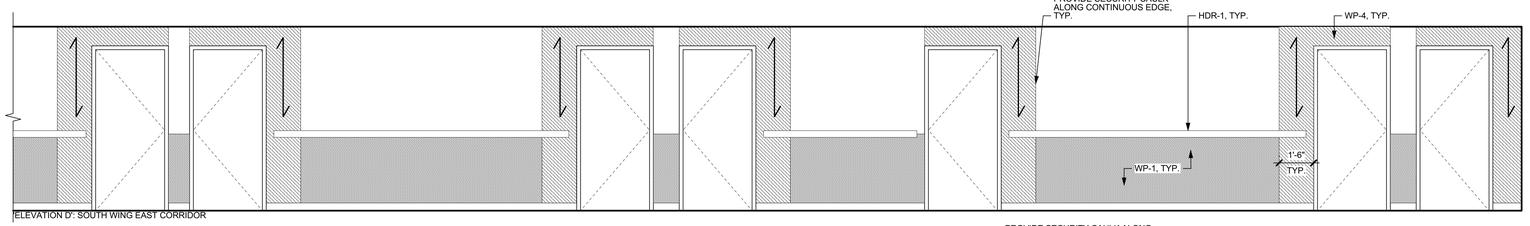
4 / A-410 MAIL ROOM S805
Scale: 3/8" = 1'-0"

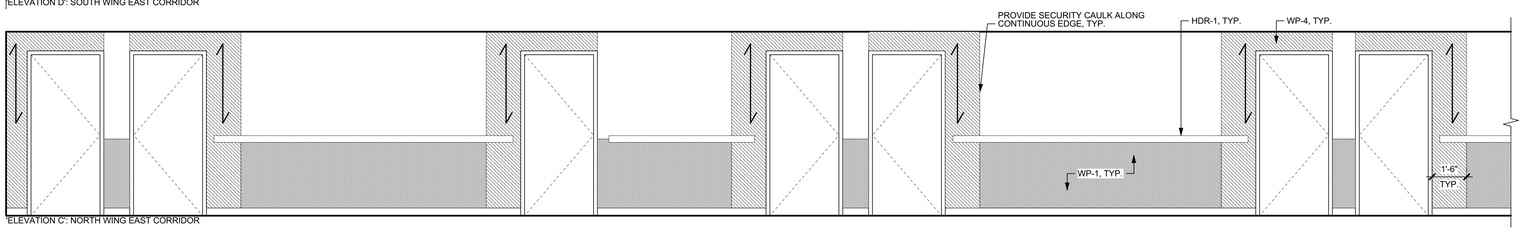


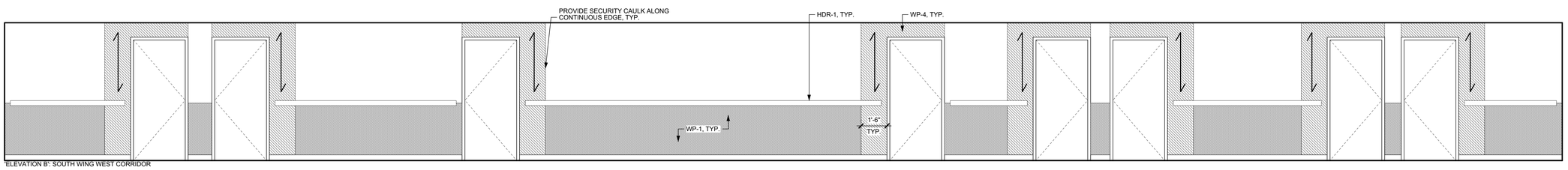
1 / A-410 EIGHTH FLOOR CENTER CORE SOUTH
Scale: 3/8" = 1'-0"

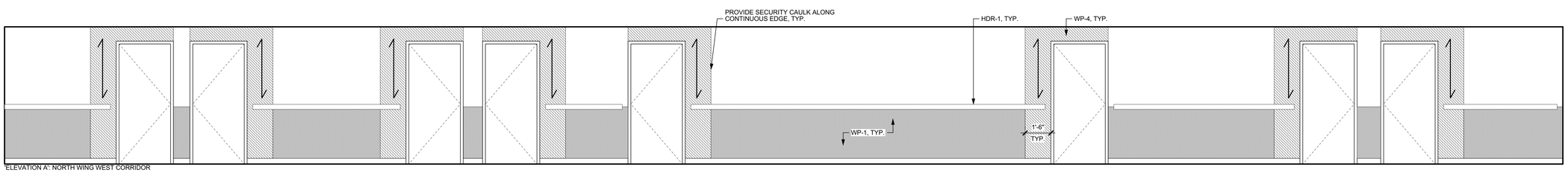


3 / A-410 TOILET S810
Scale: 3/8" = 1'-0"









2 / A-410 TYPICAL BEDROOM CORRIDOR DESIGN INTENT
Scale: 3/8" = 1'-0"

GENERAL ELEVATION NOTES

GENERAL CONSTRUCTION NOTES:

1. REFER TO SHEET A-401, FOR EQUIPMENT, FURNITURE, ALL WALL MOUNTED ACCESSORIES, AND TYPICAL HEIGHTS.
2. PROVIDE PAPER TOWEL DISPENSER AND SOAP DISPENSER AT EVERY SINK, TYP. (CFCI) REFER TO SHEET A-401 FOR MOUNTING HEIGHTS.
3. REFER TO I-SERIES SHEETS FOR FINISH SCHEDULE, LEGEND, AND FINISH PLANS.
4. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT AND ACCESSORIES (INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, MILLWORK, TV'S AND MONITORS, LOCKERS, ACOUSTICAL WALL PANELS. ETC.). PROVIDE CONTINUOUS WOOD FIRE TREATED WOOD BLOCKING AT ALL HORIZONTAL AND VERTICAL GRAB BARS.
5. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
6. COORDINATE FLOOR SLOPING REQUIREMENTS TO FLOOR DRAINS WITH FLOOR SLOPING PLANS ON SHEET I-001. COORDINATE ALL NEW FLOOR SLABS AND SLAB DEPRESSIONS WITH STRUCTURAL DRAWINGS.
7. AT ALL PATIENT TOILET AND TOILET/ SHOWER ROOM PROVIDE WATERPROOFING SYSTEM OVER ENTIRE FLOOR AND FULL HEIGHT OF WALL TILE.

GENERAL INTERIOR ELEVATION NOTES:

1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
2. PROVIDE FILLER PANELS AS REQUIRED WHERE CABINETS MEET ADJACENT WALLS.
3. COORDINATE CABINET OPENING SIZES WITH OWNER SUPPLIED EQUIPMENT.
4. REFER TO FINISH LEGEND ON SHEET I-001 FOR CABINET, COUNTERTOP, AND OTHER FINISH DESIGNATIONS.
5. TYPICAL DETAILS ARE MARKED AS SHOWN, DETAILS NOT SPECIFICALLY MARKED SHALL BE SIMILAR TO THOSE MARKED AS TYPICAL IN THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT.
6. ALL MILLWORK TO BE LOCKABLE, UNLESS OTHERWISE NOTED.
7. TILE PATTERN IS FOR STYLE REFERENCE ONLY. REFER TO SPECIFICATIONS FOR DETAILS. TYPICAL OF ALL TILE.
8. REFER TO ELEVATION DETAIL 9/A-402 FOR TOILET ACCESS DOOR AND ACCESS PLATE INFORMATION.
9. IN LOCATIONS WHERE TILE IS APPLIED ON WALL/FLOOR PROVIDE EDGE PROTECTION ON ALL INSIDE & OUTSIDE CORNERS, BASE AND TOP CAP AS REQUIRED. REFER TO THE FINISH LEGEND ON I-001 AND DETAIL 11/I-001.

(#) EQUIPMENT AND ACCESSORIES LEGEND

- ALL ITEMS ARE CFCI, UNLESS NOTED OTHERWISE, COORDINATE WITH SPECS
- COORDINATE MOUNTING HEIGHTS WITH ELEVATIONS ON SHEET A-401

1. HORIZONTAL GRAB BARS, ANTI-LIGATURE (GB-1)
2. VERTICAL GRAB BARS, ANTI-LIGATURE (GB-1)
3. HORIZONTAL GRAB BARS (GB-2)
4. VERTICAL GRAB BARS (GB-2)
5. MIRROR, ANTI-LIGATURE (MU-1)
6. MIRROR, 18x36 (MU-2)
7. HAND DRIER (HD-1)
8. PAPER TOWEL DISPENSER (PTD-3)
9. COMBO PAPER TOWEL DISPENSER (PTD-3)
10. TOILET TISSUE DISPENSER, ANTI-LIGATURE (TTD-1)
11. TOILET TISSUE DISPENSER (TTD-2)
12. SOAP DISPENSER, ANTI-LIGATURE (SD-1)
13. SOAP DISPENSER (SD-2)
14. COAT HOOK, ANTI-LIGATURE (CH-1)
15. COAT HOOK (CH-2)
16. NOT USED
17. MOP AND BROOM HOLDER (MBH-1)
18. NOT USED
19. NOT USED
20. RECESSED WASHROOM SHELF (RWS-1)
21. 14" x 14" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT
22. 12" X 12" 11 GA. STAINLESS STEEL ACCESS PLATE COORDINATE WITH P-CONTRACT FOR AUTOMATIC FLUSH SENSOR. SEE DETAIL 9/A-402.
23. 10" X 10" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

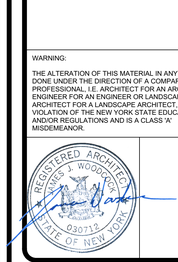
CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.



CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS

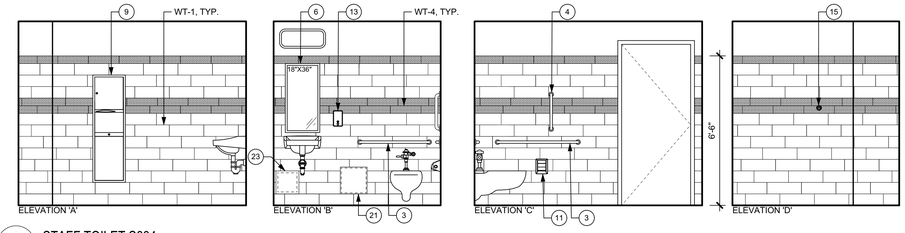
PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE:
ENLARGED PLANS AND INTERIOR ELEVATIONS

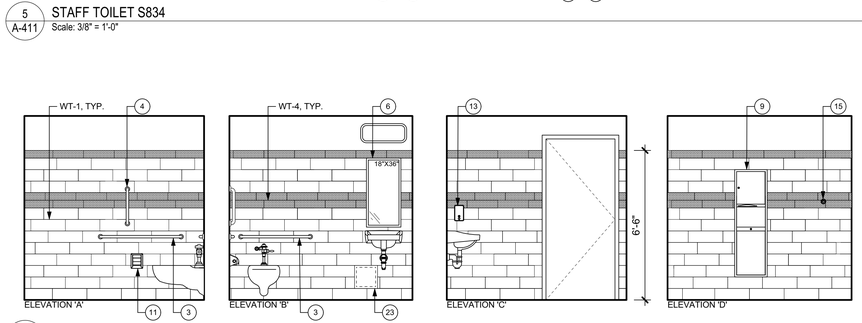
DRAWING NUMBER:
A-410

SHEET 50 OF 212

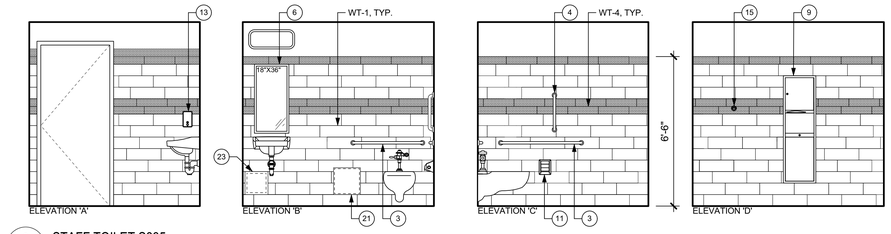
Date: 5/11/26 Time: 12:58:02 PM



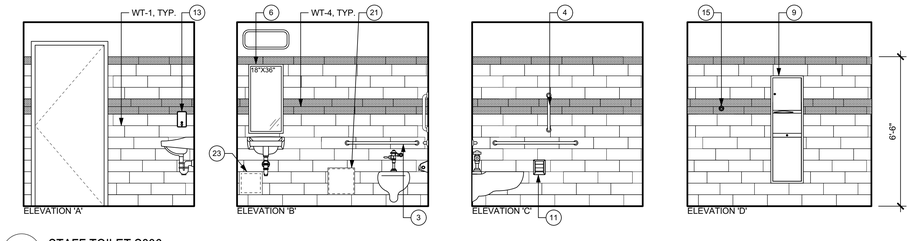
5 A-411 STAFF TOILET S834
Scale: 3/8" = 1'-0"



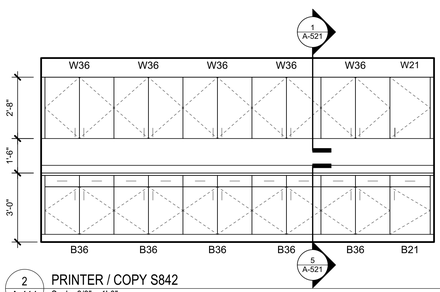
3 A-411 STAFF TOILET S840
Scale: 3/8" = 1'-0"



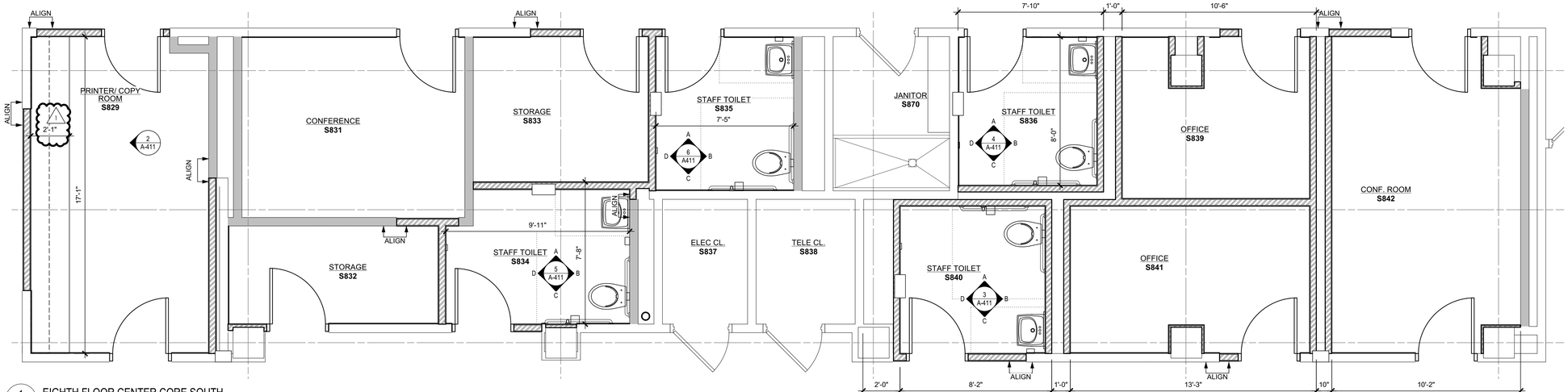
6 A-411 STAFF TOILET S835
Scale: 3/8" = 1'-0"



4 A-411 STAFF TOILET S836
Scale: 3/8" = 1'-0"



2 A-411 PRINTER / COPY S842
Scale: 3/8" = 1'-0"



1 A-411 EIGHTH FLOOR CENTER CORE SOUTH
Scale: 3/8" = 1'-0"

GENERAL ELEVATION NOTES

GENERAL CONSTRUCTION NOTES:

1. REFER TO SHEET A-401, FOR EQUIPMENT, FURNITURE, ALL WALL MOUNTED ACCESSORIES, AND TYPICAL HEIGHTS.
2. PROVIDE PAPER TOWEL DISPENSER AND SOAP DISPENSER AT EVERY SINK, TYP. (CFCI) REFER TO SHEET A-401 FOR MOUNTING HEIGHTS.
3. REFER TO I-SERIES SHEETS FOR FINISH SCHEDULE, LEGEND, AND FINISH PLANS.
4. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT AND ACCESSORIES (INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, MILLWORK, TV'S AND MONITORS, LOCKERS, ACOUSTICAL WALL PANELS. ETC.). PROVIDE CONTINUOUS WOOD FIRE TREATED WOOD BLOCKING AT ALL HORIZONTAL AND VERTICAL GRAB BARS.
5. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
6. COORDINATE FLOOR SLOPING REQUIREMENTS TO FLOOR DRAINS WITH FLOOR SLOPING PLANS ON SHEET I-001. COORDINATE ALL NEW FLOOR SLABS AND SLAB DEPRESSIONS WITH STRUCTURAL DRAWINGS.
7. AT ALL PATIENT TOILET AND TOILET/ SHOWER ROOM PROVIDE WATERPROOFING SYSTEM OVER ENTIRE FLOOR AND FULL HEIGHT OF WALL TILE.

GENERAL INTERIOR ELEVATION NOTES:

1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
2. PROVIDE FILLER PANELS AS REQUIRED WHERE CABINETS MEET ADJACENT WALLS.
3. COORDINATE CABINET OPENING SIZES WITH OWNER SUPPLIED EQUIPMENT.
4. REFER TO FINISH LEGEND ON SHEET I-001 FOR CABINET, COUNTERTOP, AND OTHER FINISH DESIGNATIONS.
5. TYPICAL DETAILS ARE MARKED AS SHOWN. DETAILS NOT SPECIFICALLY MARKED SHALL BE SIMILAR TO THOSE MARKED AS TYPICAL IN THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT.
6. ALL MILLWORK TO BE LOCKABLE, UNLESS OTHERWISE NOTED.
7. TILE PATTERN IS FOR STYLE REFERENCE ONLY. REFER TO SPECIFICATIONS FOR DETAILS. TYPICAL OF ALL TILE.
8. REFER TO ELEVATION DETAIL 9/A-402 FOR TOILET ACCESS DOOR AND ACCESS PLATE INFORMATION.
9. IN LOCATIONS WHERE TILE IS APPLIED ON WALL/FLOOR PROVIDE EDGE PROTECTION ON ALL INSIDE & OUTSIDE CORNERS, BASE AND TOP CAP AS REQUIRED. REFER TO THE FINISH LEGEND ON I-001 AND DETAIL 11/I-001.

EQUIPMENT AND ACCESSORIES LEGEND

- ALL ITEMS ARE CFCI, UNLESS NOTED OTHERWISE, COORDINATE WITH SPECS
- COORDINATE MOUNTING HEIGHTS WITH ELEVATIONS ON SHEET A-401

1. HORIZONTAL GRAB BARS, ANTI-LIGATURE (GB-1)
2. VERTICAL GRAB BARS, ANTI-LIGATURE (GB-1)
3. HORIZONTAL GRAB BARS (GB-2)
4. VERTICAL GRAB BARS (GB-2)
5. MIRROR, ANTI-LIGATURE (MU-1)
6. MIRROR, 18x36 (MU-2)
7. HAND DRIER (HD-1)
8. PAPER TOWEL DISPENSER (PTD-3)
9. COMBO PAPER TOWEL DISPENSER (PTD-3)
10. TOILET TISSUE DISPENSER, ANTI-LIGATURE (TTD-1)
11. TOILET TISSUE DISPENSER (TTD-2)
12. SOAP DISPENSER, ANTI-LIGATURE (SD-1)
13. SOAP DISPENSER (SD-2)
14. COAT HOOK, ANTI-LIGATURE (CH-1)
15. COAT HOOK (CH-2)
16. NOT USED
17. MOP AND BROOM HOLDER (MBH-1)
18. NOT USED
19. NOT USED
20. RECESSED WASHROOM SHELF (RWS-1)
21. 14" x 14" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT
22. 12" X 12" 11 GA. STAINLESS STEEL ACCESS PLATE COORDINATE WITH P-CONTRACT FOR AUTOMATIC FLUSH SENSOR. SEE DETAIL 9/A-402.
23. 10" X 10" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODWARD VI 030712 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS

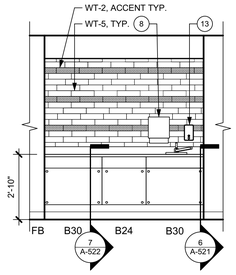
PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE:
ENLARGED PLANS AND INTERIOR ELEVATIONS

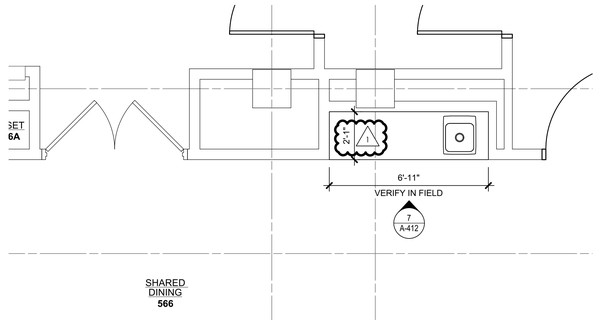
DRAWING NUMBER:
A-411

SHEET 51 OF 212

Date: 5/11/26 Time: 12:59:07 PM

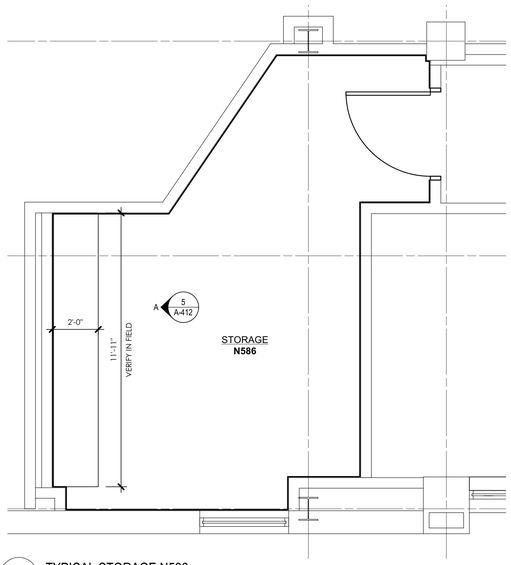


7 A-412 TYPICAL SHARED DINING 566
Scale: 3/8" = 1'-0"

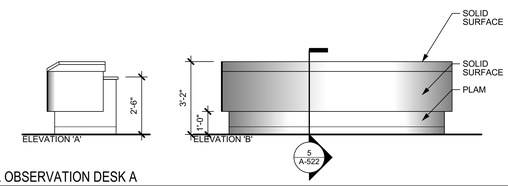


6 A-412 TYPICAL SHARED DINING 566
Scale: 3/8" = 1'-0"

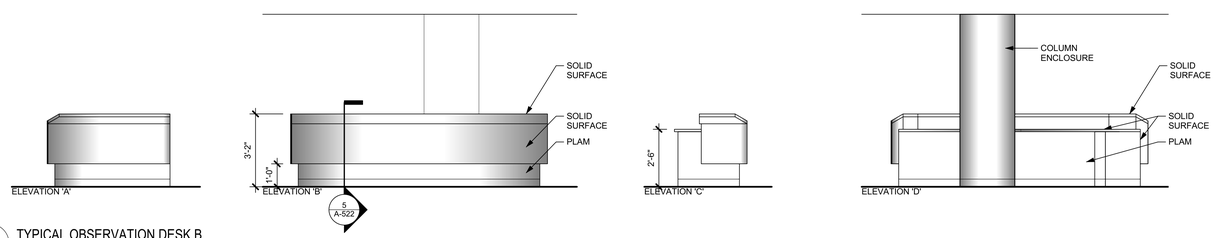
5 A-412 TYPICAL STORAGE N586
Scale: 3/8" = 1'-0"



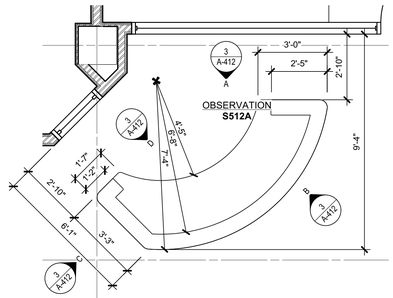
4 A-412 TYPICAL STORAGE N586
Scale: 3/8" = 1'-0"

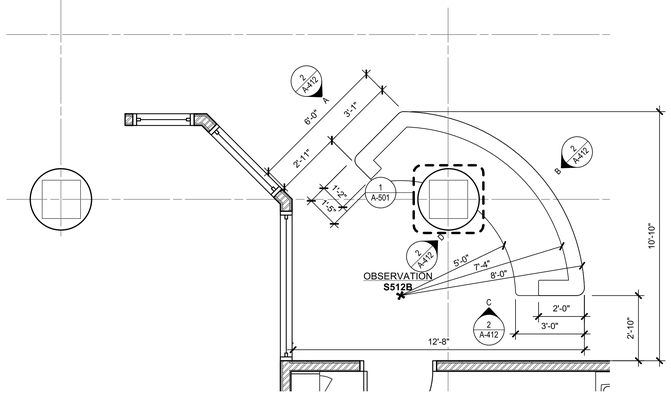


3 A-412 TYPICAL OBSERVATION DESK A
Scale: 3/8" = 1'-0"



2 A-412 TYPICAL OBSERVATION DESK B
Scale: 3/8" = 1'-0"





1 A-412 OBS. DESK PLAN - 5TH FLOOR SOUTH (TYP. FLOORS 5 - 7 SOUTH) (SIM. OPP. 5, 6 & 7 NORTH)
Scale: 3/8" = 1'-0"

GENERAL ELEVATION NOTES

GENERAL CONSTRUCTION NOTES:

1. REFER TO SHEET A-401, FOR EQUIPMENT, FURNITURE, ALL WALL MOUNTED ACCESSORIES, AND TYPICAL HEIGHTS.
2. PROVIDE PAPER TOWEL DISPENSER AND SOAP DISPENSER AT EVERY SINK, TYP. (CFCI) REFER TO SHEET A-401 FOR MOUNTING HEIGHTS.
3. REFER TO I-SERIES SHEETS FOR FINISH SCHEDULE, LEGEND, AND FINISH PLANS.
4. PROVIDE FIRE TREATED WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT AND ACCESSORIES (INCLUDING BUT NOT LIMITED TO TOILET ACCESSORIES, MILLWORK, TVS AND MONITORS, LOCKERS, ACOUSTICAL WALL PANELS. ETC.). PROVIDE CONTINUOUS WOOD FIRE TREATED WOOD BLOCKING AT ALL HORIZONTAL AND VERTICAL GRAB BARS.
5. PATCH AND REFINISH WALLS AND ADJACENT SURFACES IN ALL SPACES AFFECTED BY CONSTRUCTION AS NECESSARY TO MATCH EXISTING OR SCHEDULED FINISHES.
6. COORDINATE FLOOR SLOPING REQUIREMENTS TO FLOOR DRAINS WITH FLOOR SLOPING PLANS ON SHEET I-001. COORDINATE ALL NEW FLOOR SLABS AND SLAB DEPRESSIONS WITH STRUCTURAL DRAWINGS.
7. AT ALL PATIENT TOILET AND TOILET/ SHOWER ROOM PROVIDE WATERPROOFING SYSTEM OVER ENTIRE FLOOR AND FULL HEIGHT OF WALL TILE.

GENERAL INTERIOR ELEVATION NOTES:

1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION.
2. PROVIDE FILLER PANELS AS REQUIRED WHERE CABINETS MEET ADJACENT WALLS.
3. COORDINATE CABINET OPENING SIZES WITH OWNER SUPPLIED EQUIPMENT.
4. REFER TO FINISH LEGEND ON SHEET I-001 FOR CABINET, COUNTERTOP, AND OTHER FINISH DESIGNATIONS.
5. TYPICAL DETAILS ARE MARKED AS SHOWN. DETAILS NOT SPECIFICALLY MARKED SHALL BE SIMILAR TO THOSE MARKED AS TYPICAL IN THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT.
6. ALL MILLWORK TO BE LOCKABLE, UNLESS OTHERWISE NOTED.
7. TILE PATTERN IS FOR STYLE REFERENCE ONLY. REFER TO SPECIFICATIONS FOR DETAILS. TYPICAL OF ALL TILE.

8. REFER TO ELEVATION DETAIL 9/A-402 FOR TOILET ACCESS DOOR AND ACCESS PLATE INFORMATION.

9. IN LOCATIONS WHERE TILE IS APPLIED ON WALL/FLOOR PROVIDE EDGE PROTECTION ON ALL INSIDE & OUTSIDE CORNERS, BASE AND TOP CAP AS REQUIRED. REFER TO THE FINISH LEGEND ON I-001 AND DETAIL 11/I-001.

(#) EQUIPMENT AND ACCESSORIES LEGEND

- ALL ITEMS ARE CFCI, UNLESS NOTED OTHERWISE, COORDINATE WITH SPECS
- COORDINATE MOUNTING HEIGHTS WITH ELEVATIONS ON SHEET A-401

1	HORIZONTAL GRAB BARS, ANTI-LIGATURE (GB-1)
2	VERTICAL GRAB BARS, ANTI-LIGATURE (GB-1)
3	HORIZONTAL GRAB BARS (GB-2)
4	VERTICAL GRAB BARS (GB-2)
5	MIRROR, ANTI-LIGATURE (MU-1)
6	MIRROR, 18x36 (MU-2)
7	HAND DRIER (HD-1)
8	PAPER TOWEL DISPENSER (PTD-3)
9	COMBO PAPER TOWEL DISPENSER (PTD-3)
10	TOILET TISSUE DISPENSER, ANTI-LIGATURE (TTD-1)
11	TOILET TISSUE DISPENSER (TTD-2)
12	SOAP DISPENSER, ANTI-LIGATURE (SD-1)
13	SOAP DISPENSER (SD-2)
14	COAT HOOK, ANTI-LIGATURE (CH-1)
15	COAT HOOK (CH-2)
16	NOT USED
17	MOP AND BROOM HOLDER (MBH-1)
18	NOT USED
19	NOT USED
20	RECESSED WASHROOM SHELF (RWS-1)
21	14" x 14" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT
22	12" X 12" 11 GA. STAINLESS STEEL ACCESS PLATE COORDINATE WITH P-CONTRACT FOR AUTOMATIC FLUSH SENSOR. SEE DETAIL 9/A-402.
23	10" X 10" WALL ACCESS DOOR, COORDINATE WITH P-CONTRACT

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODCOCK 030713 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS

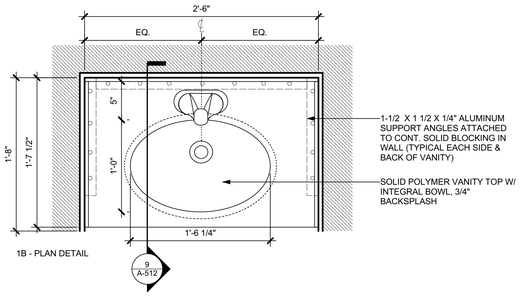
PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

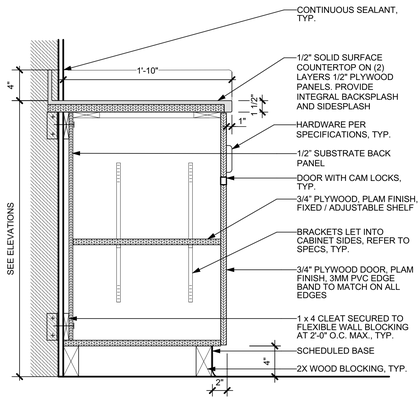
SHEET TITLE:
ENLARGED PLANS AND INTERIOR ELEVATIONS - OBSERVATION DESKS

DRAWING NUMBER:
A-412

SHEET 52 OF 212

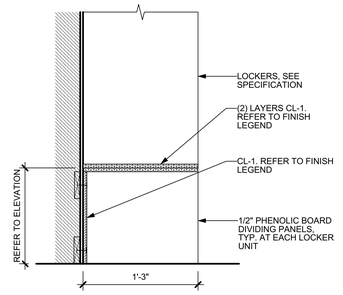
Date: 5/11/26 Time: 1:00:18 PM



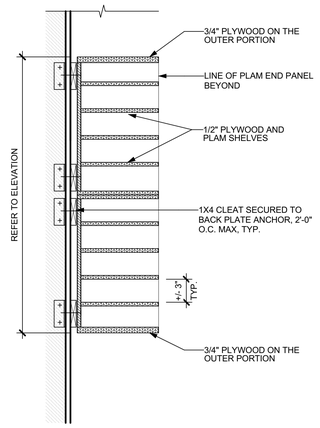


NOTE: ALL SHELVING IN MILLWORK IN SPACES / ROOMS OF HIGH / MEDIUM RISK AREAS SHALL BE FIXED AND IN SPACES / ROOMS OF LOW RISK SHALL BE ADJUSTABLE UNLESS OTHERWISE NOTED.
ALL DRAWERS AND DOORS IN SPACES / ROOMS OF HIGH / MEDIUM RISK AREAS SHALL HAVE CAM LOCKS UNLESS OTHERWISE NOTED.

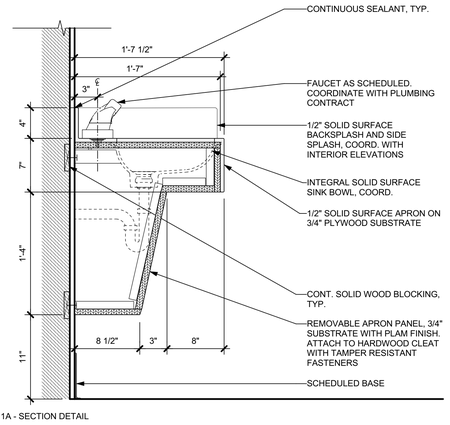
12 BASE CABINET DETAIL
Scale: 1 1/2" = 1'-0"



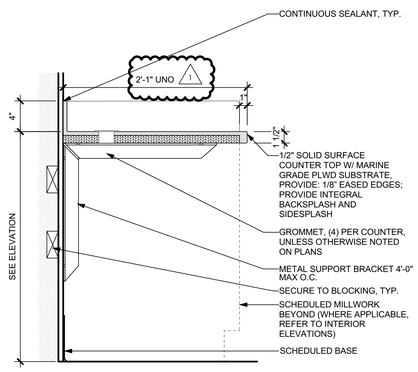
11 SHOE CUBBY DETAIL
Scale: 1 1/2" = 1'-0"



10 MAIL CUBBY DETAIL
1 1/2" = 1'-0"

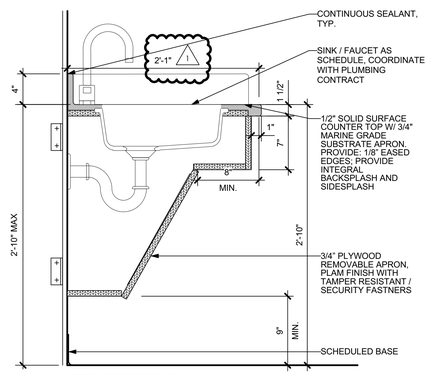


9 TYPICAL ANTI-LIGATURE SINK BASE DETAIL
Scale: 1 1/2" = 1'-0"



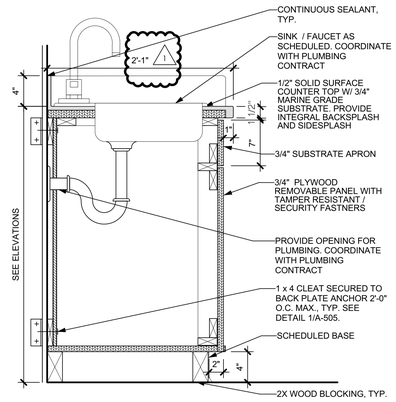
NOTE: PLAM FINISH ON ALL EXPOSED SURFACES

8 TYPICAL SOLID SURFACE COUNTERTOP DETAIL
1 1/2" = 1'-0"

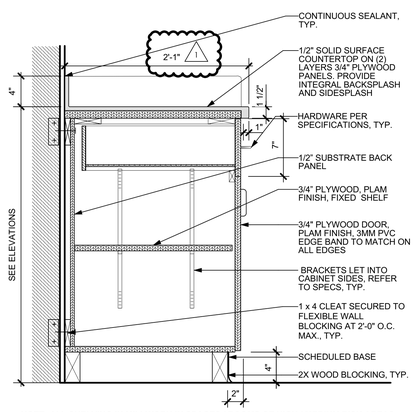


NOTE: PLAM FINISH ON ALL EXPOSED SURFACES

7 TYP. APRON SINK BASE DETAIL
Scale: 1 1/2" = 1'-0"

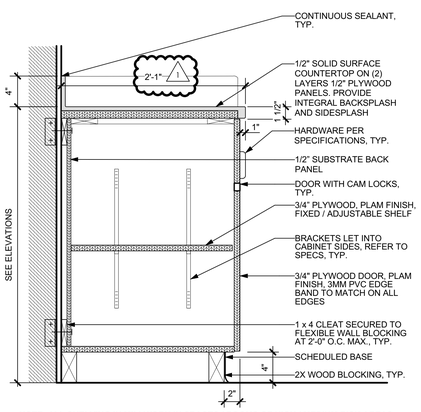


6 TYP. SINK APRON DETAIL
Scale: 1 1/2" = 1'-0"



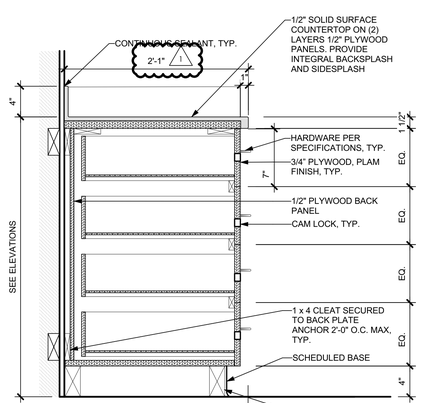
NOTE: ALL SHELVING IN MILLWORK IN SPACES / ROOMS OF HIGH / MEDIUM RISK AREAS SHALL BE FIXED AND IN SPACES / ROOMS OF LOW RISK SHALL BE ADJUSTABLE UNLESS OTHERWISE NOTED.
ALL DRAWERS AND DOORS IN SPACES / ROOMS OF HIGH / MEDIUM RISK AREAS SHALL HAVE CAM LOCKS UNLESS OTHERWISE NOTED.

5 TYPICAL BASE WITH DRAWER CABINET DETAIL
Scale: 1 1/2" = 1'-0"

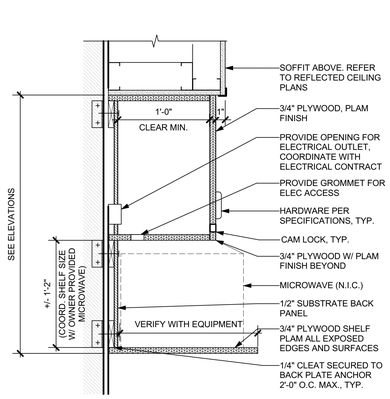


NOTE: ALL SHELVING IN MILLWORK IN SPACES / ROOMS OF HIGH / MEDIUM RISK AREAS SHALL BE FIXED AND IN SPACES / ROOMS OF LOW RISK SHALL BE ADJUSTABLE UNLESS OTHERWISE NOTED.
ALL DRAWERS AND DOORS IN SPACES / ROOMS OF HIGH / MEDIUM RISK AREAS SHALL HAVE CAM LOCKS UNLESS OTHERWISE NOTED.

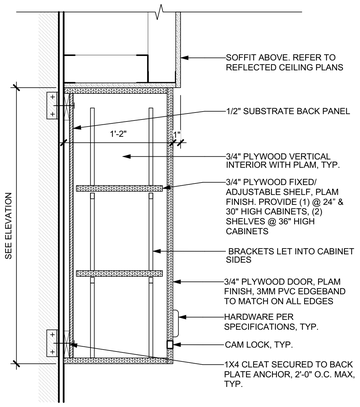
4 TYPICAL BASE CABINET DETAIL
Scale: 1 1/2" = 1'-0"



3 DRAWER BASE CABINET DETAIL
Scale: 1 1/2" = 1'-0"



2 WALL CABINET W/ MICROWAVE DETAIL
Scale: 1 1/2" = 1'-0"



ALL MILLWORK SHELVING IN PATIENT OCCUPIED SPACES/ROOMS TO BE FIXED. MILLWORK SHELVING IN STAFF OCCUPIED SPACES/ROOMS TO BE ADJUSTABLE.

1 WALL CABINET DETAIL
Scale: 1 1/2" = 1'-0"

Date: 5/11/26 Time: 1:51:20 PM

NEW YORK STATE OF OPPORTUNITY. | Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODWARD 030715 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

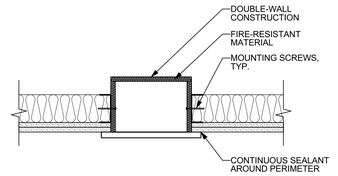
1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS
MARK:	DATE:	DESCRIPTION:

PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

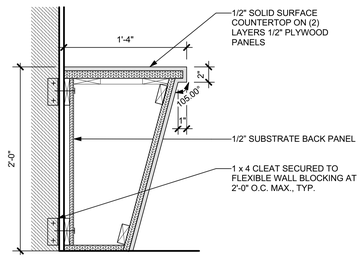
SHEET TITLE:
INTERIOR CASEWORK DETAILS

DRAWING NUMBER:
A-521

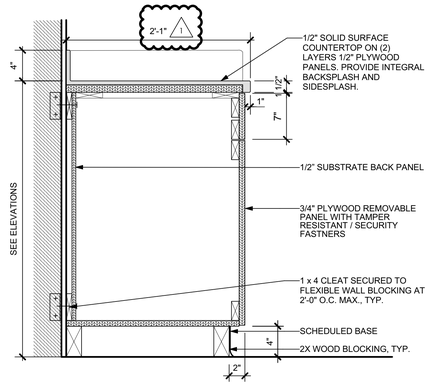
SHEET 55 OF 212



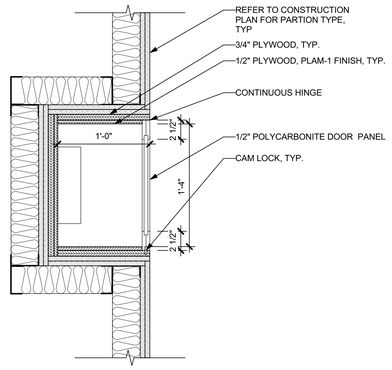
9 TYPICAL FIRE EXTINGUISHER CABINET DETAIL
Scale: 1 1/2" = 1'-0"



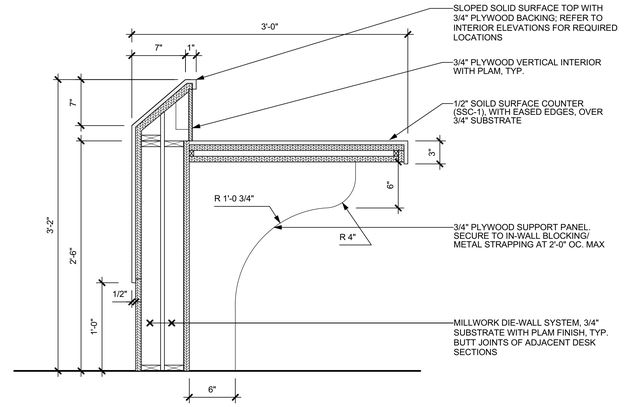
8 TYPICAL SOLID SURFACE BENCH DETAIL
Scale: 1 1/2" = 1'-0"



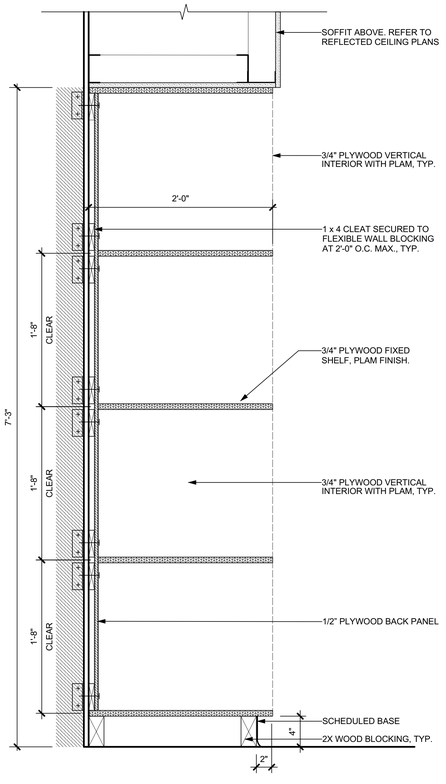
7 TYPICAL FIXED CABINET DETAIL
Scale: 1 1/2" = 1'-0"



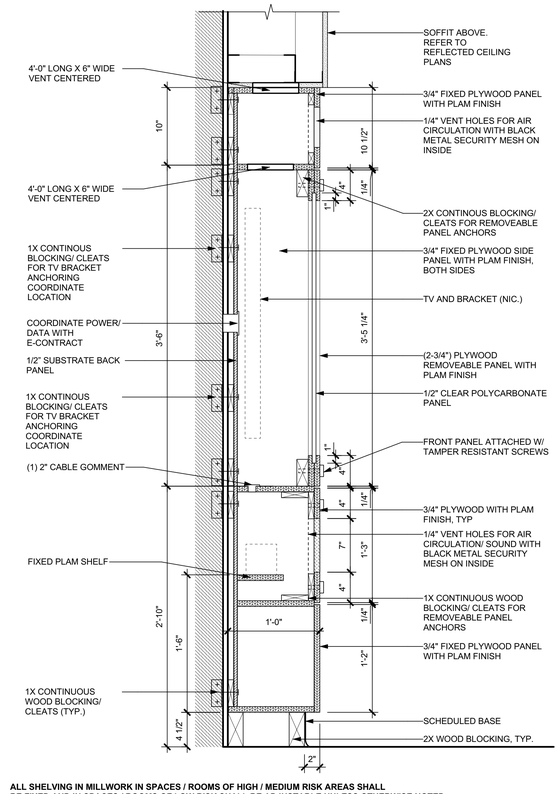
6 TYPICAL PHONE BOOTH DETAIL
Scale: 1 1/2" = 1'-0"



5 OBSERVATION STATION DETAIL
Scale: 1 1/2" = 1'-0"

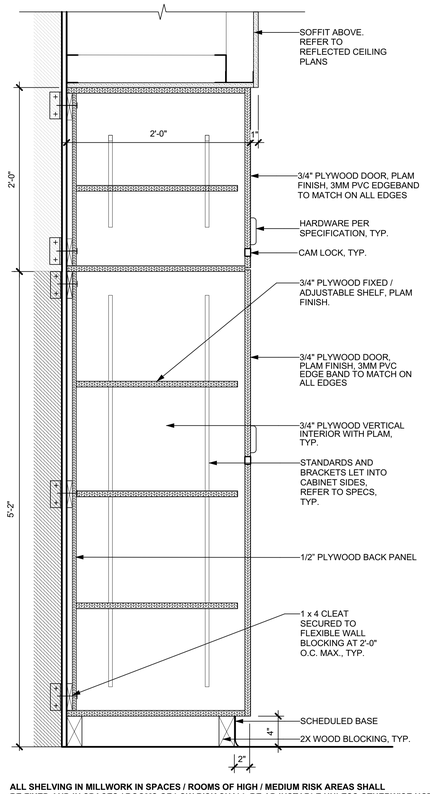


4 TYPICAL STORAGE CABINET DETAIL
Scale: 1 1/2" = 1'-0"



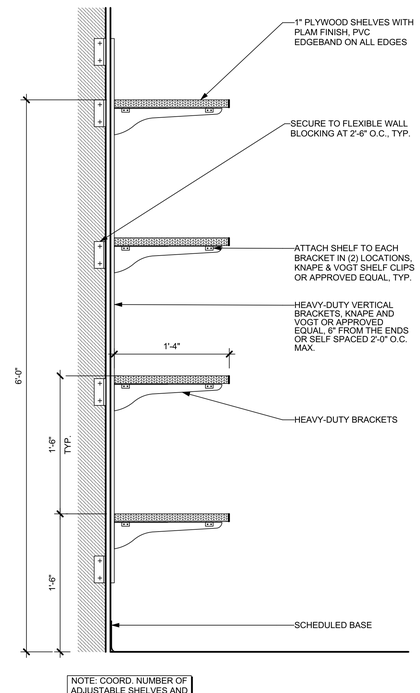
ALL SHELVING IN MILLWORK IN SPACES / ROOMS OF HIGH / MEDIUM RISK AREAS SHALL BE FIXED AND IN SPACES / ROOMS OF LOW RISK SHALL BE ADJUSTABLE UNLESS OTHERWISE NOTED. ALL DRAWERS AND DOORS IN SPACES / ROOMS OF HIGH / MEDIUM RISK AREAS SHALL HAVE CAM LOCKS UNLESS OTHERWISE NOTED.

3 TYPICAL TELEVISION CABINET DETAIL
Scale: 1 1/2" = 1'-0"



ALL SHELVING IN MILLWORK IN SPACES / ROOMS OF HIGH / MEDIUM RISK AREAS SHALL BE FIXED AND IN SPACES / ROOMS OF LOW RISK SHALL BE ADJUSTABLE UNLESS OTHERWISE NOTED. ALL DRAWERS AND DOORS IN SPACES / ROOMS OF HIGH / MEDIUM RISK AREAS SHALL HAVE CAM LOCKS UNLESS OTHERWISE NOTED.

2 TYPICAL TREATMENT CABINET DETAIL
Scale: 1 1/2" = 1'-0"



NOTE: COORD. NUMBER OF ADJUSTABLE SHELVES AND HEIGHT OF STANDARDS WITH INTERIOR ELEVATIONS

1 TYPICAL ADJUSTABLE SHELVING DETAIL
Scale: 1 1/2" = 1'-0"

Date: 5/11/26 Time: 1:02:10 PM

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODYK 030719 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

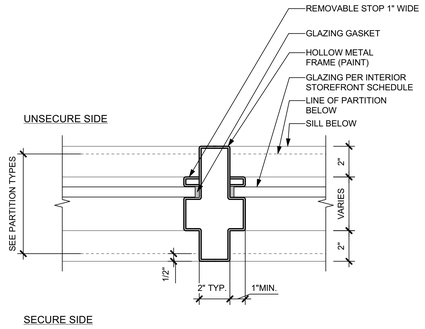
MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS

PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

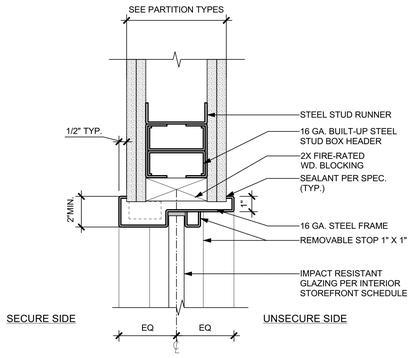
SHEET TITLE:
INTERIOR CASEWORK DETAILS

DRAWING NUMBER:
A-522

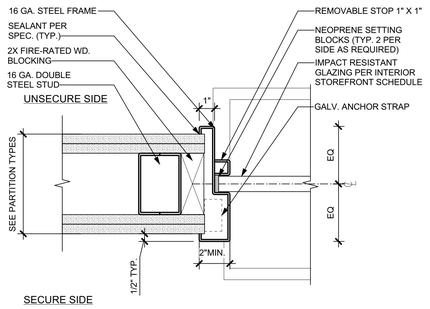
SHEET 56 OF 212



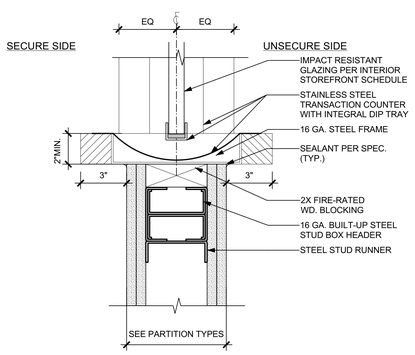
12 VERTICAL MULLION - NON-RATED HM FRAME
Scale: 3" = 1'-0"



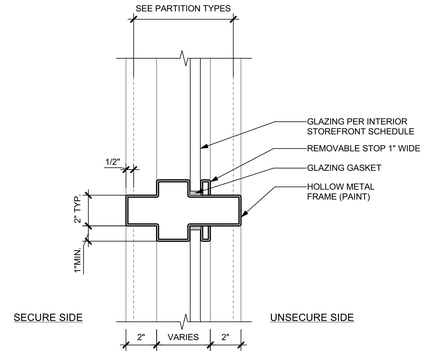
11 HEAD - SECURITY WINDOW W/ DEAL TRAY
Scale: 3" = 1'-0"



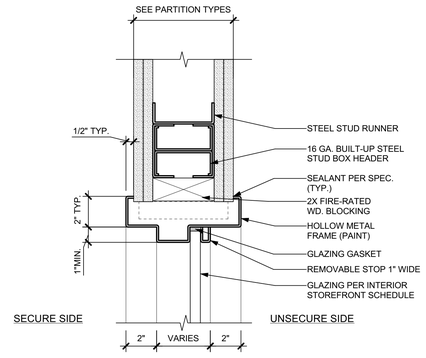
10 JAMB - SECURITY WINDOW W/ DEAL TRAY
Scale: 3" = 1'-0"



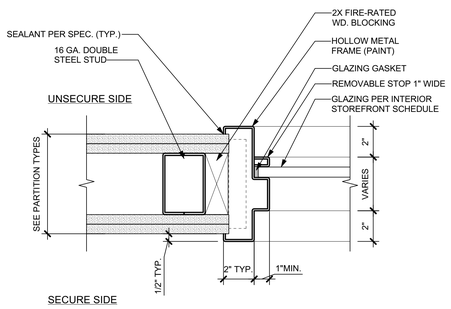
9 SILL - SECURITY WINDOW W/ DEAL TRAY
Scale: 3" = 1'-0"



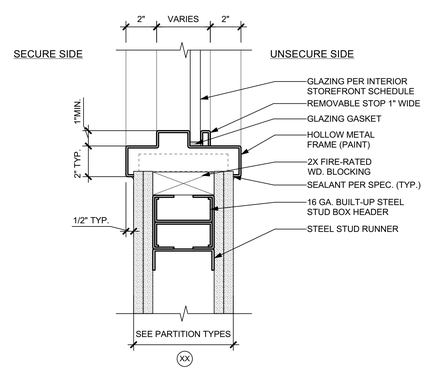
8 HORIZONTAL MULLION - NON-RATED HM FRAME
Scale: 3" = 1'-0"



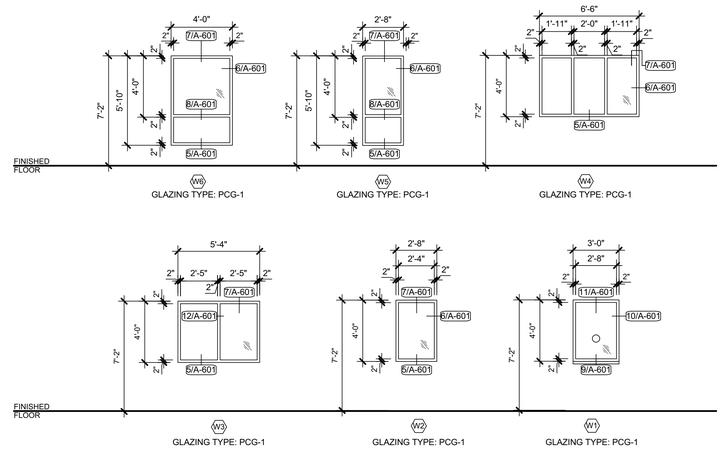
7 HEAD - NON-RATED HM FRAME
Scale: 3" = 1'-0"



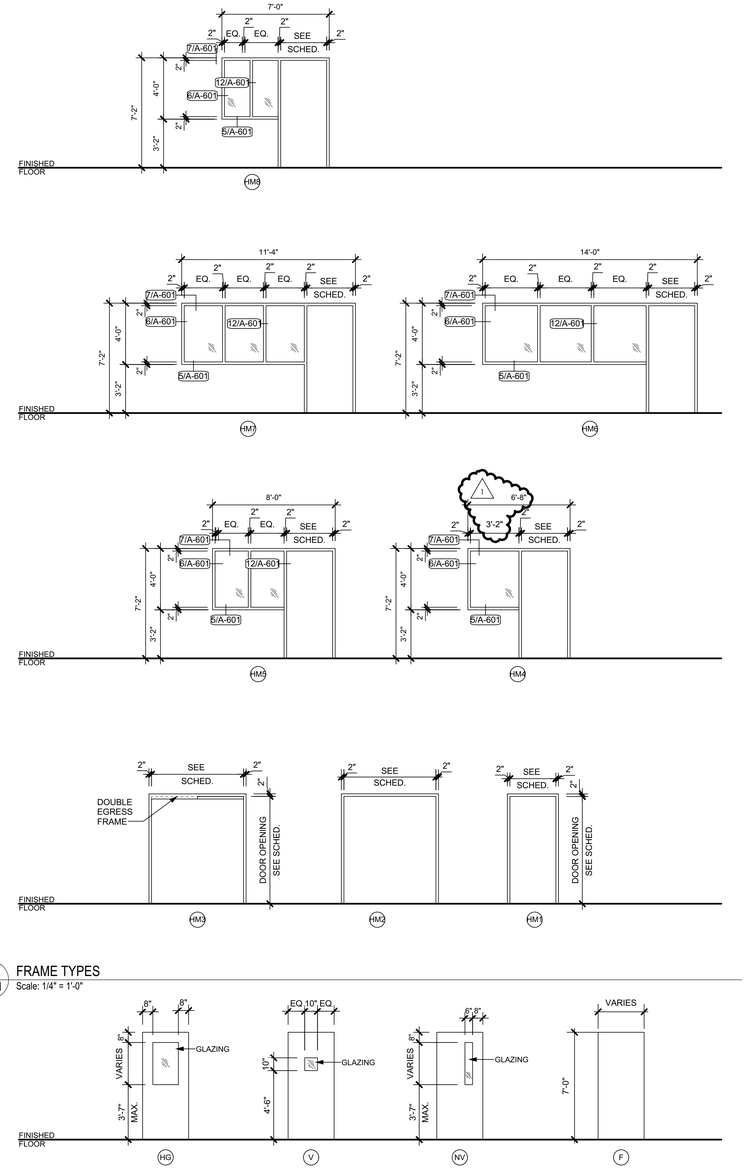
6 JAMB - NON-RATED HM FRAME
Scale: 3" = 1'-0"



5 SILL - NON-RATED HM FRAME
Scale: 3" = 1'-0"



4 A-601 WINDOW TYPES
Scale: 1/4" = 1'-0"



2 A-601 FRAME TYPES
Scale: 1/4" = 1'-0"

1 A-601 DOOR TYPES
Scale: 1/4" = 1'-0"

NEW YORK STATE OF OPPORTUNITY. Office of General Services
DESIGN & CONSTRUCTION
CONSULTANT:
dwyer ARCHITECTURAL
IBC Engineering, P.C.

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.



CONTRACT: CONSTRUCTION

TITLE: REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION: BUFFALO PSYCHIATRIC CENTER 400 FOREST AVE, BUFFALO, NEW YORK

CLIENT: NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE: **DOOR, FRAME AND WINDOW TYPES**

DRAWING NUMBER: **A-601**

SHEET 57 OF 212

Date: 5/11/26 Time: 1:03:33 PM

FINISH SCHEDULE - 8TH FLOOR

ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	NORTH WALL FINISH	EAST WALL FINISH	SOUTH WALL FINISH	WEST WALL FINISH	CEILING FINISH	REMARKS
S805	MAIL ROOM	LVT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S806	OFFICE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S806A	CLOSET	LVT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S807	CORRIDOR	ETR	RCB-2	PTM	ETR	PTM	ETR	ACT-1	2, 3 (1)
S808	KITCHENETTE	ETR	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S810	TOILET	FT-1	WT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	ACT-1	1
S812	CORRIDOR	ETR	RCB-2	PTM	ETR	PTM	ETR	ACT-1	2
S813	STAFF BREAK ROOM	ETR	PTM	ETR	PTM	ETR	PTM	ACT-1	2
S813A	CLOSET	LVT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S814	CONFERENCE ROOM	ETR	PTM	ETR	ETR	ETR	PTM	ETR	2
S818	OFFICE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S827	CORRIDOR	ETR	RCB-2	ETR	ETR	PTM	ETR	ACT-1	2
S829	PRINTER/ COPYROOM	LVT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S831	CONFERENCE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S832	STORAGE	LVT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S833	STORAGE	LVT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S834	STAFF TOILET	FT-1	WT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	ACT-1	1
S835	STAFF TOILET	FT-1	WT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	ACT-1	1
S836	STAFF TOILET	FT-1	WT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	ACT-1	1
S839	OFFICE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S840	STAFF TOILET	FT-1	WT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	WT-1,4 / PNT-1	ACT-1	1
S841	OFFICE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S842	CONF. ROOM	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S844	CORRIDOR	ETR	RCB-2	PTM	ETR	ETR	ETR	ACT-1	2
S852	OFFICE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ETR	
S855	OFFICE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S859	STORAGE	LVT-1	RCB-2	PTM	ETR	ETR	ETR	ACT-1	2
S860	STORAGE	LVT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S862	OFFICE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S863	OFFICE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S864	OFFICE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S865	OFFICE	CPT-1	RCB-2	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	
S866	SHARED DINING	ETR	RCB-2	ETR	PTM	ETR	ETR	ETR	2

KEYED NOTES

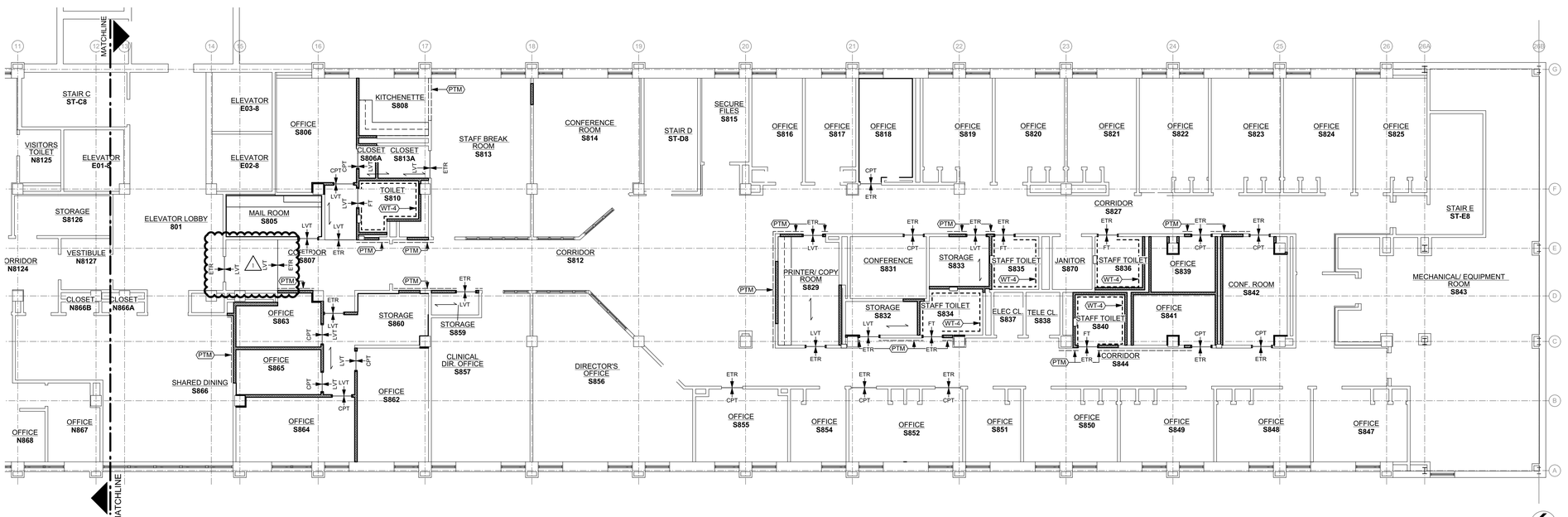
1. COORDINATE WALL TILE PATTERN IN STAFF TOILET / TOILET ROOMS WITH ELEVATIONS OF SHEET A402.
2. PATCH FINISHES IN THIS ROOM/ AREA AS REQUIRED BY REMOVALS & CONSTRUCTION ACTIVITIES TO MATCH EXISTING ADJACENT. COORDINATE WITH REMOVAL DRAWINGS. VERIFY EXISTING CONDITIONS IN FIELD.
3. PATCH FLOORING AT CORRIDOR S807 AT ENTRANCE FRM ELEVATOR LOBBY 801 TO MATCH EXISTING LVT WOOD GRAIN GLOORING. COORDINATE WITH REMOVAL DRAWINGS AND VERIFY EXISTING CONDITIONS IN THE FIELD.

GENERAL FINISH NOTES

1. SEE FLOOR PLAN SHEETS, REFLECTED CEILING PLAN SHEETS, INTERIOR ELEVATIONS, AND DETAILS SHEETS FOR ADDITIONAL MATERIAL/FINISH LOCATIONS
2. COORDINATE FINISH PLANS WITH FINISH SCHEDULE ON SHEETS I-102 THROUGH I-108.
3. PROVIDE FLOORING TRANSITION AT ALL CHANGES IN FLOOR WITH DISSIMILAR HEIGHTS AND/OR COLORWAY. FLOORING TRANSITIONS SHALL BE CENTERED UNDER CLOSED DOORS, NOT THE FRAME. COORDINATE WITH FLOORING TRANSITION SCHEDULE AND DETAILS ON SHEET I-001.
4. PREPARE EXISTING CONCRETE FLOOR SURFACE PER MANUFACTURERS REQUIREMENTS FOR INSTALLATION OF FLOORING PER ROOM FINISH SCHEDULE.
5. ALL HOLLOW METAL DOORS, FRAMES AND WINDOW FRAMES TO BE PAINTED PNT-2.
6. ALL WALLS TO BE PAINTED PNT-1 UNLESS NOTED OTHERWISE.
7. ALL GWB CEILINGS TO BE PAINTED PNT-3 UNLESS NOTED OTHERWISE.
8. ANY WALL TO RECEIVE CUSTOM GRAPHIC/IMAGE WALL PROTECTION REQUIRES A LEVEL 5 FINISH PRIOR TO WALL PROTECTION INSTALLATION.
9. **REFER TO FLOOR PLANS FROM PROJECT NORTH WHEN REFERENCING THE FINISH SCHEDULE.**
10. REFER TO G-200 SERIES DRAWINGS FOR PHASING DIAGRAMS.

FINISH SYMBOLS

- DIRECTION OF FLOOR FINISH
- PNT-X — FINISH MATERIAL CALLOUT
- CG / EWG — CORNER GUARD, END-WALL GUARD
- – – – – – ACCENT PAINT/ WALL PROTECTION LOCATION AND EXTENTS
- ..... WALL TILE LOCATION AND EXTENTS



1 / I-108 EIGHTH FLOOR FINISH PLAN (SOUTH)
Scale: 1/8" = 1'-0"

Date 5/11/26 Time 1:04:23 PM

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC Engineering, P.C.

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

REGISTERED ARCHITECT JAMES J. WOODCOCK III 030712 STATE OF NEW YORK

CONTRACT:
CONSTRUCTION

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

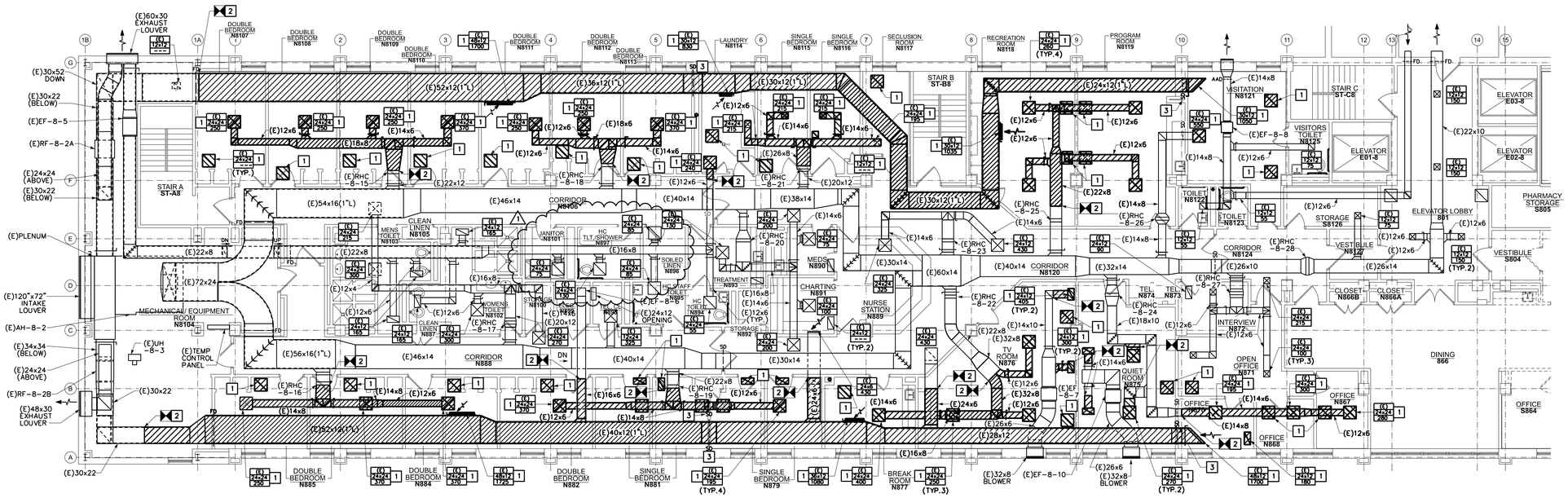
MARK	DATE	DESCRIPTION:
1	APRIL 30, 2026	ADDENDUM NO. 1
	SEPT. 17, 2025	BID DOCUMENTS

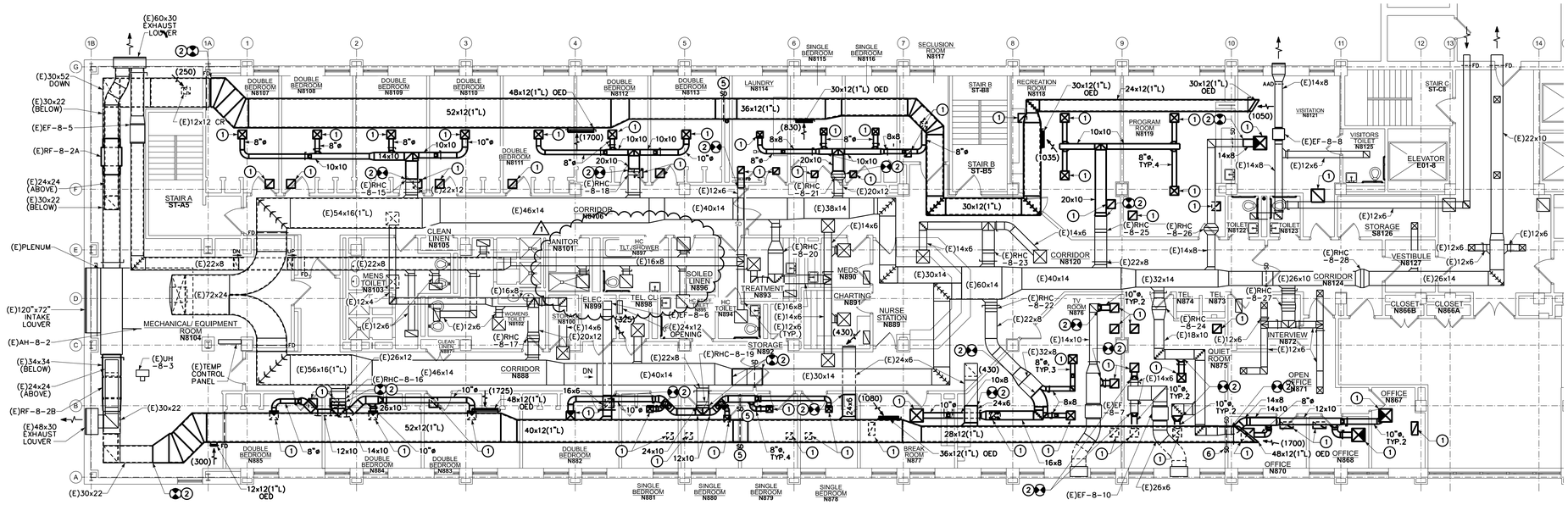
PROJECT NUMBER:	46103 - C
DESIGNED BY:	
DRAWN BY:	KK
FIELD CHECK:	
APPROVED BY:	CD

SHEET TITLE:
EIGHTH FLOOR FINISH PLAN AND SCHEDULE - SOUTH

DRAWING NUMBER:
I-108

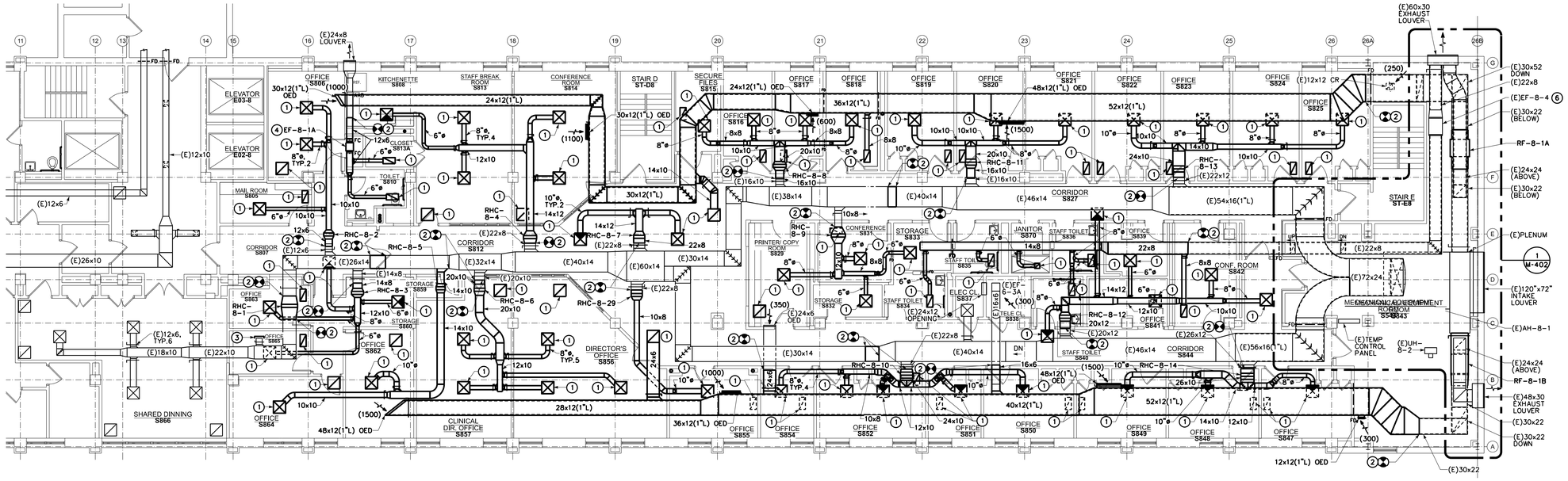
SHEET 66 OF 212


(E)60x30 EXHAUST LOUVER
DOUBLE BEDROOM N8107
DOUBLE BEDROOM N8108
DOUBLE BEDROOM N8109
DOUBLE BEDROOM N8110
DOUBLE BEDROOM N8111
DOUBLE BEDROOM N8112
DOUBLE BEDROOM N8113
LAUNDRY N8114
SINGLE BEDROOM N8115
SINGLE BEDROOM N8116
SECLUSION ROOM N8117
RECREATION ROOM N8118
PROGRAM ROOM N8119
(E)30x52 DOWN
(E)30x22 (BELOW)
(E)EF-8-5
(E)RF-8-2A
(E)24x24 (ABOVE)
(E)30x22 (BELOW)
(E)PLENUM
(E)120"x72" INTAKE LOUVER
(E)AH-8-2
(E)34x34 (BELOW)
(E)24x24 (ABOVE)
(E)RF-8-2B
(E)48x30 EXHAUST LOUVER
(E)30x22
STAIR A ST-A8
STAIR B ST-B8
STAIR C ST-C8
MENS TOILET N8105
CLEAN LINEN N8106
JANITOR N8101
HC TLT./SHOWER N897
SOILED LINEN N896
MENS TOILET N8102
CLEAN LINEN N887
STORAGE N8100
STAFF TOILET N895
HC TOILET N894
TREATMENT N893
MEDS N890
CHARTING N891
NURSE STATION N889
CORRIDOR N8106
CORRIDOR N888
MECHANICAL/ EQUIPMENT ROOM N8104
(E)TEMP CONTROL PANEL
(E)UH-8-3
(E)54x16(1"L)
(E)46x14
(E)40x14
(E)38x14
(E)36x12(1"L)
(E)30x12(1"L)
(E)52x12(1"L)
(E)72x24
(E)22x8
(E)12x6
(E)14x6
(E)16x8
(E)18x6
(E)26x8
(E)20x12
(E)22x12
(E)RHC-8-15
(E)RHC-8-16
(E)RHC-8-17
(E)RHC-8-18
(E)RHC-8-19
(E)RHC-8-20
(E)RHC-8-21
(E)RHC-8-22
(E)RHC-8-23
(E)RHC-8-24
(E)RHC-8-25
(E)RHC-8-26
(E)RHC-8-27
(E)RHC-8-28
(E)24x12 OPENING
(E)20x12 OPENING
(E)EF-8-6
(E)EF-8-7
(E)EF-8-8
(E)EF-8-9
(E)EF-8-10
(E)32x8 BLOWER
(E)26x6 (E)32x8 BLOWER
(E)28x12
(E)16x8
(E)14x8
(E)14x10
(E)18x10
(E)32x8
(E)32x14
(E)30x14
(E)60x14
(E)26x10
(E)26x14
(E)22x10
(E)22x12
(TYP.)
(TYP.2)
(TYP.3)
(TYP.4)
VISITATION N8121
VISITORS TOILET N8125
TOILET N8122
ETOILET N8123
STORAGE S8126
ELEVATOR LOBBY 801
ELEVATOR E01-8
ELEVATOR E02-8
ELEVATOR E03-8
PHARMACY STORAGE S805
VESTIBULE S804
VEST BULE N8127
CORRIDOR N8124
CLOSET N866B
CLOSET N866A
TEL N874
TEL N873
INTERVIEW N872
OPEN OFFICE N871
TV ROOM N876
QUIET ROOM N875
OFFICE N867
OFFICE N868
OFFICE S864
DINING 866
(E)22x10
(E)EF-8-8
(E)EF-8-10
(E)EF-8-11
(E)EF-8-12
(E)EF-8-13
(E)EF-8-14
(E)EF-8-15
(E)EF-8-16
(E)EF-8-17
(E)EF-8-18
(E)EF-8-19
(E)EF-8-20
(E)EF-8-21
(E)EF-8-22
(E)EF-8-23
(E)EF-8-24
(E)EF-8-25
(E)EF-8-26
(E)EF-8-27
(E)EF-8-28
(E)EF-8-29
(E)EF-8-30
(E)EF-8-31
(E)EF-8-32
(E)EF-8-33
(E)EF-8-34
(E)EF-8-35
(E)EF-8-36
(E)EF-8-37
(E)EF-8-38
(E)EF-8-39
(E)EF-8-40
(E)EF-8-41
(E)EF-8-42
(E)EF-8-43
(E)EF-8-44
(E)EF-8-45
(E)EF-8-46
(E)EF-8-47
(E)EF-8-48
(E)EF-8-49



EIGHTH FLOOR MECHANICAL DUCTWORK PLAN – NORTH 2

1/8" = 1'-0"



EIGHTH FLOOR MECHANICAL DUCTWORK PLAN – SOUTH 1

1/8" = 1'-0"

DRAWING NOTES:

1. PROVIDE NEW GRILLE/DIFFUSER AT LOCATION INDICATED. REFER TO AIR INLET/OUTLET SCHEDULE.
2. PROVIDE CONNECTION TO EXISTING DUCTWORK AT LOCATION INDICATED.
3. CAP EXISTING DUCTWORK AIR TIGHT.
4. PROVIDE INLINE EXHAUST FAN AT LOCATION INDICATED.
5. PROVIDE SMOKE DAMPER AT LOCATION INDICATED.
6. REBALANCE EXISTING EXHAUST FAN EF-8-4 TO AIRFLOW INDICATED IN AIR INLET/OUTLET SCHEDULE. RE-SHEAVE FAN AS REQUIRED TO ACHIEVE SCHEDULED AIRFLOW.

GENERAL NOTES:

A. PROVIDE FULL AIR REBALANCE OF ALL INLETS AND OUTLETS. REFER TO AIR INLET AND OUTLET SCHEDULES FOR BALANCING VALUES. REBALANCE EXISTING AIR HANDLING UNITS, RETURN FANS, AND EXHAUST FANS TO ACHEIVE NEW VALUES.

B. FIRE DAMPERS PENETRATING MECHANICAL ROOM WALLS SHALL BE RATED FOR 3-HR.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS "A" MISDEMEANOR.

STATE OF NEW YORK · GEOFFREY ERIC MEAD · 080113 · LICENSED PROFESSIONAL ENGINEER · EXP. 04/30/2029

CONTRACT: HVAC

TITLE: REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION: BUFFALO PSYCHIATRIC CENTER 400 FOREST AVE, BUFFALO, NEW YORK

CLIENT: NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - H
DESIGNED BY:	RNB/ACC
DRAWN BY:	PP/MMB
FIELD CHECK:	
APPROVED BY:	

SHEET TITLE: EIGHTH FLOOR MECHANICAL DUCTWORK PLANS - NORTH AND SOUTH

DRAWING NUMBER: M-118

SHEET OF

COOLING COIL SCHEDULE - CHILLED WATER (30% PROPYLENE GLYCOL)

TAG	AREA SERVED	LOCATION	AIRFLOW (CFM)	TOTAL (MBH)	SENS (MBH)	FLUID	FLOW (GPM)	WPD (FT)	ROWS	EWT (°F)	LWT (°F)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	FACE VEL. (FPM)	APD (IN)	BASIS OF DESIGN EQUIPMENT	REMARKS
CC-3-1	THIRD FLOOR - SOUTH	(E)AH-3-1	13,500	532	404.7	30% P.G.	94.0	24.50	8	44.0	56.0	79.0	65.0	51.7	51.6	460	1.03	SFI COILS	1
CC-4-1	FOURTH FLOOR - SOUTH	(E)AH-4-1	13,500	532	404.7	30% P.G.	94.0	24.50	8	44.0	56.0	79.0	65.0	51.7	51.6	460	1.03	SFI COILS	1
CC-5-1	FIFTH FLOOR - SOUTH	(E)AH-5-1	13,500	532	404.7	30% P.G.	94.0	24.50	8	44.0	56.0	79.0	65.0	51.7	51.6	460	1.03	SFI COILS	1
CC-5-2	FIFTH FLOOR - NORTH	(E)AH-5-2	12,500	497	377.0	30% P.G.	85.0	21.60	8	44.0	56.0	79.0	65.0	51.5	51.5	426	0.93	SFI COILS	1
CC-6-1	SIXTH FLOOR - NORTH	(E)AH-6-1	13,500	532	404.7	30% P.G.	94.0	24.50	8	44.0	56.0	79.0	65.0	51.7	51.6	460	1.03	SFI COILS	1
CC-6-2	SIXTH FLOOR - SOUTH	(E)AH-6-2	12,500	497	377.0	30% P.G.	85.0	21.60	8	44.0	56.0	79.0	65.0	51.5	51.5	426	0.93	SFI COILS	1
CC-7-1	SEVENTH FLOOR - NORTH	(E)AH-7-1	13,500	532	404.7	30% P.G.	94.0	24.50	8	44.0	56.0	79.0	65.0	51.7	51.6	460	1.03	SFI COILS	1
CC-7-2	SEVENTH FLOOR - SOUTH	(E)AH-7-2	12,500	497	377.0	30% P.G.	85.0	21.60	8	44.0	56.0	79.0	65.0	51.5	51.5	426	0.93	SFI COILS	1
CC-8-1	EIGHTH FLOOR - SOUTH	(E)AH-8-1	14,500	538	407.2	30% P.G.	98.5	25.00	8	44.0	56.0	79.0	65.0	53.0	52.5	474	1.25	SFI COILS	1

REMARKS

1. CONTRACTOR TO FIELD VERIFY EXISTING COIL DIMENSIONS PRIOR TO ORDER.

HEATING COIL SCHEDULE - STEAM

TAG	AREA SERVED	LOCATION	AIRFLOW (CFM)	CAP (MBH)	FLOW (LBS/HR)	STEAM PSIG	ROWS	EAT (°F)	LAT (°F)	FACE VEL. (FPM)	APD (IN)	BASIS OF DESIGN EQUIPMENT	REMARKS
HC-3-1	THIRD FLOOR - SOUTH	(E)AH-3-1	13,500	450.0	468.0	5.0	1	50.0	80.8	551	0.07	SFI COILS	1
HC-4-1	FOURTH FLOOR - SOUTH	(E)AH-4-1	13,500	450.0	468.0	5.0	1	50.0	85.0	551	0.07	SFI COILS	1
HC-5-1	FIFTH FLOOR - SOUTH	(E)AH-5-1	13,500	450.0	468.0	5.0	1	50.0	85.0	551	0.07	SFI COILS	1
HC-5-2	FIFTH FLOOR - NORTH	(E)AH-5-2	12,500	434.4	452.0	5.0	1	50.0	85.0	510	0.06	SFI COILS	1
HC-6-1	SIXTH FLOOR - NORTH	(E)AH-6-1	13,500	450.0	468.0	5.0	1	50.0	85.0	551	0.07	SFI COILS	1
HC-6-2	SIXTH FLOOR - SOUTH	(E)AH-6-2	12,500	434.4	452.0	5.0	1	50.0	79.6	510	0.06	SFI COILS	1
HC-7-1	SEVENTH FLOOR - NORTH	(E)AH-7-1	13,500	450.0	468.0	5.0	1	50.0	85.0	551	0.07	SFI COILS	1
HC-7-2	SEVENTH FLOOR - SOUTH	(E)AH-7-2	12,500	434.4	452.0	5.0	1	50.0	85.0	510	0.06	SFI COILS	1
HC-8-1	EIGHTH FLOOR - SOUTH	(E)AH-8-1	14,500	548.1	484.0	5.0	1	50.0	85.0	560	0.08	SFI COILS	1

REMARKS

1. CONTRACTOR TO FIELD VERIFY EXISTING COIL DIMENSIONS PRIOR TO ORDER.

FAN SCHEDULE

TAG	LOCATION	SERVICE	AIRFLOW (CFM)	SP (IN WC)	BLADE TYPE	FAN (RPM)	DRIVE TYPE	INLET SONES	MOTOR DATA HP	RPM	V	PH	STARTER	BASIS OF DESIGN EQUIPMENT	REMARKS
EF-5-1A	VISITATION MULTI S506	TOILETS	200	0.50	BI	1,560	DD	7.4	1/6	1,725	115	1	MAN	GREENHECK SQ-80-VG	1
EF-6-1A	VISITATION MULTI S606	TOILETS	200	0.50	BI	1,560	DD	7.4	1/6	1,725	115	1	MAN	GREENHECK SQ-80-VG	1
EF-7-1A	VISITATION MULTI S706	TOILETS	200	0.50	BI	1,560	DD	7.4	1/6	1,725	115	1	MAN	GREENHECK SQ-80-VG	1
EF-8-1A	KITCHENETTE S808	TOILET / CLOSET	200	0.50	BI	1,560	DD	7.4	1/6	1,725	115	1	MAN	GREENHECK SQ-80-VG	1
EF-5-8	VISITATION N5121	TOILETS	550	0.75	BI	1,615	DD	12.0	1/4	1,725	115	1	MAN	GREENHECK SQ-99-VG	1
EF-6-8	VISITATION N6121	TOILETS	550	0.75	BI	1,615	DD	12.0	1/4	1,725	115	1	MAN	GREENHECK SQ-99-VG	1
EF-7-8	VISITATION N7121	TOILETS	550	0.75	BI	1,615	DD	12.0	1/4	1,725	115	1	MAN	GREENHECK SQ-99-VG	1
RF-3-1A	3rd FLR MECH SOUTH	3rd FLR SOUTH WING	5,050	1.25	BI	1,236	BELT	22.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-3-1B	3rd FLR MECH SOUTH	3rd FLR SOUTH WING	5,050	1.25	BI	1,236	BELT	22.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-4-1A	4th FLR MECH SOUTH	4th FLR SOUTH WING	5,050	1.25	BI	1,236	BELT	22.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-4-1B	4th FLR MECH SOUTH	4th FLR SOUTH WING	5,050	1.25	BI	1,236	BELT	22.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-5-1A	5th FLR MECH SOUTH	5th FLR SOUTH WING	4,070	1.50	BI	1,344	BELT	18.2	2	1,725	460	3	ECM	GREENHECK BSQ-180	
RF-5-1B	5th FLR MECH SOUTH	5th FLR SOUTH WING	5,050	1.50	BI	1,236	BELT	22.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-5-2A	5th FLR MECH NORTH	5th FLR NORTH WING	4,070	1.50	BI	1,344	BELT	18.2	2	1,725	460	3	ECM	GREENHECK BSQ-180	
RF-5-2B	5th FLR MECH NORTH	5th FLR NORTH WING	5,050	1.50	BI	1,236	BELT	22.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-6-1A	6th FLR MECH SOUTH	6th FLR SOUTH WING	4,070	1.50	BI	1,344	BELT	18.2	2	1,725	460	3	ECM	GREENHECK BSQ-180	
RF-6-1B	6th FLR MECH SOUTH	6th FLR SOUTH WING	5,050	1.50	BI	1,236	BELT	22.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-6-2A	6th FLR MECH NORTH	6th FLR NORTH WING	4,070	1.50	BI	1,344	BELT	18.2	2	1,725	460	3	ECM	GREENHECK BSQ-180	
RF-6-2B	6th FLR MECH NORTH	6th FLR NORTH WING	5,050	1.50	BI	1,236	BELT	22.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-7-1A	7th FLR MECH SOUTH	7th FLR SOUTH WING	4,070	1.50	BI	1,344	BELT	18.2	2	1,725	460	3	ECM	GREENHECK BSQ-180	
RF-7-1B	7th FLR MECH SOUTH	7th FLR SOUTH WING	5,050	1.50	BI	1,236	BELT	22.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-7-2A	7th FLR MECH NORTH	7th FLR NORTH WING	4,070	1.50	BI	1,344	BELT	18.2	2	1,725	460	3	ECM	GREENHECK BSQ-180	
RF-7-2B	7th FLR MECH NORTH	7th FLR NORTH WING	5,050	1.50	BI	1,236	BELT	22.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-8-1A	8th FLR MECH SOUTH	8th FLR SOUTH WING	5,450	1.50	BI	1,290	BELT	23.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
RF-8-1B	8th FLR MECH SOUTH	8th FLR SOUTH WING	5,450	1.50	BI	1,290	BELT	23.0	3	1,725	460	3	ECM	GREENHECK BSQ-200	
SF-3-1	3rd FLR MECH SOUTH	3rd FLR SOUTH WING	13,500	4.50	BI	2,625	BELT	50.0	20	VARIES	460	3	ASD	GREENHECK APD-560-A1	1-2
SF-4-1	4th FLR MECH SOUTH	4th FLR SOUTH WING	13,500	4.50	BI	2,625	BELT	50.0	20	VARIES	460	3	ASD	GREENHECK APD-560-A1	1-2
SF-5-1	5th FLR MECH SOUTH	5th FLR SOUTH WING	13,500	4.50	BI	2,625	BELT	50.0	20	VARIES	460	3	ASD	GREENHECK APD-560-A1	1-2
SF-5-2	5th FLR MECH NORTH	6th FLR NORTH WING	12,500	4.50	BI	2,489	BELT	42.0	15	VARIES	460	3	ASD	GREENHECK APD-560-A1	1-2
SF-6-1	6th FLR MECH SOUTH	6th FLR SOUTH WING	13,500	4.50	BI	2,625	BELT	50.0	20	VARIES	460	3	ASD	GREENHECK APD-560-A1	1-2
SF-6-2	6th FLR MECH NORTH	6th FLR NORTH WING	12,500	4.50	BI	2,489	BELT	42.0	15	VARIES	460	3	ASD	GREENHECK APD-560-A1	1-2
SF-7-1	7th FLR MECH SOUTH	7th FLR SOUTH WING	13,500	4.50	BI	2,625	BELT	50.0	20	VARIES	460	3	ASD	GREENHECK APD-560-A1	1-2
SF-7-2	7th FLR MECH NORTH	7th FLR NORTH WING	12,500	4.50	BI	2,489	BELT	42.0	15	VARIES	460	3	ASD	GREENHECK APD-560-A1	1-2
SF-8-1	8th FLR MECH SOUTH	8th FLR SOUTH WING	14,500	4.50	BI	2,130	BELT	40.0	20	VARIES	460	3	ASD	GREENHECK APD-630-A1	1-2

REMARKS

1. PROVIDE WITH MOTOR MOUNTED ADJUSTABLE SPEED CONTROLLER.
2. UNITS SHALL BE INSTALLED WITHIN EXISTING TO REMAIN AHU CASING. REMOVE CASING PANELS AS REQUIRED FOR INSTALLATION.

REGISTER, GRILLE AND DIFFUSER SCHEDULE

TAG	TYPE	MATERIAL	FINISH/COLOR	BASIS OF DESIGN EQUIPMENT
1	SUPPLY	STEEL	PER ARCH.	TITUS TDX
2	SUPPLY	STEEL	PER ARCH.	TITUS 272-RL
3	SUPPLY	ALUMINUM	PER ARCH.	TITUS 272-FL
4	SUPPLY	STEEL	PER ARCH.	ANEMOSTAT SV432-FM
A	RETURN/EXHAUST	STEEL	PER ARCH.	TITUS 350-RL
B	RETURN/EXHAUST	ALUMINUM	PER ARCH.	TITUS 350-FL
C	RETURN/EXHAUST	STEEL	PER ARCH.	ANEMOSTAT RRSG
D	RETURN/EXHAUST	ALUMINUM	PER ARCH.	ANEMOSTAT RRSG

REMARKS

1. ALL TYPE-1 DIFFUSERS SHALL BE PROVIDED WITH 2'x2' FACE SIZE. AIR INLET/OUTLET SCHEDULES SPECIFY TYPE-1 DIFFUSER NECK SIZE.

GLYCOL MAKE-UP UNIT SCHEDULE

TAG	LOCATION	SERVICE	TANK VOLUME (GAL)	ELECTRICAL V	PH	MCA	DESIGN EQUIPMENT	REMARKS
GMU-8-NORTH	MECH ROOM 8 NORTH	HOT WATER SYSTEM	50	120	1	15.0	J.L. WINGERT GL50	1
GMU-8-SOUTH	MECH ROOM 8 SOUTH	HOT WATER SYSTEM	50	120	1	15.0	J.L. WINGERT GL51	1

REMARKS

1. PROVIDE UNIT WITH AN 8FT NEMA 5-15P POWER CORD.

HEAT EXCHANGER SCHEDULE - STEAM TO WATER

TAG	LOCATION	SERVICE	STEAM SIDE PSIG	MBH	LBS/HR	WATER SIDE FLUID	MBH	GPM	WPD (PSIG)	EWT(°F)	LWT(°F)	SURFACE AREA (SQFT)	BASIS OF DESIGN EQUIPMENT	REMARKS
HX-8-NORTH	MECH 8TH FLR NORTH	HW RADIATION LOOP	7	821.9	846.0	20% PG	821.9	85.0	0.47	130.0	150.0	24.6	B&G SU-83-2	1
HX-8-SOUTH	MECH 8TH FLR SOUTH	HW RADIATION LOOP	7	981.4	1,010.1	20% PG	981.4	101.5	0.65	130.0	150.0	24.6	B&G SU-83-2	1

PUMP SCHEDULE

TAG	LOCATION	SERVICE	FLOW (GPM)	WPD (FT)	MAX WWP	RPM	BHP	EFF. (%)	PUMP TYPE	MOTOR DATA HP	RPM	V	PH	E-POWER	STARTER	BASIS OF DESIGN EQUIPMENT	REMARKS
P-8A-NORTH	NORTH 8TH FLR MECH ROOM	HW RADIATION LOOP	87.3	75.0	125	VARIES	2.37	68.4	INLINE	5	VARIES	460	3	YES	ASD	B&G e-90-STOCK 1.5AAB	1
P-8B-NORTH	NORTH 8TH FLR MECH ROOM	HW RADIATION LOOP	87.3	75.0	125	VARIES	2.37	68.4	INLINE	5	VARIES	460	3	YES	ASD	B&G e-90-STOCK 1.5AAB	1
P-8A-SOUTH	SOUTH 8TH FLR MECH ROOM	HW RADIATION LOOP	101.5	75.0	125	VARIES	2.54	74.9	INLINE	5	VARIES	460	3	YES	ASD	B&G e-90 2AAC	1
P-8B-SOUTH	SOUTH 8TH FLR MECH ROOM	HW RADIATION LOOP	101.5	75.0	125	VARIES	2.54	74.9	INLINE	5	VARIES	460	3	YES	ASD	B&G e-90 2AAC	1

REMARKS

1. PROVIDE WITH ASD BY DIVISION 26.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK
GEOFFREY ERIC MEAD
EXP. 04/30/2026
080114
LICENSED PROFESSIONAL ENGINEER

CONTRACT:

HVAC

TITLE:

REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:

BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:

NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS

PROJECT NUMBER:	46103 - H
DESIGNED BY:	RNB/ACC
DRAWN BY:	PP/MMB
FIELD CHECK:	
APPROVED BY:	

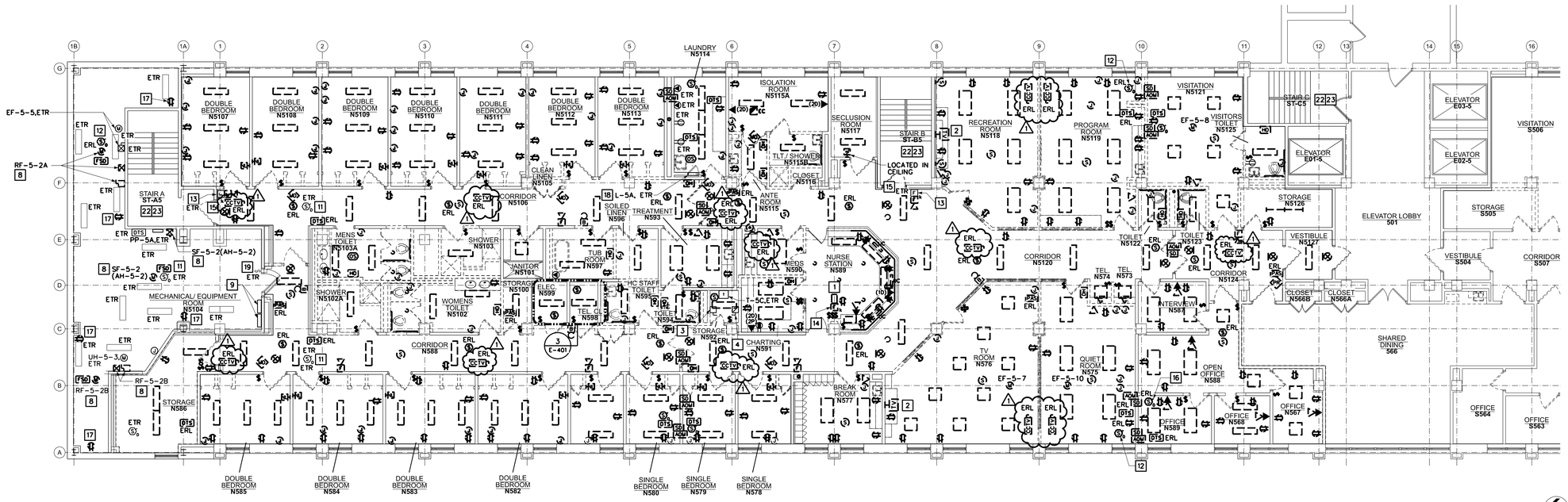
SHEET TITLE:

HVAC SCHEDULES

DRAWING NUMBER:

M-601

SHEET OF

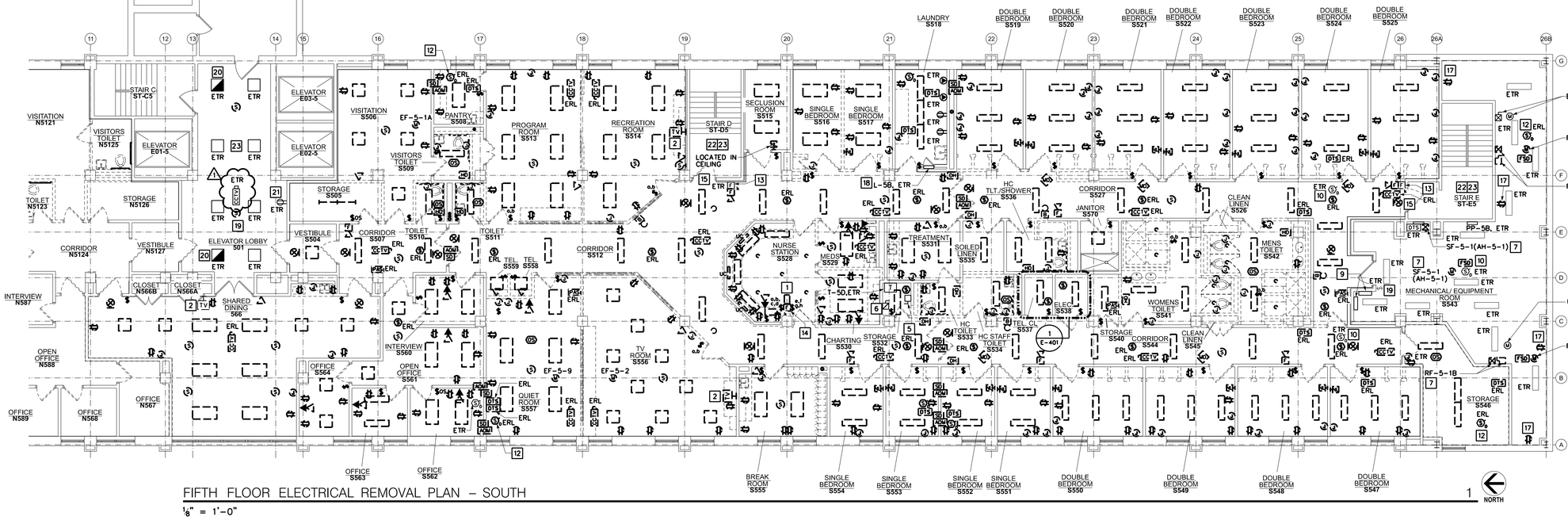


FIFTH FLOOR ELECTRICAL REMOVAL PLAN – NORTH

2

1/8" = 1'-0"

NORTH



FIFTH FLOOR ELECTRICAL REMOVAL PLAN – SOUTH

1

1/8" = 1'-0"

NORTH

GENERAL SHEET NOTES:

A. MAINTAIN EXISTING LIGHTING AND LIGHTING CONTROLS WITHIN MECHANICAL/ EQUIPMENT ROOMS N5104 AND S543. EXTEND NEW LIGHTING CIRCUIT TO ROOM SWITCH AS INDICATED, REFER TO E-115 FOR ADDITIONAL INFORMATION.

B. PAS DEVICES SHALL BE DISCONNECTED AND REMOVED BY JCSS. AFTER THE PAS DEVICE HAS BEEN REMOVED, DISCONNECT AND REMOVE PAS CABLE FROM DEVICE BACK TO TRANSPONDER #3, LOCATED IN TEL. CL S737 ON THE SEVENTH FLOOR. MAINTAIN CONDUIT STUBS BETWEEN FLOOR FOR REUSE.

C. IP SECURITY CAMERAS SHALL BE DISCONNECTED, REMOVED, AND RELOCATED BY JCSS. CAMERAS ARE FED FROM 6TH FLOOR.

D. EXISTING EXHAUST FANS LOCATED IN ELECTRICAL ROOMS ARE EXISTING TO REMAIN.

REMOVAL NOTES:

1. DISCONNECT AND REMOVE EXISTING JERON ANNUNICATOR ALARM PANEL.
2. DISCONNECT AND REMOVE CATV DISTRIBUTION INCLUDING WALL OUTLETS COAXIAL CABLE, CONNECTORS, SPLITTERS, TAPS, ETC. FROM WALL OUTLET TO TEL CL. THIS FLOOR/AREA AND CONTINUE REMOVAL DOWN TO BASEMENT CORRIDOR CEILING, ADJACENT TO ELECTRICAL RM N201. REFER TO E-010, BASEMENT ELECTRICAL REMOVAL PLAN – NORTH.
3. 200A PRIMARY DISCONNECT SWITCH FOR T-5C, ETR.
4. 225AF/400AS SECONDARY FUSED/SWITCH FEEDS L-5A THROUGH L-8A, ETR.
5. 200A PRIMARY DISCONNECT SWITCH FOR T-5D, ETR.
6. 225AF/400AS SECONDARY FUSED/SWITCH FEEDS L-5B THROUGH L-8B, ETR.
7. DISCONNECT AND REMOVE CIRCUIT BACK TO SOURCE, PP-5B. MAINTAIN EXISTING SWITCH AND FUSE IN PP-5B FOR REUSE.
8. DISCONNECT AND REMOVE CIRCUIT BACK TO SOURCE, PP-5A. MAINTAIN EXISTING SWITCH AND FUSE IN PP-5A FOR REUSE.
9. DISCONNECT AND REMOVE EXISTING CIRCUIT TO EXISTING BMS PANELS, ETR. PROVIDE NEW CIRCUIT AS INDICATED ON E-125.
10. MAINTAIN EXISTING SMOKE DUCT DETECTOR LOCATED IN THE SUPPLY DUCT OF AH-5-1.
11. MAINTAIN EXISTING SMOKE DUCT DETECTOR LOCATED IN THE SUPPLY DUCT OF AH-5-2.
12. DISCONNECT, REMOVE, AND RELOCATE EXISTING SMOKE DUCT DETECTOR TO NEW RETURN DUCTWORK. REFER TO H CONTRACT AND COORDINATE LOCATION.
13. EXISTING PULL STATION, KEYED LOCKED WITH FIRE PHONE SHALL REMAIN.
14. DISCONNECT AND REMOVE EXISTING PULL STATION, KEYED LOCKED WITH FIRE PHONE.
15. JCSS SHALL DISCONNECT AND REMOVE EXISTING DOOR ALARMS. REMOVE WIRE/CABLE BACK TO SOURCE.
16. DISCONNECT, REMOVE, AND RELOCATE EXISTING SMOKE DUCT DETECTOR TO NEW SUPPLY DUCTWORK. REFER TO H CONTRACT AND COORDINATE LOCATION.
17. REMOVE EXISTING DEVICE. MAINTAIN EXISTING BACKBOX AND CONDUIT EXTENDING TO CEILING FOR REUSE.
18. DISCONNECT AND REMOVE ALL EXISTING HAND DRYER CIRCUITS IN IT'S ENTIRETY BACK TO SOURCE PANELBOARD. MAINTAIN EXISTING BREAKERS FOR REUSE.
19. MAINTAIN EXISTING ROOM LIGHTING, LIGHTING CONTROLS, AND LIGHTING CIRCUIT IN ROOM/AREA. RECONNECT TO NEW PANELBOARD AS INDICATED. REFER TO E-115 FOR ADDITIONAL INFORMATION.
20. MAINTAIN EXISTING EGRESS LIGHTING IN ELEVATOR LOBBY. EXTEND/ MODIFY EXISTING LIFE SAFETY CIRCUIT TO EXISTING PANELBOARD CS-5. PROVIDE (2)-#10, (1)-#10EG IN 3/4" CONDUIT AS REQUIRED. REFER TO E-115 FOR ADDITIONAL INFORMATION.
21. MAINTAIN EXISTING DEVICE. RECONNECT TO NEW PANELBAORD LVP-5B. PROVIDE (2)-#12, (1)-#12EG IN 3/4" CONDUIT AS REQUIRED. REFER TO E-125 FOR ADDITIONAL INFORMATION.
22. LIGHTING IN STAIRS IS EXISTING TO REMAIN. LIGHTING CIRCUITS ROUTE VERTICAL FROM THE BASEMENT UP THROUGH EACH FLOOR AND SHALL REMAIN.
23. FIRE ALARM DEVICES THIS ROOM/AREA ARE EXISTING TO REMAIN.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK · GEOFFREY ERIC MEAD · LICENSED PROFESSIONAL ENGINEER · EXP. 04/30/2026 · 080111

CONTRACT:
ELECTRICAL

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

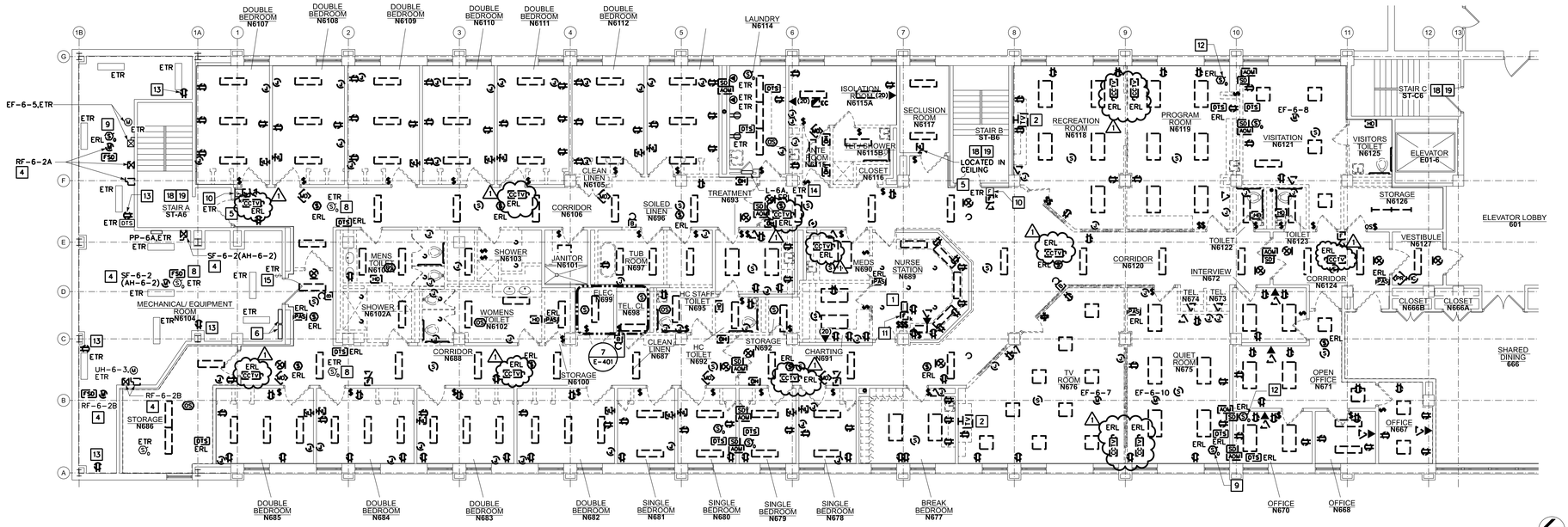
1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - E
DESIGNED BY:	FT
DRAWN BY:	FT
FIELD CHECK:	JAR
APPROVED BY:	JAR

SHEET TITLE:
FIFTH FLOOR ELECTRICAL REMOVAL PLANS - NORTH AND SOUTH

DRAWING NUMBER:
E-015

SHEET OF

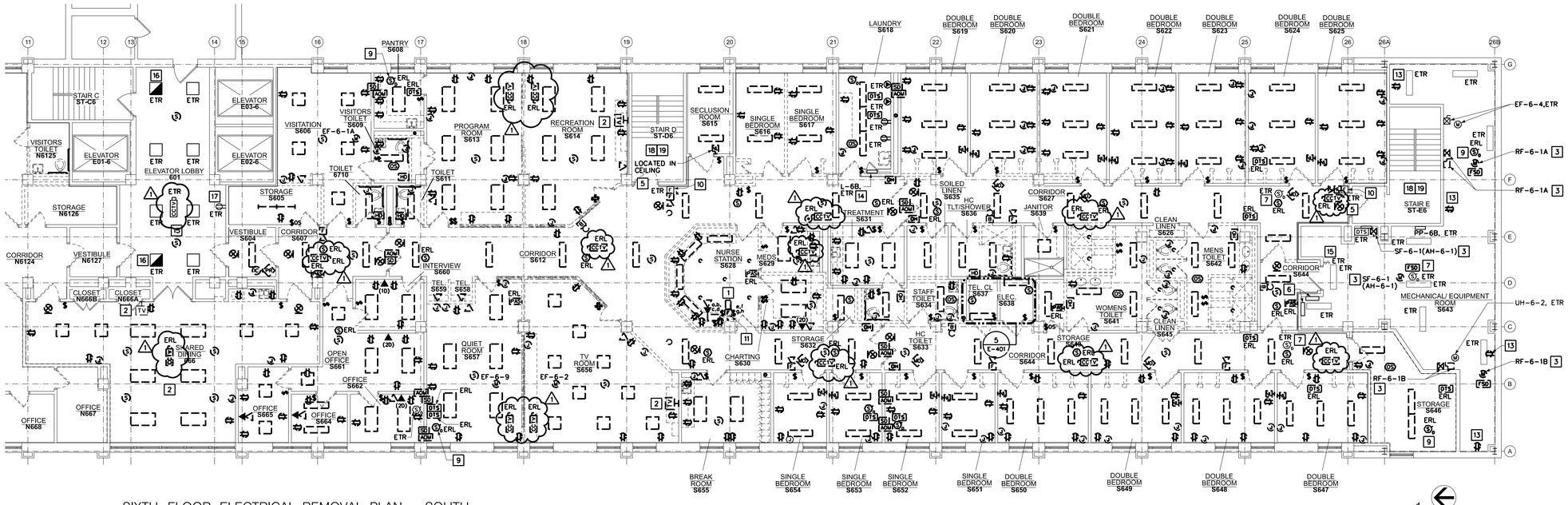


SIXTH FLOOR ELECTRICAL REMOVAL PLAN – NORTH

2

NORTH

$\frac{1}{8}$" = 1'-0"



SIXTH FLOOR ELECTRICAL REMOVAL PLAN – SOUTH

1

NORTH

$\frac{1}{8}$" = 1'-0"

GENERAL SHEET NOTES:

A. MAINTAIN EXISTING LIGHTING AND LIGHTING CONTROLS WITHIN MECHANICAL/ EQUIPMENT ROOMS N6104 AND S643. EXTEND NEW LIGHTING CIRCUIT TO ROOM SWITCH AS INDICATED, REFER TO E-116 FOR ADDITIONAL INFORMATION.

B. PAS DEVICES SHALL BE DISCONNECTED AND REMOVED BY JCSS. AFTER THE PAS DEVICE HAS BEEN REMOVED, DISCONNECT AND REMOVE PAS CABLE FROM DEVICE BACK TO TRANSPONDER #3, LOCATED IN TEL CL S737 ON THE SEVENTH FLOOR. MAINTAIN CONDUIT STUBS BETWEEN FLOOR FOR REUSE.

C. IP SECURITY CAMERAS SHALL BE DISCONNECTED, REMOVED, AND RELOCATED BY JCSS. CAMERAS ARE FED FROM 6TH FLOOR.

D. EXISTING EXHAUST FANS LOCATED IN ELECTRICAL ROOMS ARE EXISTING TO REMAIN.

REMOVAL NOTES:

1. DISCONNECT AND REMOVE EXISTING JERON ANNUNICATOR ALARM PANEL.
2. DISCONNECT AND REMOVE CATV DISTRIBUTION INCLUDING WALL OUTLETS COAXIAL CABLE, CONNECTORS, SPLITTERS, TAPS, ETC. FROM WALL OUTLET TO TEL CL. THIS FLOOR/AREA AND CONTINUE REMOVAL DOWN TO BASEMENT CORRIDOR CEILING, ADJACENT TO ELECTRICAL RM N201. REFER TO E-010, BASEMENT ELECTRICAL REMOVAL PLAN – NORTH.
3. DISCONNECT AND REMOVE CIRCUIT BACK TO SOURCE, PP-6B. MAINTAIN EXISTING SWITCH AND FUSE IN PP-6B FOR REUSE.
4. DISCONNECT AND REMOVE CIRCUIT BACK TO SOURCE, PP-6A. MAINTAIN EXISTING SWITCH AND FUSE IN PP-6A FOR REUSE.
5. JCSS SHALL DISCONNECT AND REMOVE EXISTING DOOR ALARMS. REMOVE WIRE/CABLE BACK TO SOURCE.
6. DISCONNECT AND REMOVE EXISTING CIRCUIT TO EXISTING BMS PANELS, ETR. PROVIDE NEW CIRCUIT AS INDICATED ON E-126.
7. MAINTAIN EXISTING SMOKE DUCT DETECTOR LOCATED IN THE SUPPLY DUCT OF AH-6-1.
8. MAINTAIN EXISTING SMOKE DUCT DETECTOR LOCATED IN THE SUPPLY DUCT OF AH-6-2.
9. DISCONNECT, REMOVE, AND RELOCATE EXISTING SMOKE DUCT DETECTOR TO NEW RETURN DUCTWORK. REFER TO H CONTRACT AND COORDINATE LOCATION.
10. EXISTING PULL STATION, KEY LOCKED WITH FIRE PHONE SHALL REMAIN.
11. DISCONNECT AND REMOVE EXISTING PULL STATION, KEYED LOCKED WITH FIRE PHONE.
12. DISCONNECT, REMOVE, AND RELOCATE EXISTING SMOKE DUCT DETECTOR TO NEW SUPPLY DUCTWORK. REFER TO H CONTRACT AND COORDINATE LOCATION.
13. REMOVE EXISTING DEVICE, MAINTAIN EXISTING BACKBOX AND CONDUIT EXTENDING TO CEILING FOR REUSE.
14. DISCONNECT AND REMOVE ALL EXISTING HAND DRYER CIRCUITS IN IT'S ENTIRETY BACK TO SOURCE PANELBOARD. MAINTAIN EXISTING BREAKERS FOR REUSE.
15. MAINTAIN EXISTING ROOM LIGHTING, LIGHTING CONTROLS, AND LIGHTING CIRCUIT IN ROOM/AREA. RECONNECT TO NEW PANELBOARD AS INDICATED. REFER TO E-116 FOR ADDITIONAL INFORMATION.
16. MAINTAIN EXISTING EGRESS LIGHTING IN ELEVATOR LOBBY. EXTEND/ MODIFY EXISTING LIFE SAFETY CIRCUIT TO EXISTING PANELBOARD CS-6. PROVIDE (2)-#10, (1)-#10EG IN 3/4" CONDUIT AS REQUIRED. REFER TO E-116 FOR ADDITIONAL INFORMATION.
17. MAINTAIN EXISTING DEVICE. RECONNECT TO NEW PANELBAORD LVP-6B. PROVIDE (2)-#12, (1)-#12EG IN 3/4" CONDUIT AS REQUIRED. REFER TO E-126 FOR ADDITIONAL INFORMATION.
18. LIGHTING IN STAIRS IS EXISTING TO REMAIN. LIGHTING CIRCUITS ROUTE VERTICAL FROM THE BASEMENT UP THROUGH EACH FLOOR AND SHALL REMAIN.
19. FIRE ALARM DEVICES THIS ROOM/AREA ARE EXISTING TO REMAIN.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E., ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK GEOFFREY ERIC REID LICENSED PROFESSIONAL ENGINEER EXP. 04/30/2026 080111

CONTRACT:
ELECTRICAL

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

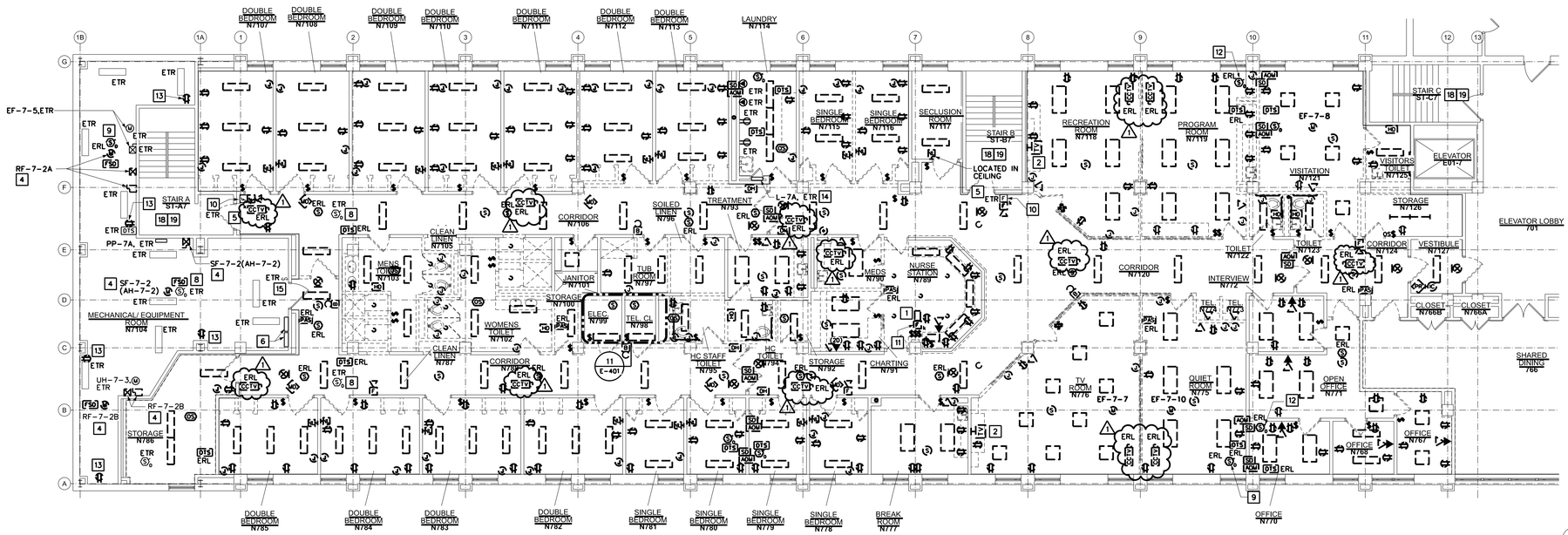
1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - E
DESIGNED BY:	FT
DRAWN BY:	FT
FIELD CHECK:	JAR
APPROVED BY:	JAR

SHEET TITLE:
SIXTH FLOOR ELECTRICAL REMOVAL PLANS - NORTH AND SOUTH

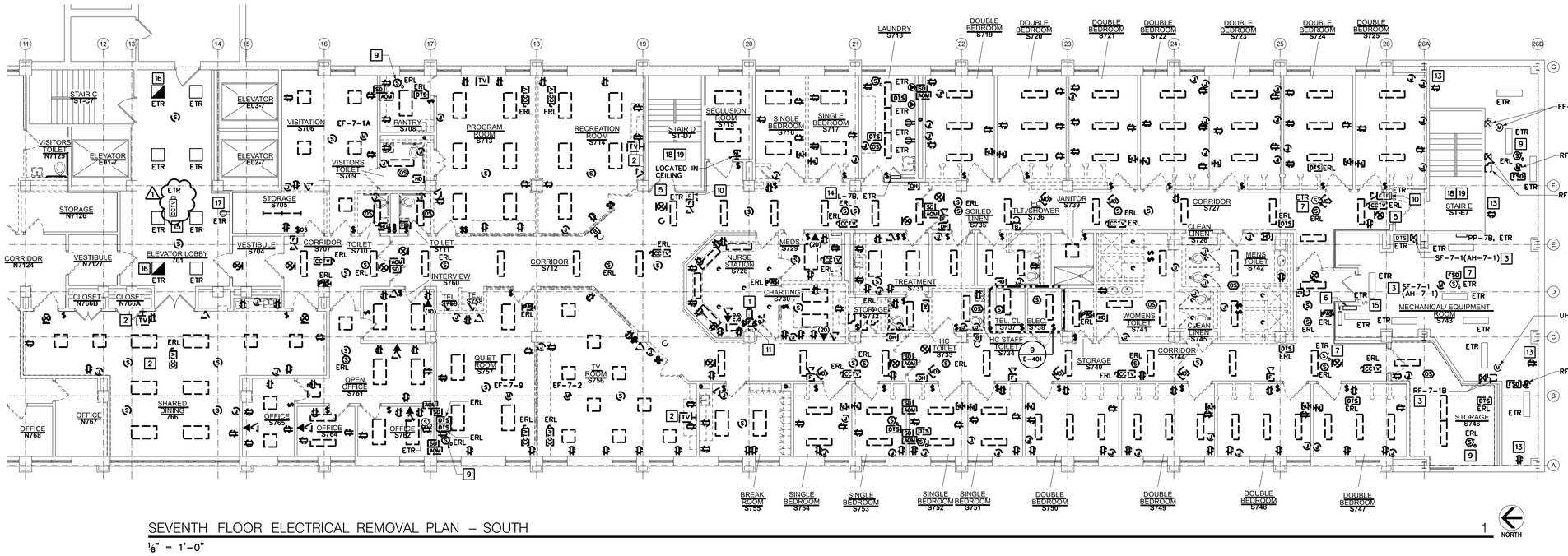
DRAWING NUMBER:
E-016

SHEET OF



SEVENTH FLOOR ELECTRICAL REMOVAL PLAN – NORTH 2

1/8" = 1'-0"



SEVENTH FLOOR ELECTRICAL REMOVAL PLAN – SOUTH 1

1/8" = 1'-0"

GENERAL SHEET NOTES:

A. MAINTAIN EXISTING LIGHTING AND LIGHTING CONTROLS WITHIN MECHANICAL/ EQUIPMENT ROOMS N7104 AND S743. EXTEND NEW LIGHTING CIRCUIT TO ROOM SWITCH AS INDICATED, REFER TO E-117 FOR ADDITIONAL INFORMATION.

B. PAS DEVICES SHALL BE DISCONNECTED AND REMOVED BY JCSS. AFTER THE PAS DEVICE HAS BEEN REMOVED, DISCONNECT AND REMOVE PAS CABLE FROM DEVICE BACK TO TRANSPONDER #3, LOCATED IN TEL CL S737, THIS FLOOR. MAINTAIN CONDUIT STUBS BETWEEN FLOOR FOR REUSE.

C. IP SECURITY CAMERAS SHALL BE DISCONNECTED, REMOVED, AND RELOCATED BY JCSS. CAMERAS ARE FED FROM 6TH FLOOR.

D. EXISTING EXHAUST FANS LOCATED IN ELECTRICAL ROOMS ARE EXISTING TO REMAIN.

REMOVAL NOTES:

1. DISCONNECT AND REMOVE EXISTING JERON ANNUNICATOR ALARM PANEL.
2. DISCONNECT AND REMOVE CATV DISTRIBUTION INCLUDING WALL OUTLETS COAXIAL CABLE, CONNECTORS, SPLITTERS, TAPS, ETC. FROM WALL OUTLET TO TEL CL. THIS FLOOR/AREA AND CONTINUE REMOVAL DOWN TO BASEMENT CORRIDOR CEILING, ADJACENT TO ELECTRICAL RM N201. REFER TO E-010, BASEMENT ELECTRICAL REMOVAL PLAN – NORTH.
3. DISCONNECT AND REMOVE CIRCUIT BACK TO SOURCE, PP-7B. MAINTAIN EXISTING SWITCH AND FUSE IN PP-7B FOR REUSE.
4. DISCONNECT AND REMOVE CIRCUIT BACK TO SOURCE, PP-7A. MAINTAIN EXISTING SWITCH AND FUSE IN PP-7A FOR REUSE.
5. JCSS SHALL DISCONNECT AND REMOVE EXISTING DOOR ALARMS. REMOVE WIRE/CABLE BACK TO SOURCE.
6. DISCONNECT AND REMOVE EXISTING CIRCUIT TO EXISTING BMS PANELS, ETR. PROVIDE NEW CIRCUIT AS INDICATED ON E-127.
7. MAINTAIN EXISTING SMOKE DUCT DETECTOR LOCATED IN THE SUPPLY DUCT OF AHU-7-1.
8. MAINTAIN EXISTING SMOKE DUCT DETECTOR LOCATED IN THE SUPPLY DUCT OF AHU-7-2.
9. DISCONNECT, REMOVE, AND RELOCATE EXISTING SMOKE DUCT DETECTOR TO NEW RETURN DUCTWORK. REFER TO H CONTRACT AND COORDINATE LOCATION.
10. EXISTING PULL STATION, KEY LOCKED WITH FIRE PHONE SHALL REMAIN.
11. DISCONNECT AND REMOVE EXISTING PULL STATION, KEYED LOCKED WITH FIRE PHONE.
12. DISCONNECT, REMOVE, AND RELOCATE EXISTING SMOKE DUCT DETECTOR TO NEW SUPPLY DUCTWORK. REFER TO H CONTRACT AND COORDINATE LOCATION.
13. REMOVE EXISTING DEVICE. MAINTAIN EXISTING BACKBOX AND CONDUIT EXTENDING TO CEILING FOR REUSE.
14. DISCONNECT AND REMOVE ALL EXISTING HAND DRYER CIRCUITS IN IT'S ENTIRETY BACK TO SOURCE PANELBOARD. MAINTAIN EXISTING BREAKERS FOR REUSE.
15. MAINTAIN EXISTING ROOM LIGHTING, LIGHTING CONTROLS, AND LIGHTING CIRCUIT IN ROOM/AREA. RECONNECT TO NEW PANELBOARD AS INDICATED. REFER TO E-117 FOR ADDITIONAL INFORMATION.
16. MAINTAIN EXISTING EGRESS LIGHTING IN ELEVATOR LOBBY. EXTEND/ MODIFY EXISTING LIFE SAFETY CIRCUIT TO EXISTING PANELBOARD CS-7. PROVIDE (2)-#10, (1)-#10EG IN 3/4" CONDUIT AS REQUIRED. REFER TO E-117 FOR ADDTIONAL INFORMATION.
17. MAINTAIN EXISTING DEVICE. RECONNECT TO NEW PANELBAORD LVP-7B. PROVIDE (2)-#12, (1)-#12EG IN 3/4" CONDUIT AS REQUIRED. REFER TO E-127 FOR ADDITIONAL INFORMATION.
18. LIGHTING IN STAIRS IS EXISTING TO REMAIN. LIGHTING CIRCUITS ROUTE VERTICAL FROM THE BASEMENT UP THROUGH EACH FLOOR AND SHALL REMAIN.
19. FIRE ALARM DEVICES THIS ROOM/AREA ARE EXISTING TO REMAIN.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E., ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK · GEOFFREY ERIC BEAD · EXP. 04/30/2026 · 080111 · LICENSED PROFESSIONAL ENGINEER

CONTRACT:
ELECTRICAL

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

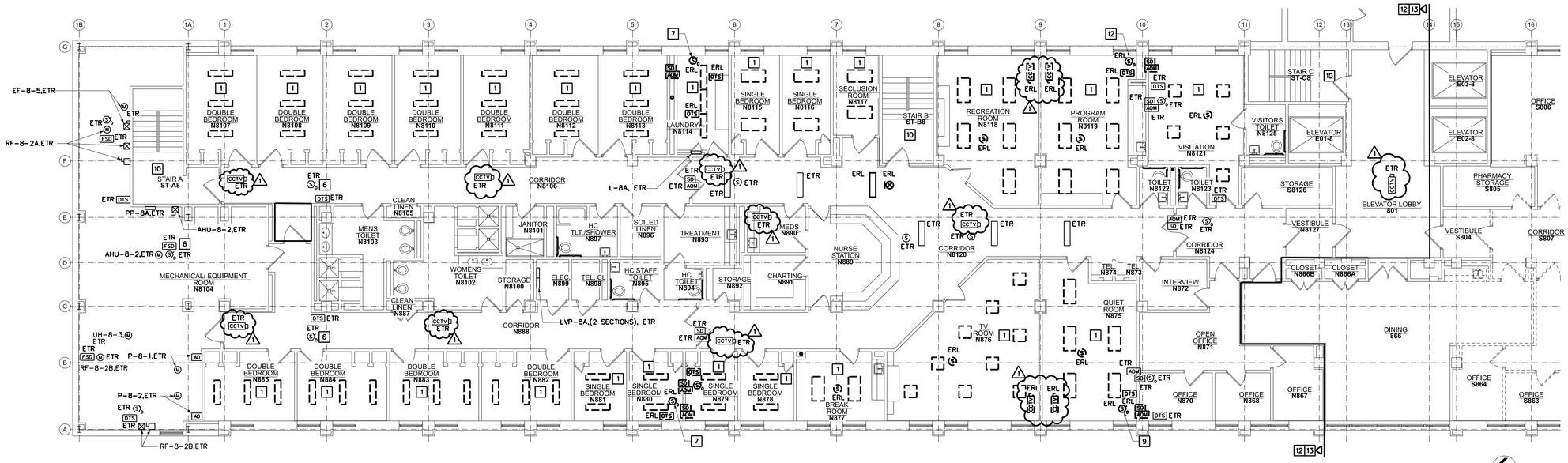
CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

MARK	DATE	DESCRIPTION:
1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
PROJECT NUMBER:	46103 - E	
DESIGNED BY:	FT	
DRAWN BY:	FT	
FIELD CHECK:	JAR	
APPROVED BY:	JAR	

SHEET TITLE:
SEVENTH FLOOR ELECTRICAL REMOVAL PLANS - NORTH AND SOUTH

DRAWING NUMBER:
E-017

SHEET OF

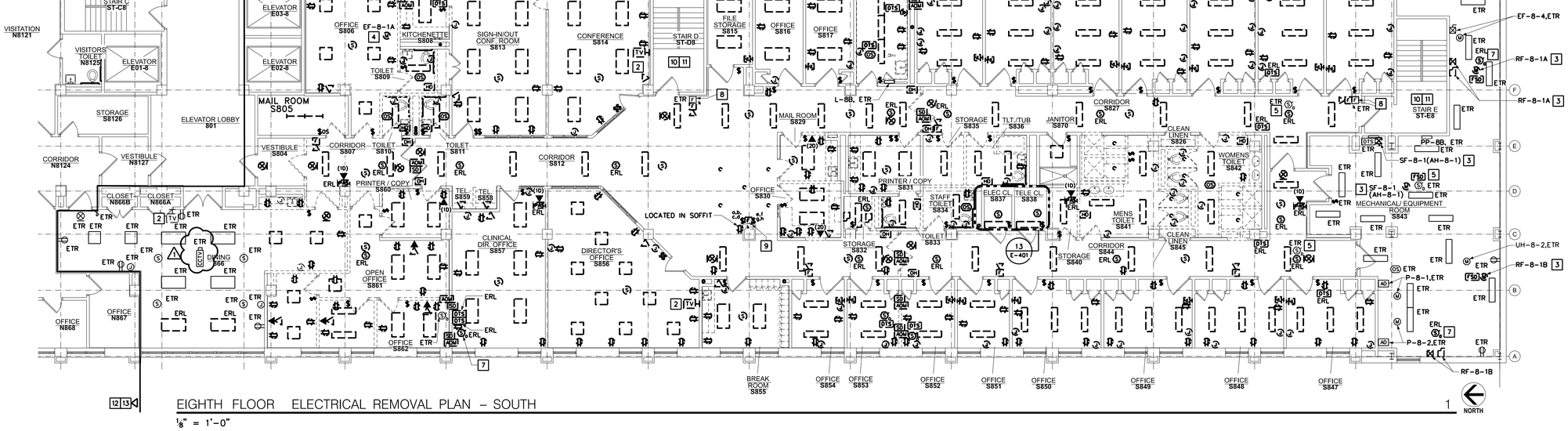


EIGHTH FLOOR ELECTRICAL REMOVAL PLAN – NORTH

2

1/8" = 1'-0"

NORTH



EIGHTH FLOOR ELECTRICAL REMOVAL PLAN – SOUTH

1

1/8" = 1'-0"

NORTH

GENERAL SHEET NOTES:

A. MAINTAIN EXISTING LIGHTING, LIGHTING CONTROLS, AND CIRCUIT TO MECHANICAL/ EQUIPMENT ROOMS N8104 AND S843. MODIFY/ EXTEND CIRCUIT AS REQUIRED. PROVIDE (2)-#12, (1)-#12EG IN 3/4" CONDUIT.

B. EXISTING EXHAUST FANS LOCATED IN ELECTRICAL ROOMS ARE EXISTING TO REMAIN.

C. EIGHTH FLOOR SOUTH – DISCONNECT AND REMOVE ALL DATA DEVICES, DATA CABLING, PHONE DEVICE, AND PHONE CABLING BACK TO TEL. CLOSET S838.

1 D. IP SECURITY CAMERAS SHALL BE DISCONNECTED, REMOVED, AND RELOCATED BY JCSS. CAMERAS ARE FED FROM 6TH FLOOR.

REMOVAL NOTES:

1. DISCONNECT AND REMOVE EXISTING LUMINAIRES, LIGHTING CONTROLS, ALL ASSOCIATED SYSTEMS, CONDUIT, AND BRANCH CIRCUIT BACK TO JUNCTION BOX SOURCE(S) IN ROOM UNLESS OTHERWISE NOTED. LIGHTING CIRCUIT HOMERUN SHALL BE MAINTAINED FOR REUSE.
2. DISCONNECT AND REMOVE CATV DISTRIBUTION INCLUDING WALL OUTLETS COAXIAL CABLE, CONNECTORS, SPLITTERS, TAPS, ETC. FROM WALL OUTLET TO TEL. CL. THIS FLOOR/AREA AND CONTINUE REMOVAL DOWN TO BASEMENT CORRIDOR CEILING, ADJACENT TO ELECTRICAL RM N201. REFER TO E-010, BASEMENT ELECTRICAL REMOVAL PLAN – NORTH.
3. DISCONNECT AND REMOVE CIRCUIT BACK TO SOURCE, PP-8B. MAINTAIN EXISTING SWITCH AND FUSE IN PP-8B FOR REUSE.
4. DISCONNECT EQUIPMENT FROM PANELBOARD L-8B. MAINTAIN EXISTING BREAKER IN PANELBOARD L-8B FOR REUSE.
5. MAINTAIN EXISTING SMOKE DUCT DETECTOR LOCATED IN THE SUPPLY DUCT OF AHU-8-1.
6. MAINTAIN EXISTING SMOKE DUCT DETECTOR LOCATED IN THE SUPPLY DUCT OF AHU-8-2. MAINTAIN EXISTING FAN SHUT DOWN FOR AHU-8-2.
7. DISCONNECT, REMOVE, AND RELOCATE EXISTING SMOKE DUCT DETECTOR TO NEW RETURN DUCTWORK. REFER TO H CONTRACT AND COORDINATE LOCATION.
8. EXISTING PULL STATION, KEY LOCKED WITH FIRE PHONE SHALL REMAIN.
9. DISCONNECT AND REMOVE EXISTING PULL STATION, KEYED LOCKED WITH FIRE PHONE.
10. LIGHTING IN STAIRS IS EXISTING TO REMAIN. LIGHTING CIRCUITS ROUTE VERTICAL FROM THE BASEMENT UP THROUGH EACH FLOOR AND SHALL REMAIN.
11. FIRE ALARM DEVICES THIS ROOM/AREA ARE EXISTING TO REMAIN.
12. UNLESS OTHERWISE NOTED ALL LIGHTING AND LIGHTING CONTROLS THIS AREA ARE EXISTING TO REMAIN.
13. UNLESS OTHERWISE NOTED ALL FIRE ALARM DEVICES THIS AREA ARE EXISTING TO REMAIN.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK
GEOFFREY ERIC MEAD
EXP. 04/30/2026
080111
LICENSED PROFESSIONAL ENGINEER

CONTRACT:
ELECTRICAL

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

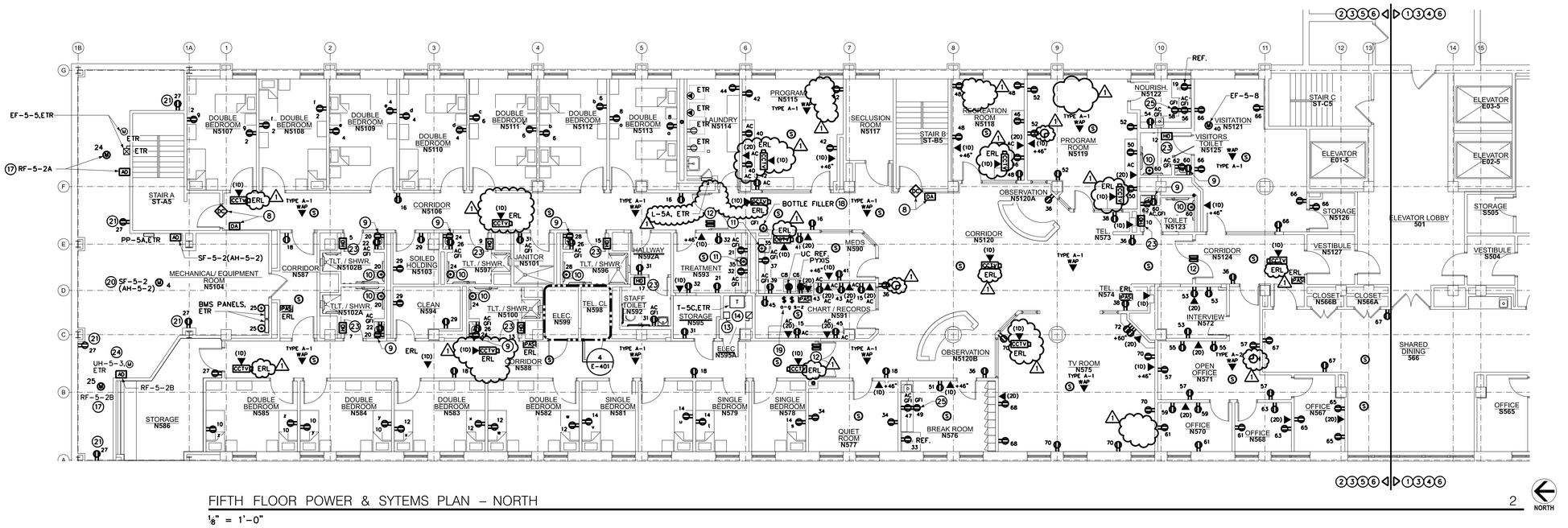
1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - E
DESIGNED BY:	FT
DRAWN BY:	FT
FIELD CHECK:	JAR
APPROVED BY:	JAR

SHEET TITLE:
EIGHTH FLOOR ELECTRICAL REMOVAL PLANS - NORTH AND SOUTH

DRAWING NUMBER:
E-018

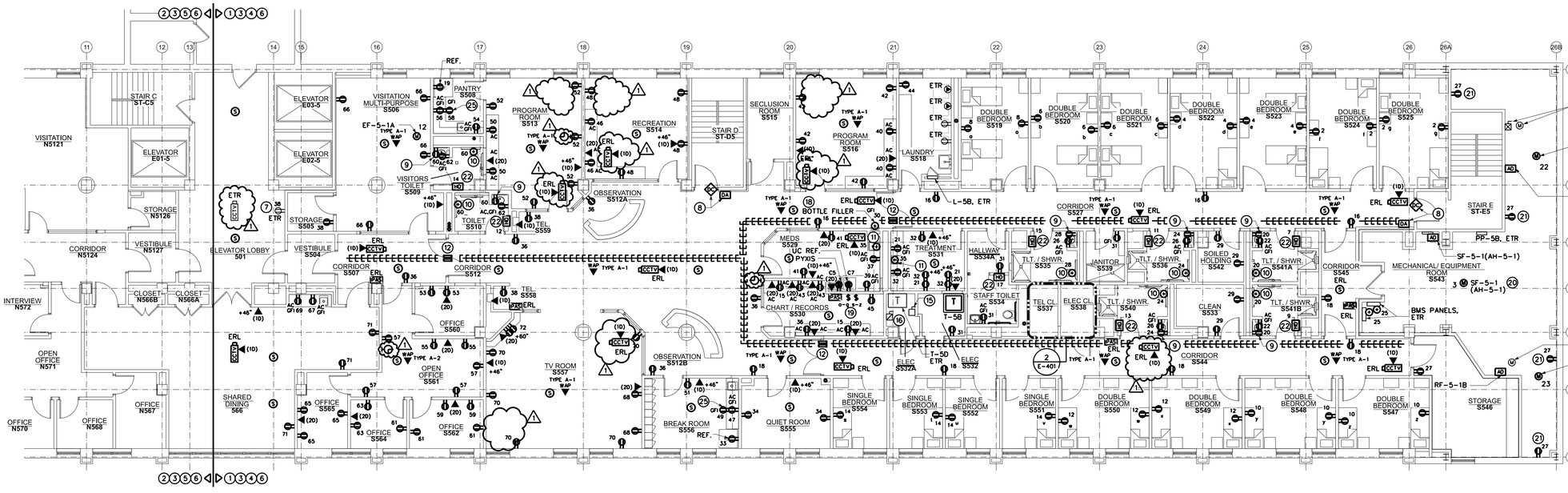
SHEET OF



FIFTH FLOOR POWER & SYTEMS PLAN – NORTH

2

1/8" = 1'-0"



FIFTH FLOOR POWER & SYTEMS PLAN – SOUTH

1

1/8" = 1'-0"

GENERAL SHEET NOTES:

A. PROVIDE DUAL FUNCTION CIRCUIT BREAKERS, AFCI (ARC FAULT CIRCUIT INTERRUPTER) AND GFCI (GROUND FAULT CIRCUIT INTERRUPTER) FOR ALL BRANCH CIRCUITS WITHIN PATIENT CARE AREA.

B. PERSONAL ALARM SYSTEM DEVICES THIS FLOOR – RELOCATE AND INSTALL NEW PAS DEVICES AS INDICATED. PROVIDE PAS SYSTEM WIRING AS INDICATED ON E-509, RISER DIAGRAM. REFER TO DETAIL 3 ON E-902 FOR MOUNTING.

C. IP SECURITY CAMERAS
– 5TH FLOOR SOUTH RELOCATED CAMERAS, CONNECT/WIRE WITH GIGATURE CAT 6, 550 MHZ SOLID BULK CABLE, PLENUM RATED, BLACK AND ROUTE TO IP SECURITY CAMERA CABINET LOCATED ON THE 6TH FLOOR, TEL. CL. S637. REFER TO E-508 FOR ADDITIONAL INFORMATION. REFER TO DETAILS 4 & 6 ON E-902 FOR MOUNTING.
– 5TH FLOOR NORTH RELOCATED CAMERAS, CONNECT/WIRE WITH GIGATURE CAT 6, 550 MHZ SOLID BULK CABLE, PLENUM RATED, BLACK AND ROUTE TO IP SECURITY CAMERA CABINET LOCATED ON THE 6TH FLOOR, ROOM S605. REFER TO E-508 FOR ADDITIONAL INFORMATION. REFER TO DETAILS 4 & 6 ON E-902 FOR MOUNTING.

D. ACCESS CONTROLS/DOOR EXIT ALARMS – TYPICAL OF (4) THIS FLOOR LOCATED AT STAIRS A, B, D, & E. DOOR EXIT ALARM AND DOOR CONTACTS, PROVIDED BY JCSS. PROVIDE #16/2 AWG STP TO THE 6TH FLOOR, ROOM S605. COORDINATE ALL REQUIREMENTS WITH JCSS.

E. CABLE TRAY – PROVIDE 18"W x 4"H CABLE TRAY IN ACCESSIBLE CEILING SPACEW FOR THE FIFTH FLOOR (NORTH & SOUTH), SIXTH FLOOR (NORTH & SOUTH), SEVENTH FLOOR (NORTH & SOUTH), AND EIGHT FLOOR (SOUTH). PROVIDE LAYOUTS FOR ALL FLOORS SIMILAR TO FIFTH FLOOR SOUTH.

F. PROVIDE J-HOOKS FOR DATA/SYSTEM WIRING IN ROOMS/AREAS WHERE CABLE TRAY IS NOT PROVIDED.

DRAWING NOTES:

1. UNLESS OTHERWISE NOTED, CONNECT ALL NORMAL BRANCH CIRCUITS IN THIS AREA TO LVP-5B.
2. UNLESS OTHERWISE NOTED, CONNECT ALL NORMAL BRANCH CIRCUITS IN THIS AREA TO LVP-5A.
3. UNLESS OTHERWISE NOTED, CONNECT ALL CRITICAL BRANCH CIRCUITS IN THIS AREA TO CB-5.
4. DATA DEVICES THIS AREA – PROVIDE CAT 6 DATA CABLE FROM DEVICE JACKS AND CAT 6A FROM WAP DEVICES TO FIFTH FLOOR SOUTH TEL. CL. S537.
5. DATA DEVICES THIS AREA – PROVIDE CAT 6 DATA CABLE FROM DEVICE JACKS AND CAT 6A FROM WAP DEVICES TO FIFTH FLOOR NORTH TEL. CL. N598.
6. SPEAKERS – CONNECT SPEAKERS TO EXISTING 25/70V SPEAKER RISER. PROVIDE #16/2 AWG STP. PROPERLY SUPPORT CABLE AS SPECIFIED.
7. RECONNECT EXISTING DEVICE TO NEW CIRCUIT AS REQUIRED.
8. DOOR EXIT ALARM SYSTEM – REFER TO DETAILS 1 & 2 ON E-902 FOR ADDITIONAL INFORMATION.
9. LOCATE RECEPTACLE UNDER SINK FOR AUTO-SENSOR. COORDINATE REQUIREMENTS WITH P-CONTRACT.
10. PROVIDE CONNECTION FOR AUTO-FLUSH. COORDINATE REQUIREMENTS WITH P-CONTRACT.
11. PROVIDE CONNECTION FOR AUTO-SENSOR. COORDINATE REQUIREMENTS WITH P-CONTRACT.
12. PROVIDE (2) 4" FIRE-STOPPING PATHWAYS ABOVE DOORS.
13. EXISTING 200A PRIMARY DISCONNECT SWITCH FOR T-5C. ETR.
14. EXISTING 225AF/400AS SECONDARY FUSED/SWITCH FEEDS L-5A THROUGH L-8A, ETR.
15. EXISTING 200A PRIMARY DISCONNECT SWITCH FOR T-5D. ETR.
16. EXISTING 225AF/400AS SECONDARY FUSED/SWITCH FEEDS L-5B THROUGH L-8B, ETR.
17. CONNECT NEW MOTOR – PROVIDE NEW CIRCUIT FOR RETURN FAN. REFER TO E-601, ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
18. COORDINATE LOCATION OF THE POWER CONNECTION FOR THE BOTTLE FILLER PRIOR TO ROUGH-IN. REFER TO THE P-CONTRACT FOR ADDITIONAL INFORMATION.
19. PROVIDE LABEL FOR EACH SWITCH INDICATING ROOM NUMBER.
20. CONNECT NEW MOTOR – PROVIDE NEW CIRCUIT FOR SUPPLY FAN. REFER TO E-601, ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
21. PROVIDE NEW DEVICE IN EXISTING BACKBOX. UTILIZE EXISTING CONDUIT UP TO CEILING AND PROVIDE NEW CIRCUIT AS INDICATED.
22. FOR HAND DRYER – PROVIDE CIRCUIT AS INDICATED TO EXISTING PANELBOARD L-5B. PROVIDE (2)–#12, (1)–#12EG IN ¾" CONDUIT.
23. FOR HAND DRYER – PROVIDE CIRCUIT AS INDICATED TO EXISTING PANELBOARD L-5A. PROVIDE (2)–#12, (1)–#12EG IN ¾" CONDUIT.
24. RECONNECT UH TO NEW NORMAL PANELBOARD THIS AREA. UTILIZE SPARE 20A/1P BREAKER. PROVIDE (2)–#12, (1)–#12EG IN 3/4" CONDUIT AS REQUIRED.
25. PROVIDE RECEPTACLE FOR MICROWAVE LOCATED ABOVE COUNTER ON SHELF AS INDICATED ON THE INTERIOR ELEVATIONS. REFER TO THE C-CONTRACT DRAWINGS FOR ADDITIONAL NFORMATION.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK GEOFFREY ERIC MEAD LICENSED PROFESSIONAL ENGINEER EXP. 04/30/2026 080111

CONTRACT:
ELECTRICAL

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

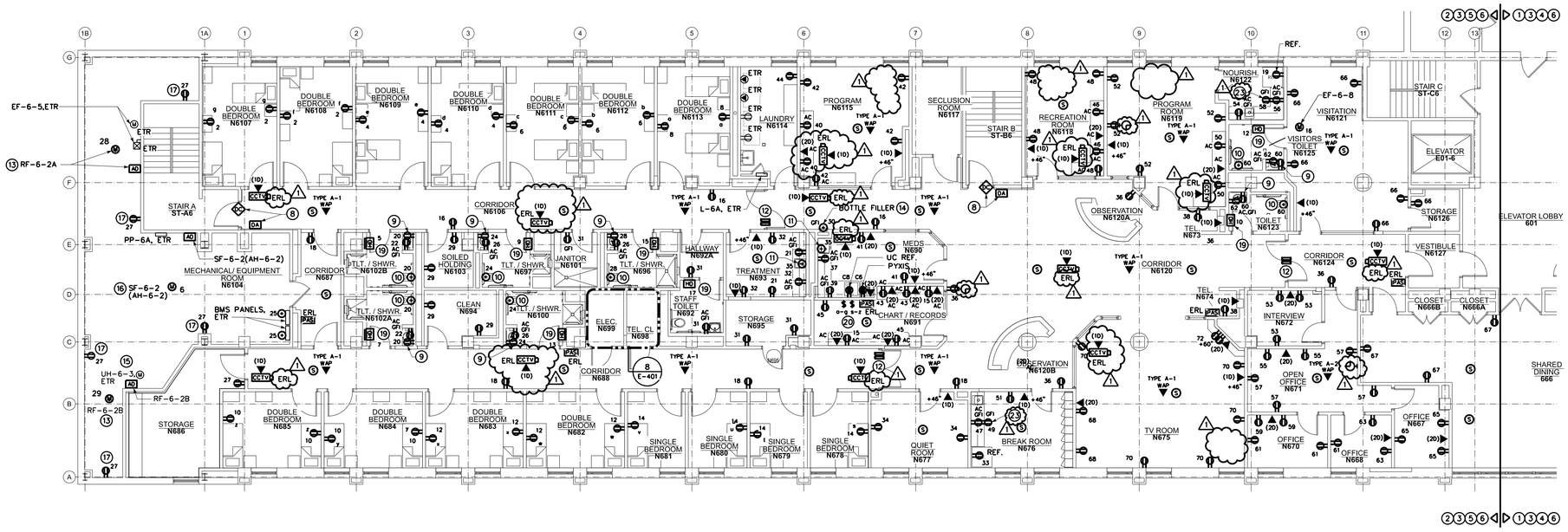
PROJECT NUMBER: 46103 - E

DESIGNED BY: SML
DRAWN BY: SML
FIELD CHECK: JAR
APPROVED BY: JAR

SHEET TITLE:
FIFTH FLOOR POWER AND SYSTEMS PLANS - NORTH AND SOUTH

DRAWING NUMBER:
E-125

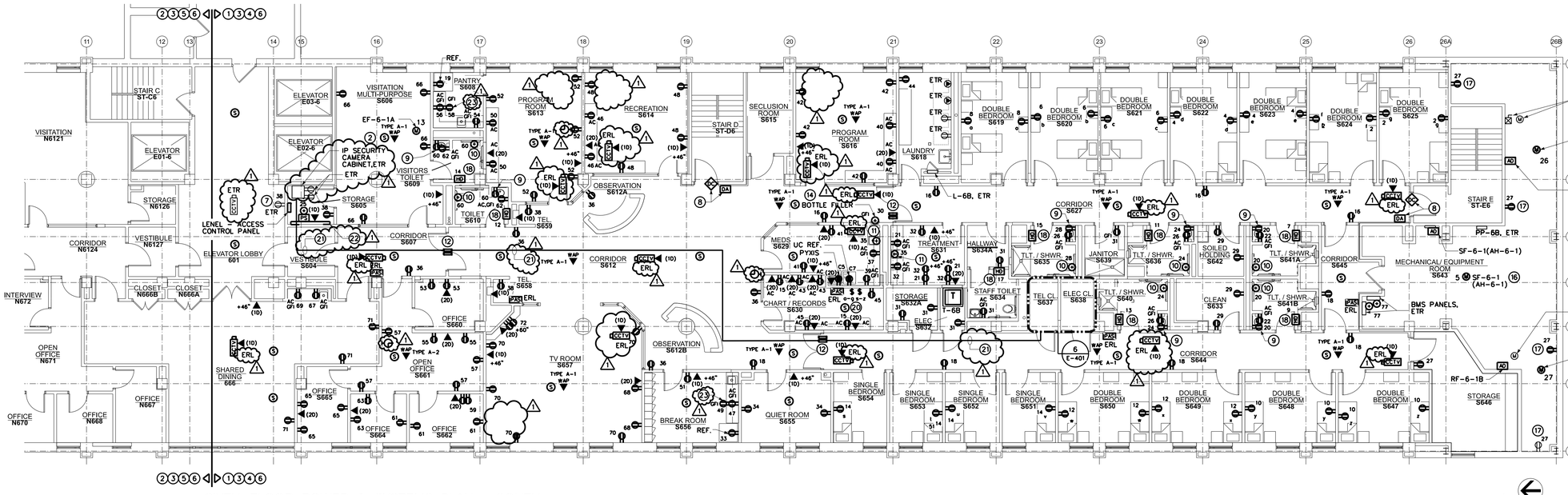
SHEET OF



SIXTH FLOOR POWER & SYSTEMS PLAN – NORTH

1/8" = 1'-0"

2 NORTH



SIXTH FLOOR POWER & SYSTEMS PLAN – SOUTH

1/8" = 1'-0"

1 NORTH

GENERAL SHEET NOTES:

A. PROVIDE DUAL FUNCTION CIRCUIT BREAKERS, AFCI (ARC FAULT CIRCUIT INTERRUPTER) AND GFCI (GROUND FAULT CIRCUIT INTERRUPTER) FOR ALL BRANCH CIRCUITS WITHIN PATIENT CARE AREA.

B. PERSONAL ALARM SYSTEM DEVICES THIS FLOOR – RELOCATE AND INSTALL NEW PAS DEVICES AS INDICATED. PROVIDE PAS SYSTEM WIRING AS INDICATED ON E-509, RISER DIAGRAM. REFER TO DETAIL 3 ON E-902 FOR MOUNTING.

C. IP SECURITY CAMERAS – 6TH FLOOR RELOCATE CAMERAS. CONNECT/WIRE WITH GIGATURE CAT 6, 550 MHZ SOLID BULK CABLE, PLENUM RATED, BLACK AND ROUTE TO IP SECURITY CAMERA CABINET LOCATED ON THIS FLOOR, ROOM S605. REFER TO E-508 FOR ADDITIONAL INFORMATION. REFER TO DETAILS 4 & 6 ON E-902 FOR MOUNTING.

D. ACCESS CONTROLS/DOOR EXIT ALARMS – TYPICAL OF (4) THIS FLOOR LOCATED AT STAIRS A, B, D, & E. DOOR EXIT ALARM AND DOOR CONTACTS, PROVIDED BY JCSS. PROVIDE #16/2 AWG STP TO THE 6TH FLOOR, ROOM S605. COORDINATE ALL REQUIREMENTS WITH JCSS.

E. CABLE TRAY – PROVIDE 18"W x 4"H CABLE TRAY IN ACCESSIBLE CORRIDOR CEILING SPACE FOR THE SIXTH FLOOR (NORTH & SOUTH). PROVIDE LAYOUT SIMILAR TO FIFTH FLOOR SOUTH.

F. PROVIDE J-HOOKS FOR DATA/SYSTEM WIRING IN ROOMS/AREAS WHERE CABLE TRAY IS NOT PROVIDED.

DRAWING NOTES:

1. UNLESS OTHERWISE NOTED, CONNECT ALL NORMAL BRANCH CIRCUITS IN THIS AREA TO LVP-6B.
2. UNLESS OTHERWISE NOTED, CONNECT ALL NORMAL BRANCH CIRCUITS IN THIS AREA TO LVP-6A.
3. UNLESS OTHERWISE NOTED, CONNECT ALL CRITICAL BRANCH CIRCUITS IN THIS AREA TO CB-6.
4. DATA DEVICES THIS AREA – PROVIDE CAT 6 DATA CABLE FROM DEVICE JACKS AND CAT 6A FROM WAP DEVICES TO SIXTH FLOOR SOUTH TEL. CL. S637.
5. DATA DEVICES THIS AREA – PROVIDE CAT 6 DATA CABLE FROM DEVICE JACKS AND CAT 6A FROM WAP DEVICES TO SIXTH FLOOR NORTH TEL. CL. N698.
6. SPEAKERS – CONNECT SPEAKERS TO EXISTING 25/70V SPEAKER RISER. PROVIDE #16/2 AWG STP, PROPERLY SUPPORT CABLE AS SPECIFIED.
7. RECONNECT EXISTING DEVICE TO NEW CIRCUIT AS REQUIRED.
8. DOOR EXIT ALARM SYSTEM – REFER TO DETAILS 1 & 2 ON E-902 FOR ADDITIONAL INFORMATION.
9. LOCATE RECEPTACLE UNDER SINK FOR AUTO-SENSOR. COORDINATE REQUIREMENTS WITH THE P-CONTRACT.
10. PROVIDE CONNECTION FOR AUTO-FLUSH. COORDINATE REQUIREMENTS WITH THE P-CONTRACT.
11. PROVIDE CONNECTION FOR AUTO-SENSOR. COORDINATE REQUIREMENTS WITH THE P-CONTRACT.
12. PROVIDE (2) 4" FIRE-STOPPING PATHWAYS ABOVE DOOR.
13. CONNECT NEW MOTOR – PROVIDE NEW CIRCUIT FOR RETURN FAN. REFER TO E-601, ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
14. COORDINATE LOCATION OF THE POWER CONNECTION FOR THE BOTTLE FILLER PRIOR TO ROUGH-IN. REFER TO THE P-CONTRACT FOR ADDITIONAL INFORMATION.
15. RECONNECT UH TO NEW NORMAL PANELBOARD THIS AREA. UTILIZE SPARE 20A/1P BREAKER. PROVIDE (2)-#12, (1)-#12EG IN 3/4" CONDUIT AS REQUIRED.
16. CONNECT NEW MOTOR – PROVIDE NEW CIRCUIT FOR SUPPLY FAN. REFER TO E-601, ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
17. PROVIDE NEW DEVICE IN EXISTING BACKBOX. UTILIZE EXISTING CONDUIT UP TO CEILING AND PROVIDE NEW CIRCUIT AS INDICATED.
18. FOR HAND DRYER – PROVIDE CIRCUIT AS INDICATED TO EXISTING PANELBOARD L-6B. PROVIDE (2)-#12, (1)-#12EG IN 3/4" CONDUIT.
19. FOR HAND DRYER – PROVIDE CIRCUIT AS INDICATED TO EXISTING PANELBOARD L-6A. PROVIDE (2)-#12, (1)-#12EG IN 3/4" CONDUIT.
20. PROVIDE LABEL FOR EACH SWITCH INDICATING ROOM NUMBER.

1
21. MAINTAIN AND PROTECT EXISTING OPTICAL FIBER CABLE.
22. PROVIDE FIRE RATED BACKBOARD.
23. PROVIDE RECEPTACLE FOR MICROWAVE LOCATED ABOVE COUNTER ON SHELF AS INDICATED ON THE INTERIOR ELEVATIONS. REFER TO THE C-CONTRACT DRAWINGS FOR ADDITIONAL NFORMATION.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK GEOFFREY ERIC MEAD LICENSED PROFESSIONAL ENGINEER EXP. 04/30/2026 080111

CONTRACT: ELECTRICAL

TITLE: REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION: BUFFALO PSYCHIATRIC CENTER 400 FOREST AVE, BUFFALO, NEW YORK

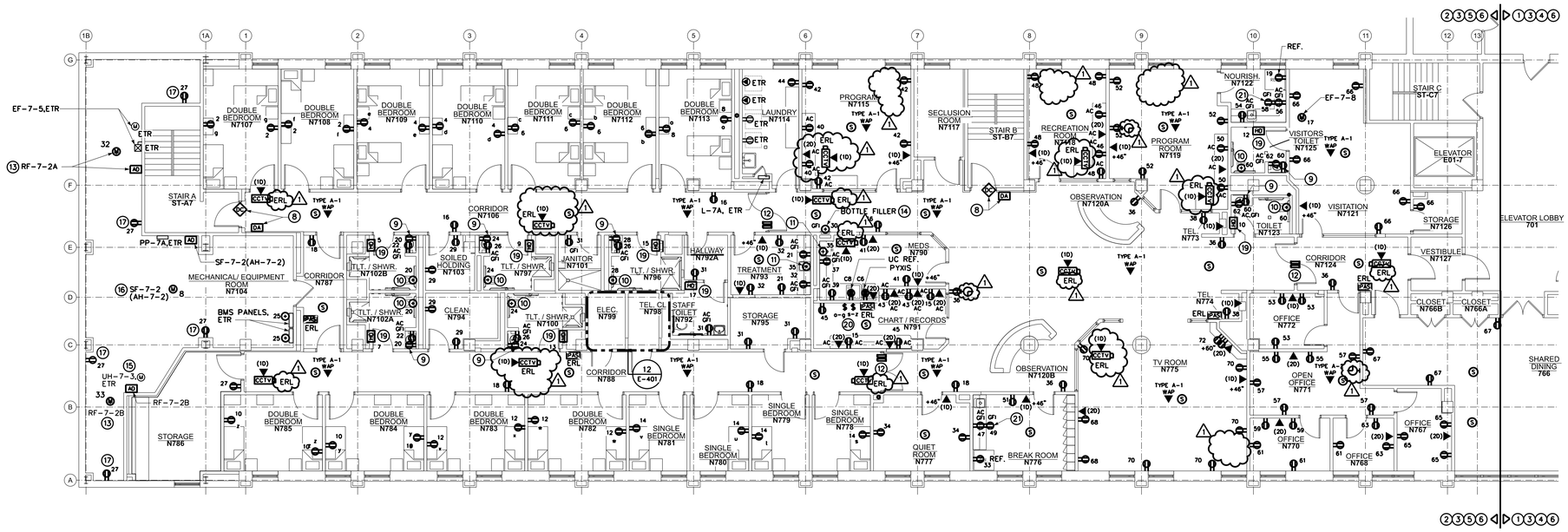
CLIENT: NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:
PROJECT NUMBER:	46103 - E	
DESIGNED BY:	SML	
DRAWN BY:	SML	
FIELD CHECK:	JAR	
APPROVED BY:	JAR	

SHEET TITLE: SIXTH FLOOR POWER AND SYSTEMS PLANS - NORTH AND SOUTH

DRAWING NUMBER: E-126

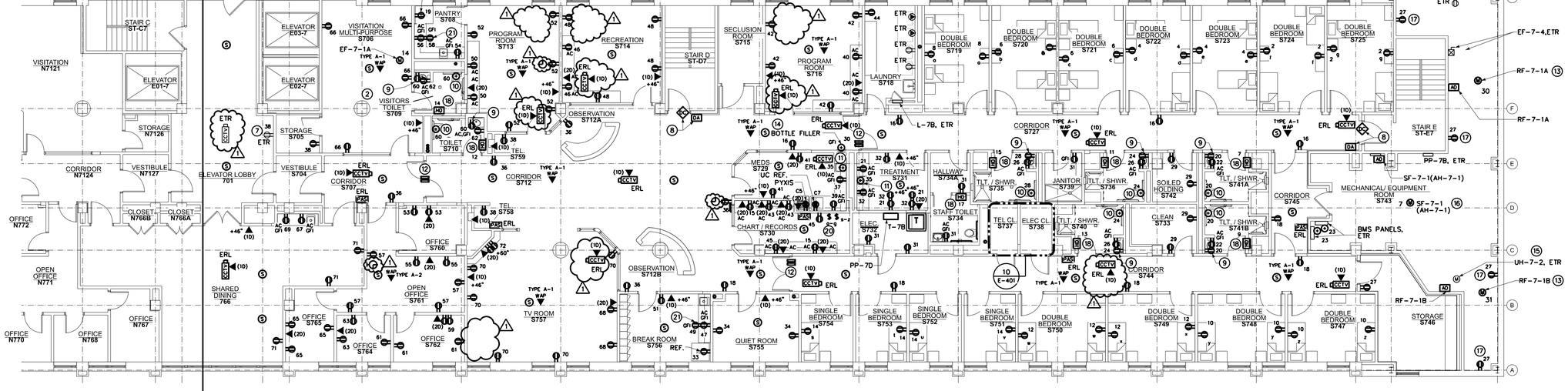
SHEET OF



SEVENTH FLOOR POWER & SYSTEMS PLAN – NORTH

1/8" = 1'-0"

2



SEVENTH FLOOR POWER & SYSTEMS PLAN – SOUTH

1/8" = 1'-0"

1

GENERAL SHEET NOTES:

A. PROVIDE DUAL FUNCTION CIRCUIT BREAKERS, AFCI (ARC FAULT CIRCUIT INTERRUPTER) AND GFCI (GROUND FAULT CIRCUIT INTERRUPTER) FOR ALL BRANCH CIRCUITS WITHIN PATIENT CARE AREA.

B. PERSONAL ALARM SYSTEM DEVICES THIS FLOOR – RELOCATE AND INSTALL NEW PAS DEVICES AS INDICATED. PROVIDE PAS SYSTEM WIRING AS INDICATED ON E-509, RISER DIAGRAM. REFER TO DETAIL 3 ON E-902 FOR MOUNTING.

C. IP SECURITY CAMERAS
– 7TH FLOOR SOUTH RELOCATED CAMERAS. CONNECT/WIRE WITH GIGATURE CAT 6, 550 MHZ SOLID BULK CABLE, PLENUM RATED, BLACK AND ROUTE TO IP SECURITY CAMERA CABINET LOCATED ON THE 6TH FLOOR, TEL. CL S637. REFER TO E-508 FOR ADDITIONAL INFORMATION. REFER TO DETAILS 4 & 6 ON E-902 FOR MOUNTING.
– 7TH FLOOR NORTH RELOCATED CAMERAS. CONNECT/WIRE WITH GIGATURE CAT 6, 550 MHZ SOLID BULK CABLE, PLENUM RATED, BLACK AND ROUTE TO IP SECURITY CAMERA CABINET LOCATED ON THE 6TH FLOOR, STORAGE ROOM S605. REFER TO E-508 FOR ADDITIONAL INFORMATION. REFER TO DETAILS 4 & 6 ON E-902 FOR MOUNTING.

D. ACCESS CONTROL/DOOR EXIT ALARMS – TYPICAL OF (4) THIS FLOOR LOCATED AT STAIRS A, B, D, & E. DOOR EXIT ALARM AND DOOR CONTACTS, PROVIDED BY JCSS. PROVIDE #16/2 AWG STP TO THE 6TH FLOOR, ROOM S605. COORDINATE ALL REQUIREMENTS WITH JCSS.

E. CABLE TRAY – PROVIDE 18"W x 4"H CABLE TRAY IN ACCESSIBLE CORRIDOR CEILING SPACE FOR THE SEVENTH FLOOR (NORTH & SOUTH). PROVIDE LAYOUT SIMILAR TO FIFTH FLOOR SOUTH.

F. PROVIDE J-HOOKS FOR DATA/SYSTEM WIRING IN ROOMS/AREAS WHERE CABLE TRAY IS NOT PROVIDED.

DRAWING NOTES:

1. UNLESS OTHERWISE NOTED, CONNECT ALL NORMAL BRANCH CIRCUITS IN THIS AREA TO LVP-7B.
2. UNLESS OTHERWISE NOTED, CONNECT ALL NORMAL BRANCH CIRCUITS IN THIS AREA TO LVP-7A.
3. UNLESS OTHERWISE NOTED, CONNECT ALL CRITICAL BRANCH CIRCUITS IN THIS AREA TO CB-7.
4. DATA DEVICES THIS AREA – PROVIDE CAT 6 DATA CABLE FROM DEVICE JACKS AND CAT 6A FROM WAP DEVICES TO SEVENTH FLOOR SOUTH TEL. CL. S737.
5. DATA DEVICES THIS AREA – PROVIDE CAT 6 DATA CABLE FROM DEVICE JACKS AND CAT 6A FROM WAP DEVICES TO SEVENTH FLOOR NORTH TEL. CL. N798.
6. SPEAKERS – CONNECT SPEAKERS TO EXISTING 25/70V SPEAKER RISER. PROVIDE #16/2 AWG STP. PROPERLY SUPPORT CABLE AS SPECIFIED.
7. RECONNECT EXISTING DEVICE TO NEW CIRCUIT AS REQUIRED.
8. DOOR EXIT ALARM SYSTEM – REFER TO DETAILS 1 & 2 ON E-902 FOR ADDITIONAL INFORMATION.
9. LOCATE RECEPTACLE UNDER SINK FOR AUTO-SENSOR. COORDINATE REQUIREMENTS WITH P-CONTRACT.
10. PROVIDE CONNECTION FOR AUTO-FLUSH. COORDINATE REQUIREMENTS WITH P-CONTRACT.
11. PROVIDE CONNECTION FOR AUTO-SENSOR. COORDINATE REQUIREMENTS WITH P-CONTRACT.
12. PROVIDE (2) 4" FIRE-STOPPING PATHWAYS ABOVE DOOR.
13. CONNECT NEW MOTOR – PROVIDE NEW CIRCUIT FOR RETURN FAN. REFER TO E-601, ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
14. COORDINATE LOCATION OF THE POWER CONNECTION FOR THE BOTTLE FILLER PRIOR TO ROUGH-IN. REFER TO THE P-CONTRACT FOR ADDITIONAL INFORMATION.
15. RECONNECT UH TO NEW NORMAL PANELBOARD THIS AREA. UTILIZE SPARE 20A/1P BREAKER. PROVIDE (2)-#12, (1)-#12EG IN 3/4" CONDUIT AS REQUIRED.
16. CONNECT NEW MOTOR – PROVIDE NEW CIRCUIT FOR SUPPLY FAN. REFER TO E-601, ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
17. PROVIDE NEW DEVICE IN EXISTING BACKBOX. UTILIZE EXISTING CONDUIT UP TO CEILING AND PROVIDE NEW CIRCUIT AS INDICATED.
18. FOR HAND DRYER – PROVIDE CIRCUIT AS INDICATED TO EXISTING PANELBOARD L-7B. PROVIDE (2)-#12, (1)-#12EG IN 3/4" CONDUIT.
19. FOR HAND DRYER – PROVIDE CIRCUIT AS INDICATED TO EXISTING PANELBOARD L-7A. PROVIDE (2)-#12, (1)-#12EG IN 3/4" CONDUIT.
20. PROVIDE LABEL FOR EACH SWITCH INDICATING ROOM NUMBER.
21. PROVIDE RECEPTACLE FOR MICROWAVE LOCATED ABOVE COUNTER ON SHELF AS INDICATED ON THE INTERIOR ELEVATIONS. REFER TO THE C-CONTRACT DRAWINGS FOR ADDITIONAL NFORMATION.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK GEOFFREY ERIC MEAD LICENSED PROFESSIONAL ENGINEER EXP. 04/30/2026 091111 PE SEAL

CONTRACT:
ELECTRICAL

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

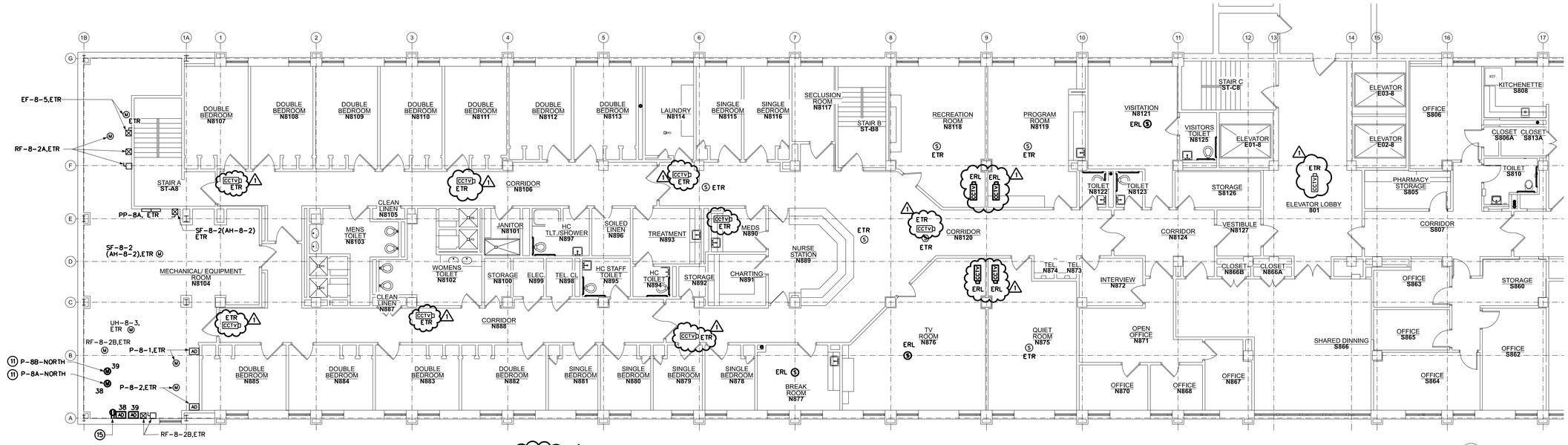
1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - E
DESIGNED BY:	SML
DRAWN BY:	SML
FIELD CHECK:	JAR
APPROVED BY:	JAR

SHEET TITLE:
SEVENTH FLOOR POWER AND SYSTEMS PLANS - NORTH AND SOUTH

DRAWING NUMBER:
E-127

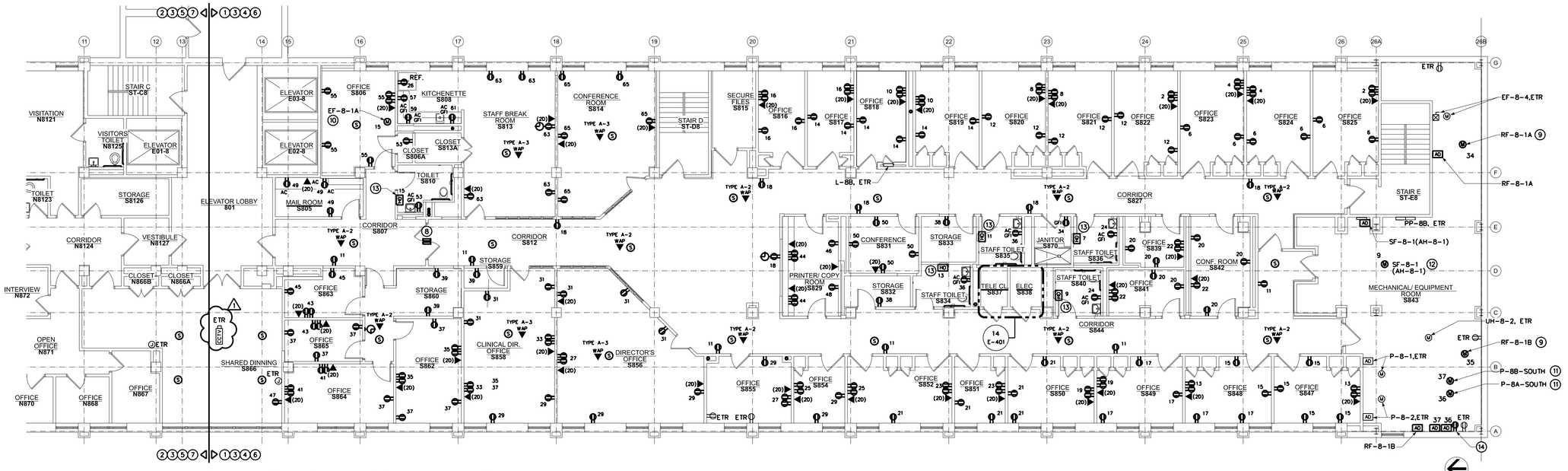
SHEET OF



EIGHTH FLOOR POWER & SYSTEM PLAN NORTH

1/8" = 1'-0"

2



EIGHTH FLOOR POWER & SYSTEM PLAN – SOUTH

1/8" = 1'-0"

1

GENERAL SHEET NOTES:

A. CABLE TRAY – PROVIDE 18"W x 4"H CABLE TRAY IN ACCESSIBLE CORRIDOR CEILING SPACE FOR THE SEVENTH FLOOR SOUTH. PROVIDE LAYOUT SIMILAR TO FIFTH FLOOR SOUTH.

B. PROVIDE J-HOOKS FOR DATA/SYSTEM WIRING IN ROOMS/AREAS WHERE CABLE TRAY IS NOT PROVIDED.

1 C. IP SECURITY CAMERAS – 8TH FLOOR NORTH RELOCATED CAMERAS. CONNECT/WIRE WITH CIGATURE CAT 6, 550 MHZ SOLID BULK CABLE, PLENUM RATED, BLACK AND ROUTE TO IP SECURITY CAMERA CABINET LOCATED ON THIS FLOOR, ROOM S605. REFER TO E-508 FOR ADDITIONAL INFORMATION. REFER TO DETAILS 4 & 6 ON E-902 FOR MOUNTING.

DRAWING NOTES:

1. UNLESS OTHERWISE NOTED, CONNECT ALL NORMAL BRANCH CIRCUITS IN THIS AREA TO LVP-8B.
2. UNLESS OTHERWISE NOTED, CONNECT ALL NORMAL BRANCH CIRCUITS IN THIS AREA TO LVP-8A.
3. UNLESS OTHERWISE NOTED, CONNECT ALL CRITICAL BRANCH CIRCUITS IN THIS AREA TO CB-8.
4. DATA DEVICES THIS AREA – PROVIDE CAT 6 DATA CABLE FROM DEVICE JACKS AND CAT 6A FROM WAP DEVICES TO EIGHT FLOOR SOUTH TEL. CL. S838.
5. DATA DEVICES THIS AREA – PROVIDE CAT 6 DATA CABLE FROM DEVICE JACKS AND CAT 6A FROM WAP DEVICES TO EIGHT FLOOR NORTH TEL. CL. N898.
6. SPEAKERS – CONNECT SPEAKERS TO EXISTING 25/70V SPEAKER RISER. PROVIDE #16/2 AWG STP. PROPERLY SUPPORT CABLE AS SPECIFIED.
7. SPEAKERS THIS AREA ARE ETR OR ERL AS INDICATED ON THE FLOOR PLAN.
8. PROVIDE (2) 4" FIRE-STOPPING PATHWAYS ABOVE DOOR.
9. CONNECT NEW MOTOR – PROVIDE NEW CIRCUIT FOR RETURN FAN. REFER TO E-601, ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
10. CONNECT EQUIPMENT TO EXISTING CIRCUIT BREAKER IN PANELBOARD L-8B. REFER TO E-601, ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
11. CONNECT NEW PUMP – REFER TO E-601 ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
12. CONNECT NEW MOTOR – PROVIDE NEW CIRCUIT FOR SUPPLY FAN. REFER TO E-601, ELECTRICAL EQUIPMENT AND CONTROL SCHEDULE FOR ADDITIONAL INFORMATION.
13. FOR HAND DRYER – PROVIDE CIRCUIT AS INDICATED TO EXISTING PANELBOARD L-8B. PROVIDE (2)-#12, (1)-#12EG IN ¾" CONDUIT.
14. PROVIDE GFI RECEPTACLE FOR GMU-8-SOUTH. PROVIDE DEDICATED 20A/1P CIRCUIT FROM EXISTING PANELBOARD L-8B. UTILIZE SPARE 20A/1P BREAKER IN PANELBOARD. PROVIDE (2)-#10, (1)-#10EG IN ¾" CONDUIT.
15. PROVIDE GFI RECEPTACLE FOR GMU-8-NORTH. PROVIDE DEDICATED 20A/1P CIRCUIT FROM EXISTING PANELBOARD L-8A. UTILIZE SPARE 20A/1P BREAKER IN PANELBOARD. PROVIDE (2)-#10, (1)-#10EG IN ¾" CONDUIT.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK GEOFFREY ERIC MEAD LICENSED PROFESSIONAL ENGINEER EXP. 04/30/2026 080111 PROFESSIONAL ENGINEER

CONTRACT:
ELECTRICAL

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

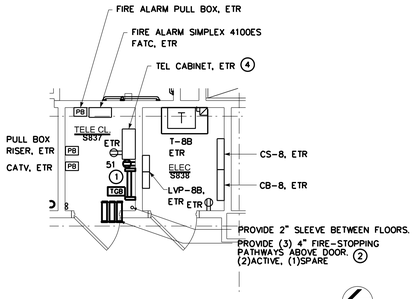
1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - E
DESIGNED BY:	SML
DRAWN BY:	SML
FIELD CHECK:	JAR
APPROVED BY:	JAR

SHEET TITLE:
EIGHTH FLOOR POWER AND SYSTEMS PLANS - NORTH AND SOUTH

DRAWING NUMBER:
E-128

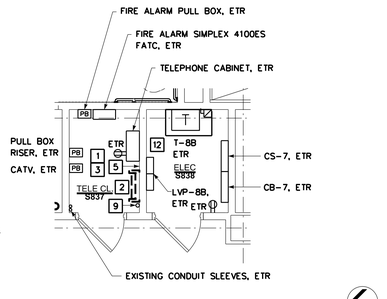
SHEET OF



8TH FLOOR PLAN – SOUTH 14

NORTH

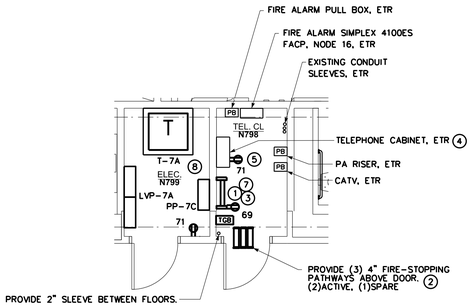
1/4" = 1'-0"



8TH FLOOR REMOVAL PLAN – SOUTH 13

NORTH

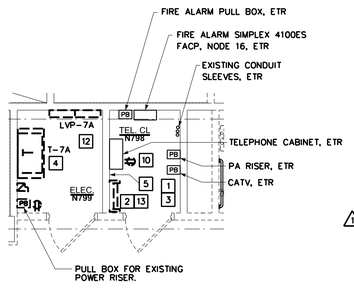
1/4" = 1'-0"



7TH FLOOR PLAN – NORTH 12

NORTH

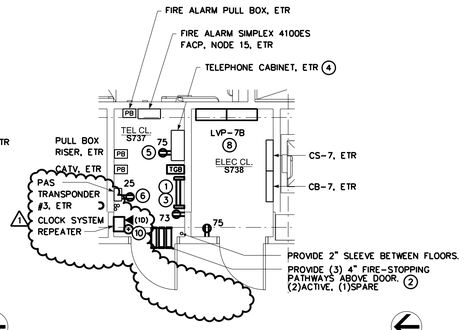
1/4" = 1'-0"



7TH FLOOR REMOVAL PLAN – NORTH 11

NORTH

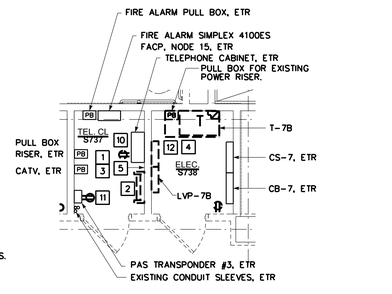
1/4" = 1'-0"



7TH FLOOR PLAN – SOUTH 10

NORTH

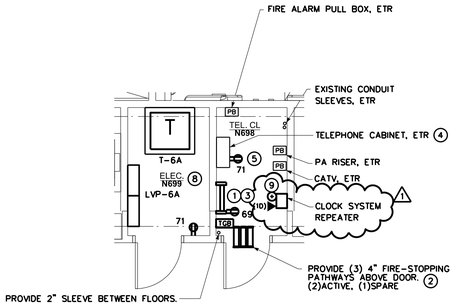
1/4" = 1'-0"



7TH FLOOR REMOVAL PLAN – SOUTH 9

NORTH

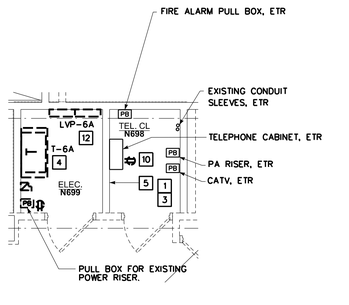
1/4" = 1'-0"



6TH FLOOR PLAN – NORTH 8

NORTH

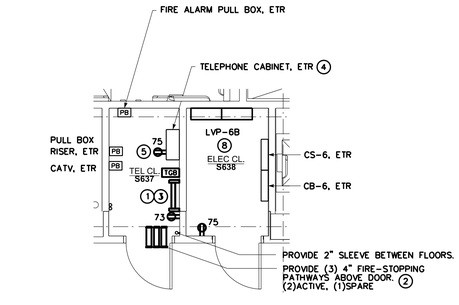
1/4" = 1'-0"



6TH FLOOR REMOVAL PLAN – NORTH 7

NORTH

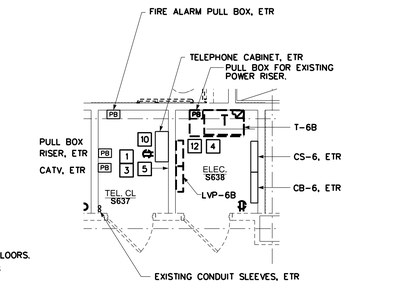
1/4" = 1'-0"



6TH FLOOR PLAN – SOUTH 6

NORTH

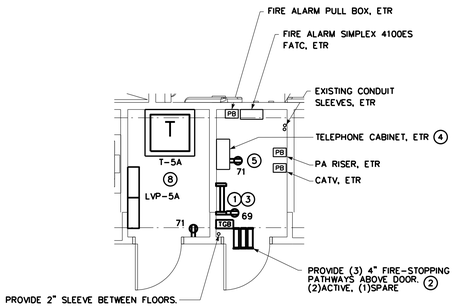
1/4" = 1'-0"



6TH FLOOR REMOVAL PLAN – SOUTH 5

NORTH

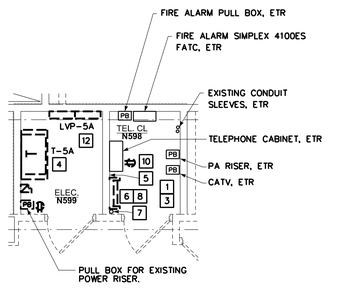
1/4" = 1'-0"



5TH FLOOR PLAN – NORTH 4

NORTH

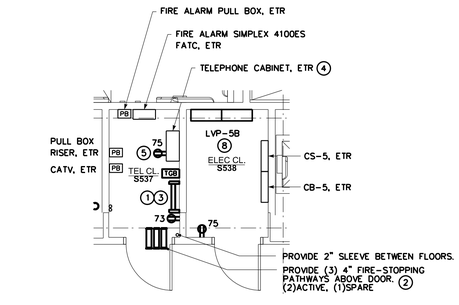
1/4" = 1'-0"



5TH FLOOR REMOVAL PLAN – NORTH 3

NORTH

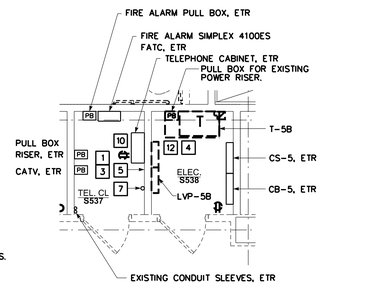
1/4" = 1'-0"



5TH FLOOR PLAN – SOUTH 2

NORTH

1/4" = 1'-0"



5TH FLOOR REMOVAL PLAN – SOUTH 1

NORTH

1/4" = 1'-0"

GENERAL SHEET NOTES:

A. COORDINATE ALL WORK WITH OWNER PRIOR TO REMOVALS..

REMOVAL NOTES:

1. COORDINATE THE REMOVAL OF ANY DATA EQUIPMENT/ DEVICES THIS ROOM PRIOR TO THE REMOVAL PHASE.
2. DISCONNECT AND REMOVE EXISTING WALL MOUNTED RACK, 24-PORT, AND 48-PORT PATCH PANELS, ALL HORIZONTAL UTP CABLING TO DATA AND VOICE OUTLETS, AND THE EXISTING OPTICAL FIBER BACKBONE CABLING IN IT'S ENTIRETY BACK TO SOURCE IN BASEMENT SERVER ROOM B63 IN BUILDING 62A.
3. MAINTAIN EXISTING CONDUIT SLEEVES BETWEEN FLOORS.
4. REMOVE EXISTING CONCRETE TRANSFORMER PAD TO EXISTING FLOOR LEVEL. PATCH FLOOR AS REQUIRED.
5. MAINTAIN EXISTING PLYWOOD BACKBOARD.
6. DISCONNECT AND REMOVE EXISTING WALL MOUNTED PATCH PANEL(S) AND ASSOCIATED HORIZONTAL UTP CABLES TO DATA AND VOICE OUTLETS.
7. DISCONNECT AND RELOCATE EXISTING CONDUIT AND WIRE ROUTING FROM FLOOR TO CEILING AS REQUIRED TO ACCOMMODATE THE NEW WALL RACK.
8. COORDINATE AND RELOCATE THE REPEATERS ON THE WALL PRIOR TO THE REMOVAL PHASE.
9. REMOVE EXISTING CONDUIT TO ACCOMMODATE THE NEW WALL RACK.
10. DISCONNECT AND REMOVE EXISTING RECEPTACLE LOCATED ON WALL BELOW TELEPHONE CABINET. MAINTAIN EXISTING BACKBOX AND CONDUIT EXTENDING UP TO THE CEILING SPACE FOR REUSE.
11. MAINTAIN EXISTING DEVICE FOR PAS TRANSPONDER. DISCONNECT AND REMOVE EXISTING CIRCUIT AND PROVIDE NEW CIRCUIT AS INDICATED.
12. EXISTING EXHAUST FANS LOCATED IN ELECTRICAL ROOM ARE EXISTING TO REMAIN.
13. PRIOR TO REMOVING THE EXISTING 7TH FLOOR NORTH WALL MOUNTED RACK, COORDINATE AND MAINTAIN ALL THE EXISTING DATA UTP CABLING AND VOICE CABLES ROUTING FROM THE 8TH FLOOR NORTH.

DRAWING NOTES:

1. PROVIDE NEW WALL MOUNTED EQUIPMENT RACK. COORDINATE LOCATION WITH OWNER PROVIDED DATA EQUIPMENT WITHIN ROOM PRIOR TO ROUGH-IN. REFER TO RISER DIAGRAM E-510 FOR ADDITIONAL INFORMATION.
2. PROVIDE FIRE-STOPPING PATHWAY(S) FROM TEL. CL. TO CORRIDOR FOR DATA/ SYSTEM WIRING AS INDICATED.
3. PROVIDE PLYWOOD BACKBOARD FROM THE EDGE OF EXISTING PLYWOOD BACKBOARD TO THE CORNER OF THE ROOM. PAINT TO MATCH EXISTING.
4. PROVIDE 1" CHASE NIPPLE FROM THE TELEPHONE CABINET TO THE NEW RACK FOR THE ANALOG TELEPHONE CABLE. REFER TO E-510 FOR ADDITIONAL INFORMATION.
5. PROVIDE NEW DEVICE IN EXISTING BACKBOX. UTILIZE EXISTING CONDUIT EXTENDING FROM BACKBOX UP TO ACCESSIBLE CEILING SPACE FOR NEW CIRCUIT AS INDICATED.
6. PROVIDE/REWORK CIRCUIT AS REQUIRED. PROVIDE (2)–#12, (1)–#12EG IN 3/4" CONDUIT.
7. RECONNECT THE EXISTING DATA UTP CABLING AND VOICE CABLEING FROM THE 8TH FLOOR NORTH TO THE NEW PATCH PANEL.
8. RECONNECT EXISTING EXHAUST FAN IN ELECTRICAL ROOM TO NEW PANELBOARD IN ROOM. UTILIZE SPARE 20A/1P BREAKER IN PANELBOARD. PROVIDE (2)–#12, (1)–#12EG IN 3/4" CONDUIT AS REQUIRED.
9. PROVIDE 120V, 20A CIRCUIT FROM PANELBOARD LVP-6A. PROVIDE 20A/1P BREAKER. PROVIDE (2)–#12, (1)–#12EG IN 3/4" CONDUIT.
10. PROVIDE 120V, 20A CIRCUIT FROM PANELBOARD LVP-7B. PROVIDE 20A/1P BREAKER. PROVIDE (2)–#12, (1)–#12EG IN 3/4" CONDUIT.

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK
GEOFFREY ERIC MEADO
LICENSED PROFESSIONAL ENGINEER
EXP. 04/30/2026
080111
PROFESSIONAL ENGINEER

CONTRACT:

ELECTRICAL

TITLE:

REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:

BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:

NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - E
DESIGNED BY:	
DRAWN BY:	
FIELD CHECK:	
APPROVED BY:	

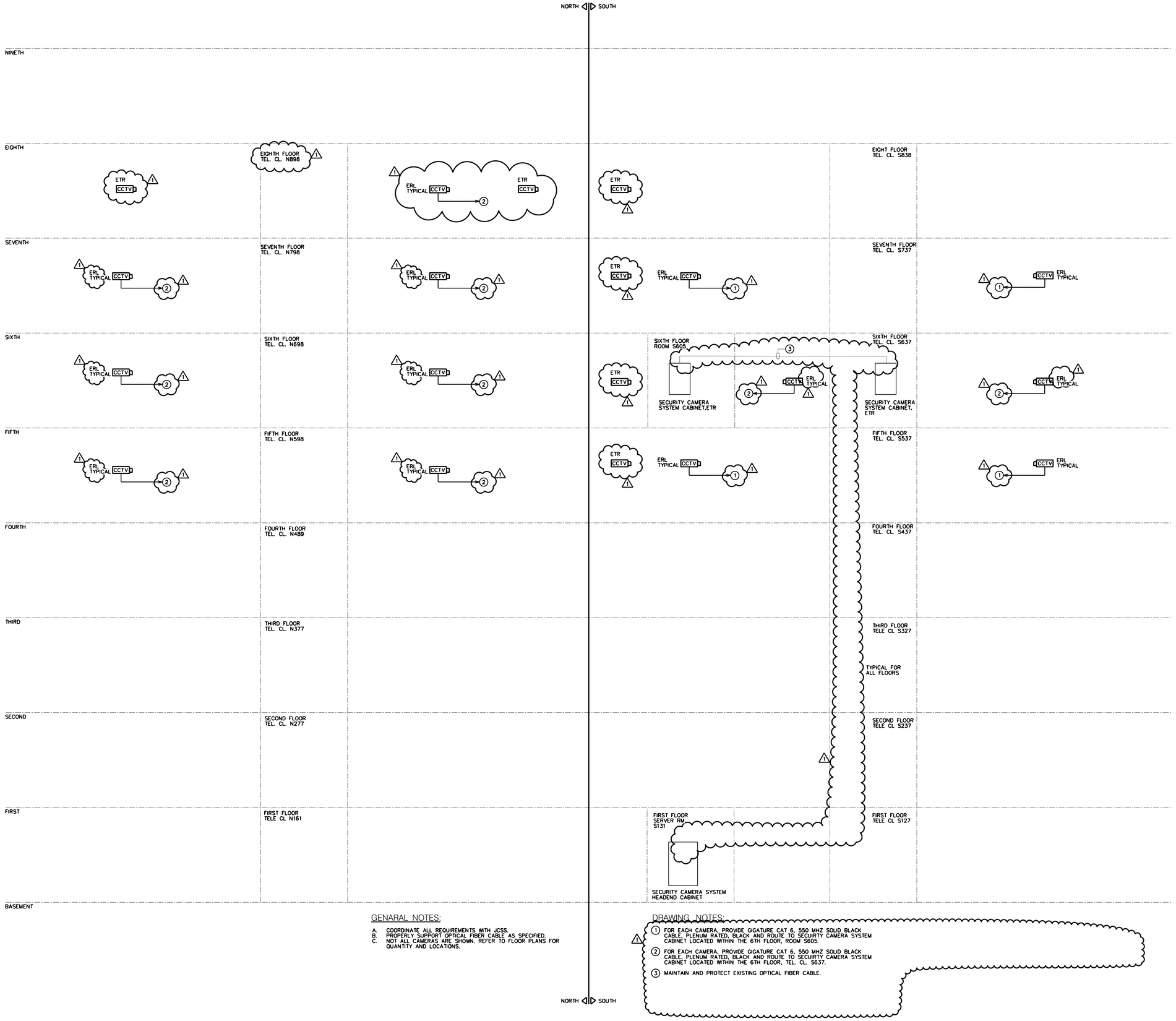
SHEET TITLE:

ENLARGED PLANS

DRAWING NUMBER:

E-401

SHEET OF



GENARAL NOTES:

A. COORDINATE ALL REQUIREMENTS WITH JCSS.
B. PROPERLY SUPPORT OPTICAL FIBER CABLE AS SPECIFIED.
C. NOT ALL CAMERAS ARE SHOWN. REFER TO FLOOR PLANS FOR QUANTITY AND LOCATIONS.

DRAWING NOTES:

1. FOR EACH CAMERA, PROVIDE GIGATURE CAT 6, 550 MHZ SOLID BLACK CABLE, PLENUM RATED, BLACK AND ROUTE TO SECURITY CAMERA SYSTEM CABINET LOCATED WITHIN THE 6TH FLOOR, ROOM S605.
2. FOR EACH CAMERA, PROVIDE GIGATURE CAT 6, 550 MHZ SOLID BLACK CABLE, PLENUM RATED, BLACK AND ROUTE TO SECURITY CAMERA SYSTEM CABINET LOCATED WITHIN THE 6TH FLOOR, TEL. CL. S637.
3. MAINTAIN AND PROTECT EXISTING OPTICAL FIBER CABLE.

SECURITY CCTV RISER DIAGRAM 1

NTS

NEW YORK STATE OF OPPORTUNITY. Office of General Services

DESIGN & CONSTRUCTION

CONSULTANT:

dwyer ARCHITECTURAL

IBC

IBC # 20079
CERTIFICATE OF AUTHORIZATION
16-1494201

WARNING:

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.

STATE OF NEW YORK
GEOFFREY ERIC HEAD
LICENSED PROFESSIONAL ENGINEER
EXP. 04/30/2026
080111

CONTRACT:
ELECTRICAL

TITLE:
REHABILITATE ADULT LIVING UNITS & HEATING SYSTEM UPGRADES, BUILDING 62

LOCATION:
BUFFALO PSYCHIATRIC CENTER
400 FOREST AVE, BUFFALO, NEW YORK

CLIENT:
NEW YORK STATE OFFICE OF MENTAL HEALTH

1	APR. 30, 2026	ADDENDUM NO. 01
	SEPT. 17, 2025	BID DOCUMENTS
MARK	DATE	DESCRIPTION:

PROJECT NUMBER:	46103 - E
DESIGNED BY:	SML
DRAWN BY:	SML
FIELD CHECK:	JAR
APPROVED BY:	JAR

SHEET TITLE:

RISER DIAGRAMS

DRAWING NUMBER:

E-508

SHEET OF