ADDENDUM NO. 2
MARCH 4, 2025

PREPARED BY SCHMIDT ASSOCIATES FOR:

20231242 - BL212 BRADFORD WOODS AQUATIC FACILITY - LILLY POOL
INDIANA UNIVERSITY

This Addendum consists of 5 Addendum pages and 25 attachment pages totaling 30 pages.

Acknowledge receipt of this Addendum by inserting its number on the Bid Form. Failure to do so may subject the Bid to disqualification. This Addendum is part of the Contract Documents.

Bidder is encouraged to verify with reprographer of record all Addenda issued (do not rely exclusively on third party plan room services).

PART 1 - CHANGES TO PRIOR ADDENDA (NOT APPLICABLE)

PART 2 - CHANGES TO THE PROJECT MANUAL

Modifications described herein shall be incorporated in the Project Manual. All other Work shall remain unchanged.

2.1 DIVISION 13 - SPECIAL CONSTRUCTION

A. **Section 131143 "POOL STAINLESS STEEL GUTTERS"**

1. DELETE AND REPLACE Section 131143 "Stainless Steel Gutters" per the attached.

2.2 DIVISION 26 – ELECTRICAL

A. **Section 260526 "GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS"**

1. DELETE Article 3.3 in its entirety.

B. **Section 260533 "RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS"**

1. DELETE Article 2.4 in its entirety.
2. DELETE AND REPLACE Subparagraph 3.1.A.3.

   "3. UNDERGROUND CONDUIT: RNC, TYPE EPC-80-PVC, DIRECT-BURIED."
3. DELETE Subparagraph 3.1.B.1 in its entirety.
4. DELETE Subparagraph 3.1.B.2 in its entirety.
5. DELETE AND REPLACE Paragraph 3.1.B.3. as follows:

"3. Exposed: GRC."

6. DELETE AND REPLACE Subparagraph 3.1.B.4. as follows:

"4. Concealed in Ceilings and Interior Walls and Partitions, conduit 2" trade size and larger: GRC."

7. INSERT Subparagraph 3.1.B.5.

"5. Concealed in Ceilings and Interior Walls and Partitions, conduit 1-½" trade size and smaller: EMT."

C. **Section 260543 "UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS"**

1. DELETE AND REPLACE PART 2 in its entirety.

"2.1 METAL CONDUIT AND FITTINGS

A. GRC: Comply with ANSI C80.1 and UL 6.

B. Coated Steel Conduit : PVC-coated GRC.

1. Comply with NEMA RN 1.
2. Coating Thickness: 0.040 inch, minimum.

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

1. AFC Cable Systems: a part of Atkore International.
2. Allied Tube & Conduit: a part of Atkore International.
3. Anamet Electrical, Inc.
4. Calconduit.
5. Electri-Flex Company.
6. Picoma Industries, Inc.
7. Republic Conduit.
8. Southwire Company.
9. Thomas & Betts Corporation: A Member of the ABB Group.
10. Western Tube and Conduit Corporation.
11. Wheatland Tube Company.

D. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.

2.2 RIGID NONMETALLIC DUCT

A. Underground Plastic Utilities Duct: Concrete Encased Type EPC-80-PVC and Type EPC-40-PVC RNC, complying with NEMA TC 2 and UL 651, with matching fittings complying with NEMA TC 3 by same manufacturer as duct.

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

1. CANTEX INC.
2. National Pipe & Plastics.

C. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.

D. Solvents and Adhesives: As recommended by conduit manufacturer.

2.3 DUCT ACCESSORIES

A. Duct Spacers: Factory-fabricated, rigid, PVC interlocking spacers; sized for type and size of duct with which used, and selected to provide minimum duct spacing indicated while supporting duct during concreting or backfilling.

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

a. CANTEX INC.

B. Underground-Line Warning Tape: Comply with requirements for underground-line warning tape specified in Section 260553 "Identification for Electrical Systems."

2. DELETE AND REPLACE Article 3.2.

"A. Power Feeder Conduit:

1. RNC 40. Install Conduit in a 3" concrete envelope. Where RNC is used, transition to GRC FOR penetrating building footings or elbows up through floor slabs. RNC conduit shall not be installed within building interior. Minimum conduit size is 1".

B. Branch Circuit and Control Circuit: 1. RNC 40. Install conduit in 3" concrete envelope. Where RNC is used and penetrates building footing or elbows up through floor slab, GRC shall be used. RNC shall not be installed within the building. Minimum conduit size is ¾.

C. Junction boxes and covers for branch circuits shall be constructed of cast iron or cast aluminum with neoprene gaskets and stainless steel screws.

D. Below grade Power Feeder, Branch Circuit, and Control Conduit may be installed using horizontal directional drilling (HDD). Conduit shall be schedule 80, High Density Polyethelene (HDPE).

1. Carlon "Bore-Gard"
2. Blue Diamond Industries EPEC-80.

E. Low & Medium Voltage Ductbanks and Service Entrance Feeders:

1. Concrete encased RNC 40.
2. Provide 100% spare conduits.
3. Install a 4/0 bare copper ground wire within ductbank."

D. **Section 260553 “IDENTIFICATION FOR ELECTRICAL SYSTEMS”**

1. DELETE Subparagraph 2.2.A.5.b in its entirety.

E. **Section 260573 “POWER SYSTEM STUDIES”**

1. ADD Section 260573 in its entirety.

F. **Section 262726 “WIRING DEVICES”**

1. DELETE Subparagraph 1.2.A.2 in its entirety.
2. DELETE Subparagraph 1.2.A.4 in its entirety.
3. DELETE Subparagraph 1.2.A.8 in its entirety.
4. DELETE Subparagraph 1.2.A.9 in its entirety.
5. DELETE Paragraph 2.2.B in its entirety.
6. DELETE Paragraph 2.2.C in its entirety.
7. DELETE Article 2.3 in its entirety.
8. DELETE Paragraph 2.4.C in its entirety.
9. DELETE Paragraph 2.4.D in its entirety.
10. DELETE Article 2.5 in its entirety.
11. DELETE Subparagraph 2.5.B.4 in its entirety.
12. DELETE Paragraph 2.5.D in its entirety.
13. DELETE Paragraph 2.5.E in its entirety.
14. DELETE Paragraph 2.5.F in its entirety.
15. DELETE Article 2.6 in its entirety.
16. DELETE Article 2.7 in its entirety.

G. **Section 262813 “FUSES”**

1. DELETE Article 2.3 in its entirety.

2. DELETE Subparagraph 3.2.A.1 in its entirety.

3. DELETE Subparagraph 3.2.A.2 in its entirety.

4. DELETE Subparagraph 3.2.A.4 in its entirety.

H. **Section 262816 "ENCLOSED SWITCHES AND CIRCUIT BREAKERS"**

1. DELETE Subparagraph 2.1.C.7 in its entirety.

2. DELETE Article 2.3 in its entirety.

I. **Section 265613 "LIGHTING POLES AND STANDARDS"**

1. DELETE Article 2.3 in its entirety.

2.3 DIVISION 31 – EARTHWORK

A. **Section 312000 "EARTH MOVING**

1. MODIFY Text within 3.19 FIELD QUALITY CONTROL as follows:

"Replace 'Owner' with 'Contractor' in 3.19.A.Special Instructions:"

"Replace 'Owner' with 'Contractor' in 3.19.B.Testing Agency:"

PART 3 - CHANGES TO THE DRAWINGS

Modifications described herein shall be incorporated in the Drawings. All other Work shall remain un-changed.

3.1 DRAWING SHEETS: ADDITIONS, DELETIONS AND REPLACEMENTS

DRAWING NO.	INDICATE ACTION: ADD (A), DELETE (D), DELETE & REPLACE (R),
C-SERIES DRAWINGS	
CL101	DELETE AND REPLACE
P-SERIES DRAWINGS	
PP101	DELETE AND REPLACE
P-601	DELETE AND REPLACE
P-901	DELETE AND REPLACE
E-SERIES DRAWINGS	
E-601	DELETE AND REPLACE
EP101	DELETE AND REPLACE

END OF ADDENDUM 2

SECTION 131143 - POOL STAINLESS STEEL GUTTERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Pool Stainless Steel Gutters

1.2 RELATED DOCUMENTS

A. Drawings and Contracting Requirements, including General and Supplementary Conditions and Division 01 - General Requirements, apply to this Section.

1.3 REFERENCES

A. The following latest edition reference specifications, guides and standards shall become part of this Specification as if herein written. If provisions conflict, the more stringent provisions shall apply.

1. NSF/ANSl 50 – NSF International Standard/American National Standard
2. NEC – National Electric Code
3. ANSI A137.1-2012

1.4 SUBSTITUTIONS

A. For alternate manufacturer system to be pre-qualified, the alternate Supplier shall have a minimum of 5 years of continuous experience in the manufacture and installation of continuous stainless steel gutter systems, and shall have no less than five other pools of similar scope utilizing recirculation systems manufactured by that Supplier and installed by their own personnel. Any request for approval of an alternate must be in the form of a complete set of engineering drawings, hydraulic calculations, and specifications, prepared specifically for this project and submitted to the Architect/Engineer for review. Systems that do not provide overflow skimming over the entire perimeter when the pool is in quiescence, and during all levels of bather use, are not acceptable.

1.5 DESIGN REQUIREMENTS

A. Provide a continuous stainless steel gutter system for recirculation of pool water. The gutter system shall extend around the perimeter of the pool, as shown on the Contract Drawings, providing surface skimming and incorporating a filtered water return line.

B. The recirculating gutter system proposed for the swimming pool shall be designed specifically for this project and shall be fabricated and installed by an established manufacturer specializing in gutter overflow systems. All hydraulic calculations shall be provided in the shop drawings, as part of the gutter submittal.

1.6 SUBMITTALS

A. Shop Drawings: Five copies of shop drawings and hydraulic calculations signed and sealed by an Engineer registered in the project State shall be submitted for the Architect/Engineer's approval and the State Department of Public Health approval 120 days prior to manufacture/installation of gutter.

B. Stainless steel gutter manufacturer must provide stainless steel certificate showing type of stainless, chemical composition and finish type. Stainless certificate will show stainless steel used for manufacturing of this gutter to be purchased from a U.S. owned and U.S. located mill.

1.7 QUALIFICATION STATEMENTS

A. The system shall be the product of a manufacturer regularly engaged in the engineering, construction and installation of swimming pool overflow gutter systems.

1.8 DELIVERY, STORAGE AND HANDLING

A. The fabricated gutter components shall be delivered to the jobsite, unloaded by the pool construction contractor and stored in the shallow end of the pool.

1.9 WARRANTY

A. The Recirculating Gutter System shall be guaranteed by the manufacturer for workmanship, materials, and performance for a period of five years from date of installation. The guarantee shall include all labor and materials for replacement of any defective materials.

PART 2 - PRODUCTS

2.1 STAINLESS STEEL GUTTER

A. Manufacturers

1. The following are approved manufacturers:

a. Whitten Products Division of Hydrotech System, Cohoes, NY
b. Paddock Pool Equipment Co. Inc., P.O. Box 11676, Rock, SC
c. Neptune Benson Inc., One Bridal Avenue, West Warwick, RI 02893
d. Natare Corporation, 5905 W 74th St, Indianapolis, IN 46278

B. Materials

1. The major components of the perimeter gutter system shall be fabricated of low maintenance, 12-gauge Type 316L (Type 304L) stainless steel with a finish equivalent to No.3 or 4., as standard to the manufacturer. Materials and methods of installation shall provide a durable and rigid installation. Exposed surface of the gutter shall be cleaned and polished to a smooth, uniform, non-corrosive finish.

2. Gutter grating shall be NSF 50 compliant with integral slip-resistant surface.
3. The gutter and gutter grating shall have a slip-resistant surface on all horizontal faces, with a minimum dynamic coefficient of friction at least equal to the requirements of ANSI A137.1-2012 of 0.42 as measured by the DCOF AcuTest.

C. Components

1. The gutter system shall consist of a stainless steel drainage trough, slip-resistant overflow lip, deflector plate and pipe converter.
2. The system shall be provided a stainless steel filtered water return tube,sized to meet flow velocities requirements in the health code.
3. A grating system will be included to enclose/cover the gutter trough.
4. The gutter drainage channel and supply system shall be fitted with movable joints at locations to match expansion joints installed into the concrete structure. The joints shall be designed to accommodate expansion and contraction of the recirculation system without causing distortion of the channel, stress on the mounting anchors, or broken welds.
5. Recessed Steps
6. Vinyl Markings for Depth and Lanes
7. Dive Agitators

D. Overflow Skimming

1. The gutter drainage trough must be capable of continuous overflow skimming and delivery to the filter of 125% of the total recirculation flow rate. The cross sectional area and depth of the gutter trough shall provide adequate hydraulic gradient considering the size of the pool.

E. Overflow Lip

1. The overflow lip of the gutter shall provide a handhold not exceeding 2-1/2 inches wide and not less than 1 inch deep or as required by Code.
2. The overflow lip shall be level to a tolerance of 1/8 inch (+/- 1/16”) around the entire pool perimeter to provide uniform skimming of the entire pool surface.

F. Deflector Plate

1. For pools with freeboard greater than 1”, the upper periphery of the pool gutter shall be formed as a wave deflector plate with angle of deflection providing a splash plate extending above the overflow level. The horizontal surface of this plate shall be slip-resistant at the deck.

G. Depth Markers, Target Markings

1. Pool gutter shall be complete with vinyl depth markers and target markings applied to the vertical face as required on the Drawings.

H. Converters

1. Gutter manufacturer shall provide gutter supply and drainage converters as required. The converters shall be incorporated into the gutter and fabricated of Type 316L (Type 304L)

stainless steel and provide all necessary pipe stub connections for interconnection of circulation piping.

a. Field connections to flanged converters shall be made by means of non-corrosive hardware.

I. Grates

1. Gutter systems not incorporating a grate will not be acceptable.
2. Grates shall provide a means of 100% access for trough inspection. Grating shall have a minimum 32% open area around the entire pool perimeter for fast reception of pool overflow and turbulence.
3. Grating shall be held in place by non-corrosive tamper-proof fasteners.
4. The grating system shall not restrict the required hydraulic flow from pool to primary channel.
5. Grates shall be unbreakable and capable of supporting at least 450 lbs. per square foot structural bearing load when in place in gutter.

J. Accessibility and Expansion

1. All return tubes, fittings, inlets and rope anchors shall be 100% accessible for inspection, repair or replacement. Allowance for lineal expansion and contraction of the gutter shall be provided.

K. Filtered Water Return Tube

1. The filtered water return tube shall be fabricated from 12 gauge Type 316L (304L) stainless steel and fitted with variable sized nylon jet inlet nozzles not over 42" on center around the entire pool perimeter except in swimming lane and stair locations. Nozzles shall be grouped under floating swimming lane lines and provided in stairwells parallel to stair treads. Inlet jets shall be installed as to provide a steady and consistent stream of filtered chlorinated water on a fixed 45-degree angle directed toward the bottom of the pool. The inlet openings shall not be larger than 1/2" in diameter and the system shall provide uniform flow around the entire pool perimeter. Provide calculations indicating the rate of flow through each inlet.

L. Racing Lane and Safety Line Anchors

1. Anchors shall be integral to the gutter system and recessed such that no part of the anchor protrudes above any finish face of the gutter.

M. Grouting

1. Grout mixture shall non-shrink, non-metallic be as designed and recommended by the manufacturer and approved by the Architect/Engineer.

N. Grounding

1. Complete stainless steel recirculating gutter system including all appurtenances (i.e. gutter components, converters, etc.) shall be provided with grounding lugs in accordance with N.E.C., Article 680 for bonding to ground system by others.

PART 3 - EXECUTION

3.1 GUTTER INSTALLATION

A. Anchoring and Installation

1. The recirculation gutter system shall be installed with corrosion resistant anchorage spaced at a maximum of 4 feet on center around the entire pool perimeter.
2. Accurate horizontal and vertical alignment not to exceed plus or minus 1/16 inch around the entire pool perimeter.
3. All joints between stainless steel sections shall be welded. Bolted or caulked joints not accepted.
4. After the stainless steel gutter system is installed and leveled on the pool walls, the gutter system installer shall complete the installation by grouting under and behind the gutters around the entire perimeter of the pool to insure a water tight seal around the entire pool perimeter.

B. Welds

1. All seams shall be welded by the TIG process and shall result in a uniform appearance. Welds shall not be ground. All welds shall be brushed after appropriate cooling. Seams shall have a flush appearance.
2. All horizontal welds shall be fully accessible for inspection.

C. At the completion of the gutter system installation, the gutter installer shall clean and passivate all accessible gutter and welds, including below the grating, per manufacturer’s cleaning instructions.

END OF SECTION 131143

SECTION 260573 - POWER SYSTEM STUDIES

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section Includes:

1. Short-circuit study.
2. Overcurrent protective device coordination study.
3. Load-flow and voltage-drop study.
4. Motor-starting study.
5. Arc-flash hazard study.

B. Analysis shall include all new distribution equipment supplied by equipment manufacturer under this Contract.

C. Analysis shall include all new distribution equipment supplied by equipment manufacturer under this Contract and all existing distribution equipment feeding the new distribution equipment.

D. Analysis shall include all new distribution equipment supplied by the equipment Manufacturer under this Contract as well as all existing distribution equipment.

1.2 ACTION SUBMITTALS

A. Product Data, Power System Study Reports, Data Files,:

1. Product Data: For power system analysis software to be used for studies.

a. Product Certificates: For power system study software applications, include certificate stating compliance with specified requirements, signed by software manufacturer.

2. Power System Study Reports:

a. Submit reports after approval of system protective devices submittals. Submittals must be in digital form.
b. Submit short-circuit study input data, including completed computer-program input data sheets.
c. Submit coordination study input data, including completed computer-program input data sheets.

1) Submit motor-starting data with coordination study.

d. Submit arc-flash study input data, including completed computer-program input data sheets.

e. Submit study report for action prior to receiving final approval of distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from Architect for preliminary submittal of sufficient study data to ensure that selection of devices and associated characteristics is satisfactory.
f. Submit revised one-line diagram, reflecting field investigation results and results of short-circuit study.

3. Data files: For studies in format compatible with Owner's power system analysis software.

1.3 QUALITY ASSURANCE

A. Submittals for power system studies must be signed and sealed by qualified electrical professional engineer responsible for their preparation.

B. Studies must be performed using commercially developed and distributed software designed specifically for power system analysis.

C. Software algorithms must comply with requirements of standards and guides specified in this Section.

D. Manual calculations are unacceptable.

PART 2 - PRODUCTS

2.1 POWER SYSTEM ANALYSIS SOFTWARE

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

1. EasyPower; brand of Bentley Systems, Inc.
2. ETAP; brand of Operation Technology, Inc.; subsidiary of Schneider Electric.
3. Power Tools for Windows (PTW); brand of SKM Systems Analysis, Inc.

B. Standard Features:

1. Power System Analysis:

a. Power-systems-analysis software applications must have analytical capability to calculate "mandatory," "very desirable," and "desirable" features as listed in IEEE 3002 series standards.
b. Computer software application must be capable of plotting and diagramming time-current-characteristic curves as part of its output. Computer software program must report device settings and ratings of overcurrent protective devices and must demonstrate selective coordination by computer-generated, time-current coordination plots.

c. Computer software application must be designed to perform arc-flash analysis or have function, component, or add-on module designed to perform arc-flash analysis.

2. Analysis Standards:

a. Short-Circuit Current Analysis: In accordance with IEEE 3002.3.
b. Device Coordination Analysis: In accordance with IEEE 3004.3 and IEEE 3004.5.
c. Motor-Starting Analysis: In accordance with IEEE 3002.7.
d. Arc-Flash Hazard Analysis: In accordance with IEEE 1584.

3. Capable of printing arc-flash hazard warnings for equipment on polyester or vinyl, weather- and UV-resistant, pressure-sensitive adhesive labels complying with NFPA 70E.

a. Label must have orange header with wording, "WARNING, ARC-FLASH HAZARD," and must include the following information taken directly from arc-flash hazard study:

1) Equipment designation.
2) Nominal voltage.
3) Protection boundaries.

a) Arc-flash boundary.
b) Restricted approach boundary.
c) Limited approach boundary.

4) Arc-flash PPE category.
5) Required minimum arc rating of PPE in Cal/cm squared.
6) Available incident energy.
7) Working distance.
8) Engineering report number, revision number, and issue date.

4. Capable of printing maximum available fault current for the service equipment on polyester or vinyl, weather- and UV-resistant, pressure-sensitive adhesive labels complying with NFPA 70.

a. Label must have orange header with wording, "WARNING" and must include the following information taken directly from short-circuit study:

MAXIMUM AVAILABLE FAULT CURRENT:
XX,XXX SYMMETRICAL RMS AMPERES
DATE: XX/XX/XXXX

C. Other Available Features Required by the Project:

1. Simultaneous faults.
2. Explicit negative sequence.
3. Mutual coupling in zero sequence.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Collect and analyze data for power system studies.

1. Verify completeness of data supplied in one-line diagram on Drawings. Call discrepancies to Architect's attention.
2. For equipment included as Work on the Project, use characteristics submitted under provisions of action submittals and information submittals for the Project.
3. For relocated equipment and equipment that is existing to remain, obtain required electrical distribution system data by field investigation and surveys, conducted by qualified technicians and engineers in accordance with NFPA 70E.
4. Gather and tabulate required input data to support power system studies. Comply with requirements in Section 017839 "Project Record Documents" for recording circuit protective device characteristics. Record data on Record Document copy of one-line diagram. Comply with recommendations in IEEE 3002 series standards as to amount of detail that is required to be acquired in field. Field data gathering must be by, or under supervision of, registered qualified electrical professional engineer located in the State of Project. Data include, but are not limited to, the following:

    a. Product data for the Project's overcurrent protective devices involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
    b. Electrical power utility impedance at service.
    c. Power sources and ties.
    d. Short-circuit current at each system bus (three phase and line to ground).
    e. Full-load current of loads.
    f. Voltage level at each bus.
    g. For transformers, include kVA, primary and secondary voltages, connection type, impedance, X/R ratio, taps measured in percent, and phase shift.
    h. For circuit breakers and fuses, provide manufacturer and model designation. List type of breaker, type of trip and available range of settings, SCCR, current rating, and breaker settings.
    i. Generator short-circuit current contribution data, including short-circuit reactance, rated kVA, rated voltage, and X/R ratio.
    j. Motor horsepower and NEMA MG 1 code letter designation.
    k. Low-voltage cable sizes, lengths, number, conductor material, and conduit material (magnetic or nonmagnetic).
    l. Derating factors.

3.2 PREPARATION

A. Preparation of Data for Short-Circuit Study:

1. Verify completeness of data supplied on one-line diagram. Call discrepancies to Architect's attention.
2. For equipment included as Work on the Project, use characteristics submitted under provisions of action submittals and information submittals for the Project.
3. Prepare one-line diagram of modeled power system, showing the following:

    a. Protective device designations and ampere ratings.
    b. Conductor types, sizes, and lengths.
    c. Transformer kVA and voltage ratings.
    d. Motor and generator designations and kVA ratings.
    e. Switchgear, switchboard, motor-control center, and panelboard designations and ratings.
    f. Disconnect switches, enclosed controllers or variable frequency controller feeding 3 phase motors.
    g. Derating factors and environmental conditions.
    h. Revisions to electrical equipment required by study.

B. Preparation of Data for Overcurrent Protective Device Coordination Study:

1. Prepare data sheets to supplement electrical distribution system one-line diagram, cross-referenced with tag numbers on diagram, indicating the following:

    a. Special load considerations, including starting inrush currents and frequent starting and stopping.
    b. Transformer characteristics, including primary protective device, magnetic inrush current, and overload capability.
    c. Motor full-load current, locked rotor current, service factor, starting time, type of start, and thermal-damage curve.
    d. Generator thermal-damage curve.
    e. Ratings, types, and settings of utility company's overcurrent protective devices.
    f. Special overcurrent protective device settings or types stipulated by utility company.
    g. Time-current-characteristic curves of devices indicated to be coordinated.
    h. Manufacturer, frame size, interrupting rating in amperes root mean square (rms) symmetrical, ampere or current sensor rating, long-time adjustment range, short-time adjustment range, and instantaneous adjustment range for circuit breakers.
    i. Manufacturer and type, ampere-tap adjustment range, time-delay adjustment range, instantaneous attachment adjustment range, and current transformer ratio for overcurrent relays.
    j. Switchgear, switchboards, motor-control centers, and panelboards ampacity, and SCCR in amperes rms symmetrical.

2. Examine the Project's overcurrent protective device submittals for compliance with electrical distribution system coordination requirements and other conditions affecting performance of the Work. Devices to be coordinated are indicated on Drawings.
3. Proceed with coordination study only after relevant equipment submittals have been assembled. Overcurrent protective devices that have not been submitted and approved prior to coordination study may not be used in study.

C. Preparation of Data for Arc-Flash Hazard Study:

1. Assemble data from short-circuit study and overcurrent protective device coordination study.
2. Proceed with arc-flash study only after relevant equipment submittals have been assembled. Overcurrent protective devices that have not been submitted and approved prior to arc-flash study may not be used in study.

3.3 SHORT-CIRCUIT STUDY

A. Base study on device characteristics supplied by device manufacturer.

B. Extent of electrical power system to be studied is indicated on Drawings.

C. Begin short-circuit current analysis at service, extending down to system overcurrent protective devices through the electrical distribution system required.

D. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for the Project. Study cases of system-switching configurations and alternate operations that could result in maximum fault conditions.

E. Include AC fault-current decay from induction motors, synchronous motors, and asynchronous generators and apply to low- and medium-voltage, three-phase AC systems. Also account for fault-current DC decrement to address asymmetrical requirements of interrupting equipment.

F. Calculate short-circuit momentary and interrupting duties for three-phase bolted fault and single line-to-ground fault at equipment indicated on one-line diagram.

1. For grounded systems, provide bolted line-to-ground fault-current study for areas as defined for three-phase bolted fault short-circuit study.

G. Include in report identification of protective device applied outside its capacity.

3.4 OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY

A. Base study on device characteristics supplied by device manufacturer. When analysis of full range of device is impractical, limiting scope of analysis from 10 to 100 percent of device range is acceptable.

B. Extent of electrical power system to be studied is indicated on Drawings.

C. Begin analysis at service, extending down to system overcurrent protective devices through the electrical distribution system required.

D. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for the Project. Study cases of system-switching configurations and alternate operations that could result in maximum fault conditions.

E. Transformer Primary Overcurrent Protective Devices:

1. Device must not operate in response to the following:

    a. Inrush current when first energized.
    b. Self-cooled, full-load current or forced-air-cooled, full-load current, whichever is specified for that transformer.
    c. Permissible transformer overloads in accordance with IEEE C57.96 if required by unusual loading or emergency conditions.

2. Device settings must protect transformers in accordance with IEEE C57.12.00, for fault currents.

F. Motor Protection:

1. Select protection for low-voltage motors in accordance with IEEE 3004.8 and NFPA 70.
2. Select protection for motors served at voltages more than 600 V in accordance with IEEE 620.

G. Conductor Protection: Protect cables against damage from fault currents in accordance with ICEA P-32-382, ICEA P-45-482, and protection recommendations in IEEE 3004.7. Demonstrate that equipment withstands maximum short-circuit current for time equivalent to tripping time of primary relay protection or total clearing time of fuse. To determine temperatures that damage insulation, use curves from cable manufacturers or from listed standards indicating conductor size and short-circuit current.

H. Generator Protection: Select protection in accordance with manufacturer's published instructions and IEEE C37.102.

I. Include AC fault-current decay from induction motors, synchronous motors, and asynchronous generators and apply to low- and medium-voltage, three-phase AC systems. Also account for fault-current DC decrement, to address asymmetrical requirements of interrupting equipment.

J. Include coordination of ground-fault protection devices.

K. Calculate short-circuit momentary and interrupting duties for three-phase bolted fault and single line-to-ground fault at equipment indicated on one-line diagram.

1. For grounded systems, provide bolted line-to-ground fault-current study for areas as defined for three-phase bolted fault short-circuit study.

L. Protective Device Evaluation:

1. Evaluate equipment and protective devices and compare to short-circuit ratings.
2. Adequacy of switchgear, motor-control centers, and panelboard bus bars to withstand short-circuit stresses.
3. Include in report identification of protective device applied outside its capacity.

3.5 LOAD-FLOW AND VOLTAGE-DROP STUDY

A. Perform load-flow and voltage-drop study to determine steady-state loading profile of system. Analyze power system performance two times as follows:

1. Determine load flow and voltage drop based on full-load currents.
2. Determine load flow and voltage drop based on 80 percent of design capacity of load buses.
3. Prepare load-flow and voltage-drop analysis and report to show power system components that are overloaded, or might become overloaded; show bus voltages that are less than as prescribed by NFPA 70.

3.6 MOTOR-STARTING STUDY

A. Perform motor-starting study to analyze transient effect of system's voltage profile during motor starting. Calculate significant motor-starting voltage profiles and analyze effects of motor starting on power system stability.

3.7 ARC-FLASH HAZARD STUDY

A. Comply with NFPA 70E, including Annex D, for arc-flash hazard study.

B. Preparatory Studies: Obtain short-circuit study and overcurrent protective device coordination study results prior to starting arc-flash hazard study.

C. Calculate maximum and minimum contributions of fault-current size.

1. Maximum calculation must assume maximum contribution from utility and must assume motors to be operating under full-load conditions.
2. Calculate arc-flash energy at 85 percent of maximum short-circuit current in accordance with IEEE 1584 recommendations.
3. Calculate arc-flash energy at 38 percent of maximum short-circuit current in accordance with NFPA 70E recommendations.
4. Calculate arc-flash energy with utility contribution at minimum and assume no motor contribution.

D. Calculate arc-flash protection boundary and incident energy at locations in electrical distribution system where personnel could perform work on energized parts.

E. Include medium- and low-voltage equipment locations.

F. Calculate limited, restricted, and prohibited approach boundaries for each location.

G. Incident energy calculations must consider accumulation of energy over time when performing arc-flash calculations on buses with multiple sources. Iterative calculations must account for changing current contributions, as sources are interrupted or decremented with time. Fault contribution from motors and generators must be decremented as follows:

1. Fault contribution from induction motors must not be considered beyond three to five cycles.
2. Fault contribution from synchronous motors and generators must be decayed to match actual decrement of each as closely as possible (for example, contributions from permanent magnet generators will typically decay from 10 p.u. to 3 p.u. after 10 cycles).

H. Arc-flash energy must generally be reported for maximum of line or load side of circuit breaker. However, arc-flash computation must be performed and reported for both line and load side of circuit breaker as follows:

1. When circuit breaker is in separate enclosure.
2. When line terminals of circuit breaker are separate from work location.

I. Base arc-flash calculations on actual overcurrent protective device clearing time. Cap maximum clearing time at two seconds based on IEEE 1584, Section B.1.2.

3.8 POWER SYSTEM STUDY REPORTS

A. Preparation of Power System Study Reports: Prepare and submit the following:

1. Short-Circuit Study Report Contents:

a. Executive summary of study findings.
b. Study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpretation of results.
c. One-line diagram of modeled power system, showing the following:

1) Protective device designations and ampere ratings.
2) Conductor types, sizes, and lengths.
3) Transformer kVA and voltage ratings.
4) Motor and generator designations and kVA ratings.
5) Switchgear, switchboard, motor-control center, and panelboard designations and ratings.
6) Disconnect switches, enclosed controllers or variable frequency controller feeding 3 phase motors.
7) Derating factors and environmental conditions.
8) Revisions to electrical equipment required by study.

d. Comments and recommendations for system improvements or revisions in written document, separate from one-line diagram.
e. Short-Circuit Study Input Data:

1) One-line diagram of system being studied.
2) Power sources available.
3) Manufacturer, model, and interrupting rating of protective devices.
4) Conductors.
5) Transformer data.

f. Protective Device Evaluation:

1) Evaluate equipment and protective devices and compare to available short-circuit currents. Verify that equipment withstand ratings exceed available short-circuit current at equipment installation locations.
2) Tabulations of circuit breaker, fuse, and other protective device ratings versus calculated short-circuit duties.
3) For 600 V overcurrent protective devices, ensure that interrupting ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.
4) For devices and equipment rated for asymmetrical fault current, apply multiplication factors listed in standards to 1/2-cycle symmetrical fault current.
5) Verify adequacy of phase conductors at maximum three-phase bolted fault currents; verify adequacy of equipment grounding conductors and grounding electrode conductors at maximum ground-fault currents. Ensure that short-circuit withstand ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.

g. Short-Circuit Study Output Reports:

1) Low-Voltage Fault Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:

a) Voltage.
b) Calculated fault-current magnitude and angle.
c) Fault-point X/R ratio.
d) Equivalent impedance.

2) Momentary Duty Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:

a) Voltage.
b) Calculated symmetrical fault-current magnitude and angle.
c) Fault-point X/R ratio.
d) Calculated asymmetrical fault currents based on fault-point X/R ratio; based on calculated symmetrical value multiplied by 1.6; and based on calculated symmetrical value multiplied by 2.7.

3) Interrupting Duty Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:

a) Voltage.
b) Calculated symmetrical fault-current magnitude and angle.
c) Fault-point X/R ratio.
d) No AC Decrement (NACD) ratio.
e) Equivalent impedance.
f) Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on symmetrical basis.
g) Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on total basis.

2. Overcurrent Protection Device Coordination Study Report Contents:

a. Executive summary of study findings.
b. Study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpretation of results.
c. One-line diagram of modeled power system, showing the following:

    1) Protective device designations and ampere ratings.
    2) Conductor types, sizes, and lengths.
    3) Transformer kVA and voltage ratings.
    4) Motor and generator designations and kVA ratings.
    5) Switchgear, switchboard, motor-control center, and panelboard designations.
    6) Disconnect switches, enclosed controllers or variable frequency controller feeding 3 phase motors.
    7) Revisions to electrical equipment required by study.

d. Report recommended settings of protective devices, ready to be applied in field. Use manufacturer's data sheets for recording recommended setting of overcurrent protective devices when available.

    1) Phase and Ground Relays:

        a) Device tag.
        b) Relay current transformer ratio and tap, time dial, and instantaneous pickup value.
        c) Recommendations on improved relaying systems, if applicable.

    2) Circuit Breakers:

        a) Adjustable pickups and time delays (long time, short time, and ground).
        b) Adjustable time-current characteristic.
        c) Adjustable instantaneous pickup.
        d) Recommendations on improved trip systems, if applicable.

    3) Fuses: Show current rating, voltage, and class.

e. Time-Current Coordination Curves: Determine settings of overcurrent protective devices to achieve selective coordination. Graphically illustrate that adequate time separation exists between devices installed in series, including power utility company's upstream devices. Prepare separate sets of curves for switching schemes and for emergency periods where power source is local generation. Show the following information:

    1) Device tag and title, one-line diagram with legend identifying portion of system covered.
    2) Terminate device characteristic curves at point reflecting maximum symmetrical or asymmetrical fault current to which device is exposed.
    3) Identify device associated with each curve by manufacturer type, function, and, if applicable, tap, time delay, and instantaneous settings recommended.
    4) Plot the following listed characteristic curves, as applicable:

a) Power utility's overcurrent protective device.
b) Medium- and low-voltage fuses including manufacturer's minimum melt, total clearing, tolerance, and damage bands.
c) Low-voltage equipment circuit-breaker trip devices, including manufacturer's tolerance bands.
d) Transformer full-load current, magnetizing inrush current, and ANSI through-fault protection curves.
e) Cables and conductors damage curves.
f) Ground-fault protective devices.
g) Motor-starting characteristics and motor damage points.
h) Generator short-circuit decrement curve and generator damage point.
i) Largest feeder circuit breaker in each motor-control center and panelboard.

5) Maintain selectivity for tripping currents caused by overloads.
6) Maintain maximum achievable selectivity for tripping currents caused by overloads on series-rated devices.
7) Provide adequate time margins between device characteristics such that selective operation is achieved.
8) Comments and recommendations for system improvements.

3. Arc-Flash Hazard Study Report Contents:

a. Executive summary of study findings.
b. Study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpretation of results.
c. One-line diagram, showing the following:

1) Protective device designations and ampere ratings.
2) Conductor types, sizes, and lengths.
3) Transformer kVA and voltage ratings, including derating factors and environmental conditions.
4) Motor and generator designations and kVA ratings.
5) Switchgear, switchboard, motor-control center, panelboard designations, and ratings.
6) Disconnect switches, enclosed controllers or variable frequency controller feeding 3 phase motors.

d. Short-circuit study output data.
e. Overcurrent protective device coordination study report contents.
f. Arc-Flash Study Output Reports:

1) Interrupting Duty Report: Three-phase and unbalanced fault calculations, showing the following for each equipment location included in report:

a) Voltage.
b) Calculated symmetrical fault-current magnitude and angle.
c) Fault-point X/R ratio.
d) No AC Decrement (NACD) ratio.
e) Equivalent impedance.

f) Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on symmetrical basis.
g) Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on total basis.

g. Incident Energy and Flash Protection Boundary Calculations:

1) Arcing fault magnitude.
2) Protective device clearing time.
3) Duration of arc.
4) Arc-flash boundary.
5) Restricted approach boundary.
6) Limited approach boundary.
7) Working distance.
8) Incident energy.
9) Hazard risk category.
10) Recommendations for arc-flash energy reduction.

h. Fault study input data, case descriptions, and fault-current calculations including definition of terms and guide for interpretation of computer printout.

3.9 FIELD ADJUSTMENT FOR DEVICE COORDINATION

A. Adjust relay and protective device settings in accordance with recommended settings provided by coordination study. Field adjustments must be completed by engineering service division of equipment manufacturer under "Startup and Acceptance Testing" contract portion.

B. Make minor modifications to equipment as required to accomplish compliance with short-circuit and protective device coordination studies.

C. Testing and adjusting must be by qualified low-voltage electrical testing and inspecting agency.

1. Perform each visual and mechanical inspection and electrical test stated in NETA ATS. Certify compliance with test parameters. Perform NETA tests and inspections for adjustable overcurrent protective devices.

3.10 WARNING LABELING OF ARC-FLASH HAZARDS

A. Apply one arc-flash label on front cover of each section of equipment for each equipment included in study, including each piece of equipment listed below:

1. Switchboards.
2. Panelboards.
3. Motor-control centers.
4. Low voltage transformers.
5. Disconnect switches feeding 3 phase motors.
6. Enclosed controllers feeding 3 phase motors.
7. Variable frequency controller feeding 3 phase motors.
8. Control panels.

B. Base arc-flash label data on highest values calculated at each location.

C. Machine print warning labels with no handwritten or field-applied markings.

D. Install arc-flash warning labels under direct supervision and control of qualified electrical professional engineer.

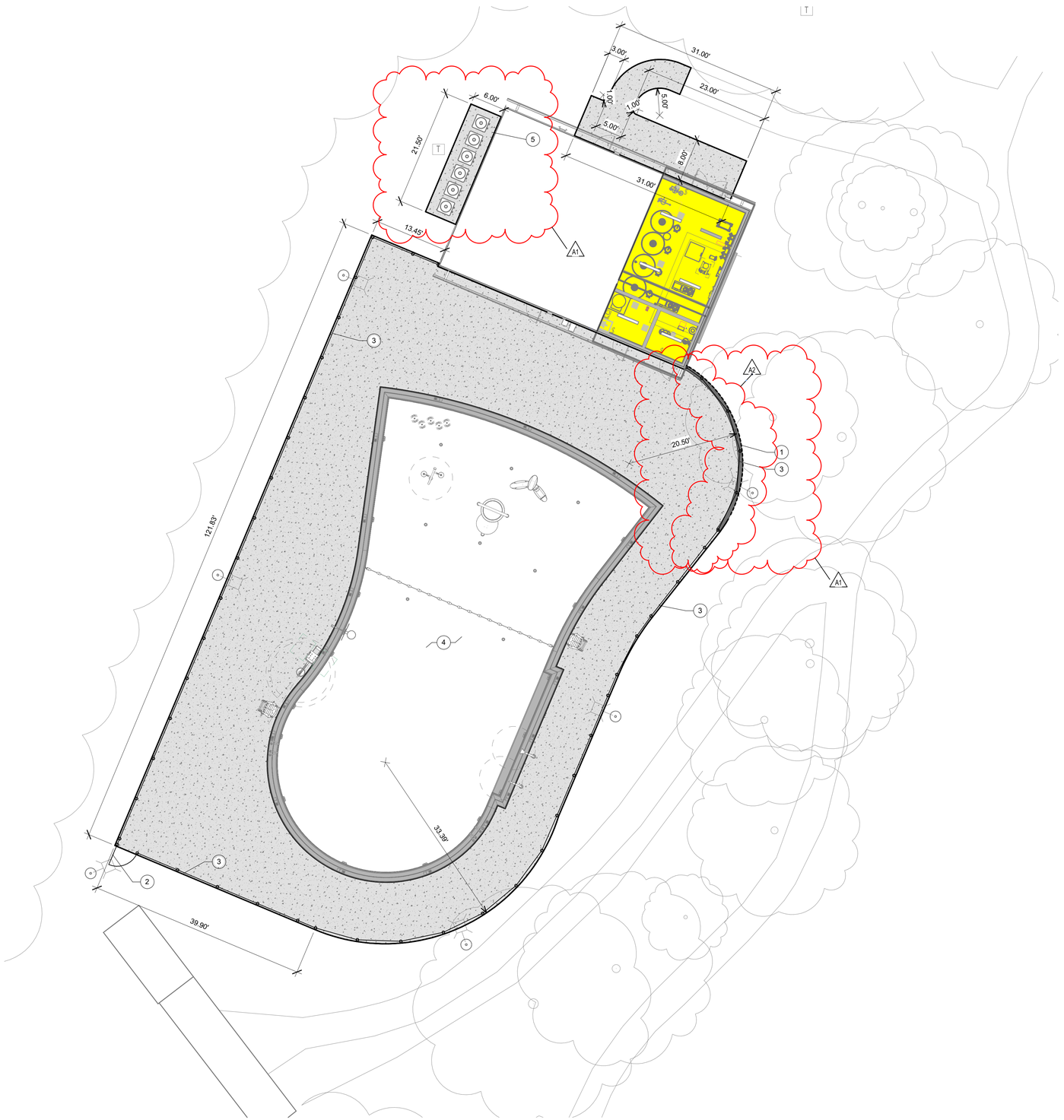
E. Indicate on record Drawings location of equipment where personnel could be exposed to arc-flash hazard during their work.

1. Indicate arc-flash energy.
2. Indicate protection level required.

3.11 WARNING LABELING OF MAXIMUM AVAILABLE FAULT CURRENT

A. Apply one maximum available fault current label on front cover of each service equipment.

END OF SECTION 260573



1 **OVERALL SITE PLAN**
1" = 10'-0"

GENERAL LAYOUT NOTES

1. REFERENCE C-001 FOR GENERAL LAYOUT PLAN NOTES.
2. NORTHING AND EASTING COORDINATES ARE STATE PLANE COORDINATES BASED ON A TOPOGRAPHIC SURVEY. REFER TO SURVEY DRAWINGS FOR HORIZONTAL CONTROL POINT DATA.
3. ALL EXISTING PAVEMENT DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO MATCH EXISTING CONDITIONS.

SITE LAYOUT LEGEND

	"IU BEIGE" INTEGRAL COLOR STANDARD CONCRETE PAVING, SEE DETAIL 1A/CL501 AND SPECS

SITE LAYOUT NOTES

#	NOTE
1	CONCRETE RETAINING WALL. SEE GRADING PLAN AND DETAIL 1B/CL501
2	6' TALL, 4' WIDE BLACK VINYL CHAINLINK SWING GATE. SEE DETAIL SHEET AND SPECS
3	6' TALL BLACK VINYL CHAINLINK FENCE. SEE SPECS AND DETAIL SHEET AND SPECS
4	NEW POOL. SEE S-SERIES AND POOL DRAWINGS
5	CONCRETE PAD FOR POOL HEATERS. SEE DETAIL 3A/CL501 AND SPECS

SCHMIDT
ASSOCIATES
schmidt-arch.com • 317.263.6226
415 Massachusetts Ave., Indianapolis, IN 46204
731 Brent St. #203, Louisville, KY 40204

Project No. 2023-194.BWA
Project Date 01.24.2025
Produced SG

KYLE E. MILLER
REGISTERED
NO. 19900465
STATE OF INDIANA
PROFESSIONAL ENGINEER

#	Revision	Date
A1	Addendum 1	02.14.2025
A2	Addendum 2	03.04.2025

5040 St. Road 67 N, Martinsville, IN 46151

N

BRADFORD WOODS

LILLY POOL REPLACEMENT

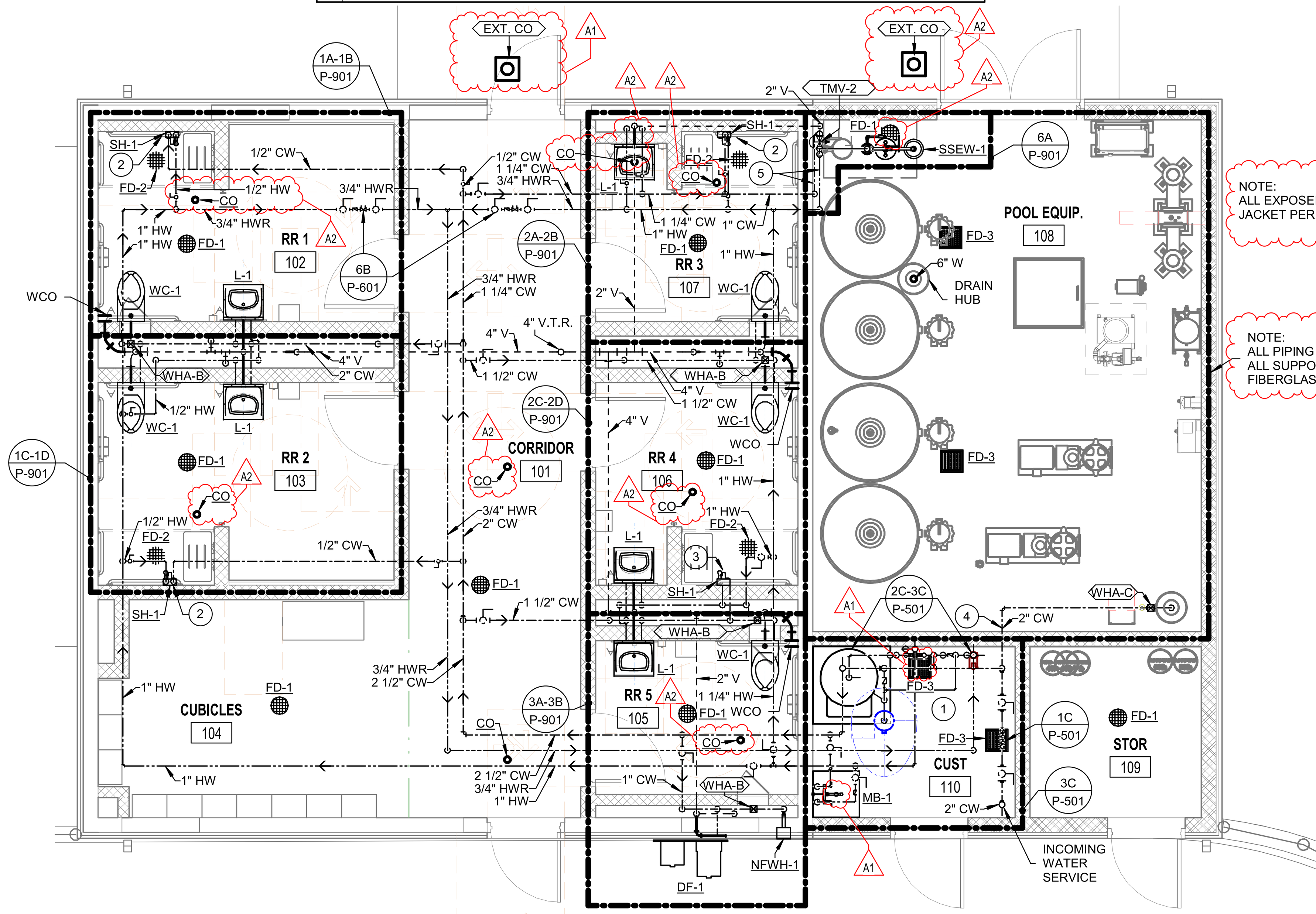
SITE LAYOUT PLAN

CL101

PLUMBING PLAN NOTES

NOT ALL NOTES APPLY TO EVERY SHEETS.

#	NOTE
1	MANUAL AIR VENT BALL VALVES LOCATED IN MECHANICAL ROOM TO FACILITATE DOMESTIC WATER SYSTEM DRAIN DOWN. SEE SHEET P-501 FOR LOCATIONS.
2	CONTRACTOR SHALL FEED SH-1 UNIT DOMESTIC WATER SUPPLIES THRU TOP OF UNIT. TYPICAL OF (1). SHOWER CONTROLS AND HAND WAND SHALL BE INSTALLED WITHIN THE ACCEPTABLE SHOWER CONTROL ZONE. SEE SERIES A DRAWINGS FOR ADA ROLL-IN SHOWER LAYOUT TYPICAL DETAIL.
3	CONTRACTOR SHALL FEED SH-1 UNIT DOMESTIC WATER SUPPLIES THRU WALL FROM RESTROOM CHASE. TYPICAL OF (3). SHOWER CONTROLS AND HAND WAND SHALL BE INSTALLED WITHIN THE ACCEPTABLE SHOWER CONTROL ZONE. SEE SERIES A DRAWINGS FOR ADA ROLL-IN SHOWER LAYOUT TYPICAL DETAIL.
4	CONTRACTOR SHALL INSTALL A 2'' CPVC PIPE WITH A WATER HAMMER ARRESTOR FROM CUSTODIAL ROOM TO AIR GAP AT A MINIMUM OF 6'' ABOVE FILL HUB RIM IN POOL EQUIPMENT ROOM.
5	CONTRACTOR SHALL INSTALL 1'' HW AND 1'' CW CPVC PIPING TO MIXING VALVE BEFORE ENTERING POOL EQUIPMENT ROOM. ROUTE 1-1/4'' CPVC TEMPERED WATER PIPING TO EMERGENCY FIXTURE.



NOTE:
ALL EXPOSED DOMESTIC WATER PIPING SHALL HAVE FIELD APPLIED JACKET PER SPECIFICATIONS.

NOTE:
ALL PIPING MATERIAL IN POOL EQUIPMENT ROOM SHALL BE CPVC.
ALL SUPPORTS AND OR HANGERS IN POOL EQUIPMENT ROOM SHALL BE FIBERGLASS OR STAINLESS STEEL. SEE SPECIFICATIONS FOR FURTHER DETAILS.

4B LEVEL 01 PLUMBING PLAN
1/4" = 1'-0"

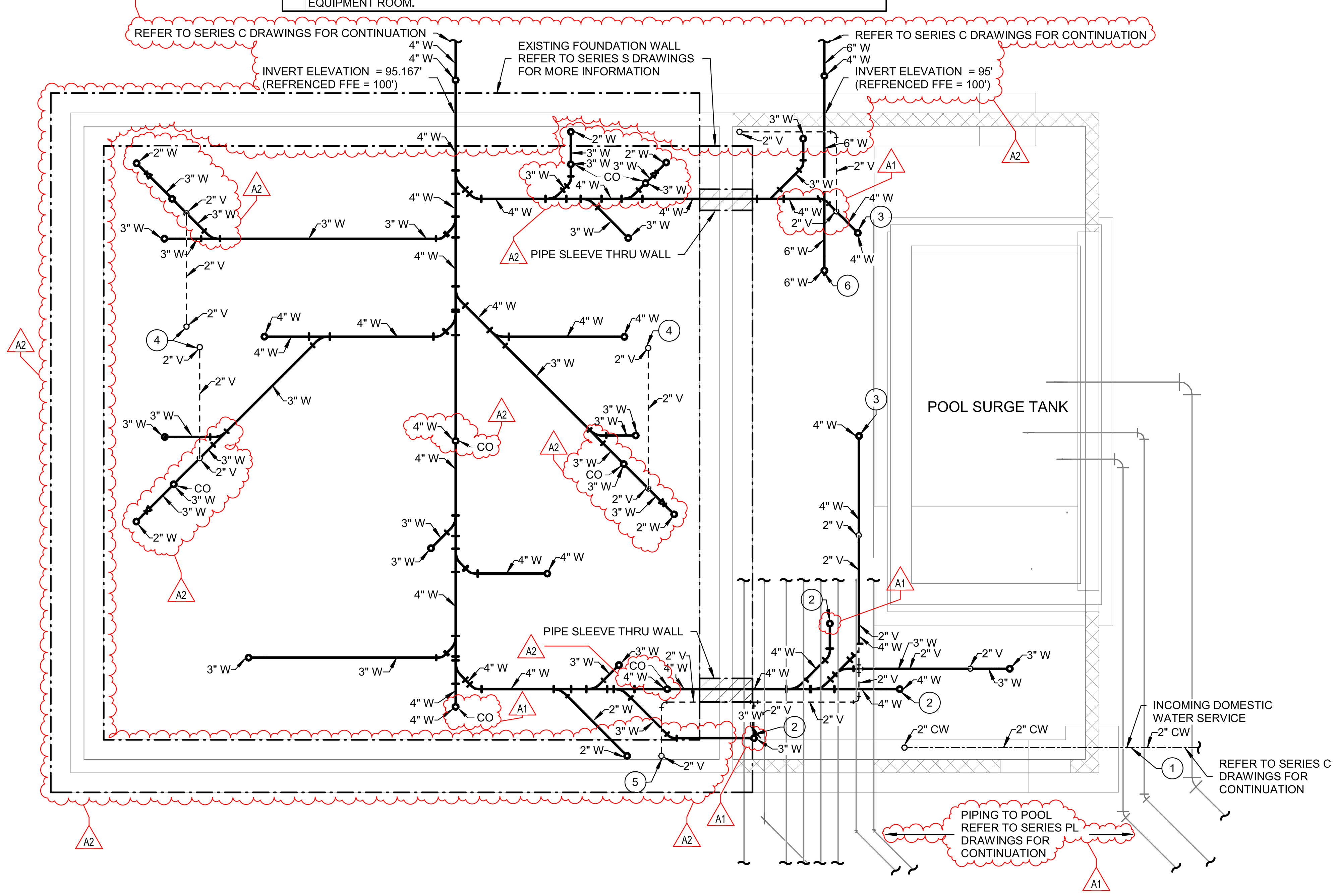
FOUNDATION PLUMBING PLAN NOTES

NOT ALL NOTES APPLY TO EVERY SHEETS.

#	NOTE
1	CONTRACTOR SHALL COORDINATE INCOMING WATER SERVICE INVERT ELEVATION TO BE ABOVE POOL PIPING.
2	CONTRACTOR SHALL COORDINATE CUSTODIAL ROOM SANITARY AND VENT PIPING ROUTING WITH POOL PIPING.
3	COORDINATE PLACEMENT OF POOL EQUIPMENT ROOM FLOOR DRAINS BY MAINTANING MINIMUM 1'-0'' CLEARANCE FROM FACE OF WASTE PIPING TO FACE OF POOL SURGE TANK.
4	CONTRACTOR SHALL CONNECTION VENT PIPING TO RESTROOM CHASE VENT SYSTEM.
5	CONTRACTOR SHALL CONNECT VENT PIPING TO WATER FOUNTAIN CHASE VENT SYSTEM.
6	COORDINATE LOCATION AND CONNECTION OF 6" SANITARY PIPE WITH POOL DRAIN HUB IN POOL EQUIPMENT ROOM.

GENERAL NOTE:
CONTRACTOR SHALL ACCOMADATE AND ROUTE NEW SANITARY PIPING UNDER EXISTING STRUCTURAL FOOTERS.

COORDINATE SANITARY PIPE ROUTING WITH POOL PIPING AND ALL DISCIPLINES AS NECESSARY.

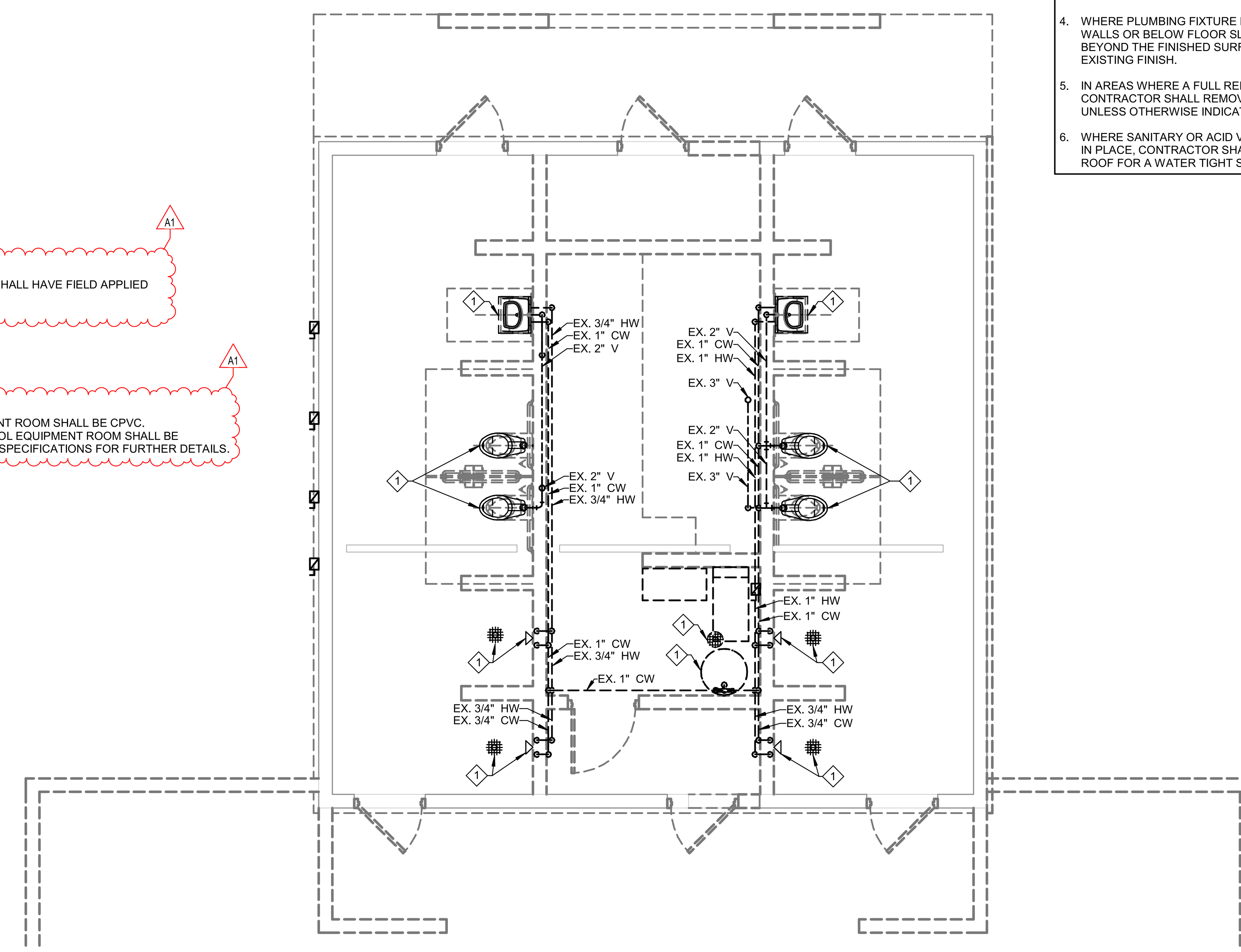


4A FOUNDATION PLUMBING PLAN
1/4" = 1'-0"

DEMOLITION PLAN NOTES

NOT ALL NOTES APPLY TO EVERY SHEETS.

#	NOTE
1	REMOVE ALL EXISTING PLUMBING FIXTURE(S), TRIM, ASSOCIATED PIPING, HANGERS, AND SUPPORTS COMPLETE.

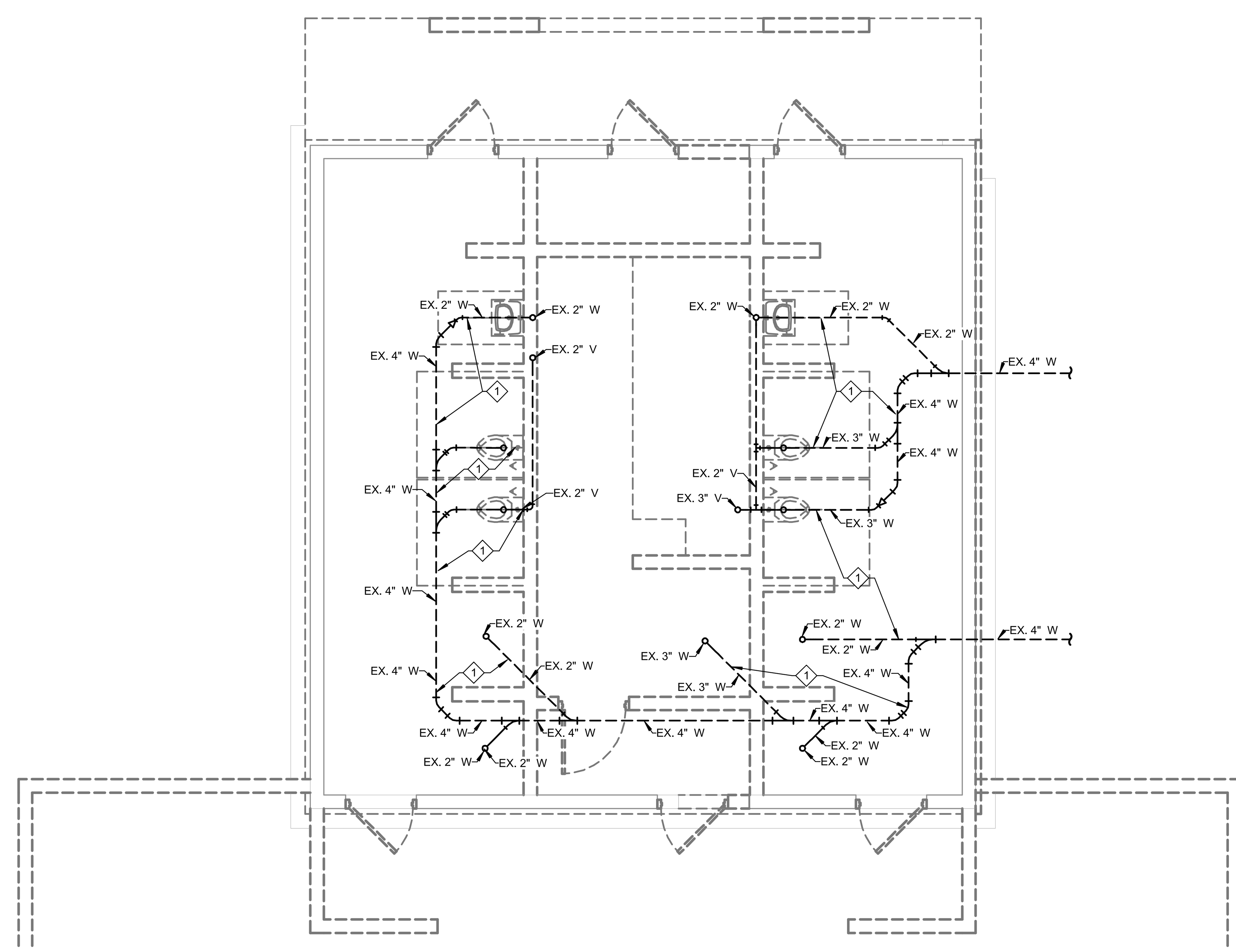


1B DEMOLITION LEVEL 01 PLUMBING PLAN
1/4" = 1'-0"

DEMOLITION FOUNDATION PLAN NOTES

NOT ALL NOTES APPLY TO EVERY SHEETS.

#	NOTE
1	ALL EXISTING SANITARY AND VENT PIPING SHALL BE REMOVED COMPLETE.



1A DEMOLITION FOUNDATION PLUMBING PLAN
1/4" = 1'-0"

PLUMBING RENOVATION NOTES

1. EXISTING PIPE ROUTING, AS SHOWN ON DRAWINGS, IS BASED UPON RECORD DOCUMENTS AND FIELD SURVEYS. ACTUAL ROUTE OF CONCEALED PIPING MAY VARY. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY PIPE ROUTING PRIOR TO SAW CUTTING OF FLOOR SLABS.
2. CONTRACTOR SHALL JET AND THOROUGHLY FLUSH EXISTING SANITARY SEWERS WHERE DOCUMENTS CALL FOR NEW WASTE PIPE CONNECTIONS.
3. ALL UNDERGROUND SANITARY OR STORM PIPING SHOWN TO BE ABANDONED IN PLACE SHALL BE CAPPED AND FILLED WITH FLOWABLE FILL.
4. WHERE PLUMBING FIXTURE ROUGH-IN PIPING IS SHOWN TO BE ABANDONED IN WALLS OR BELOW FLOOR SLAB, ROUGH-INS SHALL BE REMOVED TO A POINT BEYOND THE FINISHED SURFACE AND CAPPED. PATCH SURFACE TO MATCH EXISTING FINISH.
5. IN AREAS WHERE A FULL REMODEL IS INDICATED ON THE DRAWINGS, CONTRACTOR SHALL REMOVE ALL OVERHEAD PIPING AND HANGERS COMPLETE UNLESS OTHERWISE INDICATED.
6. WHERE SANITARY OR ACID VENT THROUGH ROOF IS SHOWN TO BE ABANDONED IN PLACE, CONTRACTOR SHALL PERMANENTLY CAP PIPE ABOVE AND BELOW ROOF FOR A WATER TIGHT SEAL.

PLUMBING FIXTURE ROUGH-IN LEGEND

MARK	FIXTURE CONNECTION			
	CW	HW	W	V
SSEW-1	1 1/4"	0"	1 1/4"	2"
DF-1	1/2"		1 1/2"	1 1/2"
FD-1			3"	
FD-2			2"	
FD-3			4"	
L-1	1/2"	1/2"	1 1/2"	1 1/2"
NFWH-1	3/4"	0"	0"	0"
SH-1	1/2"	1/2"	0"	0"
MB-1	1/2"	1/2"	3"	2"
WC-1	1"		4"	2"

SCHMIDT ASSOCIATES
schmidt-arch.com • 317.263.6226
415 Massachusetts Ave., Indianapolis, IN 46204
731 Brent St. #203, Louisville, KY 40204

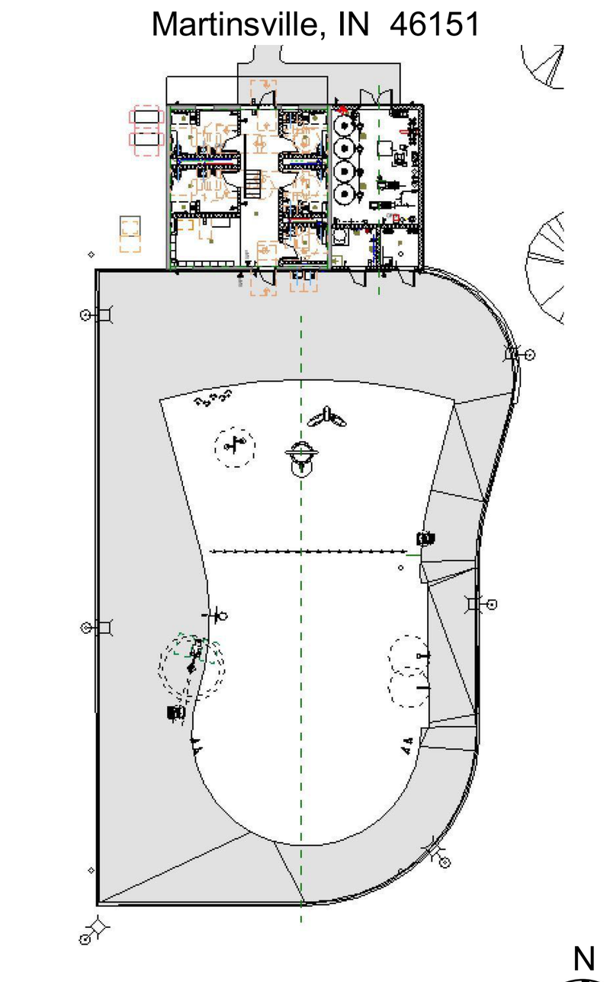
Project No. 2023-194.BWA
Project Date 01.24.2025
Produced AQS

SARAH KATHLEEN HEMPSTEAD REGISTERED NO. AR10400134 STATE OF INDIANA ARCHITECT

Sarah K Hempstead

#	Revision	Date
A1	Revision 1	02/14/2025
A2	Revision 2	03/04/2025

5040 State Road 67 N.
Martinsville, IN 46151



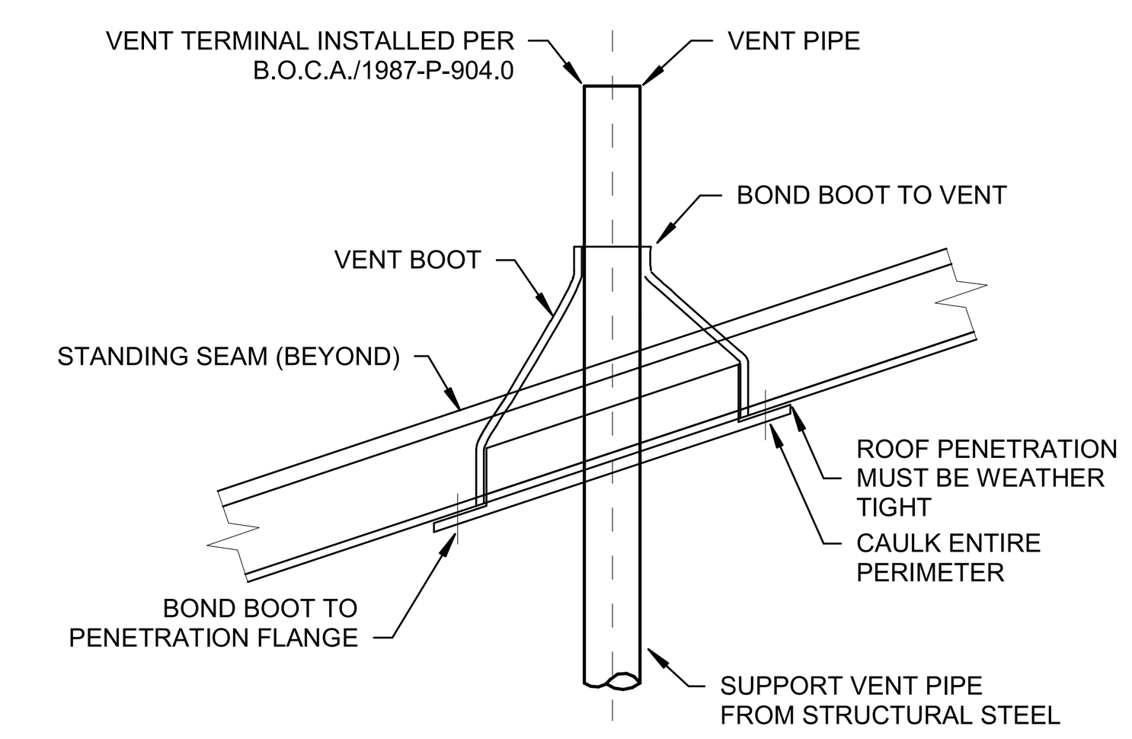
KEY PLAN

Indiana University

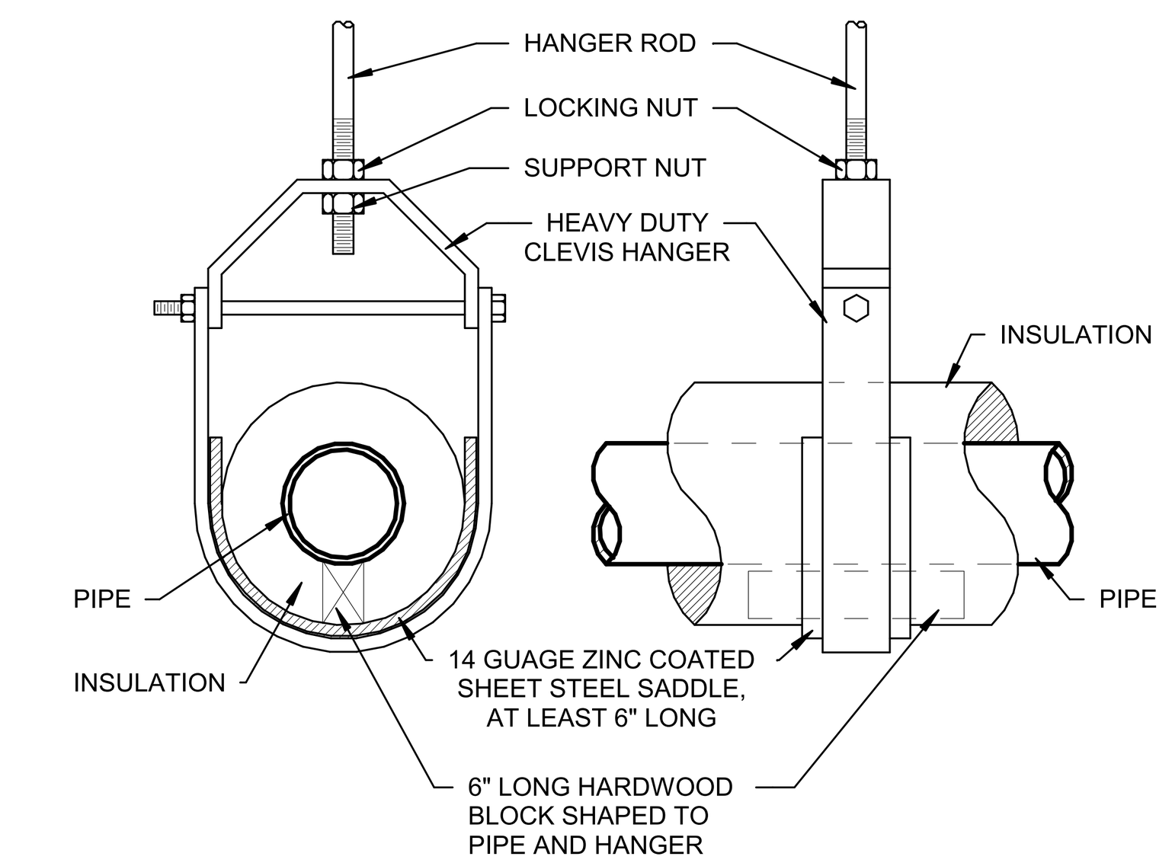
20231242 - BL212
Bradford Woods
Aquatic Facility

PLUMBING PLAN

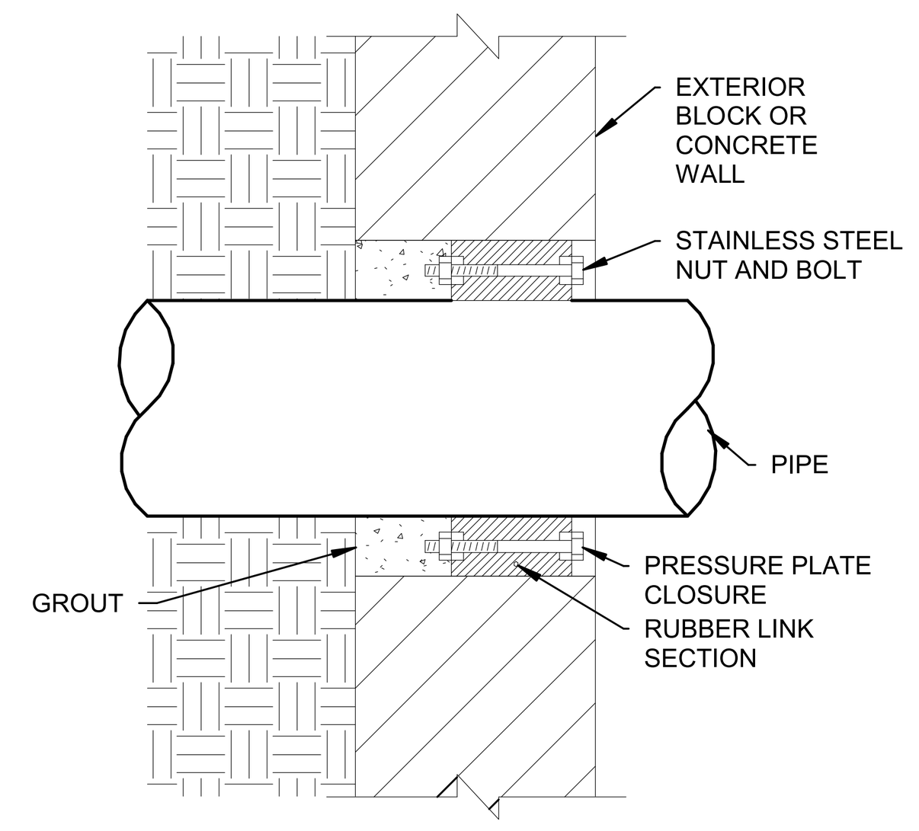
PP101



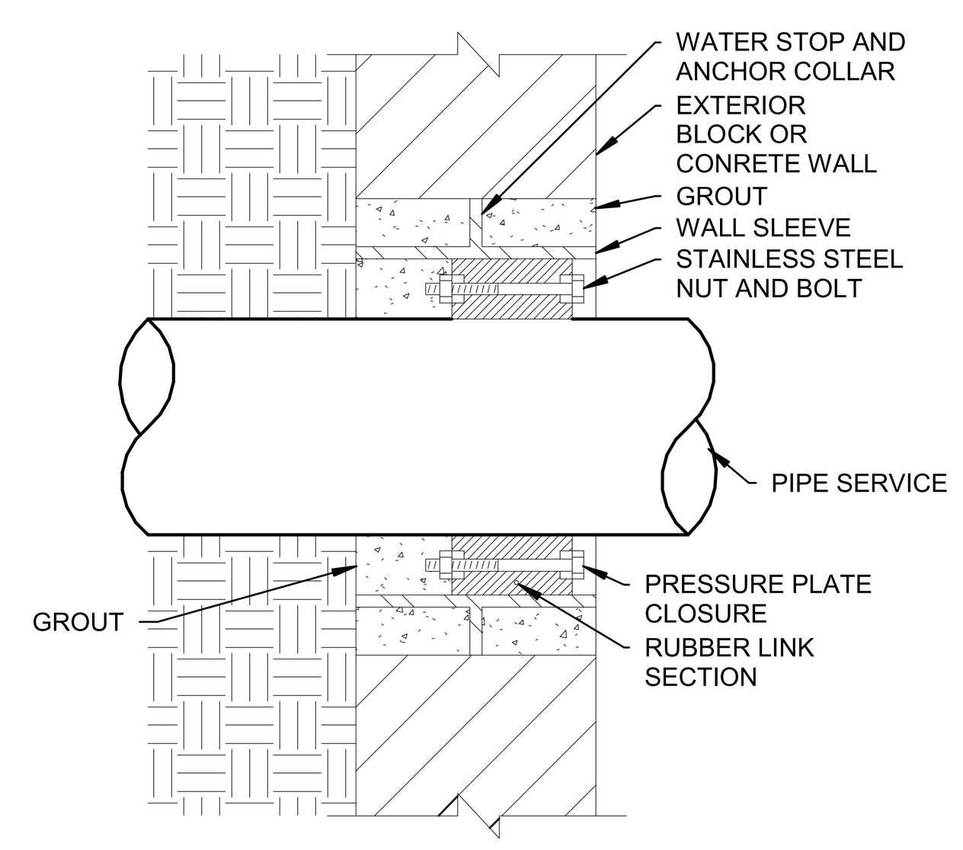
1D ROOF VENT BETWEEN SEAMS DETAIL
NOT TO SCALE



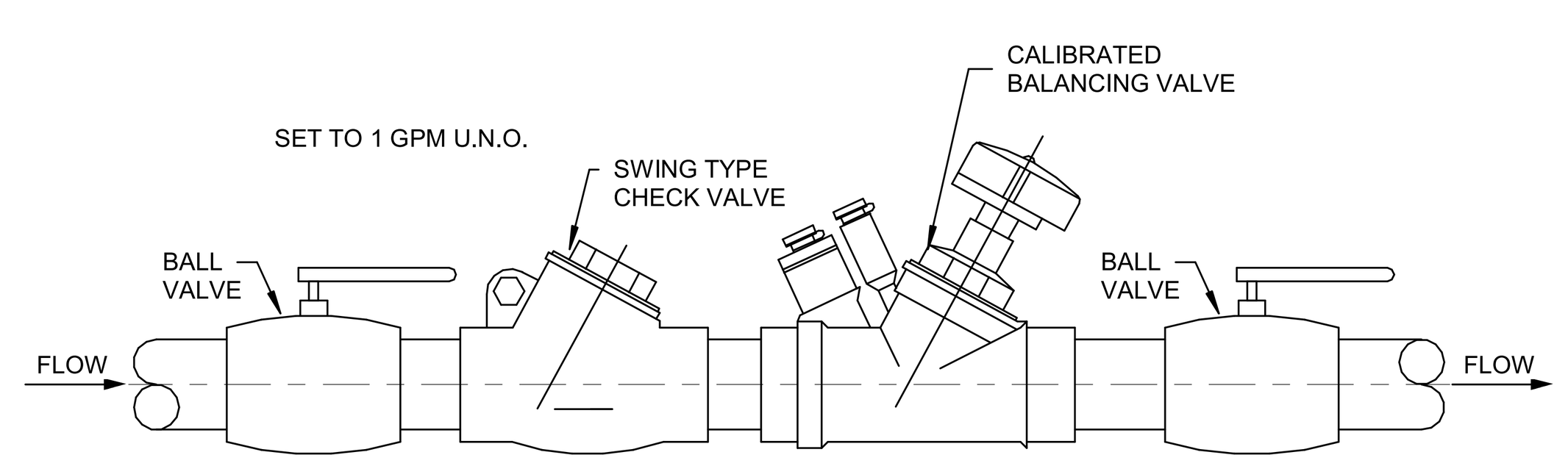
1C PIPE HANGER (6" & SMALLER) DETAIL
NOT TO SCALE



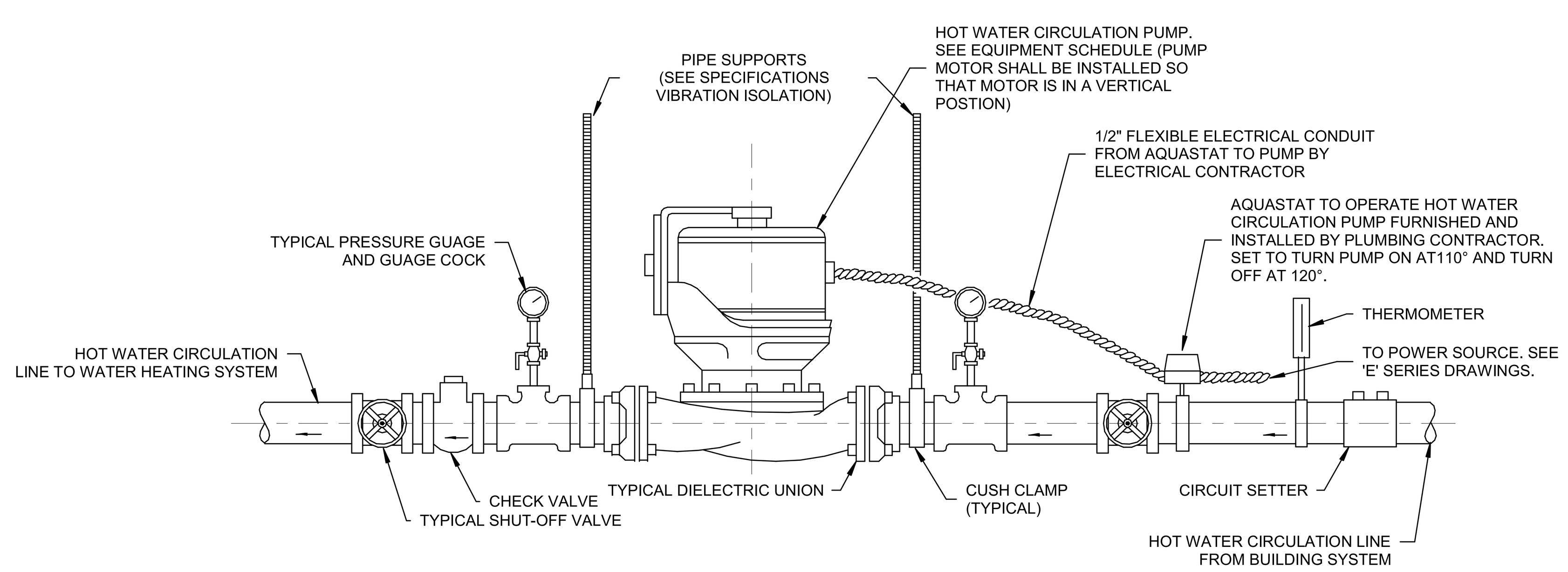
3 CORE DRILL WITH LINK SEAL DETAIL FOR EXISTING FOUNDATION WALL
NOT TO SCALE



6C PIPE SLEEVE WITH LINKSEAL THRU EXTERIOR WALL OR FOUNDATION WALL (BELOW GRADE) DETAIL
NOT TO SCALE



6B HOT WATER BALANCING VALVE STATION DETAIL
NOT TO SCALE



6A HOT WATER RECIRCULATING PUMP DETAIL
NOT TO SCALE

EMERGENCY PLUMBING FIXTURE SCHEDULE (224500)

IDENTITY DATA				FIXTURE			MOUNTING	
MARK	MANUFACTURER	MODEL	DESCRIPTION	TW	V	W	(FLOOR TO RIM)	NOTES
SSEW-1	GUARDIAN EQUIPMENT	#G1990	SAFETY SHOWER AND EYEWASH PEDESTAL	1 1/4"	2"	1 1/4"	PEDESTAL	

EXPANSION TANKS

IDENTITY DATA						
MARK	MANUFACTURER	MODEL	DESCRIPTION	TANK VOLUME (GAL)	MAX. ACCEPT. VOLUME (GAL)	NOTES
ET-1	AMTROL	ST-5-C	DOMESTIC HOT WATER EXPANSION TANK	2.1	0.9	

MIXING, METERING, AND PRESSURE REDUCING VALVES (221119)

				PLUMBING		
MARK	MANUFACTURER	MODEL	DESCRIPTION	FLOW RATE (GPM)	PRESSURE DROP (PSI)	NOTES
BFP-1	ZURN WILKINS	#975XLS2 - 1 1/2"	REDUCED PRESSURE BACKFLOW PREVENTER	100 GPM	15.00 psi	
BFP-2	ZURN WILKINS	#975XLS2 - 1 1/2"	REDUCED PRESSURE BACKFLOW PREVENTER	100 GPM	15.00 psi	
TMV-1	SYMMONS	#7-1000	TEMPERATURE-ACTUATED, WATER MIXING VALVE	67 GPM	10.00 psi	OUTPUT = 120 DEGREE F
TMV-2	Bradley Corporation	NRS-13	Navigator® Recirculation Station with HL130 (S59-3130)	4 GPM	40.00 psi	

DOMESTIC WATER PIPING SPECIALTIES SCHEDULE (221119)

	FIXTURE			FIXTURE CONNECTION				MOUNTING	
MARK	MANUFACTURER	MODEL	DESCRIPTION	CW	HW	W	V	(FLOOR TO OUTLET)	NOTES
NFWH-1	ZURN	#Z1320-C	NONFREEZE WALL HYDRANT WITH RECESSED BOX	3/4"	0"	0"	0"	18"	LOCK BOX W/ KEY

PLUMBING PUMPS (221123.99)

	EQUIPMENT			PLUMBING		ELECTRICAL				
MARK	MANUFACTURER	MODEL	DESCRIPTION	FLOW RATE (GPM)	PUMP HEAD (TDH)	VOLTAGE	PHASE	RPM	HP	NOTES
HWCP-1	BELL AND GOSSETT	ECOCIRC XL N 20-35 #104450LF	100° DOMESTIC HOT WATER CIRCULATION PUMP	3	10	120	1	VARIABLE	1/2	

SANITARY WASTE PIPING SPECIALTIES SCHEDULE (221319)

	FIXTURE			W		
MARK	MANUFACTURER	MODEL	DESCRIPTION	CONNECTION	ACCESSORIES	NOTES
FD-1	J.R. SMITH	#9600Y-U	STAINLESS STEEL BODY WITH FLASHING COLLAR, ADJUSTABLE ROUND STRAINER HEAD	3"	TRAPGUARD BY PROSET, NO SUBSTITUTIONS	
FD-2	J.R. SMITH	#9600Y-U	STAINLESS STEEL BODY WITH FLASHING COLLAR, ADJUSTABLE ROUND STRAINER HEAD	2"	NA	
FD-3	J.R. SMITH	#9693Y-14	STAINLESS STEEL FLOOR SINK WITH DOME BOTTOM STRAINER; SQUARE STAINLESS STEEL GRATE WITH CENTER HOLE	4"	TRAPGUARD BY PROSET, NO SUBSTITUTIONS	

ELECTRIC, DOMESTIC WATER HEATERS SCHEDULE (223300)

	EQUIPMENT			PLUMBING		EQUIPMENT CONNECTIONS			ELECTRICAL			
MARK	MANUFACTURER	MODEL	DESCRIPTION	100°F RISE (GPH)	STORAGE (GAL)	CW	HW	DRAIN	ELEMENT WATTAGE (kW)	VOLTAGE	PHASE	NOTES
EWH-1	A.O. Smith	DVE-120	Gold Xi Series Commercial Electric Water Heaters	148	119	1 1/4"	1 1/4"	1 1/4"	36	208	3	

COMMERCIAL AND RESIDENTIAL WATER CLOSETS SCHEDULE (224100, 224213.13)

	FIXTURE			TRIM				FIXTURE CONNECTION				MOUNTING	ADA	
MARK	MANUFACTURER	MODEL	DESCRIPTION	MANUFACTURER	MODEL	OPERATION	GPF	CW	W	V	SEAT	(FLOOR TO RIM)	COMPLIANT	NOTES
WC-1	AMERICAN STANDARD	#2257.101	WALL-MOUNTED, TOP SPUD, ACCESSIBLE WATER CLOSET	SLOAN	ROYAL #111-1.6	MANUAL	1.6	1"	4"	2"	CLOSED BACK, OPEN FRONT WITH SELF-SUSTAINING METAL CHECK HINGES	17"	Yes	

COMMERCIAL AND RESIDENTIAL LAVATORIES (224100, 224216.13)

	FIXTURE			TRIM				FIXTURE CONNECTION				MOUNTING	ADA	
MARK	MANUFACTURER	MODEL	DESCRIPTION	MANUFACTURER	MODEL	OPERATION	GPM	CW	HW	W	V	(FLOOR TO RIM)	COMPLIANT	NOTES
L-1	AMERICAN STANDARD	#0356.015	VITREOUS CHINA, WALL MOUNTED, WITH BACK	CHICAGO FAUCETS	#404-HZE70ABCP	MANUAL	0.5	1/2"	1/2"	1 1/2"	1 1/2"	34"	Yes	

COMMERCIAL AND RESIDENTIAL SINKS SCHEDULE (224100, 224216.16)

	FIXTURE			TRIM				FIXTURE CONNECTION						ADA	
MARK	MANUFACTURER	MODEL	DESCRIPTION	MANUFACTURER	MODEL	OPERATION	GPM	CW	HW	W	V	STRAINER	MOUNTING	COMPLIANT	NOTES
MB-1	ZURN	#Z1996-24	FLOOR MOUNTED MOP BASIN	T&S BRASS	B-0662	MANUAL	8.9	1/2"	1/2"	3"	2"	GRID	FLOOR MOUNTED	Yes	

A2

COMMERCIAL AND RESIDENTIAL SHOWERS (224223)

	FIXTURE			SHOWERHEAD		FIXTURE CONNECTION					MOUNTING	ADA	
MARK	MANUFACTURER	MODEL	DESCRIPTION	GPM	HEAD HEIGHT	CW	HW	W	V	ACCESSORIES	(FLOOR TO BOTTOM OF UNIT)	COMPLIANT	NOTES
SH-1	BRADLEY CORPORATION	#WS-1X-HN-HD-B-ST-NSD-SHV	Individual Pivoting Wall Shower - ADA Compliant	1.5	6' - 0"	1/2"	1/2"	0"	0"	NA	3' - 2"	Yes	

PRESSURE WATER COOLERS SCHEDULE (224716)

	FIXTURE			FIXTURE CONNECTION				MOUNTING	ADA	
MARK	MANUFACTURER	MODEL	DESCRIPTION	CW	W	V	ACCESSORIES	(FLOOR TO BUBLER)	COMPLIANT	NOTES
DF-1	ELKAY	#EZVRSM-EDFPVM217D1LK	Elkay ezH2O Vandal Resistant Mechanical Bottle Filling Station with Bi-Level Integral Soft Sides® Fountain	1/2"	1 1/2"	1 1/2"	#97258C CANE APRON	BI-LEVEL	Yes	

WATER HAMMER ARRESTER (221119)

MARK	IPS	F.U. RATING	J.R. SMITH NO.	WADE NO.	ZURN NO.	REMARKS
A	3/4"	1-11	5005	W-5	100	P.D.I. CERTIFIED
B	1"	12-32	5010	W-10	200	P.D.I. CERTIFIED
C	1"	33-60	5020	W-20	300	P.D.I. CERTIFIED
D	1"	61-113	5030	W-50	400	P.D.I. CERTIFIED
E	1"	114-154	5040	W-75	500	P.D.I. CERTIFIED

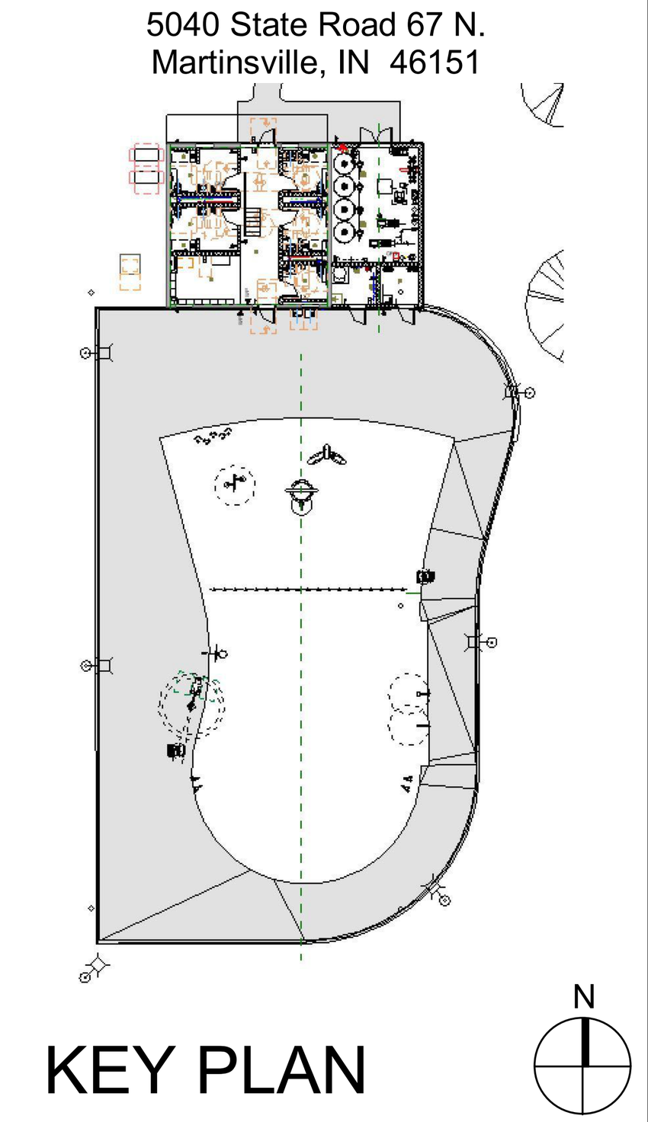
SCHMIDT ASSOCIATES
schmidt-arch.com • 317.263.6226
415 Massachusetts Ave., Indianapolis, IN 46204
731 Brent St. #203, Louisville, KY 40204

Project No. 2023-194.BWA
Project Date 01.24.2025
Produced AQS

SARAH KATHLEEN HEMPSTEAD
REGISTERED
NO. AR10400134
STATE OF INDIANA
ARCHITECT

#	Revision	Date
A2	Revision 2	03/04/2025

5040 State Road 67 N.
Martinsville, IN 46151



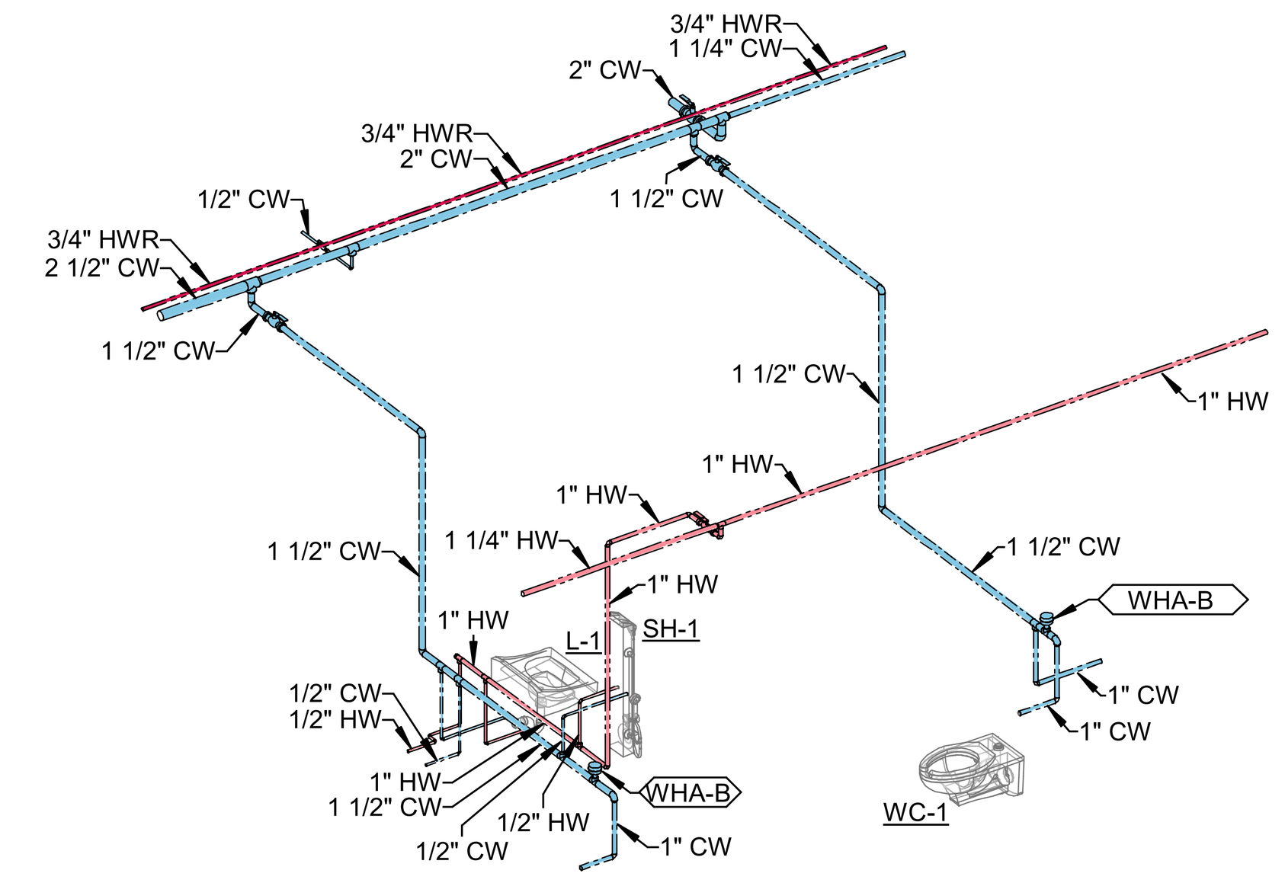
KEY PLAN

Indiana University

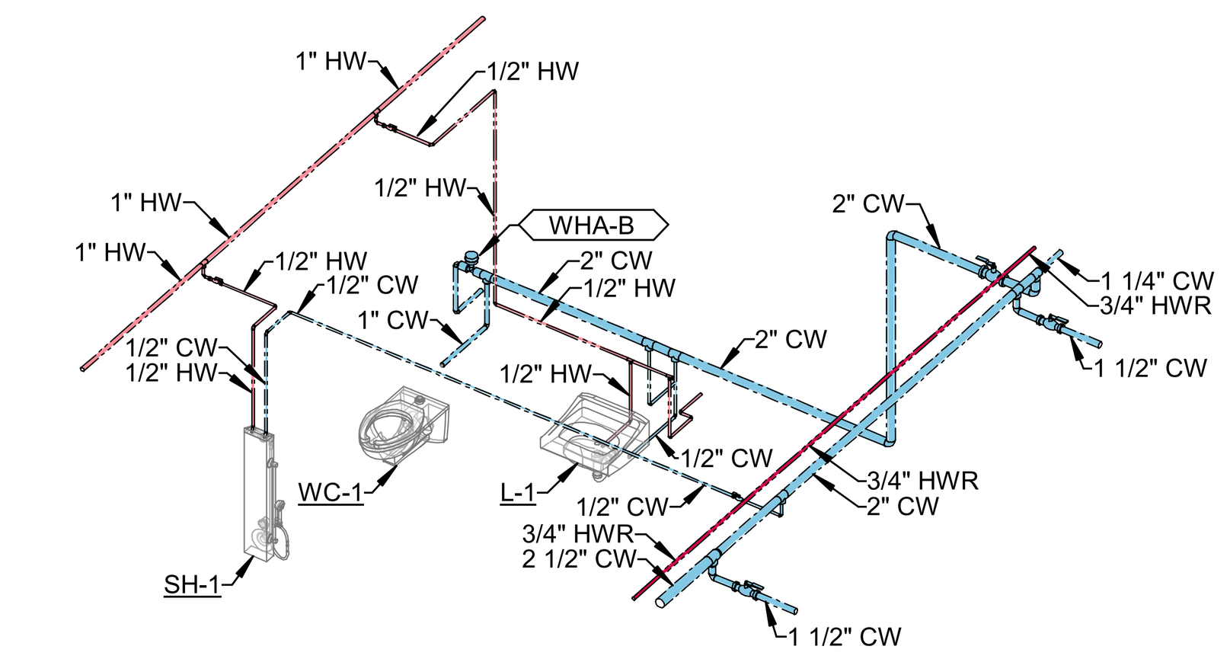
20231242 - BL212
Bradford Woods
Aquatic Facility

PLUMBING DETAILS & SCHEDULES

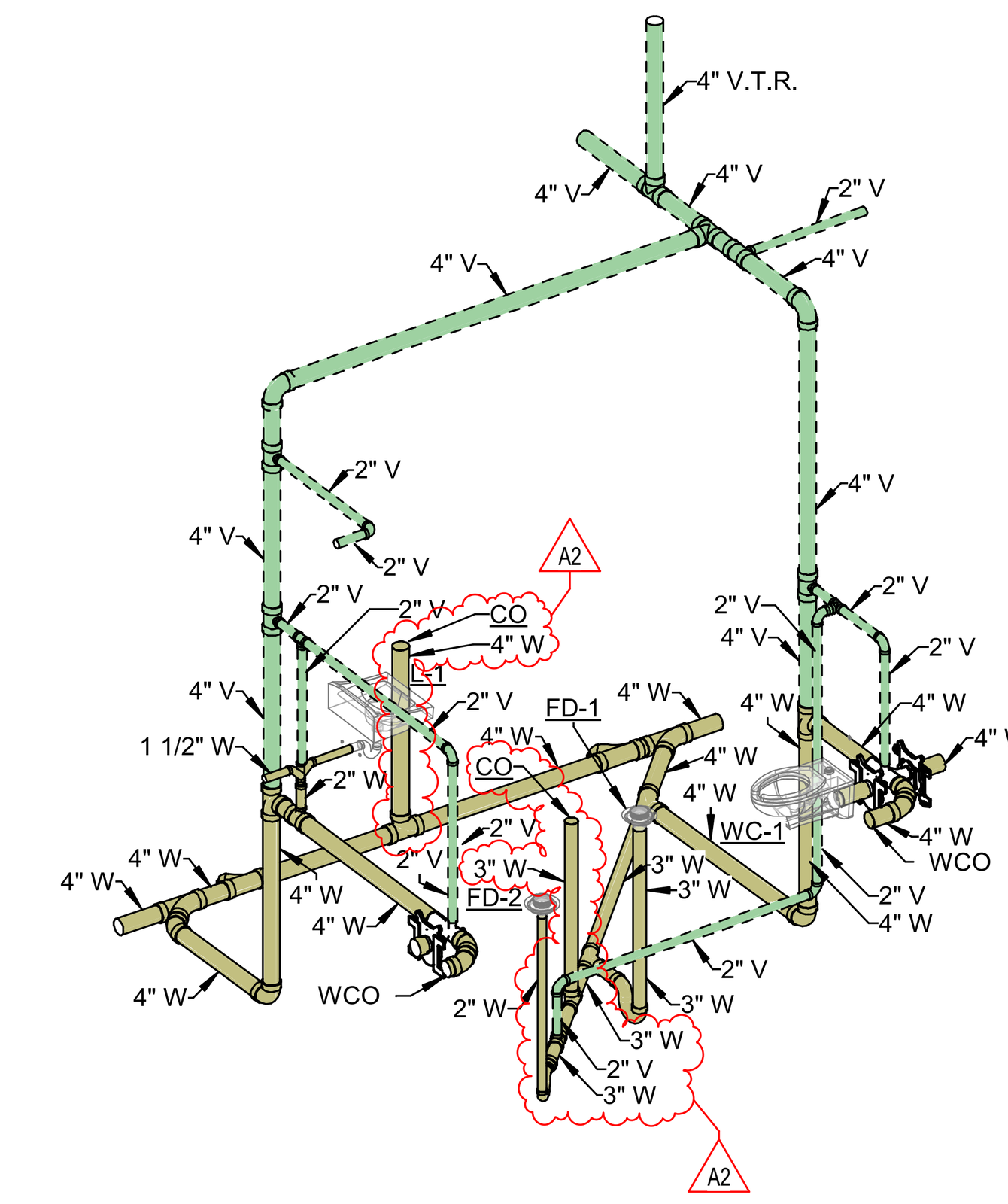
P-601



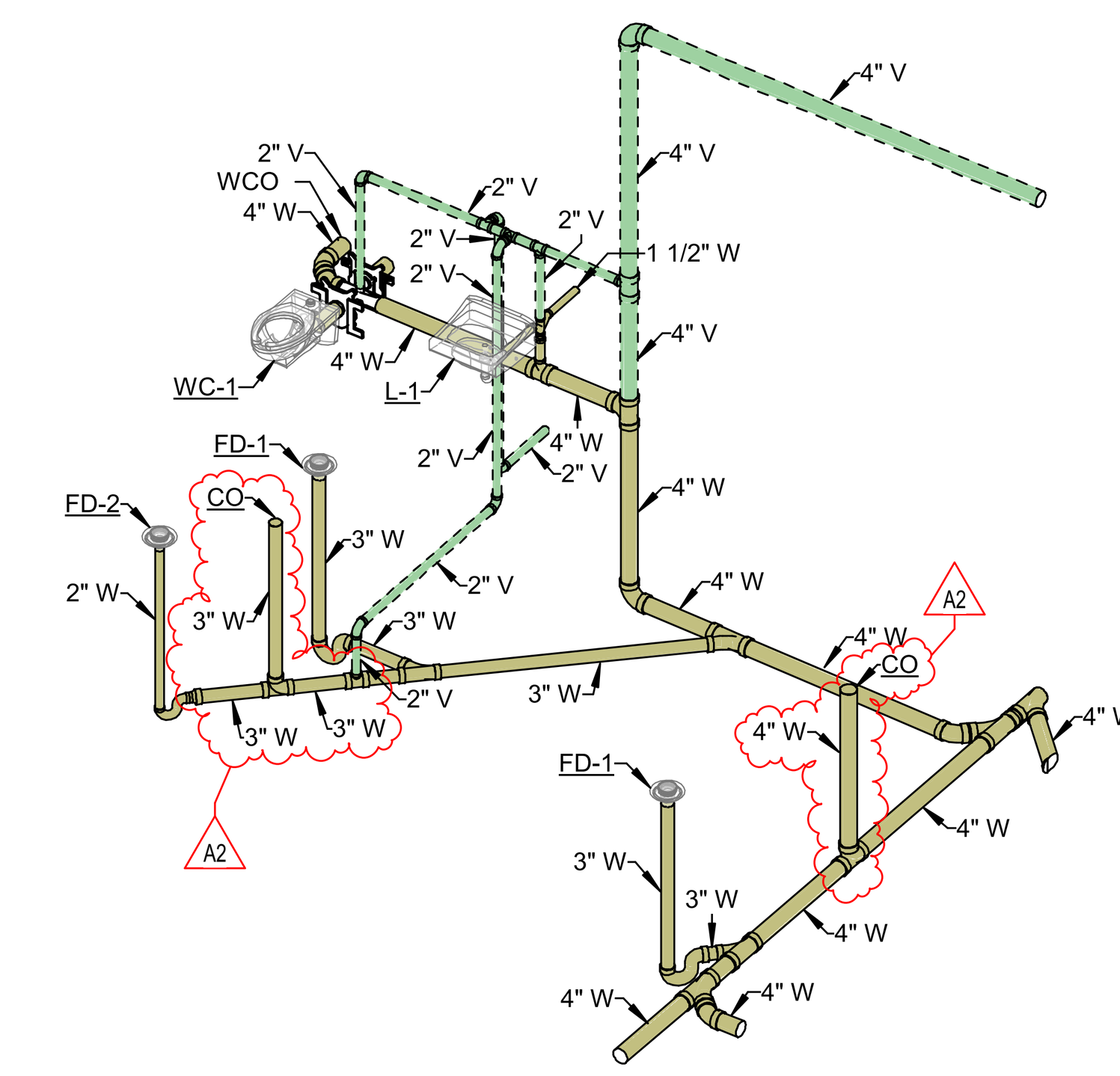
2D CHANGE RM 4 DOMESTIC WATER ISOMETRIC
NOT TO SCALE



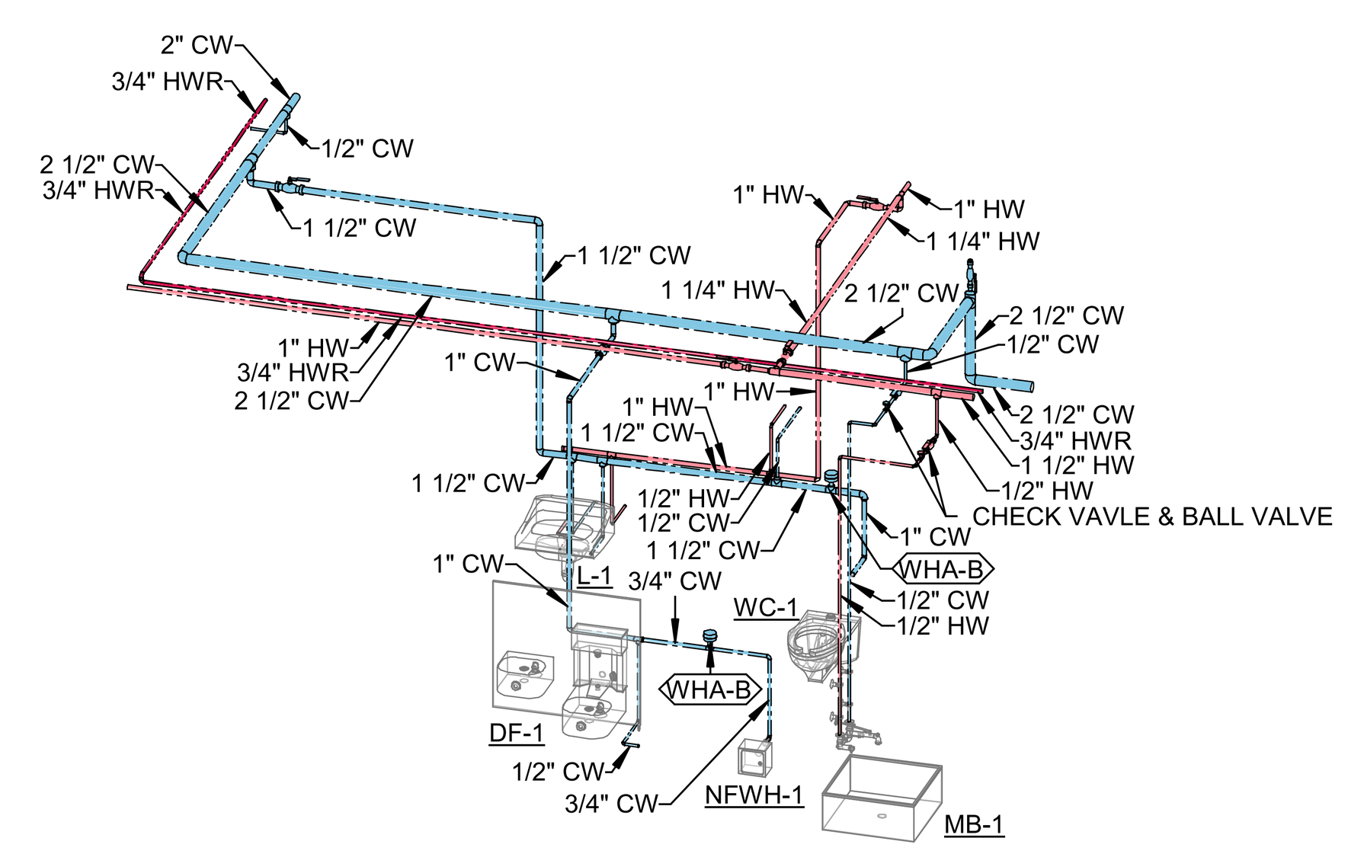
1D CHANGE RM 2 DOMESTIC WATER ISOMETRIC
NOT TO SCALE



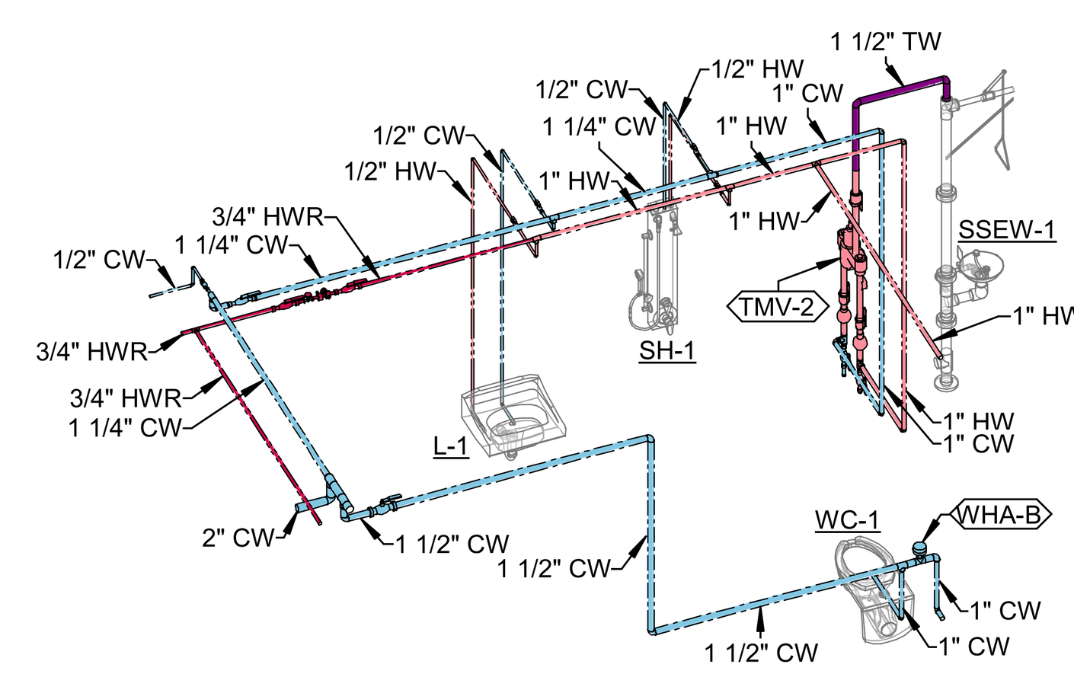
2C CHANGE RM 4 WASTE AND VENT ISOMETRIC
NOT TO SCALE



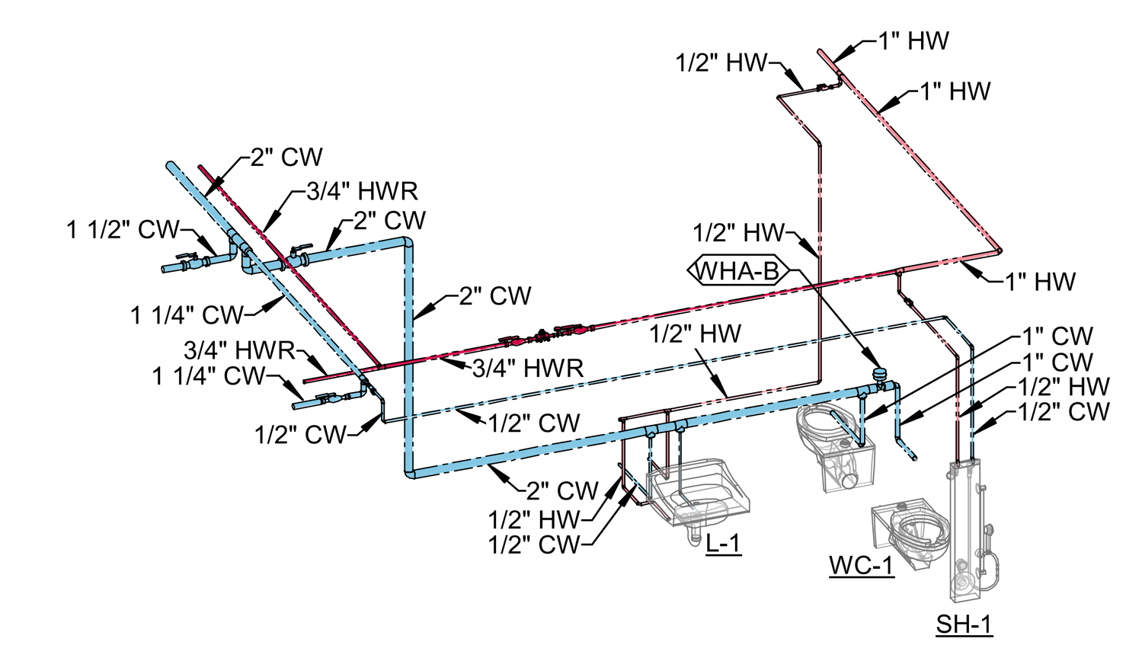
1C CHANGE RM 2 WASTE AND VENT ISOMETRIC
NOT TO SCALE



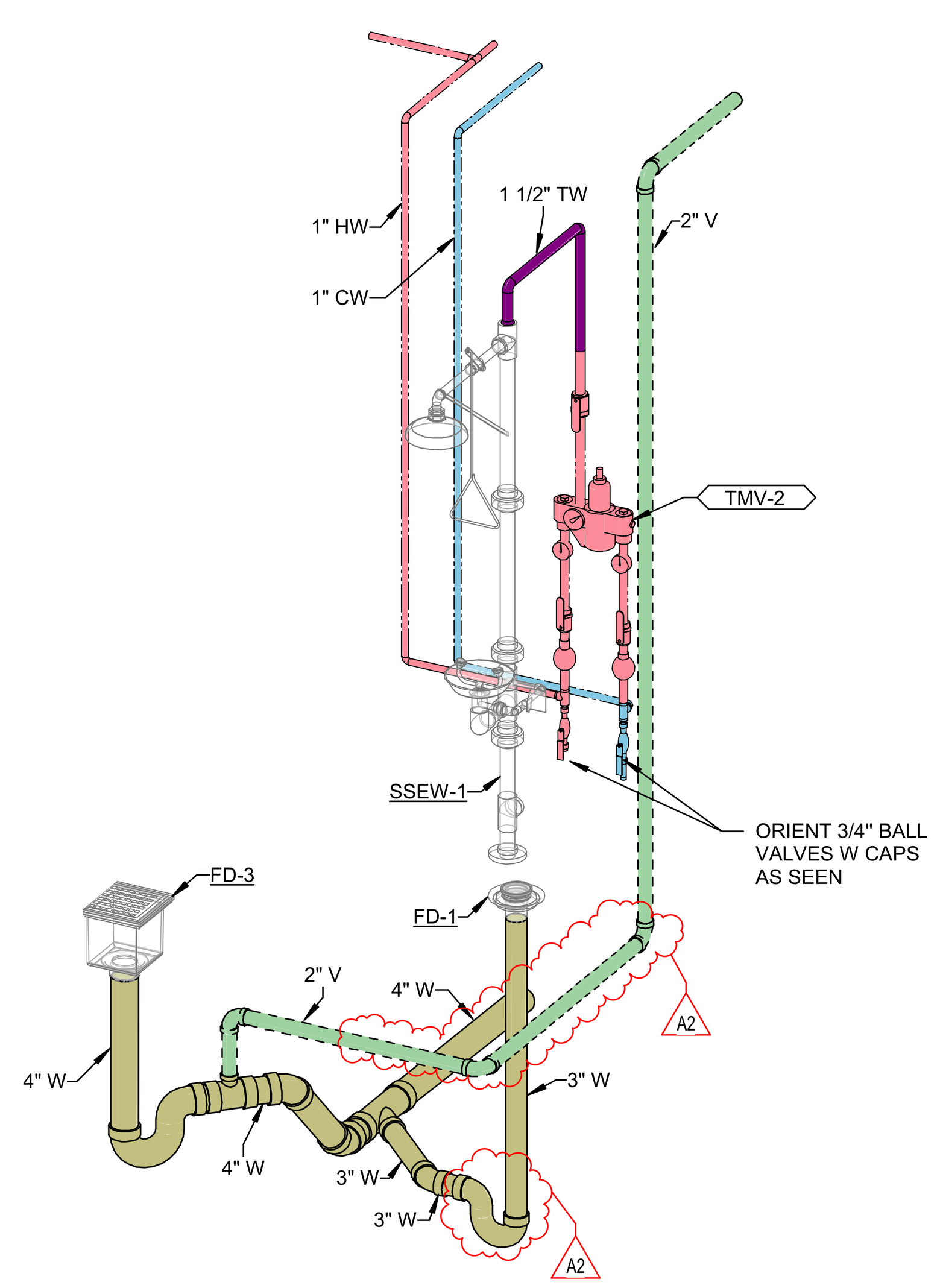
3B CHANGE RM 5 DOMESTIC WATER ISOMETRIC
NOT TO SCALE



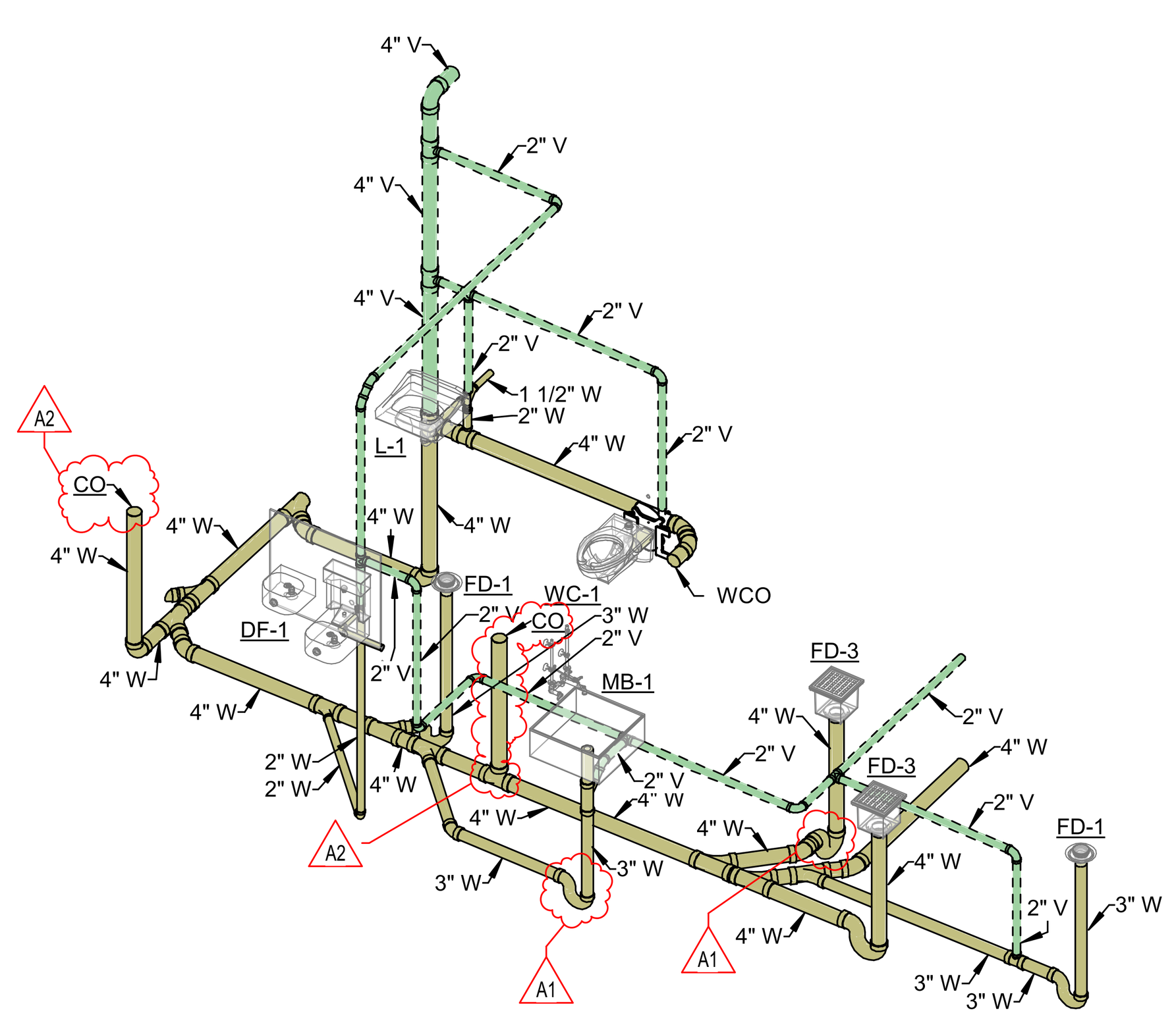
2B CHANGE RM 3 DOMESTIC WATER ISOMETRIC
NOT TO SCALE



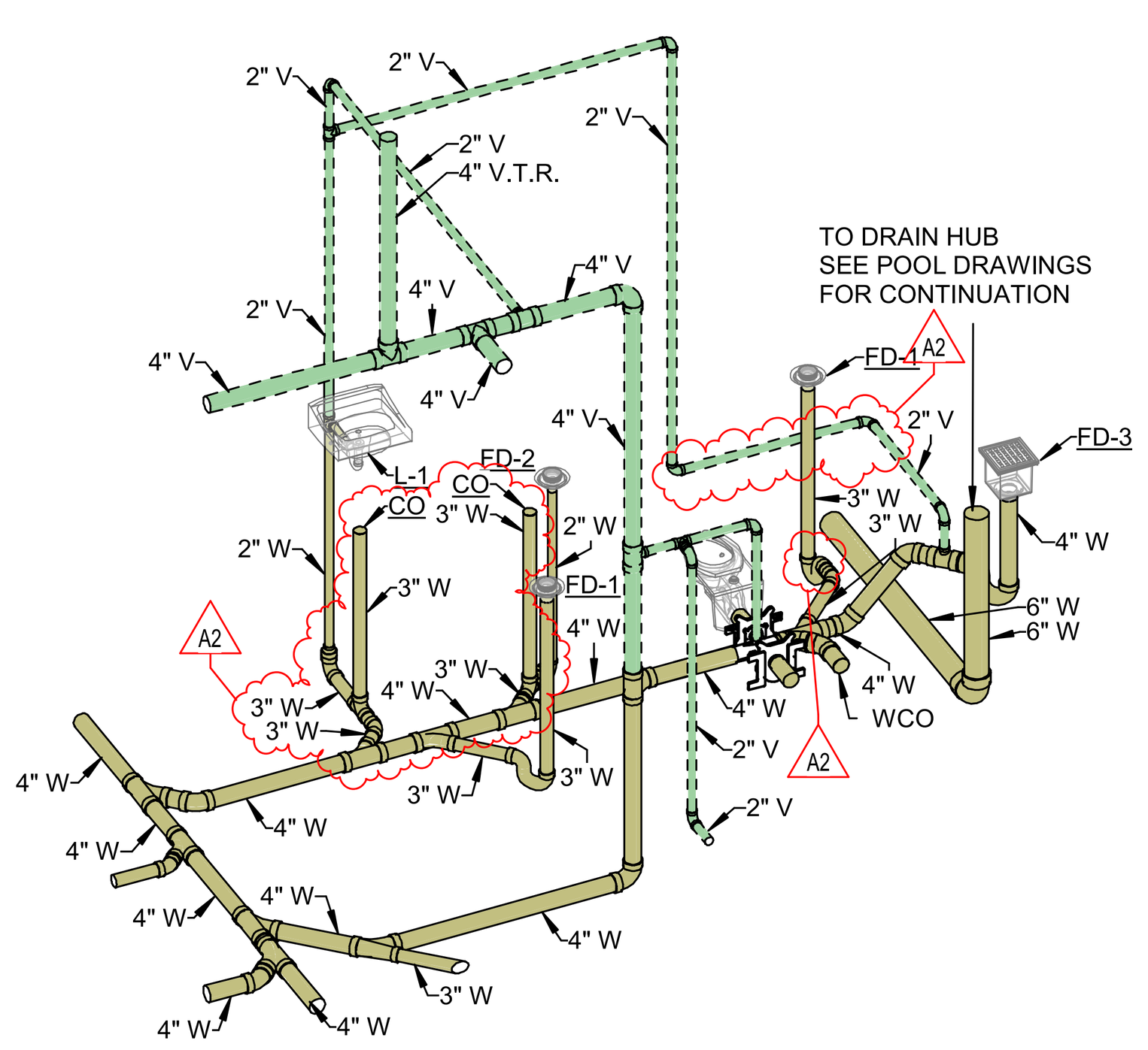
1B CHANGE RM 1 DOMESTIC WATER ISOMETRIC
NOT TO SCALE



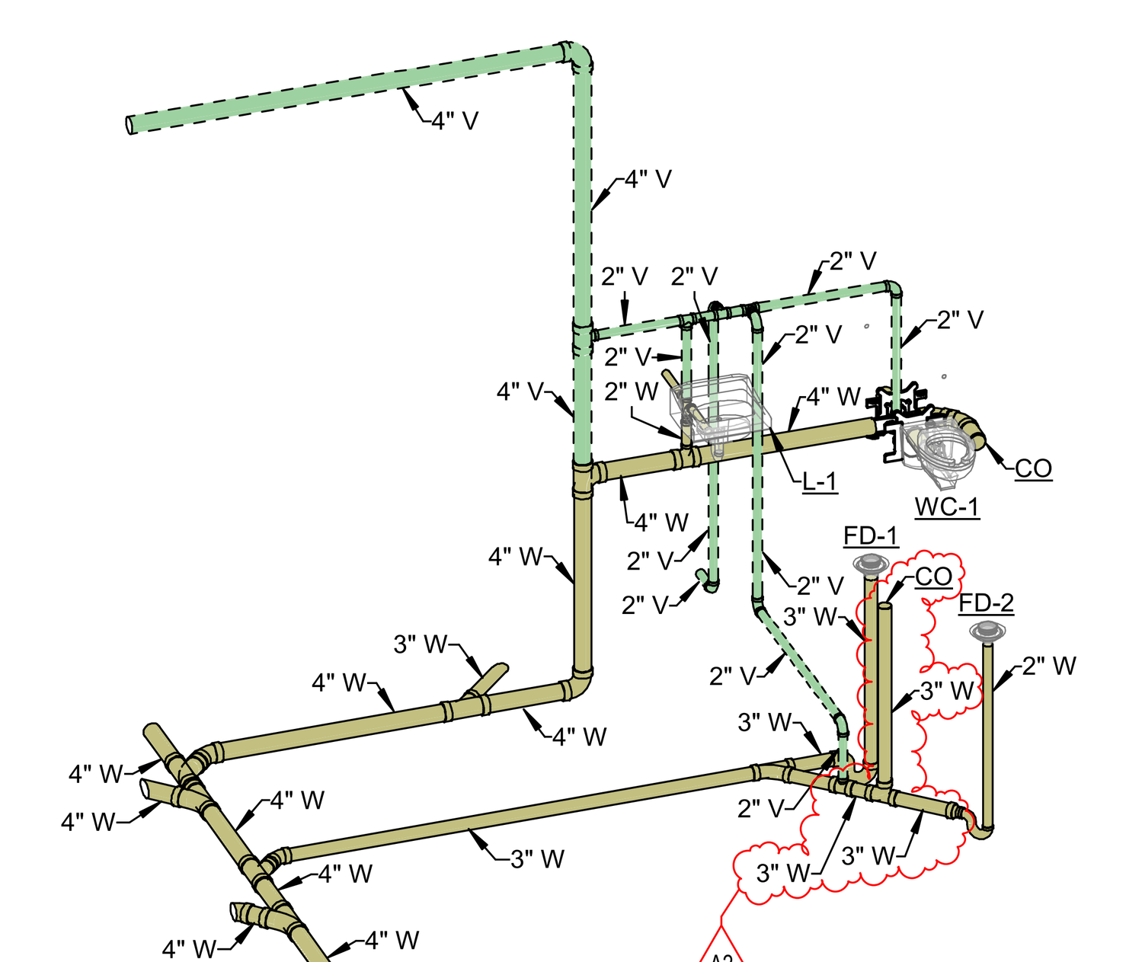
6A EMERGENCY FIXTURE COMBINED ISOMETRIC



3A CHANGE RM 5 WASTE AND VENT ISOMETRIC
NOT TO SCALE



2A CHANGE RM 3 WASTE AND VENT ISOMETRIC
NOT TO SCALE



1A CHANGE RM 1 WASTE AND VENT ISOMETRIC
NOT TO SCALE

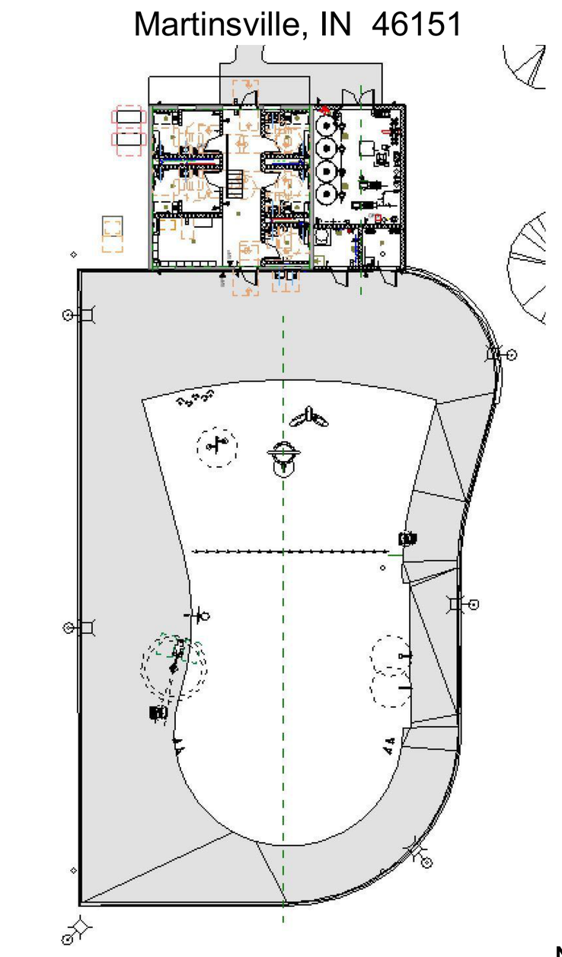
SCHMIDT ASSOCIATES
schmidt-arch.com • 317.263.6226
415 Massachusetts Ave., Indianapolis, IN 46204
731 Brent St. #203, Louisville, KY 40204

Project No. 2023-194.BWA
Project Date 01.24.2025
Produced AQS

SARAH KATHLEEN HEMPSTEAD REGISTERED NO. AR10400134 STATE OF INDIANA ARCHITECT

#	Revision	Date
A1	Revision 1	02/14/2025
A2	Revision 2	03/04/2025

5040 State Road 67 N.
Martinsville, IN 46151



KEY PLAN

Indiana University

20231242 - BL212
Bradford Woods
Aquatic Facility

PLUMBING ISOMETRIC

P-901

BRANCH CIRCUIT PANELBOARD SCHEDULE					
DESIGNATION:	1NL11	VOLTS:	208Y/120 V	MAINS RATING:	400 A
LOCATION:	CUBICLES 104	PHASES:	3	MAINS TYPE:	MCB
MOUNTING:	FLUSH	WIRES:	4	MCB RATING:	400 A
SUPPLY FROM:	EXISTING SCI REMC 15...	AIC RATING:	50,000 A	MCB OPTIONS:	Y

O	CKT NO.	CIRCUIT ROOM #	CIRCUIT TYPE	TRIP	P	A		B		C		P	TRIP	CIRCUIT TYPE	CIRCUIT ROOM #	CKT NO.	O
	1	102, 103	RECEPT	20 A	1	0.36	12.00					3	125 A	EWH-1	CUST 109	2	
	3	105, 106, 107	RECEPT	20 A	1			0.54	12.00			--	--	--	--	4	--
	5	101, 104	RECEPT	20 A	1					0.54	12.00	--	--	--	--	6	--
	7	109, 110	RECEPT	20 A	1	0.54	1.06					1	20 A	EF-1 EF-2	ROOF	8	
	9	108 POOL EQUIP	RECEPT	20 A	1			0.36	5.80			3	80 A	P1A	POOL EQUIP. 108	10	G
	11	EXTERIOR	RECEPT	20 A	1					0.72	5.80	--	--	--	--	12	--
	13	CHANGE RM 1	MOTOR	20 A	1	1.80	5.80					--	--	--	--	14	--
	15	CHANGE RM 2	MOTOR	20 A	1			1.80	3.16			3	40 A	P2A	POOL EQUIP. 108	16	G
	17	101, 104, 108, 109, 110	LIGHTING	20 A	1					0.42	3.16	--	--	--	--	18	--
	19	102, 103, 105, 106, 107	LIGHTING	20 A	1	0.19	3.16					--	--	--	--	20	--
	21	POOL FENCE	LIGHTING	20 A	1			0.58	1.98			1	20 A	AC1	POOL EQUIP. 108	22	
	23	POOL EQUIP. 108	CHEM CP	20 A	2					0.90	1.80	1	20 A	C1A	POOL EQUIP. 108	24	G
--	25	--	--	--	--	0.90	0.10					1	20 A	HCP	POOL EQUIP. 108	26	G
G	27	POOL	LIFT	20 A	3			0.12	0.30			1	20 A	CP1A	POOL EQUIP. 108	28	
--	29	--	--	--	--					0.12	0.15	1	35 A	EVA1	POOL EQUIP. 108	30	
--	31	--	--	--	--	0.12	1.18					1	20 A	SV1A	POOL EQUIP. 108	32	
	33	POOL EQUIP. 108	UV1A	30 A	2			1.25	0.30			1	20 A	AP1A	POOL EQUIP. 108	34	
--	35	--	--	--	--					1.25	0.50	1	20 A	AF1A	POOL EQUIP. 108	36	
	37	POOL HEATERS	H1A4	50 A	2	2.91	2.91					2	50 A	H1A1	POOL HEATER	38	
--	39	--	--	--	--			2.91	2.91			--	--	--	--	40	--
	41	POOL EQUIP. 108	BP1	20 A	3					0.72	1.70	2	20 A	RACK	STOR 110	42	
--	43	--	--	--	--	0.72	1.70					--	--	--	--	44	--
--	45	--	--	--	--			0.72	1.18			1	20 A	HWCP-1	CUST 109	46	
	47	STOR 110	TVSS	20 A	1					0.18	2.91	2	50 A	H1A2	POOL HEATER	48	
--	49	SPARE		20 A	1	0.00	2.91					--	--	--	--	50	--
	51	POOL HEATER	H1A5	50 A	2			2.91	0.00			1	20 A		SPARE	52	--
--	53	--	--	--	--					2.91	2.91	2	50 A	H1A3	POOL HEATER	54	
--	55	SPARE		20 A	1	0.00	2.91					--	--	--	--	56	--
	57	POOL HEATER	H1A6	50 A	2			2.91	0.00			1	20 A		SPARE	58	--
--	59	--	--	--	--					2.91	0.00	1	20 A		SPARE	60	--
--	61	SPARE		20 A	1	0.00	0.00					1	20 A		SPARE	62	--
--	63	SPARE		20 A	1			0.00	0.00			1	20 A		SPARE	64	--
--	65	SPARE		20 A	1					0.00	0.00	1	20 A		SPARE	66	--
					TOTAL LOAD:	41.28 kVA		41.73 kVA		41.61 kVA							
					TOTAL AMPS:	344 A		348 A		347 A							

A2

TOTAL CONNECTED LOAD:	124.61 kVA	135.85 kVA	TOTAL DEMAND LOAD:
TOTAL CONNECTED AMPS:	348 A	377 A	TOTAL DEMAND AMPS:

PANELBOARD & CIRCUIT BREAKER OPTIONS ("O" COLUMN / MCB OPTIONS ABBREVIATIONS)	
C	CONTACTOR CONTROLLED
G	GFCI PROTECTED
P	HANDLE LOCKING DEVICE
S	SHUNT TRIP
X	80% RATED CIRCUIT BREAKER WITH LSI
Y	100% RATED CIRCUIT BREAKER WITH LSI
Z	100% RATED CIRCUIT BREAKER WITH LSIG
	FEED THROUGH LUGS (FTL)
	SUB FEED LUGS (SFL)

LOAD CLASSIFICATION	CONNECTED LOAD (VA)	DEMAND FACTOR	ESTIMATE DEMAND (VA)
Receptacle - General	7180 VA	100.00%	7180 VA
Lighting - Interior	610 VA	125.00%	763 VA
Lighting - Exterior	576 VA	100.00%	576 VA
Mechanical - Motor	74213 VA	112.13%	83213 VA
Mechanical - Equipment	7090 VA	108.82%	7715 VA
Mechanical - Heating	34944 VA	104.17%	36400 VA

NOTES:
1. UL SERVICE ENTRANCE RATED PANELBOARD.
2. PROVIDE SURGE PROTECTION DEVICE.
3. PROVIDE (3) 1" SPARE CONDUITS FROM PANELBOARD TO CEILING SPACE.

262816.1 - ENCLOSED SWITCHES & CIRCUIT BREAKERS SCHEDULE

	LOCATION			EQUIPMENT RATINGS						ACCESSORIES		
LABEL	NUMBER	NAME	EQUIPMENT SERVED	VOLTAGE	POLES	AMPERAGE	FUSED	FUSE SIZE	NEMA ENCL	AUX. CONTACTS	SOLID NEUTRAL	REMARKS
DS-1	109	CUST	EWH-1	240 V	3	200 A	Yes	125	1	(1) N.O. / N.C.	No	
DS-2			H1A2	240 V	2	60 A	Yes	50	3R	(1) N.O. / N.C.	Yes	
DS-3			H1A1	240 V	2	60 A	Yes	50	3R	(1) N.O. / N.C.	Yes	
DS-4	108	POOL EQUIP.	AC1	240 V	2	30 A	Yes	20	4X	(1) N.O. / N.C.	No	
DS-6	108	POOL EQUIP.	BP1	240 V	3	30 A	Yes	15	4X	(1) N.O. / N.C.	No	
DS-7			H1A3	240 V	2	60 A	Yes	50	3R	(1) N.O. / N.C.	Yes	
DS-8			H1A4	240 V	2	60 A	Yes	50	3R	(1) N.O. / N.C.	Yes	
DS-9			H1A5	240 V	2	60 A	Yes	50	3R	(1) N.O. / N.C.	Yes	
DS-10			H1A6	240 V	2	60 A	Yes	50	3R	(1) N.O. / N.C.	Yes	

262913/262923.1 - ENCLOSED & VARIABLE-FREQUENCY MOTOR CONTROLLERS SCHEDULE

	LOCATION			EQUIPMENT RATINGS					STARTER		DISCONNECT SWITCH			
LABEL	NUMBER	NAME	EQUIPMENT SERVED	VOLTAGE	PHASE	HP	FLA	NEMA ENCL	TYPE	NEMA SIZE	TYPE	FUSE SIZE	REMOTE CAPACITOR	REMARKS
MS-1	108	POOL EQUIP.	SV1A	120 V	1	1/2 HP	9.8 A	1	FHPMC	1	-	-	-	HORSEPOWER-RATED TOGGLE SWITCH WITH THERMAL OVERLOADS.
MS-2	108	POOL EQUIP.	EF-2	120 V	1	1/6 HP	4.4 A	1	FHPMC	1	-	-	-	HORSEPOWER-RATED TOGGLE SWITCH WITH THERMAL OVERLOADS.
MS-3	109	CUST	HWCP-1	120 V	1	1/2 HP	9.8 A	1	FHPMC	1	-	-	-	HORSEPOWER-RATED TOGGLE SWITCH WITH THERMAL OVERLOADS.
MS-4	108	POOL EQUIP.	EF-1	120 V	1	1/6 HP	4.4 A	1	FHPMC	1	-	-	-	HORSEPOWER-RATED TOGGLE SWITCH WITH THERMAL OVERLOADS.
VFD1A	108	POOL EQUIP.	P2A	208 V	3	7.5	25.3 A	-	VFD	-	-	-	-	FURNISHED BY POOL EQUIPMENT CONTRACTOR AND INSTALLED BY DIVISION 26 CONTRACTOR.
VFD2A	108	POOL EQUIP.	P1A	208 V	3	15	48.3 A	-	VFD	-	-	-	-	FURNISHED BY POOL EQUIPMENT CONTRACTOR AND INSTALLED BY DIVISION 26 CONTRACTOR.

265119/265619/26213.1 - INTERIOR/EXTERIOR/EMERGENCY & EXIT LIGHT FIXTURES SCHEDULE

			SOURCE								
LABEL	DESCRIPTION	VOLTAGE	TYPE	LUMENS	WATTS	CCT	MOUNTING	LENS/REFLECTOR	CERTIFICATIONS	ACCEPTABLE MANUFACTURERS	LABEL
L1	4' LED VAPORTIGHT FIXTURE. FIBERGLASS HOUSING. U.L. LISTED WET LOCATION.	120/277 V	LED	4,000 LM	38 W	4000 K	SURFACE/CEILING	IMPACT RESISTANT, POLYCARBONATE LENS	N/A	METALUX 4VT2 COLUMBIA LXEM4 LITHONIA FEM LED	L1
L1E	4' LED VAPORTIGHT FIXTURE. FIBERGLASS HOUSING. U.L. LISTED WET LOCATION. INTEGRAL BATTERY INVERTER.	120/277 V	LED	4,000 LM	38 W	4000 K	SURFACE/CEILING	IMPACT RESISTANT, POLYCARBONATE LENS	N/A	METALUX 4VT2 COLUMBIA LXEM4 LITHONIA FEM LED	L1E
S1	LED SITE FIXTURE. SINGLE-PIECE ALUMINUM HOUSING. ARM MOUNT. U.L. LISTED WET LOCATION. DARK BRONZE FINISH. ROUND, STRAIGHT, STEEL, POLE DESIGNED TO SUPPORT FIXTURE(S) IN 100 MPH WINDS WITH 1.3 GUST FACTOR. PRIMARY FUSES. FLAT LENS. SURGE PROTECTION. (1) HEAD.	120	LED	13,100 LM	96 W	4000 K	20' POLE, BASE BY DIVISION 26 CONTRACTOR	N/A	N/A	LUMARK PREVAIL LED BEACON RATIO SERIES LITHONIA RSX LED	S1
X1	EXIT SIGN. VANDAL PROOF. MATTE WHITE HOUSING. SINGLE FACE. STENCIL FACE. RED LETTERS. SELF-POWERED. NICKEL-CADMIUM BATTERY. SELF-DIAGNOSTIC/SELF-TESTING MODULE.	120/277 V	LED	N/A	5 W	N/A	WALL MOUNTED	VANDAL-RESISTANT POLYCARBONATE SHIELD WITH TAMPERPROOF SCREWS	N/A	SURE-LITES UX DUAL-LITE SEWL LITHONIA LV	X1
E1	LED EMERGENCY LIGHT. 25' ON CENTER COVERAGE. ADJUSTABLE OPTICS. SELF DIAGNOSTIC. WHITE FINISH. SEALED NICKEL CADMIUM BATTERY.	120/277 V	LED	220 LM	10 W	4000 K	UNIVERSAL		N/A	SURE-LITES SEL25 DUAL-LITE EV LITHONIA ELM2	E1

262913.1 - LIGHTING CONTACTORS SCHEDULE

	LOCATION		EQUIPMENT RATINGS					COIL CIRCUIT					
LABEL	NUMBER	NAME	VOLTAGE	AMPERAGE	POLES	NEMA ENCL	ACCESSORIES	VOLTAGE	PANEL	CIRCUIT	CONTROL	CIRCUIT(S) CONTROLLED	REMARKS
LC1	109	CUST	600 V	30 A	6	NEMA 1	H-O-A PILOT LIGHT DDC INTEGRATION	120 V	1NL11	21	PHOTOCELL LOCATED ON ROOF	12P1-21	

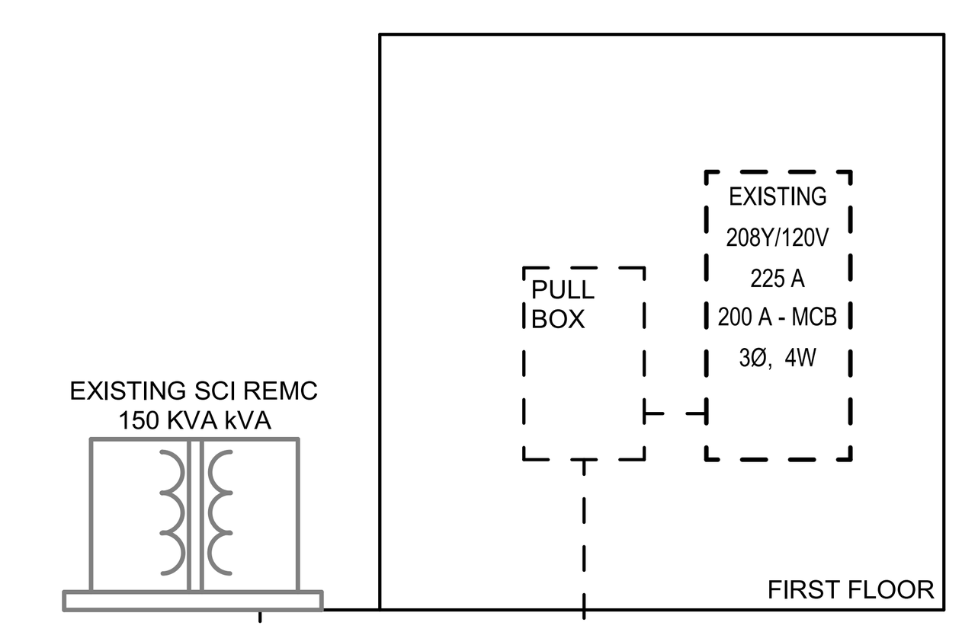
GENERAL ONE-LINE DIAGRAM NOTES

#	NOTES
A	REFER TO SHEETS E-001 AND E-002 FOR ADDITIONAL INFORMATION.

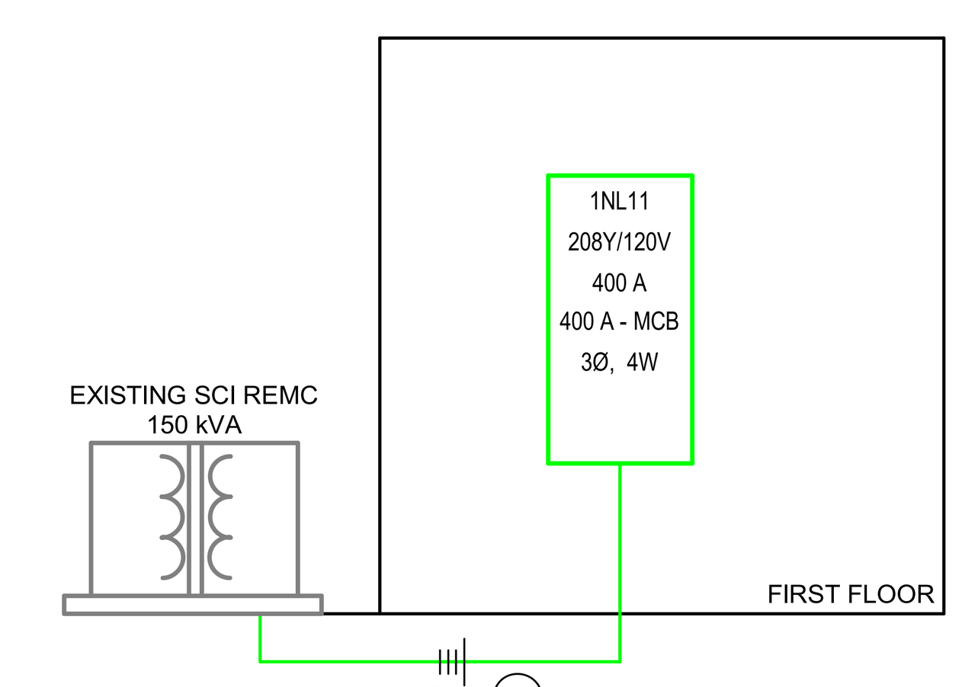
ONE-LINE DIAGRAM NOTES

NOT ALL NOTES APPLY TO EVERY SHEET.

#	NOTES
1	PROVIDE NEW CONDUIT & CONDUCTORS FROM UTILITY TRANSFORMER UNDERGROUND. TRENCH FLOORS UNDER NEW PANEL LOCATION. ROUTE CONDUIT UNDER FOOTINGS. PROVIDE BACKFILL AND CONCRETE FLOOR.



1B ONE-LINE DIAGRAM - DEMOLITION
1/8" = 1'-0"



1A ONE-LINE DIAGRAM
1/8" = 1'-0"

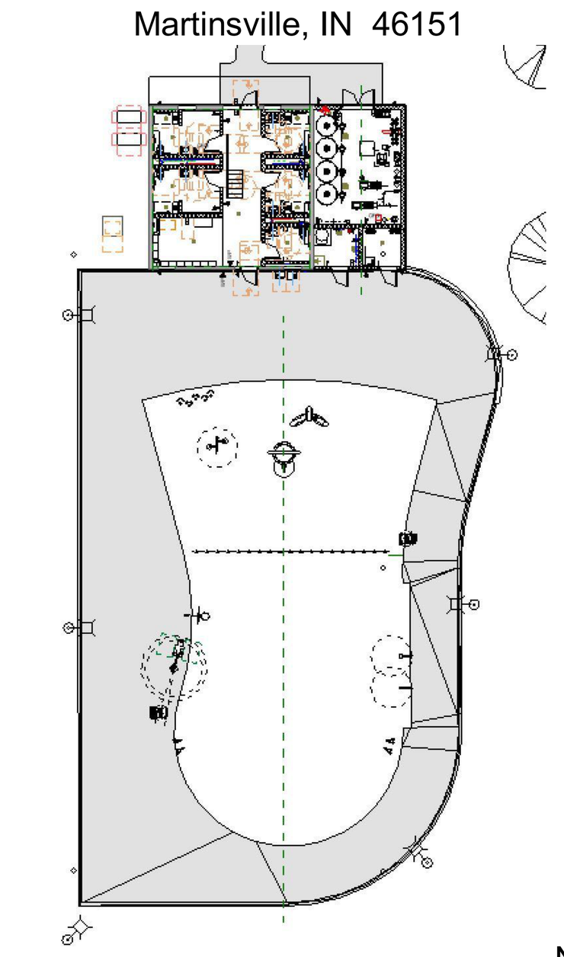
SCHMIDT ASSOCIATES
schmidt-arch.com • 317.263.6226
415 Massachusetts Ave., Indianapolis, IN 46204
731 Brent St. #203, Louisville, KY 40204

Project No. 2023-194.BWA
Project Date 01.24.2025
Produced EMB

SARAH KATHLEEN HEMPSTEAD REGISTERED NO. AR10400134 STATE OF INDIANA ARCHITECT

#	Revision	Date
A1	ADDENDUM #1	02.14.2025
A2	ADDENDUM #2	03.04.2025

5040 State Road 67 N.
Martinsville, IN 46151



KEY PLAN

Indiana University

20231242 - BL212
Bradford Woods
Aquatic Facility

ONE-LINE DIAGRAM

E-601

GENERAL LIGHTING NOTES

#	NOTES
A	REFER TO SHEETS E-001 AND E-002 FOR ADDITIONAL INFORMATION.

LIGHTING PLAN NOTES

NOT ALL NOTES APPLY TO EVERY SHEET.

#	NOTES
1	PROVIDE CONNECTION TO EF-1 LOCATED ON THE ROOF. FAN IS TO OPERATE WHILE LIGHTS ARE ON.
4	LIGHTING FIXTURE TO BE MOUNTED TO THE UNDERSIDE OF ROOF STRUCTURE AT 8'-8".

GENERAL POWER NOTES

#	NOTES
A	REFER TO SHEETS E-001 AND E-002 FOR ADDITIONAL INFORMATION.
B	ALL RIGID CONDUIT INSTALLED IN POOL EQUIPMENT ROOM IS SCHEDULE 80 PVC. ALL DEVICES INSTALLED IN POOL EQUIPMENT ROOM ARE TO BE SURFACE MOUNTED & INSTALLED IN NONMETALLIC BOXES. UTILIZE THERMOPLASTIC WALL PLATES FOR ALL RECEPTACLES IN THE POOL EQUIPMENT ROOM.
C	ALL FLEXIBLE CONDUIT INSTALLED IN POOL EQUIPMENT ROOM IS REINFORCED THERMOSETTING RESIN CONDUIT.

POWER PLAN NOTES

NOT ALL NOTES APPLY TO EVERY SHEET.

#	NOTES
1	PROVIDE HARDWIRED CONNECTION FOR POOL EQUIPMENT.
2	PROVIDE EPO FOR POOL HEATER CIRCULATION PUMP.
3	PROVIDE CONDUIT AND CONDUCTORS FROM VFD TO FLOW METER SENSOR FOR LOW VOLTAGE POWER. PROVIDE SIGNAL CONDUIT AND CONDUCTORS FROM VFD TO CHEMICAL CONTROLLER.
4	PROVIDE 1-1/2" CONDUIT FROM UV CONTROL CABINET TO UV CHAMBER. INSTALL POWER CORD PROVIDED BY POOL CONTRACTOR. PROVIDE 1"C FOR SIGNAL WIRING FROM UV CONTROL PANEL TO UV CHAMBER.
5	PROVIDE HARDWIRED CONNECTION FOR POOL EQUIPMENT. PROVIDE POWER FOR OUTLET MOUNTED TO EQUIPMENT BOARD FROM CONTROL PANEL.
6	PROVIDE HARDWIRED CONNECTION FOR POOL EQUIPMENT. PROVIDE POWER FOR OUTLET MOUNTED TO EQUIPMENT BOARD FROM CONTROL PANEL. PROVIDE LABELS FOR OUTLETS FOR THIS SYSTEM AS DIRECTED BY POOL DESIGN DRAWINGS.
7	ALL CONDUIT IN POOL EQUIPMENT ROOM IS SURFACE MOUNTED.
8	PROVIDE MAIN GROUNDING BAR IN WALL CAVITY. PROVIDE CONNECTIONS TO PANEL GROUND AND GROUNDING TRIANGLE.
9	PROVIDE BONDING CONDUCTOR FROM POOL EQUIPMENT TO MEGB.
10	PROVIDE NEMA L6-20R RECEPTACLE FOR TELECOM RACK. COORDINATE EXACT LOCATION AND MOUNTING DETAILS WITH T-SERIES DRAWINGS.
11	PROVIDE CIRCUIT TO FAN LOCATED ON THE ROOF OVER POOL EQUIPMENT ROOM. PROVIDE PROTECTIVE COVER.
12	INSTALL POOL CONTRACTOR PROVIDED VFD MOUNTED TO UNISTRUT. REFER TO DETAIL 4D/E-502 & MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. CONNECT COMPLETE.
13	INSTALL POOL CONTRACTOR PROVIDED VFD MOUNTED TO WALL. REFER TO DETAILS & MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. CONNECT COMPLETE.
14	PROVIDE WATERPROOF FLEX OUTLET WITH 120V CONNECTION FOR LIFT TABLE MOTOR. PROVIDE 14" OF FLEX CABLE FOR CONNECTION TO EQUIPMENT. CONNECT COMPLETE WITH CONTROL SWITCH & EMERGENCY OFF BUTTON.

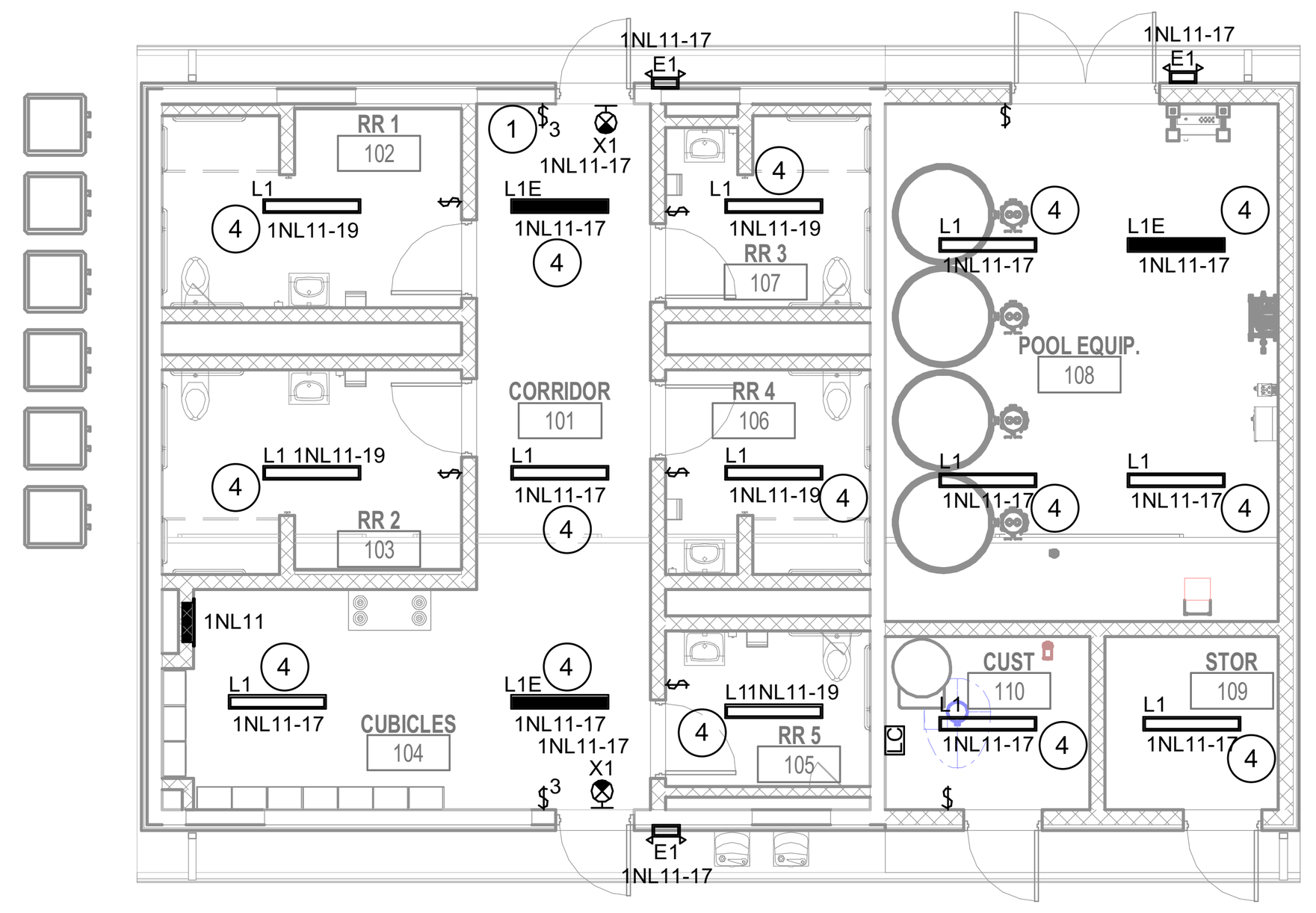
GENERAL DEMOLITION NOTES

#	NOTES
A	REFER TO SHEETS E-001 AND E-002 FOR ADDITIONAL INFORMATION.
B	THIS DRAWING REPRESENTS INFORMATION OBTAINED FROM ORIGINAL CONTRACT DRAWINGS AND FIELD SURVEY. VERIFY BY ON-SITE OBSERVATION THE EXTENT OF WORK PRIOR TO SUBMISSION OF BID.
C	CONTRACT DOCUMENTS CONSIST OF BOTH PROJECT MANUAL AND DRAWINGS AND ARE MEANT TO BE COMPLEMENTARY. ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.
D	THOROUGHLY EXAMINE THE WORK OF OTHER CONTRACTORS AND PROPERLY INSTALL ALL WORK REQUIRED FOR THE PROJECT.
E	THE OWNER HOLDS RIGHT OF FIRST REFUSAL FOR ALL DEMOLISHED ELECTRICAL EQUIPMENT.
F	ALL ELECTRICAL ITEMS SHOWN WITH LIGHT LINEWORK ARE EXISTING TO REMAIN.
G	REMOVE ALL ELECTRICAL ITEMS SHOWN WITH BOLD/DASHED LINEWORK COMPLETE.
H	COORDINATE AND DISCONNECT ALL CIVIL, ARCHITECTURAL, MECHANICAL, PLUMBING, AND TELECOMMUNICATION EQUIPMENT AS NOTED FOR REMOVAL BY OTHERS. REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT, RACEWAYS, CONDUCTORS, ETC. SERVING THE EQUIPMENT.
I	PROVIDE ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL OF EXISTING ELECTRICAL EQUIPMENT. REFER TO SPECIFICATIONS.
J	PROVIDE A BLANK COVERPLATE FOR ALL EXISTING WALL OPENINGS WHERE ELECTRICAL EQUIPMENT HAS BEEN REMOVED AND NOT REPLACED. IN AREAS RECEIVING NEW WALL TREATMENTS, PATCH THE EXISTING OPENING.
K	REFER TO A, M, P, AND T-SERIES DRAWINGS FOR AREAS WITH ABOVE CEILING WORK AND/OR CEILING REMOVAL. TEMPORARILY SUPPORT ALL ELECTRICAL DEVICES, FIXTURES, ETC. AS REQUIRED. RE-INSTALL ELECTRICAL ITEMS FOLLOWING THE COMPLETION OF WORK IN THE NEW OR EXISTING CEILINGS.
L	REMOVE SYSTEMS AND EQUIPMENT MADE OBSOLETE BY THIS PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO, CONDUIT, RACEWAYS, WIREWAYS, CONDUCTORS, JUNCTION BOXES, WIRING DEVICES, LIGHT FIXTURES, PULL BOXES, DISCONNECTS, MOTOR STARTERS, CONTACTORS, ETC.
M	REMOVE ALL DEBRIS FROM SITE AND LEGALLY DISPOSE OF SAME.
N	REMOVE ALL EXISTING EQUIPMENT PADS MADE OBSOLETE. CUT OFF BELOW FLOOR SLAB AND FILL WITH CONCRETE ALL CONDUITS WHICH ARE ABANDONED IN OR BELOW THE FLOOR SLAB. PATCH FLOOR TO MATCH EXISTING CONDITIONS.
O	COORDINATE DISCONNECTION AND REMOVAL OF EXISTING ELECTRICAL PANEL FEEDER WITH LOCAL UTILITY,

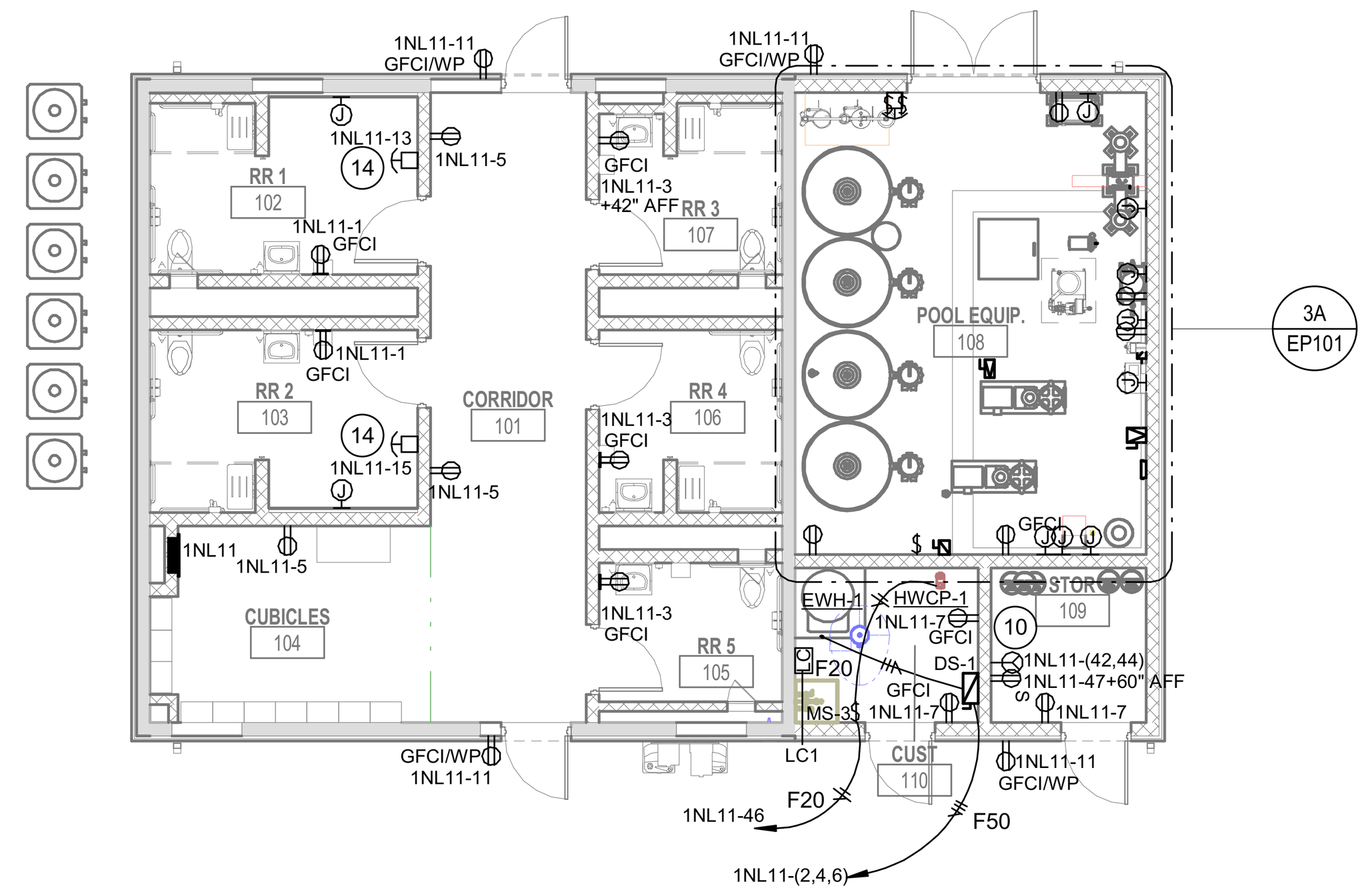
DEMOLITION PLAN NOTES

NOT ALL NOTES APPLY TO EVERY SHEET.

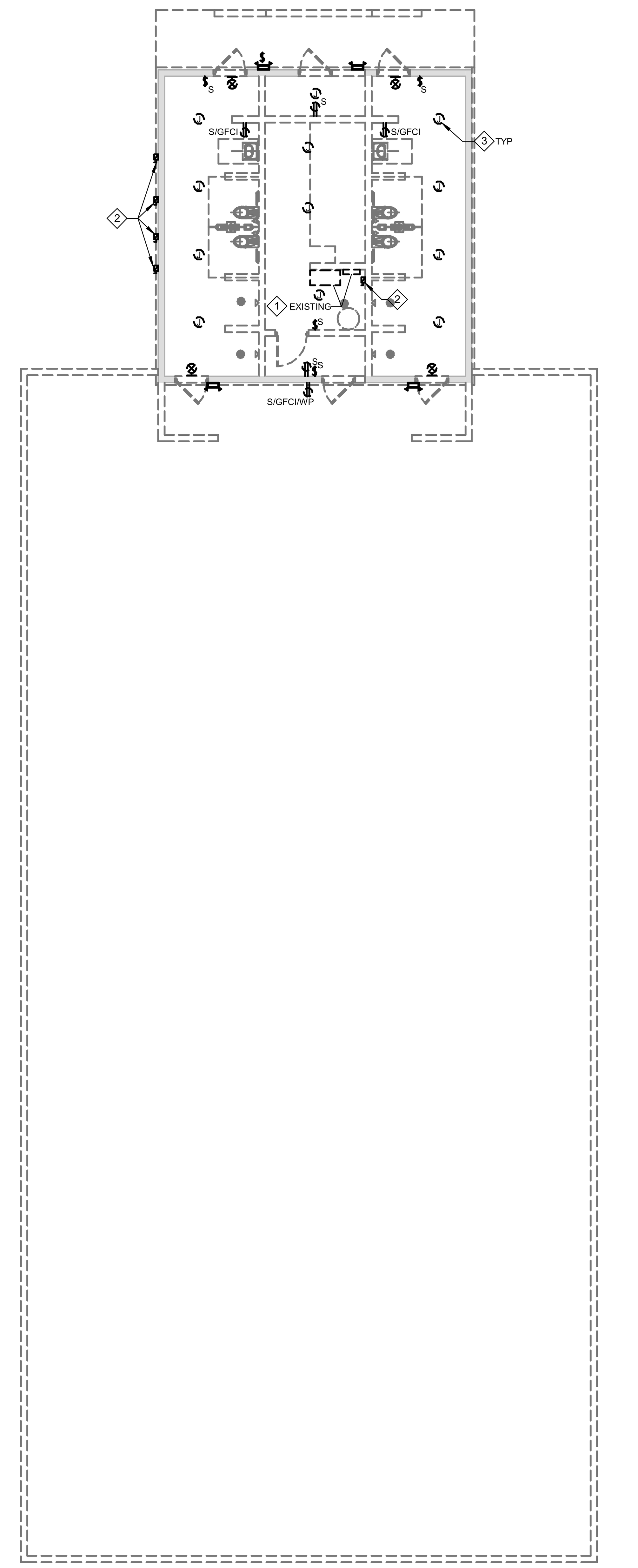
#	NOTES
1	DISCONNECT AND REMOVE EXISTING PANEL AND ALL SERVICE ENTRANCE CONDUCTORS AND BRANCH CIRCUITS CONDUIT, CONDUCTORS COMPLETE. PANEL IS FED FROM 150 KVA UTILITY TRANSFORMER.
2	DISCONNECT AND REMOVE DISCONNECT SWITCH, CONDUIT, AND CONDUCTORS COMPLETE.
3	DISCONNECT AND REMOVE EXISTING LIGHT FIXTURE, JUCTION BOX, CONDUIT, AND CONDUCTORS COMPLETE.



5C FIRST FLOOR - LIGHTING PLAN
1/8" = 1'-0"



3C FIRST FLOOR - POWER PLAN
1/8" = 1'-0"

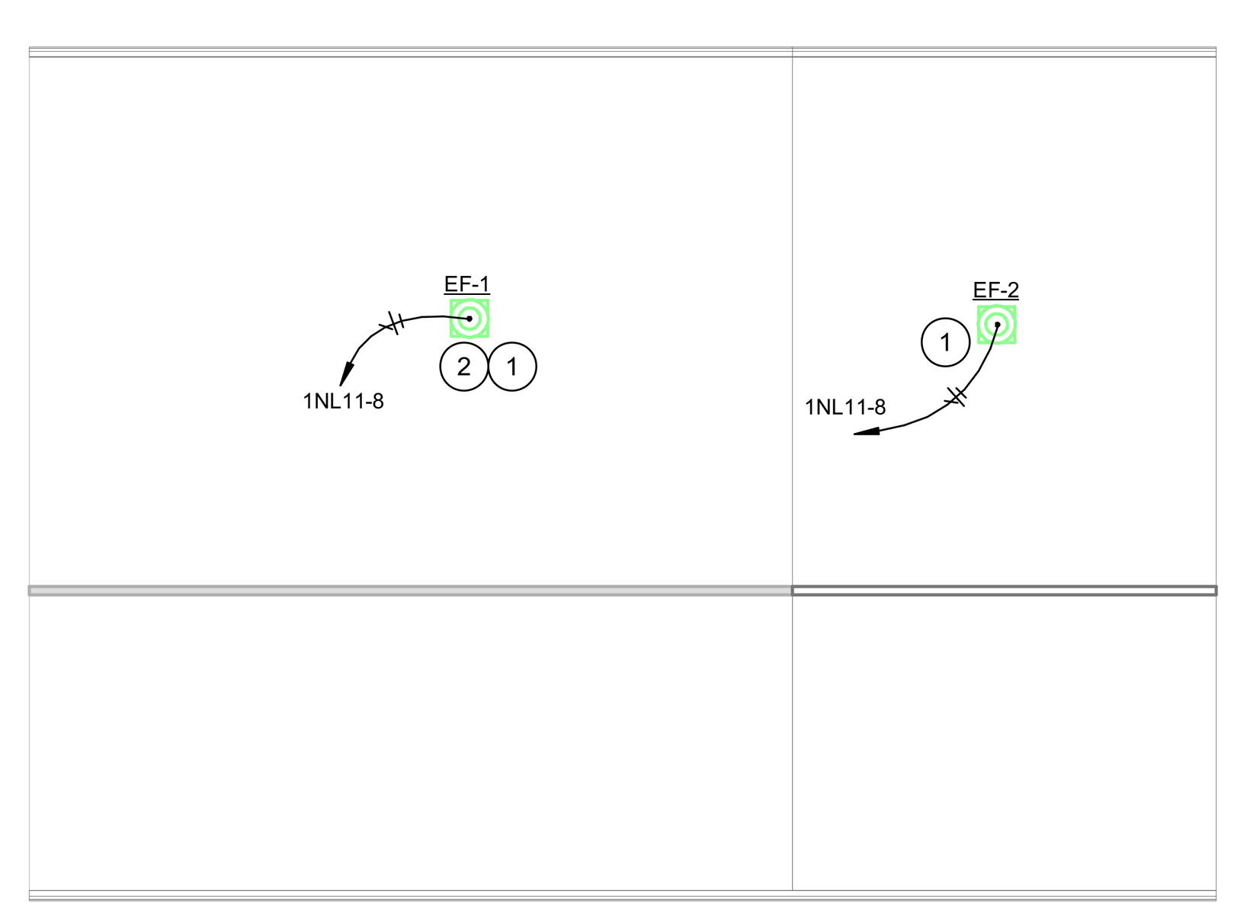


2A FIRST FLOOR - DEMOLITION PLAN
1/8" = 1'-0"

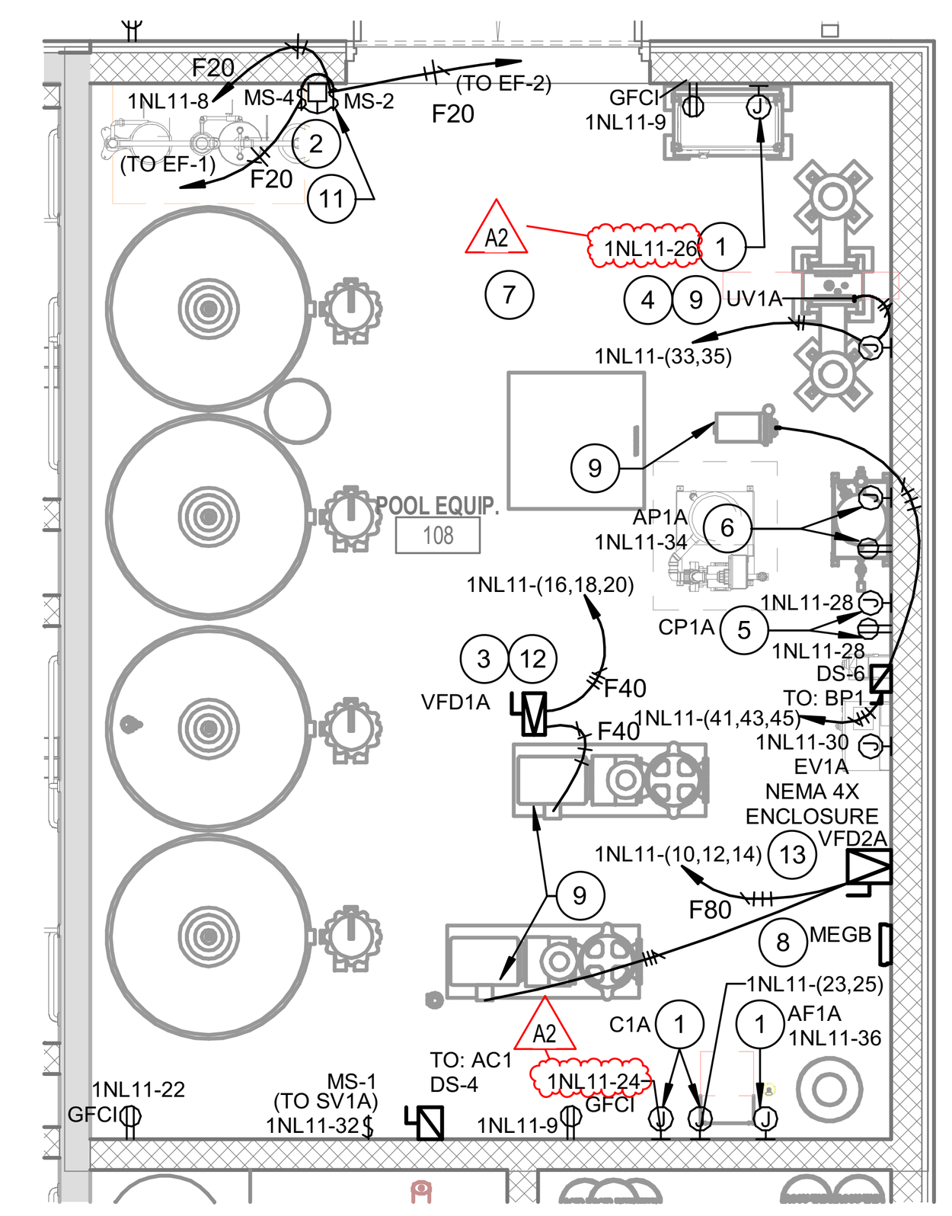
ROOF PLAN NOTES

NOT ALL NOTES APPLY TO EVERY SHEET.

#	NOTES
1	PROVIDE CONNECTION TO INTEGRAL DISCONNECT. PROVIDE SWITCH WITH COVER LOCATED IN POOL EQUIPMENT ROOM. PROVIDE CONDUIT AND CONDUCTORS BETWEEN SWITCH & FAN.
2	COORDINATE MOTOR CONTROL WITH LIGHTING CONTROL IN CORRIDOR BELOW.



5A ROOF PLAN
1/8" = 1'-0"



3A ENLARGED PLAN - POOL EQUIP. 108
1/4" = 1'-0"

SCHMIDT ASSOCIATES
schmidt-arch.com • 317.263.6226
415 Massachusetts Ave., Indianapolis, IN 46204
731 Brent St. #203, Louisville, KY 40204

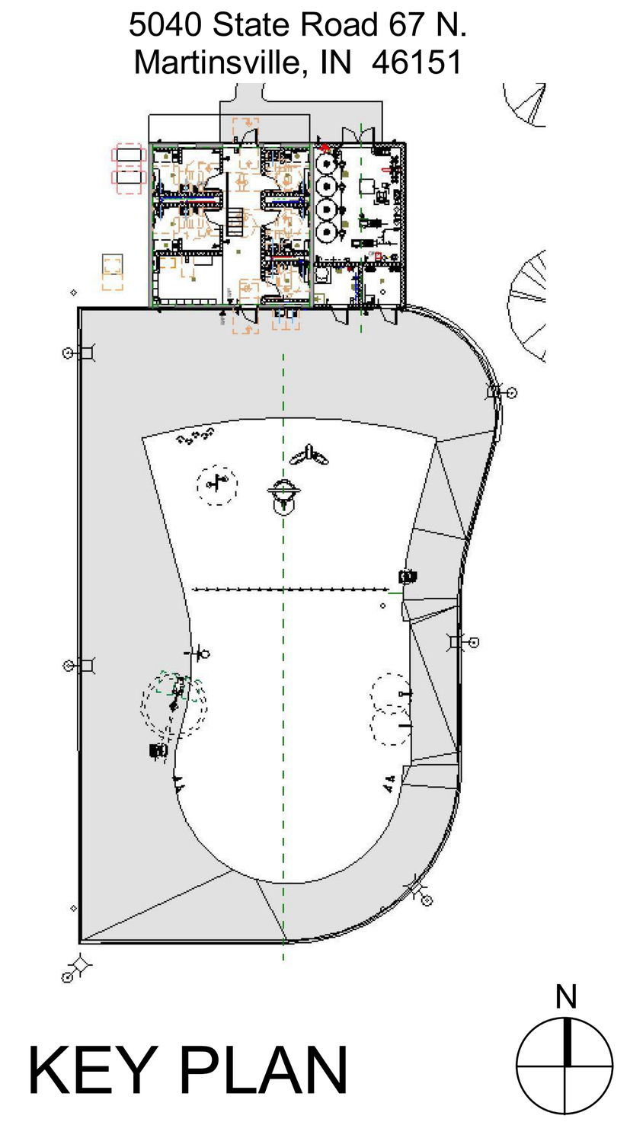
Project No. 2023-194.BWA
Project Date 01.24.2025
Produced EMB

SARAH KATHLEEN HEMPSTEAD REGISTERED NO. AR10400134 STATE OF INDIANA ARCHITECT

Sarah K Hempstead

#	Revision	Date
A1	ADDENDUM #1	02.14.2025
A2	ADDENDUM #2	03.04.2025

5040 State Road 67 N.
Martinsville, IN 46151



KEY PLAN

Indiana University

20231242 - BL212
Bradford Woods
Aquatic Facility

DEMOLITION, POWER, & LIGHTING PLAN

EP101