ADDENDUM

Project: Twin Falls ID SSa

Project No.: 597877823010201

Addendum No.: 1

Project Address: 1134 N College Rd W, Twin Falls, ID 83301

Date: 10/9/2024

Owner: The Church of Jesus Christ of Latter-day Saints, a Utah corporation sole

From (Architect): Laughlin Ricks Architecture

Instructions to Prospective Bidders:

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents and/or prior Addenda as noted below. All conditions, requirements, materials and workmanship are to be as described in the Contract Documents unless specifically stated otherwise. This Addendum consists of 44 page(s) and the attached drawing(s), Sheet(s) 15, dated 10/7/2024

1. Changes to prior Addenda:
   a.
   b.

2. Changes to Bidding Requirements:
   a.
   b.

3. Changes to Conditions of the Contract:
   a.
   b.

4. Changes to Specifications:
   a. ADD Sections 27 1116, 27 1501, 27 4117, 27 4118, 27 4124
   b.

5. Changes to Drawings:
   a. REVISE G001, A001, A100, L1.0 AND L2.0
   b. ADD ET101, ET101A, ET102, ET601, TA501, TA502, TA601, TA602, TA603, TT601

End of Addendum

SECTION 27 1116
COMMUNICATIONS CABINETS, RACKS, FRAMES, AND ENCLOSURES

PART 1 GENERAL

1.01 SUMMARY

A. Selection Includes But Is Not Limited To:
   1. Furnish and install communications cabinets, racks, frames, and enclosures as described in Contract Documents.

B. Related Requirements:
   1. Section 26 0526: 'Grounding And Bonding For Electrical Systems'.
   2. Section 27 1501: 'Communications Horizontal Cabling'.
   3. Section 27 4117: 'Video Systems'.
   4. Section 27 4118: 'Audio Systems'.

C. Products Installed But Not Furnished Under This Section:
   1. Cable Management, Vertical Cable Management, and Horizontal Cable Management.

1.02 REFERENCES

A. Association Publications:
   1. Building Industry Consulting Service International (BISCI):
      a. Information Technology Systems Installation Methods Manual (ITSIMM) (8th Edition).
      b. Telecommunications Distribution Methods Manual (TDMM) (14th Edition).
   2. Institute of Electrical and Electronics Engineers:
      a. IEEE 802.3, 'Standard for Ethernet'.
      b. IEEE 1100-2005, 'Recommended Practice for Powering and Grounding Electric Equipment'.

B. Reference Standards:
   1. National Fire Protection Association:
      a. NFPA 70, 'National Electrical Code (NEC)' (2020 or most recent edition adopted by AHJ).
   2. EIA/TIA 310D - Cabinets, Racks, Panels and Associated Equipment.
   3. UL - Underwriters Laboratories:
   4. ISO 9001:2000 - Quality Mangement Systems

1.03 SUBMITTALS

A. Action Submittals:
   1. Product Data:
      a. Provide Manufacturer's documentation and descriptive information on each piece of equipment to be used.

PART 2 PRODUCTS

2.01 SYSTEMS

A. Manufacturers:
   1. Approved Manufacturers. See Section 01 6200:
      a. Atlas Sound, www.atlassound.com
      b. Lowell Manufacturing Co., www.lowellmfg.com
      c. Middle Atlantic Products, www.middleatlantic.com.

B. See ET, TA and TT sheets for specified manufactures, models, and accessories.

PART 3 EXECUTION

3.01 INSTALLERS

A. Approved Installers:
   1. Approved installers in Section 27 5117 are to both furnish and install components of this section. See Section 01 4301. Installer requirements of Section 01 4301 applies.

3.02 INSTALLATION

A. Equipment Cabinet:
   1. See Section 27 4118 ‘Sound System’ for installation of Sound Equipment.

B. Equipment Cabinet:
   1. Install vent panels at top and bottom of equipment cabinets and between components where possible for maximum ventilation when equipment locations is not specified in Contract Drawings. Locate amplifiers at top of cabinet. Locate equalizers below amplifiers, separated by several vent panels.
      a. Follow manufactures recommendations.
   2. Securely fasten equipment plumb and square in place. Utilize all fastening holes in front of cabinet.
   3. Securely fasten in place equipment that is not rack mounted, including relays and other small components. Do not use sticky-back tape.
   4. Identification:
      a. Legibly identify user-operated system controls and system input / output jacks using engraved, permanently attached laminated plastic plates or imprinted Lexan labels. Label equipment and controls within equipment cabinets using similar labels or printed labels from a label maker or laser printer.
      b. Affix label to rack panel inside cabinet listing name and telephone number of installer. Appropriate warranty instructions may be included.

C. Communications Racks, Frames and Enclosures:
   1. Racks shall be installed as per manufacturer’s recommendations.
   2. Floor racks shall be securely attached to concrete floor with 3/8 inch (9.5 mm) minimum hardware or as required by local codes.
   3. Place floor racks with 36 inches (900 mm) minimum clearance front and back from walls and 28 inches (710 mm) clear on one side of rack. When mounted in row, maintain 36 inches (900 mm) minimum from wall behind and in front of row of racks and from wall at each end of row.
   4. Install wall-mounted pivoting equipment racks in accordance with manufacturer's instructions at locations indicated on the Drawings.
      a. Adjust operating hardware to operate smoothly without binding.
   5. Install equipment racks plumb, level, square, and secure.
   6. Grounding:
      a. Racks shall be grounded to telecommunications ground bus bar as per Section 26 0526 ‘Grounding And Bonding For Electrical Systems’.
      b. Racks shall be grounded in accordance with TIA-607.
   7. Seismic Bracing:
      a. Comply with IBC and local seismic requirements for all equipment and conduit pathways.
   8. Rack mount screws not used for installing patch panels and other hardware shall be bagged and left with rack upon completion of installation.
   9. Mounted termination block fields shall be mounted on Terminal Board in Technology Room provided by Electrical as shown in Contract Documents.
      a. Wall mounted termination block fields shall be installed with lowest edge of Terminal Board.

3.03 FIELD QUALITY CONTROL

A. Non-Conforming Work: Non-conforming work as covered in the General Conditions applies, but is not limited to the following:
   1. Correct any work found defective or not complying with Contract Document requirements at no additional cost to Owner.

B. Protect racks from damage during construction

C. Repair minor damages to finish in accordance with manufacturer's instructions and as approved

END OF SECTION

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SECTION 27 1501
COMMUNICATIONS HORIZONTAL CABLING

PART 1 GENERAL

1.01SUMMARY

A. Includes But Not Limited To:
   1. Furnish, install, and test communications horizontal cabling as described in Contract Documents including following:
      a. Cables and related terminations.
      b. Patch cords and modular connectors.
      c. Surface raceway and outlet poles.
      d. Support and grounding hardware.
      e. UTP Cable.
      f. UTP Patch cords.
      g. UTP Connector Modules.
      h. Installation and testing of Owner Furnished Network Equipment.

B. Related Requirements:
   1. Division 26: Raceways and surface boxes.
   2. Section 07 8400: 'Firestopping' for furnishing and installation of firestopping.
   3. Section 26 0526: 'Grounding And Bonding For Electrical Systems' for installation and termination.
   4. Section 27 1116: 'Communications Cabinet, Racks, Frames, and Enclosures'.
   5. Section 27 4117: 'Video And Satellite Distribution Systems'.
   6. Section 27 4118: 'Audio Systems'.

C. Products Installed But Not Furnished Under This Section:
   1. Owner Furnished Network Equipment as specified on TT (Technology Telecommunication) and TA (Technology Audiovisual) Drawings as shown in Contract Documents including:
      a. Internet Firewall.
      b. ISP Modem.
      c. Network Switch.
      d. Wireless Access Port.

D. Related Requirements:
   1. Section 01 6400: Owner will provide Network Equipment as specified on TT (Technology Telecommunication) and TA (Technology Audiovisual) Drawings as shown in Contract Documents. Contract Documents establishes quality of materials and installation for information of Contractor, Architect, and Owner's Representatives. Design Criteria in PART 2 of this Section identifies Contractor's responsibility for Owner Network Equipment.

1.02 REFERENCES

A. Association Publications:
   1. Building Industry Consulting Service International (BISCI:
      a. Information Technology Systems Installation Methods Manual (ITSIMM) (8th Edition).
      b. Telecommunications Distribution Methods Manual (TDMM) (14th Edition).
   2. Institute of Electrical and Electronics Engineers:
      a. IEEE 802.3, 'Standard for Ethernet'.
      b. IEEE 1100-2005, 'Recommended Practice for Powering and Grounding Electric Equipment'.
   3. Telecommunications Industry Association:
      a. TIA TSB-162, 'Telecommunication Cabling Guidelines for Wireless Access Points' (Revision A, 2013).

B. Reference Standards:

1. National Fire Protection Association:
   a. NFPA 70, ‘National Electrical Code (NEC)' (2020 or most recent edition adopted by AHJ).
2. Canadian Standards Association:
   a. CSA C22.1-18, ‘Canadian Electrical Code, part I (21st Edition), safety standard for electrical installations.
3. Telecommunications Industry Association:
   a. TIA-568.1 ‘Commercial Building Telecommunications Infrastructure Standard’ (Revision D, 2019)
   b. TIA-568.2, 'Balanced Twisted-Pair Telecommunications Cabling and Components Standards' (Revision D, 2018).
   c. TIA-568.4 ‘Broadband Coaxial Cabling and Components Standard (Revision D, 2017)
   d. TIA-606, 'Administration Standard for Telecommunications Infrastructure' (Revision C, 2017).
   e. TIA-607, 'Telecommunications Bonding and Grounding (Earthling) for Customer Premises' (Revision D, 2019).
   f. TIA-758, ‘Customer-Owned Outside Plant Telecommunication Infrastructure Standard' (Revision B, 2012).
   g. TIA-1152, ‘Requirements for Field Test Instruments and Measurements for Balanced Twisted-Pair Cabling' (Revision A 2016).
4. Underwriters Laboratories:
   a. UL 94: Standard for Test for Flammability of Plastic Materials for Parts in Devices and Appliances (March 2013 6th Edition).
      1) 94HB, ‘Horizontal Burn Test’.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate with Project Manager and/or Facility Manager well in advance of Substantial Completion for installation of all Owner Furnished Network Equipment.

1.04 SUBMITTALS

A. Action Submittals:
   1. Product Data:
      a. Provide Manufacturer’s documentation, installation instructions, and descriptive information on each piece of equipment to be used.
   2. Shop Drawings:
      a. Provide sample of labeling system reflecting approved label scheme for cable installation for racks, cables, panels, and outlets.

B. Informational Submittals:
   1. Certificates:
      a. Provide Installer certificates of qualifications required.
   2. Design Data:
      a. Identification and labeling:
         1) Provide labeling system for cable installation to be approved by Owner.
            (a) Clearly identify all components of system: racks, cables, panels and outlets.
            (b) Designate cables origin and destination and unique identifier for cable within facility by room number and port count.
            (c) Racks and patch panels shall be labeled to identify location within cable system infrastructure.
      b. After system installation, provide documentation set to Consulting Engineer/Architect for approval.
   3. Tests And Evaluation Reports:
      a. Submit documentation within ten (10) working days of completion of each testing phase. This is inclusive of all test results and record drawings.

b. Draft drawings may include annotations done by hand. Final copies of all drawings shall be submitted within thirty (30) working days of completion of each testing phase.
c. At request of Consulting Engineer, provide copies of original test results.

4. Field Quality Control Submittals:
   a. Architect will provide floor plans in paper and electronic formats on which record documentation information can be recorded.
5. Qualification Statements:
   a. Letter from Manufacturer certifying level of training and experience of Installer.

C. Closeout Submittals:
1. Include following information in Operations And Maintenance Manual specified in Section 01 7800:
   a. Operations and Maintenance Data:
      1) Provide operating and maintenance instructions for each item of equipment submitted under Product Data.
   b. Warranty Documentation:
      1) Final, executed copy of Warranty.
   c. Record Documentation:
      1) Manufacturers documentation:
         (a) Manufacturer's literature or cut sheet.
      2) Tests and evaluation reports.
      3) As-built Documentation:
         (a) Provide record document to include cable routes and outlet locations.
         (b) Sequential number shall identify outlet locations.
         (c) Numbering, icons, and drawing conventions used shall be consistent throughout all documentation.
         (d) Provide labeling system information.

1.05 QUALITY ASSURANCE

A. Regulatory Agency Sustainability Approvals:
1. System shall meet approval of authority having jurisdiction (AHJ). NEC and State and/or local ordinances and regulations shall govern unless more stringent requirements are specified.
2. Meet all TIA/EIA commercial building wiring standards.
3. Meet Telecommunications Distribution Methods Manual (TDMM) (14th Edition) requirements for installation and testing.
4. All Networks shall be installed per applicable standards and manufacturer's guidelines.
5. Cable assemblies shall be UL / CE Listed and CSA Certified. Cables shall be a distinctive green or green/yellow in color, and all jackets shall be UL, VW-1 flame rated.
6. Grounding shall conform to all required Commercial Building Grounding and Bonding Requirements for Telecommunications, Electrical Codes, and Manufacturer’s grounding requirements.

B. Qualifications: Requirements of Section 01 4301 applies, but is not limited to following:
1. Manufacturer Qualifications:
   a. Provide single source for all products of system:
      1) KeyConnect by Belden.
      2) Netkey by Panduit.
      3) System 6 by Siemon.
      4) Uniprise Media 6 by CommScope.
2. Installers Qualifications:
   a. Approved and Certified by Manufacturer (installation and maintenance trained):
      1) Belden Certified System Vendor (CSV).
         (a) Belden Certified LDS Partner.
      2) CommScope Certified Business Partner.

(a) CommScope Certified LDS Partner.
3) Panduit Certified Installer (PCI).
4) Siemon Certified Installers (CI).
b. Three (3) year experience with similar projects. Provide documentation.

1.06 WARRANTY

A. Special Warranty:
1. Cabling System:
a. Provide warranty for permanent link cabling system to meet Category 6 standard requirements for structured cabling system for twenty (20) years.
2. Installer Warranty:
a. Installer guarantees that all work is in accordance with all express and implied requirements of Contract Documents, that all work is of good quality, and further warrants work and material for period of (1) year from date of substantial completion of project, unless longer period of time is specified in Contract. All work not conforming to these requirements, may be considered defective:
1) If, within one (1) year after substantial completion of work, or within such longer period of time as may be prescribed by law or by terms of any warranty in Contract, any of work is found to be defective or not in accordance with Contract, Installer shall at Installer cost correct it promptly after receipt of written notice from Owner.
2) Installer's obligation shall survive termination of Contract.
3) Owner shall give such notice within reasonable time after discovery of condition.
b. Installer warrants to Owner that all materials and equipment furnished under this Contract shall be new unless otherwise specified, free from faults and defects and in conformance with Contract Documents:
1) Contractor shall secure manufacturer's warranties and deliver copies thereof to Owner upon completion of work.
2) All such warranties shall commence from date of substantial completion and will not in any way reduce Installer's responsibilities under this Contract.
3) Whenever guarantees or warranties are required by specifications for longer period than one year, such longer period shall govern.
c. Installer will provide twenty (20) year minimum end to end manufacturer warranty.

PART 2 PRODUCTS

2.01 OWNER-FURNISHED PRODUCTS

A. Products. See Section 01 6200:
1. Owner Furnished Network Equipment as specified on TT (Technology Telecommunication) and TA (Technology Audiovisual) Drawings as shown in Contract Documents including:
a. Internet Firewall.
b. ISP Modem.
c. Network Switch(es).
d. Wireless Access Points.
2. Coordination:
a. Coordinate installation of all Owner Furnished Network Equipment including but limited to:
1) Installation and configure devices in accordance with Owner requirements.
2) Proper set-up of network equipment.
3) Owner Furnished internet service to building prior to final installation of AV and Voice Data Equipment.
4) Testing of network equipment.

2.02 SYSTEMS

A. Manufacturers:

1. Approved Manufacturers and Products. See Section 01 6200:
   a. Belden, St. Louis, MO www.belden.com.
   b. Panduit Corporation, Tinley Park IL www.panduit.com.
   c. Systimax Solutions, a CommScope Company, Hickory, NC www.systimax.com.
   d. The Siemon Company, Watertown, CT www.siemon.com.

B. Design Criteria:
   1. Must install single manufacture as complete permanent link.
      a. Category 6 minimum compliance margin on all parameters beyond category 6 and Power Sum ACR out to 250 MHz.
   2. Entire Category 6 system to be provided by single approved Manufacturer throughout.
   3. Install structured cabling system that will be able to support interconnections to active telecommunications equipment for voice and data applications in multi vendor, multi product environment. Structured cabling system should adhere to TIA-568, TIA-606; TIA-607, and TIA-942 standards with respect to pathways, distribution, administration, and grounding of the system.
   4. Each room drop will consist of two drops each consisting of two terminations can be interoperable to accommodate either voice or data applications. Provide convenience phone drops that will consist of single termination that will be installed in proper faceplate for each location's phone.
   5. Install, terminate, test, and guarantee each drop according to customer all applicable standards and customer preferences.
   6. Horizontal cables will be rated Category 6 (250 MHz) in performance and rated to comply with TIA-568 to connector outlets at Work Area. Horizontal cables will home run back to Technology Room (Entrance Facility / Main Cross Connect) and will terminate on individual Category 6 rated jacks to populate modular 48 port angled patch panel on open or flat patch panel inside enclosures. All cables will be patched at cutover as interconnection into floor serving active equipment using RJ45 modular equipment cables rated to Category 6.
   7. Match additions to horizontal raceway to complete system according to TIA-568 where suspension and protection gaps exist.

C. Components – Work Area Subsystem:
   1. Provide connectivity equipment used to connect horizontal cabling subsystem and equipment in work area. Both copper and fiber media shall be supported. Connectivity equipment shall include following options:
      a. Patch (equipment) cords and modular connectors.
      b. Outlets and surface mount boxes.
      c. Surface raceway and outlet poles.
      d. Consolidation point / MUIO.
   2. Patch Cords and Modular Connectors:
      a. Match horizontal cabling medium and rating. Same Manufacturer shall provide modular connectors and patch cords. Total patch cord length at work area is not to exceed 10 feet (3.0 m).
      b. Copper Connectivity:
         1) Network Cabling System:
            (a) Provide for Work Area subsystem, including all modular connectors.
            (b) Modular connectors shall support of high-speed networks and applications designed for implementation on copper cabling.
            (c) Outlets shall utilize fully interchangeable and individual connector modules that mount side-by-side to facilitate quick and easy moves, adds and changes.
         2) Modular Connections:
            (a) Data Modules shall be Category 6:

(b) Eight position modules required in all work areas and shall exceed connector requirements of TIA Category 6 standard.
(c) Prove termination cap with strain relief on cable jacket, ensure cable twists are maintained to within 1/8 inch (3 mm) and include wiring scheme label. Wiring scheme label shall be available with TIA-568 wiring schemes.
(d) Terminations shall use for TIA-568 wiring scheme.
(e) Modules shall terminate 4 pair 23 100-ohm solid unshielded twisted pair cable.
(f) Modules shall meet ISO 11801 standard including complying with intermateability standard IEC 60603-7 for backward compatibility.
(g) Category 6 modules shall have UL and CSA approval.
(h) Modules shall have ETL verified Category 6 performance and ISO 11801 Class E performance in both basic and channel links.
(i) Modules shall be universal in design, accepting 2, 3, or 4 pair modular plugs without damage to outer jack contacts.
(j) Modules shall be able to be re-terminated minimum of 10 times and be available in 11 standard colors for color-coding purposes.
(k) Jack shall snap into all outlets and patch panels.
(l) Module shall include black base to signify Category 6 400 MHz performance.

3) Patch Cords:
(a) Category 6 patch cords 'shall be factory terminated with modular plugs featuring one-piece, tangle-free latch design and strain-relief boots to support easy moves, adds, and changes.
(b) Constructed with Category 6 23-AWG stranded UTP cable.
(c) Each patch cord shall be one hundred (100) percent performance tested at factory in channel test to TIA Category 6 standard.
(d) Patch cords shall come in standard lengths of 3, 5, 7, 9, 14 and 20 feet (0.90, 1.50, 2.15, 2.75, 4.20 and 6.1 meters) and 6 standard colors of Blue or White.
(e) Provide one (1) each 8 feet (2.45 m) patch cord for 50 percent of terminated work station ports.

3. Outlets and Surface Mount Boxes:
a. Outlets and surface mount boxes shall support network system by providing high-density in-wall, surface mount cabling applications.
b. Provide faceplates for flush mount:
1) Outlets faceplates shall be manufactured from high-impact thermoplastic material with UL 94 flammability rating of 94 HB or better.

4. Copper Cable:
a. Design Criteria:
1) Performance exceeds all TIA-568 Category 6 and ISO 11801 for Class E cable requirements.
2) ETL tested and verified for Category 6 component performance.
3) Conductors are twisted in pairs with four pairs contained in flame retardant PVC jacket separated by a spline.
4) Performance tested to 650 MHz.
5) Plenum (CMP) and non-plenum/riser (CMR) flame rated.
6) Maximum installation tension of 25 lbs (110 N).
7) Installation temperature range: 32 deg F (0 deg C) to 140 deg F (60 deg C).
8) Operating temperature range: 14 deg F (minus 10 deg C) to 140 deg F (60 deg C).
9) Cable diameter: Riser – 0.26 inch (6.604 mm) 0.260"; Plenum – 0.25 inch (6.35 mm).

10) Easy payout, reel-in-a-box and descending length markings on cable speed installation.
11) Supports following applications: Ethernet 10BASE-T, 100BASE-T (Fast Ethernet) and 1000BASE-T (Gigabit Ethernet); 1.2Gb/s ATM; Token Ring 4/16; digital video; and broadband/baseband analog video.
12) Color shall be blue.

D. Horizontal Distribution Cabling:
1. General:
a. Horizontal distribution cabling system is portion of telecommunications cabling system that extends from work area telecommunications outlet/connector to horizontal cross-connect in Technology Room (Entrance Facility / Main Cross Connect).
1) Horizontal cabling in office should terminate in Technology Room (Entrance Facility / Main Cross Connect) located on same floor as Work Area being served.
2) Horizontal cabling is installed in star topology (home run).
3) Bridged taps and splices are not permitted as part of copper horizontal cabling.

E. Components – Technology Room (Entrance Facility / Main Cross Connect):
1. General:
a. Connect networking equipment to horizontal and backbone cabling subsystems:
1) Termination hardware (connectors and patch cords), racks, cable management products and cable routing products.
2) Cable termination hardware.
b. Terminate each horizontal or backbone cabling run using appropriate connectors or connecting blocks depending upon cable type:
1) Matching patch cords will be used to perform cross-connect activities or to connect into the networking/voice hardware:
(a) Category 6 Enhanced Unshielded Twisted Pair (UTP).
c. Four-pair Category 6 UTP cabling shall be terminated onto four-pair Category 6 module:
1) All modules shall be terminated using 568-B wiring scheme.
2) Eight position module shall exceed connector requirements of TIA Category 6.standard.
3) Jack termination to 4-pair, 100 ohm solid unshielded twisted pair cable shall be by use of forward motion termination cap and shall not require use of punchdown or insertion tool.
2. Rack, Cabinet, and Cabling Management Enclosure:
a. Cable Management:
1) Cable Management System shall be used to provide neat and efficient means for routing and protecting fiber and copper cables and patch cords on telecommunication racks and enclosures.
2) Provide complete cable management system comprised of vertical and horizontal cable managers to manage cables on both front and rear of rack.
3) System shall protect network investment by maintaining system performance, controlling cable bend radius and providing cable strain relief.
b. Vertical Cable Management:
1) General:
(a) Vertical cable managers include components that aid in routing, managing and organizing cable to and from equipment.
(b) Panels shall protect network equipment by controlling cable bend radius and providing cable strain relief.
2) Provide panels with universal design mounting to 19 inches (480 mm) rack and constructed of steel bases with PVC duct attached.

3) Covers shall be able to hinge from either side yet still be easily removed to allow for quick moves, adds, and changes.

c. Horizontal Cable Management:

1) General:

(a) Horizontal cable managers include components that aid in routing managing and organizing cable to and from equipment.

(b) Panels shall protect network equipment by controlling cable bend radius and providing cable strain relief.

2) Provide panels with universal design mounting to 19 inches (480 mm) rack and constructed of steel bases with PVC duct attached.

3) Duct fingers shall include retaining tabs to retain cables in place during cover removal.

4) Covers shall be able to hinge from either side yet still be easily removed to allow for quick moves, adds, and changes.

3. Patch Cords:

a. Provide patch cords between modular patch panels configured as cross-connect or between patch panel and networking hardware when patch is used as interconnect. Provide one (1) each 3 feet (0.90 m) patch cord for each terminated patch panel port.

b. Provide patch cords as indicated on Drawings and Specifications as shown in Contract Documents. Ensure all devices are fully connected to network equipment.

c. Provide additional patch cords with appropriate length to connect all Owner provided internet enabled appliances (IEA) as specified on TT (Technology Telecommunication) and TA (Technology Audiovisual) Drawings as shown in Contract Documents.

d. Patch cords shall be factory terminated with modular plugs featuring one-piece, tangle-free latch design and black strain-relief boots to support easy moves, adds and changes.

e. Construct patch cords with Category 6 24-AWG stranded UTP cable.

f. Patch cords shall be one hundred (100) percent performance tested at factory in channel test to Category 6 standard.

4. Patch Panels:

a. Four-pair Category 6 UTP cabling shall be terminated onto four-pair-punch-down style connecting hardware mounted to rear of integral patch panels and routed to Category 6 modules on front face of patch panel.

b. Patch panels shall be universal for TIA-568 wiring configurations.

c. Patch panels shall have removable 6-port design that allows 6-port module to be removed without disrupting other ports.

d. Integral cable tie mounts shall be included in panel for cable management on back of panel.

e. Port and panels shall be easy to identify with write-on areas and optional label holder for color-coded labels.

f. Rack mountable patch panels shall mount to standard 19 inches (480 mm) rack.

5. Grounding and Bonding:

a. Provide Telecommunications Bonding Backbone:

1) Ground all telecommunications cable shields, equipment, racks, cabinets, raceways, and other associated hardware that has potential to act as current carrying conductor.

2) Install telecommunication Bonding Backbone independent of building's electrical and building ground.

3) Designed in accordance with recommendations contained in TIA-607 Telecommunications Bonding and Grounding Standard.

b. All wires used for telecommunications grounding purposes shall be identified with green insulation:

1) Non-insulated wires shall be identified at each termination point with wrap of green tape.
2) All cables and bus bars shall be identified and labeled as required.

6. Firestopping: Furnish and install firestopping as per Section 07 8400.

PART 3 EXECUTION

3.01 INSTALLATION

A. General:
1. Install communications system in accordance with Manufacturer's written instructions, and complying with applicable portions of NEC 'Standard of Installation'.

B. Work Area Outlets:
1. Cables shall be coiled in in-wall or surface-mount boxes if adequate space is present to house cable coil without exceeding Manufacturers bend radius.
   a. No more than 12 inches (300 mm) of UTP slack shall be stored in in-wall box, modular furniture raceway, or insulated walls.
   b. Excess slack shall be loosely configured and stored in ceiling above each drop location when there is not enough space present in outlet box to store slack cable.
2. Cables shall be dressed and terminated in accordance with TIA-568, Manufacturer's recommendations, and best industry practices.
3. Cables shall be bundled using Velcro straps at least 0.25 inch (6.35 mm) wide. Use of plastic wire ties or zip ties is not allowed on project.
4. Pair untwist at termination shall not exceed 0.125 inch (3.175 mm).
5. Bend radius of cable in termination area shall not be less than 4 times outside diameter of cable.
6. Cable jacket shall be maintained to within one inch (25 mm) of termination point.
7. Data / voice jacks, unless otherwise noted in Contract Documents, shall be located on each faceplate.
8. Horizontal Cabling:
   a. Data jacks in horizontally oriented faceplates shall occupy rightmost position(s).
   b. Voice jacks shall occupy the top position(s) on the faceplate. Voice jacks in horizontally oriented faceplates shall occupy the left-most position(s).

C. Horizontal Cross Connect:
1. Cables shall be dressed and terminated in accordance with TIA-568, Manufacturer's recommendations, and best industry practices.
2. Pair untwist at termination shall not exceed 0.125 inch (3.175 mm).
   a. Bend radius of cable in termination area shall not be less than 4 times outside diameter of cable.
3. Cables shall be neatly bundled and dressed to their respective panels or blocks.
   a. Each panel or block shall be fed by individual bundle separated and dressed back to point of cable entrance into rack or frame.
   b. Cables shall be bundled using Velcro straps at least 0.25 inch (6.35 mm) wide. Use of plastic wire ties or zip ties is not allowed on project.
4. Cable jacket shall be maintained as close as possible to termination point.
5. Each cable shall be clearly labeled on cable jacket behind patch panel at location that can be viewed without removing bundle support ties.
   a. Cables labeled within bundle, where label is obscured from view shall not be acceptable.
6. Horizontal Cabling:
   a. A pull cord (nylon; 1/8 inch (3 mm) minimum) shall be co-installed with all cable installed in any conduit.
   b. Cable raceways shall not be filled greater than required by TIA-569 maximum fill for particular raceway type.

c. Cables shall be installed in continuous lengths from origin to destination (no splices) except for transition points, or consolidation points.
d. Where transition points or consolidation points are allowed, they shall be located in accessible locations and housed in enclosure intended and suitable for purpose.
e. Cable's minimum bend radius and maximum pulling tension shall not be exceeded.
f. If J-hook or trapeze system is used to support cable bundles, all horizontal cables shall be supported at 48 inch (1 200 mm) to 60 inches (1 500 mm) maximum intervals. At no point shall cable(s) rest on acoustic ceiling grids or panels.
g. Horizontal distribution cables shall be bundled in groups of no more than 25 cables. Cable bundle quantities in excess of 25 cables may cause deformation of bottom cables within bundle and degrade cable performance.
h. Cables shall be bundled using Velcro straps at least 0.25 inch (6.35 mm) wide. Use of plastic wire ties or zip ties is not allowed on project.
i. Cable shall be installed above fire-sprinkler systems and shall not be attached to system or any ancillary equipment or hardware. Cable system and support hardware shall be installed so that it does not obscure any valves, fire alarm conduit, boxes, or other control devices.
j. Cables shall not be attached to ceiling grid or lighting fixture wires. Where support for horizontal cable is required, install appropriate carriers to support cabling.
k. Cables shall be identified by self-adhesive label and meet requirements of TIA-606. Cable label shall be applied to cable behind faceplate on section of cable that can be accessed by removing cover plate.
l. Unshielded twisted pair cable shall be installed so that there are no bends smaller than four times the cable outside diameter at any point in run and at termination field.
m. Pulling tension on 4-pair UTP cables shall not exceed 25 lbf (111 N) for a four-pair UTP cable.

D. Vertical Outlet Pole And Surface Raceway:
1. Horizontal Cabling:
a. General:
1) Vertical outlet poles and Surface Raceway refers to surface raceway system used for branch circuit wiring and/or data network, voice, video and other low-voltage cabling. Surface raceway shall be used in solid wall applications or for applications where moves, additions and changes are very typical to workflow.
b. Raceway system shall consist of raceway, appropriate fittings and accessories to complete installation per electrical Contract Documents. Non-metallic surface raceway is to be utilized in dry interior locations only as covered in Article 352, part B of the NEC, as adopted by the NFPA and as approved by the ANSI.

E. Copper Termination Hardware:
1. Cables shall be dressed and terminated in accordance with TIA-568, Manufacturer's recommendations, and best industry practices.
2. Pair untwist at termination shall not exceed 0.125 inch (3.175 mm).
a. Bend radius of cable in termination area shall not be less than 4 times outside diameter of cable.
3. Cables shall be neatly bundled and dressed to their respective panels or blocks.
a. Each panel or block shall be fed by individual bundle separated and dressed back to point of cable entrance into rack or frame.
b. Cables shall be bundled using Velcro straps at least 0.25 inch (6.35 mm) wide. Use of plastic wire ties or zip ties is not allowed on project.
4. Cable jacket shall be maintained as close as possible to termination point.
5. Each cable shall be clearly labeled on cable jacket behind patch panel at location that can be viewed without removing bundle Velcro support straps.
a. Cables labeled within bundle, where label is obscured from view shall not be acceptable.

F. Grounding System:
   1. Where required, Telecommunications Bonding Backbone shall be designed and/or approved by qualified Installer.
   2. Follow requirements of TIA-607.

G. Seismic Bracing:
   1. Comply with IBC and local seismic requirements for all equipment and conduit pathways.

H. Identification and Labeling:
   1. Apply machine generated approved labeling for racks, cables, panels and outlets:
      a. Designate cables origin and destination and unique identifier for cable by room name and/or number and port count.
      b. Racks and patch panels shall be labeled to identify location within cable system infrastructure.
   2. Place labeling within view at termination point on each end.
   3. Outlet, patch panel and wiring block labels shall be installed on, or in, space provided on device.
   4. See Contract Drawings for labeling scheme.
   5. Conform to IP addressing assignments as listed in Attachment 'FACILITIES ZONE IP ADDRESS ASSIGNEMENT TABLE'.
      a. See Attachment 'FACILITIES ZONE IP ADDRESS ASSIGNEMENT TABLE' for 'IP Address Assignments.

3.02 FIELD QUALITY CONTROL

A. Field Tests:
   1. Provide testing upon completion of installation.
      a. General:
         1) Testing to be in accordance with TIA standards and Manufacturer's system warranty guidelines and best industry practice.
            (a) If any of these are in conflict, discrepancies shall be brought to attention of Architect/Consulting Engineer for clarification and resolution.
      b. Cables and termination hardware:
         1) Test complete system for defects in installation.
         2) Verify cabling system performance under installed conditions according to requirements of TIA-568:
            (a) All pairs of each installed cable shall be verified prior to system acceptance.
            (b) Any defect in cabling system installation including but not limited to cable, connectors, feed through couplers, patch panels, and connector blocks shall be repaired or replaced in order to ensure one hundred (100) percent useable conductors in all cables installed.
      c. Copper channel testing:
         1) All twisted-pair copper cable links shall be tested for compliance to requirements of TIA-568 for appropriate Category of cabling installed.
         2) Backbone multimode fiber cabling shall be tested at both 850 nm and 1300 nm.
      d. UTP Cables and Links testing:
         1) UTP cabling channel must be tested at swept frequencies up to 250 MHz for internal channel performance parameters as defined in IEEE 802.3 and TIA-568. Certifications shall include following parameters for each pair of each cable installed:
            (a) Wire map (pin to pin connectivity).
            (b) Length (in feet or millimeters).
            (c) Near End Crosstalk (NEXT).
            (d) Far End Crosstalk (FEXT).
            (e) ELFEXT.
            (f) Attenuation/Crosstalk Ration (ACR).

(g) Return Loss.
(h) Propagation Delay.
(i) Delay Skew.
(j) Test equipment shall provide electronic and printed record of these tests.

2) Test each pair of cable for opens, shorts, grounds, and pair reversal.
(a) Correct short or grounded and reversed pairs.
(b) Examine open and shorted pairs to determine if problem is caused by improper termination.
(c) If termination is proper, tag bad pairs at both ends and note on termination sheets.
(d) If horizontal cable contains bad conductors, remove and replace cable.

e. Testing Equipment:
1) Comply with requirements of TIA-568.
(a) Appropriate level III tester shall be used to verify Category 6 cabling systems.
2) UTP Cables and Links test equipment:
(a) Category Four Approved Testing Equipment. See Section 01 6200 for definitions of Categories:
(b) Fluke Networks DTX-1800 with firmware version 2.04 or later.
(c) Test lead to be P/N DTX-PLA001 or PLA002 universal permanent link interface adapter.
(d) Agilent Wirescope Pro N2640A with firmware version 2.1.9 or later.
(e) Test lead to be P/N N2644A-101 universal CAT6A link smart probes.
(f) Equipment shall be calibrated in accordance with manufacture requirements, TIA standards and warranty requirements.

f. Re-Testing:
1) Consulting Engineer may request ten (10) percent random field re-test to be conducted on cable system, at no additional cost to Owner, to verify documented findings.
(a) Tests shall be repeat of those defined above.
(b) If findings contradict documentation submitted, additional testing can be requested to extent determined necessary by Consulting Engineer, including one hundred (100) percent re-test at no additional cost to Owner.

g. Tests And Evaluation Reports:
1) Printouts generated for each cable by wire test instrument shall be submitted as part of documentation package. Installer may furnish this information in electronic form.
(a) Media shall contain electronic equivalent of test results as defined by the Section along with software necessary to view and evaluate test reports.
2) Submit documentation within ten (10) working days of completion of each testing phase. This is inclusive of all test results and record drawings.
3) Draft drawings may include annotations done by hand. Final copies of all drawings shall be submitted within thirty (30) working days of completion of each testing phase.
4) If requested by Consulting Engineer, provide copies of original test results.

h. Test Documentation:
1) Provide electronic format documentation within three (3) weeks after completion of project.
2) Documentation shall be clearly marked on outside front cover with following:
(a) "Project Test Documentation".
(b) Project name.
(c) Date of completion (month and year).
3) Test results shall include following:
(a) Record of test frequencies.

(b) Cable type.
(c) Conductor pair and cable (or outlet) I.D.
(d) Measurement direction.
(e) Reference setup.
(f) Crew member name(s).
(g) Test equipment name, manufacturer, model number, serial number, software version.
(h) Last calibration date:
(i) Unless Manufacturer specifies more frequent calibration cycle, annual calibration cycle is required on all test equipment used on project.
(j) Document shall detail test method used and specific settings of equipment during test as well as software version being used in field test equipment.

B. Non-Conforming Work: Non-conforming work as covered in General Conditions applies, but is not limited to following:
1. Any cable damaged or exceeding recommended installation parameters during installation shall be replaced at no additional cost to Owner.
2. Any defect in cabling system installation including but not limited to cable, connectors, feed through couplers, patch panels, and connector blocks shall be repaired or replaced in order to ensure one hundred (100) percent useable conductors in all cables installed at no additional cost to Owner.
3. Correct deviation and repeat applicable testing at no additional cost to Owner.
4. Correct any work found defective or not complying with Association Publications and TDMM requirements at no additional cost to Owner.
   a. Document all problems found and corrective action taken.
   b. Include both failed and passed test data.

END OF SECTION

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SECTION 27 4117
AUDIO SYSTEMS

PART 1 GENERAL

1.01SUMMARY

A. Includes But Not Limited To:
   1. Furnish and install complete and operational sound system as described in Contract Documents including:
      a. Complete systems for amplifying sound signals from microphones and media source equipment and distributing them to loudspeakers at various locations.
   2. Assist Audiovisual Consultant with final inspection and equalization of system and provide necessary test equipment for audio system and partition noise isolation tests if applicable. Correct problems found at time of final inspection of system.

B. Audiovisual Consultant will perform final inspection, system balance, equalization, and instruct local leaders in operation of system.

C. Products Installed But Not Furnished Under This Section:
   1. Webcast/Streaming Capable Device.

1.02 RELATED REQUIREMENTS

A. Section 26 0533.13 - Conduit for Electrical Systems

B. Section 26 0533.16 - Boxes for Electrical Systems.

C. Section 27 4118 - Video Systems.

1.03 REFERENCE STANDARDS

A. ANSI/AVIXA 10 - Audiovisual Systems Performance Verification 2013.

B. ANSI/Infocomm 2M - Standard Guide for Audiovisual Systems Design and Coordination Processes 2010.

C. ANSI/Infocomm 10 - Audiovisual Systems Performance Verification 2013.

D. AVIXA RP-C303.01 - Recommended Practices for Security in Networked Audiovisual Systems 2018.

E. BICSI ITSIMM - Information Technology Systems Installation Methods Manual (ITSIMM), 8th Edition 2022.

F. BICSI N1 - Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure, 1st Edition 2019.

G. BICSI TDMM - Telecommunications Distribution Methods Manual, 14th Edition 2020.

H. ANSI/AVIXA 4:2 , ‘Audiovisual Systems Energy Management'(2012 Edition)..

I. IEEE 1100 - IEEE Recommended Practice for Powering and Grounding Electronic Equipment 2005.

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

K. NFPA 72 - National Fire Alarm and Signaling Code Most Recent Edition Cited by Referring Code or Reference Standard.

L. TIA-568-C.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards 2009, with Addendum (2016).

M. TIA-569 - Telecommunications Pathways and Spaces 2019e.

N. TIA-606 - Administration Standard for Telecommunications Infrastructure 2021d.

O. TIA-607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises 2019d.

P. TIA-758, ‘Customer-Owned Outside Plant Telecommunication Infrastructure Standard' (Revision B, 2012).

Q. UL 486A-486B - Wire Connectors Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate final inspection schedule of both audio and video systems before Audiovisual Consultant's final inspection.

B. Schedule:
   1. After completion of audio system installation of this section, Installer to perform Field Testing before Audiovisual Consultant Final Inspection of audio system.
   2. Notify Audiovisual Consultant two (2) weeks minimum before Audiovisual Consultant's final inspection as specified in Field Quality Control in Part 3 of this specification.
   3. Deliver metal speaker grilles, which are to be painted to match ceiling, before attachment to speakers and before installation of audio system.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Informational Submittals:
   1. Special Procedure Submittals:
      a. Provide itemized list of equipment to be supplied.
      b. Provide proposed labeling for system components.
   2. Qualification Statement:
      a. Installer:
         1) Provide Qualification documentation as requested by Engineer/Architect including:
            (a) List of Projects requested.
            (b) List of certified technician(s) with dates of training courses completed.
            (c) Other items outlined section 1.06 b.

C. Closeout Submittals:
   1. Include following in Operations And Maintenance Manual specified in Section 01 7800:
      a. Operations and Maintenance Data:
         1) Equipment Manufacture’s manual:
            (a) Audio system operation and maintenance instructions.
            (b) List of equipment provided, including portable equipment, showing make, model, and serial number.
      b. Warranty Documentation:
         1) Include copy of final, executed warranty.
      c. Record Documentation:
         1) Software and Programming: Copies of all manufacturers’ software used for programming various components and functions of the system shall be furnished to the Owner:
            (a) Original audio processor program files, source codes and compiled codes used for system control, audio setup and any other computerized functions of system including screen layout generation, configuration and layouts and any other related computer files shall also be furnished to Owner.
            (b) In each and every case, all programming, code generation, configuration files, layout files and any other software and/or code written and generated of setup and operation of this system are property of Owner of system and not of Audiovisual Consultant, Contractor or Integrator.

1.06 QUALITY ASSURANCE

A. Regulatory Agency Sustainability Approvals:

1. System shall be installed in accordance with applicable standards, requirements, and recommendations of International Building Code, National Electrical Code and all local authorities having jurisdiction.

B. Qualifications:
   1. Installer. Requirements of Section 01 4000 applies, but not limited to following:
      a. Approved Installers:
         1) Installers are to furnish and install components of audio system and meet qualification requirements.
         2) Approval subject to agreement process for Pre-Approval Installers.
      b. Alternate Installer(s):
         1) Firm specializing in performing work of this section:
            (a) Minimum three (3) years of successful installation experience of AV system projects of comparable size, and complexity required for this project. Audio systems must have included complete installation and setup work and must have been completed by factory trained and certified technician.
            (b) Firm successfully completed minimum of three (3) projects in past two (2) years before bidding. including at least one (1) project designed by an audio consultant.
            (c) Firm shall own sufficient hand tools, vehicles, scaffolding, power tools, and so forth to install the system in a timely and proper manner.
            (d) Firm shall be a factory authorized dealer for the majority of equipment ot be furnished, and able to execute manufacturers warranties for installed equipment.
            (e) Firm must employ personnel which have:
               (1) At-least 5 years recent experience in sound reinforcement, who will be assigned to the project.
               (2) Satisfactorily completed formal industry technical training including Syn-Aud-Con: Course 50, AVIXA: CTS-I, or CTS-D, and manufacturers training for equipment installed under this section including Q-sys: Level 1 and 2.
            (f) Firm Shall be active in industry professional societies such as NSCA, AES, AVIXA, etc.
            (g) Firm shall own appropriate test equipment for audio and network equipment installed under this section, including but not limited to notebook computer, test and measurement microphone(s), SPL Meter, Level II Cable Certifier, etc.
            (h) Firm shall be directly responsible for the completion of the work, and shall not sub-contract it to another contractor who would not otherwise meet these qualification requirements.
            (i) Firm shall have sufficient staff, physical plan, and inventory to provide timely warranty and post-warranty service as required by the specifications.
            (j) Comply with specifications and Contract Documents.
         2) Submit documentation of compliance of qualifications before bid to Architect or Owner’s Representative.
      c. Same Approved Installer shall furnish and install components of Section
      d. Same Approved Installer shall furnish and install components of Section 27 1000 - Structured Cabling and 27 4118 - Video Systems.
      e. Same Approved Installer shall furnish and install components of Section 27 1000 - Structured Cabling.
      f. Same Approved Installer shall furnish and install components of Section 27 4118 - Video Systems.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Delivery And Acceptance Requirements:

1. Materials shall be delivered in original, unopened packages with labels intact.

B. Storage And Handling Requirements:
   1. Provide secure location protected from weather in cool, dry location, out of direct sunlight in compliance with Manufacturer's instructions and recommendations.
   2. Keep materials free from dirt and foreign matter.

1.08 WARRANTY

A. Special Warranty:
   1. Provide complete warranty repair or replacement for one (1) year at no cost to Owner, except in case of obvious abuse.
   2. If failure causes audio system to be inoperative or unusable for its intended purpose, Installer, when notified of problem shall repair system within five (5) days so it will be operational and usable. If defective components cannot be repaired in time, furnish and install temporary loaner equipment as required.
   3. If failure causes Chapel or Cultural Center audio system to be inoperative or unusable for its intended purpose, Installer, when notified of problem before Wednesday, shall repair system so it will be operational and usable by following Sunday. If defective components cannot be repaired in time, furnish and install temporary loaner equipment as required.
   4. Honor component warranties for term established by Manufacturer, if greater than one (1) year.

PART 2 PRODUCTS

2.01 OWNER-FURNISHED PRODUCTS

A. Approved Products. See Section 01 6000:
   1. Network Streaming Equipment as specified on contract drawings. Drawings as shown in Contract Documents. including projectors and video monitors.
   2. Steaming Equipment, as shown on contract drawings.
   3. Coordinate installation of all Owner Furnished Network Streaming Equipment with Div 27 4133 Installer.

2.02 SYSTEM

A. Shall Consist of components, as specified on Project Drawings. See Section 01 6000.

B. Performance:
   1. Capabilities:
      a. Installations with audio DSP shall meet following performance parameters:
         1) From 100 Hz to 2 kHz, flat within plus or minus 2 dB.
         2) Above 2 kHz, slope down along an approximate 3 dB per octave slope to 8 kHz.
      b. No noise, hum, RFI pickup or distortion shall be audible under normal operating conditions.
      c. Audio systems shall reproduce program material at level of 80 to 85 dBA without audible distortion.
      d. All input levels shall be pre-set so system may be operated without going into feedback under normal conditions.
      e. Seat-to-seat variations in the 4kHz octave band shall not exceed plus or minus 2 dB in the Chapel or Cultural Center.
      f. Sound masking system:
         1) Sound masking system shall provide adequate speech privacy in Corridor when set between 42 dBA and 46 dBA at ear-height under speaker so conversation in Office at slightly raised voice levels cannot be understood in Corridor.
         2) Speakers and masking generator, as specified on Technology drawings.

C. System Requirements:
   1. General:

a. Provide complete and fully functional audio systems using materials and equipment of types, sizes, ratings, and performances as indicated in equipment list in accompanying drawings:
   1) Use materials and equipment that comply with referenced standards and manufacturers' standard design and construction in accordance with published product information.
   2) Coordinate features of materials and equipment so they form integrated system with components and interconnections matched for optimum performance of specified functions.

2. Provide all wire, cable, and connectors as required to complete installation of all systems as designed and specified.

D. Equipment And Materials:
1. Provide equipment selected from equipment list on drawings, or as substituted following proscribed substitution process, using all solid state components fully rated for continuous duty at ratings indicated or specified.
2. Select equipment for normal operation on input power supplied at 105 130 V, 60 Hz.

E. Operation
1. Summary: Set up and program the system so room combining and signal routing is automatically executed based on control commands issued by system switches and partition infra-red sensors.
2. Program system using owner provided template files. Make modifications to files as indicated on project drawigns to provide turn-key system.

PART 3 EXECUTION

3.01 INSTALLERS

A. Approved Installers. See Section 01 6000:
1. Qualifications:
   a. Meet qualification requirements as specified in Quality Assurance in Part 1 of this specification.
2. General Communications: (801) 266-5731.
3. Marshall Industries: (801) 266-2428.
4. Poll Sound: (801) 261-2500.
5. Professional Systems Technology: (801) 649-6696.

3.02 EXAMINATION

A. Verification Of Conditions:
1. Verify compliance with following items before beginning work of this Section:
   a. No cables spliced.
   b. Isolated ground run back to electrical panel from all equipment cabinets.
   c. Specified conduit, cables, speaker enclosures and equipment cabinets are properly installed.
   d. Location and angle of speaker cabinets.
2. Ensure that no solid structural or decorative member impedes sound propagation from speakers and that no member with cross section greater than 3/4 inch (19 mm) is placed in front of speakers.
3. Verify installation of fiberglass insulation in field-fabricated speaker enclosures.
4. Verify proper functionality for all system components being reused or remaining untouched.

3.03 INSTALLATION

A. General:
1. Install system in accordance with NFPA 70, NFPA 72, and other applicable codes. Install equipment in accordance with manufacturer's written instructions.

B. Mounting And Securing Equipment:

1. Equipment shall be firmly secured in place unless requirements of portability dictate otherwise.
2. Fastenings and supports shall be adequate to support their loads with safety factor of at least three (3) times weight of equipment being installed.
3. Any structural mounting that is not able to meet this requirement due to specific nature of equipment, manufacturer's requirements or limitations of facility, shall not be installed without prior approval of Engineer.
4. Install all boxes, equipment, hardware, and other materials plumb, level, and square.

C. Millwork:
1. Install technology equipment and support equipment in millwork in neat and cosmetically dressed out manner.
2. Install technology equipment and support equipment in podium and other millwork in neat and cosmetically dressed out manner.
3. Saw cuts, holes and recesses into laminates and woodwork shall be straight.
4. Radius and circular cuts shall be consistent, and all uneven surfaces shall be corrected. This shall include use of moldings, grommets, bushings, laminates, and wood products as required to dress out installation of equipment.
5. Install equipment and panels in technology racks using matching screws, hardware and grommets.
6. Install equipment and panels in technology racks and podiums using matching screws, hardware and grommets.

D. Speakers:
1. Maintain uniform polarity in speakers and wiring.
2. Employ no positive stop in rotation of speaker volume controls. Controls shall be capable of continuous rotations in either direction.
3. Mount transformers with screws securely to speaker brackets or enclosures. Adjust torsion springs as necessary to securely support speaker assembly.
4. Neatly mount speaker grilles, panels, connector plates, control panels, etc., tight, plumb, and square unless indicated otherwise on drawings.
5. Provide brackets, screws, adapters, springs, rack mounting kits, etc, recommended by manufacturer for correct assembly and installation of speaker assemblies and electronic components.
6. Line factory-fabricated speaker back boxes with one inch (25 mm) minimum fiberglass if not done by Back box Manufacturer.
7. Speaker Back Boxes shall be secured to structure using 12 ga (2.7 mm) minimum seismic safety cables.

E. Technology:
1. Provide sufficient ventilation for adequate cooling of equipment.
2. Install vent rack panels in unused spaces. Install vent panels at top and bottom and above each power amplifier.
3. Securely fasten equipment plumb and square in place. Where equipment is installed in rack cabinets, utilize all fastening holes and cove open spaces with perforated panels.
4. Securely fasten relays and small components. Do not use sticky-back tape for fasteners.
5. Install balancing transformer on each unbalanced input or output that connects to devices outside equipment cabinet, or that connects to balanced input or output within equipment cabinet.
6. Connect powered components to 120 VAC outlets on transient voltage surge suppressors. Do not connect to outlets on other components.
7. Leave sufficient service loops to uniform length on cables to allow operation of system with chassis outside cabinet.
8. Equipment shall be held firmly in place with proper types of mounting hardware as recommended and/or supplied by manufacturer:

a. Mounting hardware provided with equipment shall be used when practical. This shall include, but not be limited to, front and rear rack rails, angle brackets and rack mount kits.
b. Equipment shall be installed so as to provide reasonable safety to operator.

F. Cables, Wires, And Connectors:
1. Cables:
a. Cable and wire shall be new and unspliced.
b. Splicing:
1) Splicing of cables and conductors is expressly prohibited in any location other than equipment racks.
2) Splicing of control and speaker level conductors shall be accomplished via punch block or terminal strip connections only.
c. Additional cable length shall be provided at all connector locations. Duplex box, junction box, and floor box locations shall be installed with sufficient cable length behind cover plates to permit wiring maintenance and connector replacement in the future.
d. When cable runs utilize vertical cable raceways located within walls, acoustic integrity of walls shall be maintained:
1) Cables that pass-through cover plates of junction boxes and raceways, through slab-to-slab walls, and through conduit lines shall be properly gasketed and sealed. Acoustic material shall be restored or replaced.
e. Separation between system cables and other services shall be maximized to prevent and/or minimize potential for electro-magnetic interference (EMI):
1) Provide at least 12 inches (305 mm) separation from electrical lines whenever feasible.
2) Where separation is unavoidable, distribution cables shall cross other services at right angles whenever practical to minimize EMI.
f. Do not install signal cables on top of light fixtures, ceiling speakers, projection screens, HVAC controls or sensing devices, fire safety and sprinkler system detection technology, or any other technology or mechanical equipment.
g. Do not lay cables directly on top of T-bar grid ceiling tiles:
1) Support cables installed outside of conduit at 4 feet (1.20 m) maximum intervals from building structure.
2) Do not utilize support wires from other trades or systems.
h. Install system cables shall not block access to other equipment or services, across removable service panels and/or in any other manner to prohibit routine maintenance of HVAC systems, fire safety equipment and building mechanical control systems.
i. Inter-rack cabling:
1) Inter-rack cabling shall be neatly laced, dressed, strain relieved and adequately supported.
2) Inter-rack cables shall be grouped according to signals being carried to reduce signal contamination. Separate groups shall be formed for following:
(a) Power.
(b) Control.
(c) Video.
(d) Audio cables carrying signals less than -20 dBM.
(e) Audio cables carrying signals between -20 dBM and +20 dBM.
(f) Audio cables carrying signals over +20 dBM.
j. Power cables, control cables, and high-level cables shall be run on left side of equipment racks as viewed from rear. All other cables shall be run on right side of all equipment racks as viewed from rear.
k. Cables, except video cables which must be cut to electrical length, shall be cut to length dictated by cable run.

l. Terminal blocks, boards, strips or connectors, shall be furnished by installer for all cables which interface with racks, cabinets, consoles, or equipment modules. Affix terminal blocks, boards, strips or connectors to equipment racks using screws only. Double sided tape will not be accepted.

m. Shields for audio cables shall be grounded at input end only of various equipment items on system to prevent potential for ground loops.

n. Shields for microphone cables shall be grounded at both ends to allow Phantom Power to pass.

o. Where AV cable is installed in areas that are exposed to view of end users, install AV cable and associated power cables inside nylon braided sleeving (wire loom):

1) Examples of such areas include, but are not limited to cables installed to projectors and monitors, and cables installed to devices in/on lecterns such as touch panels and document cameras.

2) Where security cables are specified for physical security to such devices, install the specified security cables inside nylon braided sleeving along with AV cables.

2. Wiring and Cabling:

a. Comply with industry standard circuit polarity and loudspeaker wiring polarity. No cables shall be terminated with polarity reversal between connectors at either end.

b. System wire, after being cut and stripped, shall have wire strands twisted back to their original lay and be terminated by approved soldered or mechanical means. No bare wire ends shall be accepted.

c. Do not place any wires and cables for this system in any conduit, raceway, wire way or cable tray that is used for mechanical systems of building.

d. Route all cable and wiring within equipment racks, cabinets and millwork according to function, separating wires of different signal levels (microphone, line level, amplifier output, AV, control, etc.) by as much distance as possible. Neatly arrange, harness and bundle all cable with velcro straps.

e. After completion of wiring and cable installation, all trough and box covers shall be notched out and grommeted for clearance of various cable bundles, (i.e., separate audio, video, and control). Panel covers shall be screwed back in place and all gaskets shall be restored or replaced.

3. Connectors:

a. Provide connectors of type and quality as detailed in Contract Drawings and/or as required to meet minimum bandwidth requirements of equipment to which connectors are terminated. Overall quantity of connectors shall not be limited by quantities indicated in Contract Drawings and shall be provided as required.

b. No connectors shall be installed in non-accessible locations or used for splicing cables. Connectors shall be new.

c. Connectors shall incorporate strain relief mechanisms which firmly grip the jacket of connected cables.

d. Connectors shall be properly polarized to prevent improper seating.

e. Connectors shall provide appropriate electrical characteristics for circuitry to which they are attached.

f. Exposed conductors inside of equipment racks shall be dressed with heavy duty neoprene heat-shrink tubing.

g. Heat-shrink type tubing shall be used to insulate and dress ends of all wire and cables including separate tube for ground or drain wire.

h. Solder connections shall be made with rosin-core solder. Temperature controlled soldering irons rated at least 60 watts shall be used for all soldering work. No soldering guns, gas or butane, or temperature unregulated irons shall be used on job site.

i. Mechanical connections shall be made with approved crimp lugs of correct size and type for connection. Wire nuts shall not be permitted except inside speaker enclosures. Each connector shall be attached with proper size controlled-duty-cycle ratcheting crimp tool approved by manufacturer.

j. Conventional non-ratcheting type crimping tools are unacceptable, and shall not be used on job site. Presence of such tools on job site shall constitute evidence of mechanical connections made with unauthorized tools and shall provide sufficient grounds for rejection of all mechanical connections in system, and will be considered non-conforming work.

G. Equipment Cabinet:
1. Install vent panels at top and bottom of equipment cabinets and between components where possible for maximum ventilation. Locate amplifiers at top of cabinet. Locate equalizers below amplifiers, separated by several vent panels.
2. Securely fasten equipment plumb and square in place. Utilize all fastening holes in front of cabinet.
3. Securely fasten in place equipment that is not rack mounted, including relays and other small components. Do not use sticky-back tape.
4. Install balancing / isolation transformer when balanced and unbalanced components are connected.
5. Wire XLR-type connections with pin 2 hot, pin 1 shield.
6. Connect powered components to 120 VAC outlets on voltage suppressor power bars. Do not connect to outlets on other components.
7. Identification:
   a. Legibly identify user-operated system controls and system input / output jacks using engraved, permanently attached laminated plastic plates or imprinted Lexan labels. Label equipment and controls within equipment cabinets using similar labels or printed labels from a label maker or laser printer.
   b. Affix label to rack panel inside cabinet listing name and telephone number of installer. Appropriate warranty instructions may be included.

H. Identification And Labeling:
1. Cables, regardless of length, shall be identified with machine-printed wrap-around labeling system at both ends:
   a. These labels shall be self-laminating to ensure durability.
   b. Label format used shall be equal, or better than, system detailed.
2. There shall be no unmarked cables any place in system.
3. Marking codes used on cables shall correspond to codes provided with submittals, and/or written documentation of 'Record Drawings'.
4. Connectors, controls, equipment components, terminal blocks and equipment racks are to be permanently labeled in format approved during submittal process.
5. Equipment labels are to be permanently engraved in metal. Alternative method shall be approved during submittal process only.
6. Clearly and permanently label all jacks, controls, connections, and so forth. Embossed or printed label tape shall not be used and is considered unacceptable for this system. Attach labels with double stick tape as required.
7. Labeling shall be completed prior to acceptance of final system.

I. Grounding:
1. Provide equipment grounding connections for audio system as indicated. Tighten connections to comply with tightening torques specified in UL 486A-486B to assure permanent and effective grounds.
2. Ground equipment, conductor, and cable shields to eliminate shock hazard and to eliminate ground loops, common mode returns, noise pickup, cross talk, and other impairments. Provide 5 ohm ground at main equipment location. Measure, record, and report ground resistance.
3. Provide grounding conductor with green insulation between as indicated on Contract Drawings. Comply with IEEE and TIA standards.

J. Pulpit:

1. Install pulpit microphone pre-amplifier to be accessible below lectern. Do not alter factory supplied microphone cable and connectors.
2. Install pulpit microphone so tip of microphone head is 2 inches (50 mm) inside edge of lectern when microphone is tilted down to maximum extent.

K. Seismic Bracing:
1. Comply with IBC and local seismic requirements for all equipment and conduit pathways.

3.04 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for additional requirements.

B. Field Tests:
1. Installer Testing:
a. After completion of installation but before inspection by Audiovisual Consultant, perform following:
1) Conduct system tests and make necessary corrections for proper system operation including, but not limited to, following:
(a) Output level uniformity.
(b) Polarity.
(c) Shock, strain excited hum, and oscillation.
(d) Clipping, hum, noise, and RFI in all system configurations.
(e) Speaker line impedances.
(f) Loose parts and poor workmanship or soldering.
2) Sweep speaker systems with high-level sine wave or 1/3 octave pink noise source. Correct causes of buzzes or rattles related to speakers or enclosures. Notify Contractor and Audiovisual Consultant of external causes of buzzes or rattles.
3) Rough Balance: Balance system well enough that it can be used for meetings before final inspection.
b. Complete documentation required by Audiovisual Consultant and submit to consultant within five (5) days of Substantial Completion.

C. Field Inspections:
1. Audiovisual Consultant Inspection And Equalization:
a. Coordinate final inspection schedule with Audiovisual Consultant two (2) weeks minimum before Consultant's final inspection.
b. Have copy of Installer redlined documents sent to Audiovisual Consultant two (2) weeks minimum to before field inspection.
c. Have loose equipment (microphones, cables, etc.) available at time of inspection.
d. Assist Audiovisual Consultant in final inspection of completed system.
e. Assist Audiovisual Consultant in noise isolation testing of folding partitions and office doors.
f. Provide following test equipment in good working order:
1) Laptop computer:
(a) capable of running current DSP configuration software
(b) with active commercially available anti-virus software
2) 1/3 octave real-time audio spectrum analyzer with SPL meter, and precision microphone.
3) Digitally generated random pink noise generator, 20Hz-20KHz, minimum two (2) hour repetition rate or ten (10) minutes minimum of equivalent signal recorded on compact disc.
4) Direct reading audio impedance meter, minimum three (3) frequencies, and ten (10) percent accuracy.
5) Digital Volt-Ohmmeter.
6) Audio oscillator, variable frequency, 20Hz-20KHz.
7) MP3 player with pre-recorded speech and music program material.

8) Necessary chargers, cables, test leads, adapters, and other accessories for test equipment.
9) Tools and spare parts for making adjustments and corrections to system.
10) Level II Cable certifier, or cable certifier report.

g. Correct minor items so Audiovisual Consultant may certify satisfactory completion during his visit.

D. Non-Conforming Work:
1. Correct any work found defective or not complying with contract document requirements at no additional cost to the Owner.
a. Provide all materials requested by consultant to document rededication of punchlist items not remedied during system commissioning.

E. Manufacturer Services:
1. Provide services of factory authorized service representative to supervise field assembly and connection of components and pretesting, testing, and adjustment of system.

3.05 CLEANING

A. Waste Management:
1. All work areas are to be kept clean, clear and free of debris at all times.
2. Disposal of rubbish, debris, and packaging materials to Contractor provided Dumpster.
3. Disposal of rubbish, debris, and packaging materials in proper manner.

PART 4 MEETINGHOUSE SOUND SYSTEM FUNCTIONALITY

4.01 EACH OF THE SOUND SYSTEM(S) SHOULD FUNCTION AS INDICATED.

4.02 SOUND MASKING SYSTEM

A. Sound masking speakers located in outside of offices, should be tapped at 1W, and be calibrated to produce X SPL when measured at 5'10" AFF. Masking speakers located in offices, shall be tapped at ½ W. SPL is determined by calibration of public area sound masking speakers.

4.03 CHAPEL SYSTEM

A. 'CP' shall consist of touch panel installed in Bishop's Pedestal and shall function as follows:

B. When in the Off state, the touch panel shall contain a single On/Off button. Chapel inputs shall be muted, and power to the amplifier shall be off. Pressing the On/Off Button shall cause the system to turn on.
1. Power to the amplifier shall be engaged. While the amplifier is booting, Touch panel shall display a message indicating the system is powering on, and system chapel outputs shall remain muted.

C. When the amplifier is fully powered on, Chapel outputs shall be unmuted, and the Touchpanel shall display standard "System On" Page. This page shall consist of:
1. Momentary Pulpit Up and Down Buttons, which shall raise and lower the pulpit respectively when pressed.
2. Chapel Volume Slider, which shall start at center position, and allow the user to raise or lower the room volume by 5 dB.
3. Power On/Off Button, which when pressed shall return the system to its original off state.
4. In systems with video systems, a Program Audio Button, which when pressed shall unmute audio the program audio feed to the room, and add a second slider to the panel for controlling the program audio level.
a. Pressing the program audio button again, shall mute the program audio, remove the program audio slider form the panel display, and return the program audio slider to its pre-set level.
b. Program audio level shall allow adjustment of up to 60dB, and when at its lowest position, shall mute the program output.

D. Each time the system is turned on, the system will shall:

1. Restore the system to its default settings, and,
2. return chapel volume slider to middle sound level, which corresponds to its default sound level.
3. After the system is fully ready, the touch panel shall display the main operations screen
4. Shall not cause an audible pop to be heard over the sound system

E. Volume Level Control

F. Default Configuration
1. The defaults sound level for the system is 4Db below the feedback level.
2. The number of open Mics (NOM) shall be 3.
3. The pulpit, and sacrament microphones shall be set to always open.
4. Auxiliary feeds from both the video system, and the audio system shall not be included in the NOM calculation.

4.04 CULTURAL HALL SYSTEM

A. The cultural hall system consists of multiple sections. From the available sections, the section closest to the chapel shall be equipped with a 'CC' or main controller, and shall be referred to as the main section. The next largest available section may be equipped with a 'CC2' or secondary controller, and shall be referred to as the secondary. Each section shall be electronically separated, or combined via an Infrared sensor, which shall be mounted such that it reliably detects weather the operable partition doors are open or closed.

B. The Cultural hall 'CC' device shall consist of a touchpanel installed on the wall and shall function as follows:
1. When Cultural Hall system(CC) is off, and the associated section is separated (separating door(s) are closed) form the chapel, or it is connected to the Chapel (door(s) are open)and the chapel is off, CC shall display the "CC System Off" page.
2. When associated section is connected to chapel (door(s) are open) and Chapel system is on or starting, CC shall display a message indicating "CC is connected to Chapel. To use system turn off chapel system or close one or more doors separating the rooms.
3. The CC System Off pages shall consist of a single "System On" Button. When pressed, the system shall engage power to the amplifier, unmute the cultural hall audio outputs, and display the "CC Auto Mode Page".
4. The CC Auto Mode Page shall consist of a "Power Off" button, and a "CC Manual" Button.
   a. Pressing the "Power Off" button shall return the CC panel and its associated room to their off states.
   b. Pressing the "CC Manual" button shall display the CC Manual page.
5. The "CC Manual Mode" page shall consist of the same System On/Off Buttons available on the "Auto Mode" page, and volume sliders for each audio inputs in the associated cultural hall section, or any of its combined sections (door(s) open between then). This excludes the chapel, which inputs are never broken out for individual control. Since the number of available inputs will vary depending on which other sections are combined, the number of sliders will vary. Multiple "CC Manual Mode" pages may be necessary.
   a. Each slider shall allow for 40dB of gain adjustment, ranging from -30dB to +10dB from teach inputs nominal level. When the slider is set to -30dB, the system shall fully mute the associated input.
6. Pressing the "CC Auto" Button shall return the panel to the "CC Auto Mode" page. return system to Auto mode operation, and reset all manual volume sliders to nominal levels and positions.
7. Pressing "CC Off" Button from this screen shall immediately return associated cultural all sections to their off state, display the "CC System Off" page, and return all manual volume sliders to their nominal volume levels and positions.

C. When included in a system, CC2 shall function in the same manner as the "CC" control panel.
1. When cultural hall sections containing CC and CC2 are combined, both panels shall show the same pages, and information at the same time.

2. When separated (one or more partition doors between them are closed) each panel shall operate independently of the other, enabling only control of the audio inputs and outputs in their respective sections.

D. If at any time, the chapel system is turned on while connected to the one or more of the cultural hall sections containing a CC or CC2 control. Connected controls shall immediately display the "CC connected to Chapel" page, Mute their inputs, and route chapel audio to any cultural hall sections connected to the chapel.
   1. Any systems which were operation in Manual Mode, shall additionally return sliders to their nominal positions, and levels.

E. Room Combining
   1. Cultural hall sections and the chapel shall be combinable, by opening the folding partition doors, and triggering the IR sensors. Combinable sections are assigned a priority, when a lower priority section is combined with a higher priority section, controls in the lower priority section shall be disabled, and the sound mix from the higher priority section shall be routed to the lower priority section.

4.05 ASSISTIVE LISTENING SYSTEM (ALS)

A. The assistive listening system, uses RF frequencies to broadcast an audio feed to compatible receivers. When the chapel sound system is on, the system broadcasts the chapel sound. If the cultural hall system is on, and the chapel is not, the system will broadcast the sound form the cultural hall.

4.06 INDEPENDENT ROOM SYSTEMS

A. Rooms with independent systems include one or mic or auxiliary input jacks, and a wall controller consisting if an audio switch, and volume control.
   1. Switch shall select which audio signal is heard in the room. Available signals are Local sound, or overflow.

4.07 PERIMITER ROOM SYSTEMS, AND THE PERIMITER FEED

A. The perimeter room systems shall include a speaker and volume control knob, in each meetinghouse foyer area, serving area, as well as other selected rooms. These systems shall be connected to the perimeter feed.

B. When active, the perimeter feed shall transmit sound to the connected systems and rooms. Connected systems shall include independent room systems, Assistive Listening Systems, and Foyer systems, the perimeter feed shall default to the chapel sound whenever the chapel system is on. If the cultural hall system is on, when the chapel system is off, the perimeter feed shall transmit the cultural hall system. When both systems are off, the perimeter feed shall transmit no sound signals.

4.08 STREAMING AUDIO

A. Stake Centers shall be equipped with XLR inputs and outputs for the purpose of allowing users to alter the default webcast audio feed. The AV rack shall include connections for 2 Choir microphones, an Organ Output, a Chapel Mix output, and a Webcast Input. The chapel organ sound shall be routed from the chapel organ to the chapel organ output. The sound heard through the overflow speakers in the chapel shall be routed to the Chapel Mix Output. The Choir Microphone outputs shall be cabled directly to the Choir microphone inputs on the rostrum.

B. The system shall include a webcast output connected directly from the DSP processor to the Webcast device. By Default, the system shall route the Chapel Mix to webcast device. If signal is detected on the Webcast In, the system shall automatically route that signal to the webcast device instead of the default chapel mix. Users shall be able to connect a manual mixer to the provided connections on CP1, and automatically route a custom mix to the webcast device.
   1. Webcast output (3,5mm plug type connection) shall be set to provide a line level (commercial). adjusted for a typical talker at the pulpit, while chapel slider is in its default position.

END OF SECTION

SECTION 27 4118
VIDEO SYSTEMS

PART 1 GENERAL

1.01 SUMMARY OF WORK:

A. Furnish and install complete and operational video and satellite system (when specified) as described in Contract Documents including:
   1. Line amplifiers, video and audio processors, video switchers, cable, connectors and ancillary equipment necessary to successful reception and distribution of video and audio signal from selected reception device (satellite or video stream).
   2. Satellite dish, LNB and receiver when specified.
   3. Installation and testing of Owner Furnished Network and Streaming Equipment.

B. Assist Audiovisual Consultant with final inspection of system and provide necessary test equipment. Correct problems found at time of final inspection of system.

C. Audiovisual Consultant will perform final inspection and instruct local leaders in operation of system.

D. Products Furnished But Not Installed Under This Section:
   1. Steel base pipe for satellite system.

E. Products Installed But Not Furnished Under This Section:
   1. Owner Furnished Network Streaming Equipment as specified on TA and TT (Technology Audiovisual and Technology Telecommunications) Drawings as shown in Contract Documents.

1.02 RELATED REQUIREMENTS

A. 01 6000 - Product Requirements.
   1. Owner will Furnish Network Encoding Streaming Equipment as specified on TA (Technology Audiovisual) Drawings as shown in Contract Documents. Contract Documents establish quality of materials and installation for information of Contractor, Architect, and Owner's Representatives. Design Criteria in PART 2 of this Section identifies Contractor's responsibility for Owner Network Equipment.

B. 03 1000 - Concrete Forming and Accessories: Installation of concrete base pier for base pipe.

C. 09 9113 - Exterior Painting: Finish painting of base pipe.

D. Section 26 0533.13 - Conduit for Electrical Systems.

E. Section 26 0533.16 - Boxes for Electrical Systems.

F. 26 0536 - Cable Trays for Electrical Systems.

G. 27 1000 - Structured Cabling: Communications Cabinet, Racks, Frames, and Enclosures.

H. Section 27 4117 - Audio Systems.

I. Instructions to Owner by Audiovisual Consultant.

1.03 REFERENCE STANDARDS

A. ANSI/Infocomm 2M - Standard Guide for Audiovisual Systems Design and Coordination Processes 2010.

B. ANSI/Infocomm 3M - Image System Contrast Ratio 2011.

C. ANSI/Infocomm 4 - Audiovisual Systems Energy Management 2012.

D. ANSI/Infocomm 10 - Audiovisual Systems Performance Verification 2013.

E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2022.

F. AVIXA RP-C303.01 - Recommended Practices for Security in Networked Audiovisual Systems 2018.

G. BICSI TDMM - Telecommunications Distribution Methods Manual - 14th Edition 2020.

H. IEEE 1100 - IEEE Recommended Practice for Powering and Grounding Electronic Equipment 2005.

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

J. NFPA 72 - National Fire Alarm and Signaling Code Most Recent Edition Cited by Referring Code or Reference Standard.

K. TIA-568-C.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards 2009, with Addendum (2016).

L. TIA-569 - Telecommunications Pathways and Spaces 2019e.

M. TIA-606 - Administration Standard for Telecommunications Infrastructure 2021d.

N. TIA-607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises 2019d.

O. TIA-758, 'Customer-Owned Outside Plant Telecommunication Infrastructure Standard' (Revision B, 2012).

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with Owner's Representative (Project Manager and/or Facility Manager) well in advance of Substantial Completion for installation of all Owner Furnished Network Streaming Equipment.

B. Coordinate final inspection schedule of both audio and video systems before Audiovisual Consultant's final inspection.

C. After completion of video system installation of this section, Installer to perform Field Testing before Audiovisual Consultant Final Inspection of audio system.

D. Notify Audiovisual Consultant two (2) weeks minimum before Field Inspection specified in Field Quality Control in Part 3 of this specification.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Informational Submittals:
   1. Manufacturer Reports: Itemized list of equipment to be supplied.
   2. Special Procedure Submittals: Provide itemized list of equipment to be supplied and proposed labeling for system components.
   3. Installer Qualifications:
      a. Provide Qualification documentation as requested by Engineer/Architect including list of Projects requested and list of certified technician(s) with dates of training courses completed.

C. Closeout Submittals:
   1. Project Record Documents:
      a. Record actual locations of outlets, devices, and cable routing.
      b. Equipment manufacturer's manuals and warranty information.
   2. Operation Data:
      a. Instructions for setting and tuning channels.
      b. System operation and maintenance instructions.
      c. List of equipment provided, including portable equipment, showing make, model, and serial number.
      d. Leave clear plastic sheet protector in rear of equipment cabinet with system drawings and documentation.
      e. Set-up files and settings for video equipment.
   3. Warranty Documentation: Final, executed copy of Warranty.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70 and cable television utility company.

B. Regulatory Agency Sustainability Approvals:
   1. System shall be installed in accordance with applicable standards, requirements, and recommendations of International Building Code, National Electrical Code and all local authorities having jurisdiction.

C. Qualifications:
   1. Installer. Requirements of Section 01 4000 applies, but not limited to following:
      a. Approved Installers:
         1) Installers are to furnish and install components of video system and meet qualification requirements.
         2) Approval subject to agreement process for Pre-Approval Installers.
      b. Alternate Installer(s):
         1) Firm specializing in performing work of this section:
            (a) Minimum three (3) years of successful installation experience of AV system projects of comparable size, and complexity required for this project. Audio systems must have included complete installation and setup work and must have been completed by factory trained and certified technician.
            (b) Firm successfully completed minimum of three (3) projects in past two (2) years before bidding.
            (c) Firms must have certified technician that has successfully completed all relevant training courses recommended by manufacturers and is proficient with all specified equipment of this section.
            (d) Comply with specifications and Contract Documents.
         2) Submit documentation of compliance of qualifications before bid to Architect or Owner's Representative.
      c. Same Approved Installer shall furnish and install Section 27 4117 - Audio Systems

1.07 DELIVERY, STORAGE, AND HANDLING

A. Delivery And Acceptance Requirements:
   1. Materials shall be delivered in original, unopened packages with labels intact.

B. Storage And Handling Requirements:
   1. Provide secure location protected from weather in cool, dry location, out of direct sunlight in compliance with Manufacturer's instructions and recommendations.
   2. Keep materials free from dirt and foreign matter.

1.08 WARRANTY

A. Provide complete warranty repair or replacement for one (1) year at no cost to Owner, except in case of obvious abuse.

B. If failure causes audio system to be inoperative or unusable for its intended purpose, Installer, when notified of problem shall repair system within five (5) days so it will be operational and usable. If defective components cannot be repaired in time, furnish and install temporary loaner equipment as required.

C. If failure causes Chapel or Cultural Center audio system to be inoperative or unusable for its intended purpose, Installer, when notified of problem before Wednesday, shall repair system so it will be operational and usable by following Sunday. If defective components cannot be repaired in time, furnish and install temporary loaner equipment as required.

D. Honor component warranties for term established by Manufacturer, if greater than one (1) year.

PART 2 PRODUCTS

2.01 OWNER-FURNISHED PRODUCTS

A. Products. See Section 01 6000:
   1. Network Equipment as shown on TT601 (Technology) Drawings.

2. Steaming Equipment, as shown on TA601 and TA602
3. Wall Mounted Televisions, and support brackets

B. Coordinate installation of all Owner Furnished Network Streaming Equipment including but not limited to:
1. Installation and configure devices in accordance with Owner requirements.
2. Mounting and setup of wall-mounted televisions
3. Proper set-up of Network Streaming Equipment.
4. Testing of Streaming Equipment, by originating a webcast.

2.02 DESIGN CRITERIA

A. Video distribution system refers but is not limited to following components:
1. Line amplifiers, video and audio processors, video switchers, cable, connectors and ancillary equipment necessary for successful reception and distribution of video and audio signal from the selected reception device (satellite or video stream).
2. Satellite dish, LNB and receiver when satellite system is included.
3. Owner Furnished streaming and network equipment.

B. Intent of this specification is that
1. Audiovisual signals shall be broadcast and available within the originating receiving system will receive broadcasts from network streaming device and/or satellite currently in use by Church and provide video, audio, and video signal distributed properly throughout system.

C. System shall be fully function and complete video distribution system using equipment and materials of types, sizes, rating, and performances as indicated in Contract Drawings and following requirements:
1. Equipment and materials shall comply with manufacturers' standard design and construction in accordance with published product data and in compliance with referenced standards.
2. Equipment and materials are to be integrated with components and connections functions at optimum performance.
3. Setup shall be optimized for display resolutions matching owner furnished display devices.

PART 3 EXECUTION

3.01 INSTALLERS

A. Approved Installers - See Section 01 6000:
1. Meet qualification requirements as specified in Quality Assurance in Part 1 of this specification.
2. General Communications: (801) 266-5731.
3. Marshall Industries: (801) 266-2428.
4. Poll Sound: (801) 261-2500.
5. Professional Systems Technology: (801) 649-6696.

3.02 EXAMINATION

A. A. Verification Of Conditions:
1. Verify compliance with following items before beginning work of this Section:
a. Assure that antenna clears every obstacle and has clear line-of-sight to United States domestic-arc satellites. If there are obstructions, report to Architect before proceeding.
b. No cables spliced.
c. Specified cables and equipment cabinets are properly installed.
2. Verify all site conditions are in compliance with requirements for proper installation and function of video system work.
3. Verify proper functionality for all system components being reused or remaining untouched.

3.03 INSTALLATION

A. Owner Furnished Equipment:
   1. Network Streaming Equipment:
      a. Install and setup Owner Furnished Network Streaming Equipment.
   2. Extended Display Identification Data (EDID):
      a. Set all specified EDID capable devices for Owner Furnished Display Device resolutions and sync signals including installation and setup.

B. General:
   1. Install system in accordance with NFPA 70, NFPA 72, and other applicable codes. Install equipment in accordance with manufacturer's written instructions.

C. Satellite Dish Antenna:
   1. Supply and install as shown on Contract Drawings in conjunction with Manufacturer's instructions.
   2. Orient to satellite currently used by Church using L-band spectrum analyzer.
   3. Roof Mounted Antenna for low-slope roofs if shown on Construction Drawings:
      a. Mount Antenna to roof using non-penetrating roof mount, specified on Construct Drawings.
      b. Place Antenna on top rubber roof pad, 1/8 inch (3 mm) minimum.
      c. Install additional ballast in uniformly distributed manner, on non-penetrating mount frame. Total weight of mount, antenna and ballast shall weigh between 590 lbs (267.6 kg) and 620 lbs (281.2 kg).

D. Equipment Cabinet:
   1. File smooth exposed rough edges after cutting and drilling. Do not allow sharp screws to protrude from cabinet.
   2. Install vent panels at top and bottom of equipment cabinets. In addition, install vent panels above and below satellite receiver and between other components, where possible, for maximum ventilation.
   3. Securely fasten equipment plumb and square in place. Utilize all fastening holes in front of cabinet.
   4. Securely fasten in place equipment that is not rack mounted, including relays and other small components. Do not use sticky-back tape.
   5. Install balancing/isolation transformer when balanced and unbalanced components are connected.
   6. Wire XLR-type connections with pin 2 hot, pin 1 shield.
   7. Connect powered components to 120 VAC outlets on voltage suppressor power bars. Do not connect to outlets on other components.
   8. Identification:
      a. Legibly identify user-operated system controls and system input/output jacks using engraved, permanently attached laminated plastic plates or imprinted Lexan labels. Label equipment and controls within equipment cabinets using similar labels or printed labels from a label maker or laser printer.
      b. Affix label to rack panel in cabinet listing name and telephone number of installer. Appropriate warranty instructions may be included.
   9. Comply with IBC and local seismic requirements for all equipment and conduit pathways.

E. Cables, Wires, And Connectors:
   1. Cables:
      a. Cable and wire shall be new and unspliced.
      b. Splicing:
         1) Splicing of cables and conductors is expressly prohibited in any location other than equipment racks.
         2) Splicing of control and speaker level conductors shall be accomplished via punch block or terminal strip connections only.

c. Additional cable length shall be provided at all connector locations. Duplex box, junction box, and floor box locations shall be installed with sufficient cable length behind cover plates to permit wiring maintenance and connector replacement in the future.

d. When cable runs utilize vertical cable raceways located within walls, acoustic integrity of walls shall be maintained:
   1) Cables that pass-through cover plates of junction boxes and raceways, through slab-to-slab walls, and through conduit, lines shall be properly gasketed and sealed. Acoustic material shall be restored or replaced.

e. Separation between system cables and other services shall be maximized to prevent and/or minimize potential for electromagnetic interference (EMI):
   1) Provide at least 12 inches (305 mm) separation from electrical lines whenever feasible.
   2) Where separation is unavoidable, distribution cables shall cross other services at right angles whenever practical to minimize EMI.

f. Do not install signal cables on top of light fixtures, ceiling speakers, video projector lifts, projection screens, HVAC controls or sensing devices, fire safety and sprinkler system detection technology, or any other technology or mechanical equipment.

g. Do not lay cables directly on top of T-bar grid ceiling tiles:
   1) Support cables installed outside of conduit at 4 feet (1.20 m) maximum intervals from building structure.
   2) Do not utilize support wires from other trades or systems.

h. Install system cables shall not block access to other equipment or services, across removable service panels and/or in any other manner to prohibit routine maintenance of HVAC systems, fire safety equipment and building mechanical control systems.

i. Inter-rack cabling:
   1) Inter-rack cabling shall be neatly laced, dressed, strain relieved and adequately supported.
   2) Inter-rack cables shall be grouped according to signals being carried to reduce signal contamination. Separate groups shall be formed for following:
      (a) Power.
      (b) Control.
      (c) Video.
      (d) Audio cables carrying signals less than -20 dBM.
      (e) Audio cables carrying signals between -20 dBM and +20 dBM.
      (f) Audio cables carrying signals over +20 dBM.

j. Power cables, control cables, and high-level cables shall be run on left side of equipment racks as viewed from rear. All other cables shall be run on right side of all equipment racks as viewed from rear.

k. Cables, except video cables must be cut to electrical length, shall be cut to length dictated by cable run.

l. Terminal blocks, boards, strips or connectors, shall be furnished by installer for all cables which interface with racks, cabinets, consoles, or equipment modules. Affix terminal blocks, boards, strips or connectors to equipment racks using screws only. Double sided tape will not be accepted.

m. Shields for audio cables shall be grounded at input end only of various equipment items on system to prevent potential for ground loops.

n. Shields for microphone cables shall be grounded at both ends to allow Phantom Power to pass.

2. Wiring and Cabling:
   a. Comply with industry standard circuit polarity and loudspeaker wiring polarity. No cables shall be terminated with polarity reversal between connectors at either end.

b. System wire, after being cut and stripped, shall have wire strands twisted back to their original lay and be terminated by approved soldered or mechanical means. No bare wire ends shall be accepted.
c. Do not place any wires and cables for this system in any conduit, raceway, wire way or cable tray that is used for mechanical systems of building.
d. Route all cable and wiring within equipment racks, cabinets and millwork according to function, separating wires of different signal levels (microphone, line level, amplifier output, AC, control, etc.) by as much distance as possible. Neatly arrange, harness and bundle all cable with velcro straps.
e. After completion of wiring and cable installation, all trough and box covers shall be notched out and grommeted for clearance of various cable bundles, (i.e., separate audio, video, and control). Panel covers shall be screwed back in place and all gaskets shall be restored or replaced.

3. Connectors:
a. Provide connectors of type and quality as detailed in Contract Drawings and/or as required to meet minimum bandwidth requirements of equipment to which connectors are terminated. Overall quantity of connectors shall not be limited by quantities indicated in Contract Drawings and shall be provided as required.
b. No connectors shall be installed in non-accessible locations or used for splicing cables. Connectors shall be new.
c. Connectors shall incorporate strain relief mechanisms which firmly grip the jacket of connected cables.
d. Connectors shall be properly polarized to prevent improper seating.
e. Connectors shall provide appropriate electrical characteristics for circuitry to which they are attached.
f. Exposed conductors inside of equipment racks shall be dressed with heavy duty neoprene heat-shrink tubing.
g. Heat-shrink type tubing shall be used to insulate and dress ends of all wire and cables including separate tube for ground or drain wire.
h. Solder connections shall be made with rosin-core solder. Temperature controlled soldering irons rated at least 60 watts shall be used for all soldering work. No soldering guns, gas or butane, or temperature unregulated irons shall be used on job site.
i. Mechanical connections shall be made with approved crimp lugs of correct size and type for connection. Wire nuts shall not be permitted except inside speaker enclosures. Each connector shall be attached with proper size controlled-duty-cycle ratcheting crimp tool approved by manufacturer.
j. Conventional non-ratcheting type crimping tools are unacceptable, and shall not be used on job site. Presence of such tools on job site shall constitute evidence of mechanical connections made with unauthorized tools and shall provide sufficient grounds for rejection of all mechanical connections in system, and will be considered non-conforming work.

F. Mounting And Securing Equipment:
1. Equipment shall be firmly secured in place unless requirements of portability dictate otherwise.
2. Fastenings and supports shall be adequate to support their loads with safety factor of at least three (3) times weight of equipment being installed.
3. Any structural mounting that is not able to meet this requirement due to specific nature of equipment, manufacturer's requirements or limitations of facility, shall not be installed without prior approval of Engineer.
4. Install all boxes, equipment, hardware, and other materials plumb, level, and square.

G. Millwork:
1. Install technology equipment and support equipment in millwork in neat and cosmetically dressed out manner.

2. Install technology equipment and support equipment in podium, and other millwork in neat and cosmetically dressed out manner.
3. Saw cuts, holes and recesses into laminates and woodwork shall be straight.
4. Radius and circular cuts shall be consistent, and all uneven surfaces shall be corrected. This shall include use of moldings, grommets, bushings, laminates, and wood products as required to dress out installation of equipment.
5. Verify installation of equipment and panels in technology racks are completed by using matching screws, hardware and grommets.
6. Verify installation of equipment and panels in technology racks and podiums are completed by using matching screws, hardware and grommets.

H. Technology:
1. Provide sufficient ventilation for adequate cooling of equipment.
2. Install vent rack panels in unused spaces. Install vent panels at top and bottom and above each power amplifier.
3. Securely fasten equipment plumb and square in place. Where equipment is installed in rack cabinets, utilize all fastening holes and cove open spaces with perforated panels.
4. Securely fasten relays and small components. Do not use sticky-back tape for fasteners.
5. Install balancing transformer on each unbalanced input or output that connects to devices outside equipment cabinet, or that connects to balanced input or output within equipment cabinet.
6. Connect powered components to 120 VAC outlets on transient voltage surge suppressors. Do not connect to outlets on other components.
7. Leave sufficient service loops to uniform length on cables to allow operation of system with chassis outside cabinet.
8. Equipment shall be held firmly in place with proper types of mounting hardware as recommended and/or supplied by manufacturer:
   a. Mounting hardware provided with equipment shall be used when practical. This shall include, but not be limited to, front and rear rack rails, angle brackets and rack mount kits.
   b. Equipment shall be installed so as to provide reasonable safety to operator.

I. Install in accordance with manufacturer's instructions.

3.04 SYSTEM SETUP

A. Digital Video System Setup:
1. Pulpit HDMI and VGA Input (DTP T UWP 332D):
   a. Set Transmitter to Auto Switch between inputs, by shorting Contact Pins 1 and 2 to ground.

B. Rack Mounted DTP Receiver (DTP HDMI 330 RX):
1. Connect HDMI and Analog audio outputs to respective inputs on DTP switcher.

C. Video Switcher ‘VS’ Audio Setup:
1. Inputs:
   a. Video Input 2 must be set to Analog.
   b. Video Input 3 must be set to Multi-Ch Auto, system will automatically switch between analog and digital audio inputs when Input 3 is selected.
   c. Video Input 4 must be set to Multi-Ch Auto, system will automatically switch between analog and digital audio inputs when Input 4 is selected.
   d. Video Input 5 must be set for LPCM-2Ch Auto.
   e. Mic/Line Inputs 1 and 2 shall be muted.
2. Outputs:
   a. Input 1 and 6 must be set with preset which mutes analog audio outputs to Chapel when either input 1 or 6 is selected.
   b. All other inputs must be set up to unmute analog outputs.

c. Input 5 must be configured to pass Left Program on Left Channel, Right Program on Right Channel.
d. Variable analog output should be setup to pass 'No Program'.
e. Digital Outputs must be setup for 'Stereo Program'.

D. Video Switcher 'VS' Video Setup:
1. Input Configuration:
a. All inputs shall be labeled in software according to inputs connected to them.
b. Input 1's selected signal type shall match Camera's Native Signal Output. IF no camera is installed, Signal type shall be set to composite.
c. Input 2's signal type shall be set to RGB.
d. Aspect Ratio for Inputs 2 and 5 shall be set to follow, all others shall be set to fill.
e. All Inputs shall be set to auto image, auto memory, HDCP authorized, and Film Detect.
2. Output Configuration:
a. Set output Configuration to auto.
b. Set Output Format for Auto for each output group.
c. Set Transitions to 'CUT'.
3. General Settings:
a. Screen Saver shall be set to Blue with OSD Bug.
b. Select display color when sending HDCP content on non-compliant device to Green.
c. Set front Panel Lock out to Mode 2, allowing only input selection and volume controls.
d. Set HDCP mode to Follow Input.

3.05 FIELD QUALITY CONTROL

A. Field Tests:
1. Installer Testing:
a. Upon completion of installation and before inspection by Audiovisual Consultant, test functions verifying following. Make necessary corrections:
1) System is free from hum, noise, ghosting, loose parts and poor construction or soldering.
2) Video signals shall be clear, sharp, noise-free picture with good chroma and undistorted, noise free audio.
3) Audio to sound system is undistorted and noise free.
b. Complete documentation required by Audiovisual Consultant and submit to consultant within five (5) days of Substantial Completion.

B. Field Inspections:
1. Audiovisual Consultant Inspection:
a. Coordinate final inspection schedule with Audiovisual Consultant two (2) weeks minimum before Consultant's final inspection.
b. Have copy of Installer redlined documents sent to Audiovisual Consultant two (2) weeks minimum to before field inspection.
c. Provide following test equipment in good working order:
1) Digitally generated video test signal generator:
(a) Generator shall provide minimum of but not be limited to industry standard test signals including color bar patterns, grey scale, alternating pixel, cross hatch and H-pattern.
(b) Generator shall provide resolutions compatible with all specified video equipment.
(c) Generator shall provide resolutions up to 4096 x 2160 at 60 Hz.
2) Digital Volt-Ohmmeter.
3) Necessary chargers, cable, test leads, adapters and other accessories for test equipment.

d. Ensure Owner Furnished Display Devices such as projectors and video monitors are available and on site at time of inspections.
e. Correct minor items so Audiovisual Consultant may certify satisfactory completion without return trip.

C. Non-Conforming Work:
1. Correct any work found defective or not complying with contract document requirements at no additional cost to the Owner.

D. Manufacturer Services:
1. Provide services of factory authorized service representative to supervise field assembly and connection of components and pretesting, testing, and adjustment of system.

3.06 CLEANING

A. Waste Management:
1. All work areas are to be kept clean, clear and free of debris at all times.
2. Disposal of rubbish, debris, and packaging materials to Contractor provided Dumpster.
3. Disposal of rubbish, debris, and packaging materials in proper manner.

END OF SECTION

SECTION 27 4124
TELEVISION WALL MOUNTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Furnish and install TV wall mount as described in Contract Documents.

1.02 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.

B. Section 06 1000 - Rough Carpentry for wall blocking and installation of television wall mounts.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Action Submittals:
   1. Product Data:
      a. Provide Manufacturer's written installation instructions.

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

A. TV Wall Mounts:
   1. Description:
      a. Large Flat Panel TV Swing Arm Wall Display Mount allowing for perfect display placement and ideal viewing from any angle and remains low-profile in home position.
   2. Design Criteria:
      a. Adjustable tilt mechanism.
      b. Mounting system secures flat panel to mount.
      c. Typical Screen Sizes: 65 inch (1 067 mm to 71 inch (1 803 mm).
      d. UL Listed.
      e. Weight Capacity: 200 lbs (90 kg).
   3. General:
      a. Lateral shift: 9 inch (230 mm).
      b. Manual Height Adjustment: 1 inch (25 mm).
      c. Maximum Extension: 37 inch (940 mm) extension.
      d. Minimum Depth: 3.4 inch (86.4 mm).
      e. Mounting Pattern Compatibility (Universal Versions): 200 x 200mm - 862 x 517mm.
      f. Orientation: landscape and portrait.
      g. Overall Dimensions 22 inches (559 mm) high x 39.5 inches (940 mm) wide x 3.4 inches (86 mm) deep.
      h. Tilt: +5 deg, -16 deg.
   4. Color: Black.
   5. Acceptable Products:
      a. PDRUB / PDR Series Large Flat Panel Swing Arm Wall Display Mount - 37 inch extension by Chief (Division of Milestone AV Technologies), Eden Prairie, Minnesota www.milestone.com.
      b. Equals as approved by Architect before bidding. See Section 01 6200.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions:
   1. Verify wall blocking in stud wall is in correct location for mounting TV Wall Mount before beginning installation.

3.02 INSTALLATION

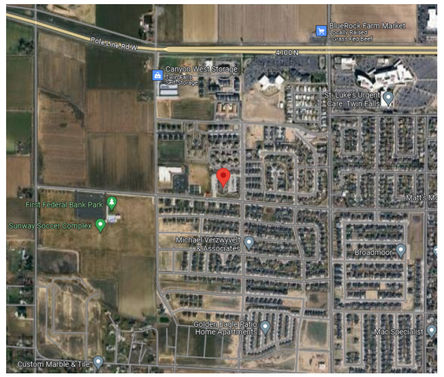
A. Installing TV Wall Mount to Wall:
   1. Follow Manufacturer's written installation instructions for anchoring to wall.
   2. Install Mount so that top of TV is 3 inch (76 mm) minimum from ceiling.
   3. Install at locations shown on Contract Drawings.

END OF SECTION

AN ADDITION FOR THE NORTH POINT LDS CHURCH

1134 N College Rd W, Twin Falls, ID 83301

LOCATION MAP



NORTH

THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

ABBREVIATIONS

AC	ACOUSTICAL CEILING	EJ	EXPANSION JOINT	MECH	MECHANIC (-AL)	SP	SPACE (-S)
ADJ	ADJUSTABLE - ADJACENT	EL	ELEVATION	MFR	MANUFACTURE (-R)	SPEC	SPECIFICATION
AFF	ABOVE FINISH FLOOR	ELEC	ECLECTRIC (-AL)	MIN	MINIMUM	SQ	SQUARE
AL	ALUMINUM	EP	ENAMEL PAINT	MISC	MISCELLANEOUS	S/S	STAINLESS STEEL
ALT	ALTERNATE	EQ	EQUAL	MRGB	MOISTURE RESISTANT GYPSUM BOARD	ST	STAIN
ANOD	ANODIZED	EW	EACH WAY			STL	STEEL
AP	ACOUSTICAL WALL PANEL	EXG	EXISTING	MTL	METAL	STR	STRUCTURE (-AL)
APPROX	APPROXIMATE	EXP	EXPANSION	N	NORTH	STRG	STORAGE
ARCH	ARCHITECT (-URAL)	EXT	EXTERIOR	(N)	NEW	SV	SHEET VINYL FLOORING
AW	ACOUSTICAL WALL	FA	FIRE ALARM	NA, N/A	NOT APPLICABLE	T	THREAD
AWF	ACOUSTICAL WALL FABRIC	FD	FLOOR DRAIN	NIC	NOT IN CONTRACT	TBB	TILE BACKER BOARD
BLDG	BUILDING	FE	FIRE EXTINGUISHER	NDU	SANITARY NAPKIN DISPOSAL UNIT	T&G	TONGUE AND GROOVE
BM	BEAM	FEC	FIRE EXTINGUISHER CABINET			TO	TO OF
BOD	BOTTOM OF DECK	FF	FACTORY FINISH, FINISH FLOOR	NOM	NOMINAL	TOW	TOP OF WALL
BOT	BOTTOM	FIN	FINISH (-ED)	NTS	NOT TO SCALE	TPD	TOILET PAPER DISPENSER
BTWN	BETWEEN	FLR	FLOOR (-ING)	OC	ON CENTER	TSCD	TOILET SEAT COVER DISPENSER
CB	CATCH BASIN	FND	FOUNDATION	OD	OUTSIDE DIAMETER	TT	TIRE TREAD
CBT	CABINET	FOC	FACE OF CONCRETE	OPP	OPPOSITE	TYP	TYPICAL
CG	CORNER GUARD	FRP	FIBERGLASS REINFORCED PLASTIC PANEL	PCMU	PRE-FACED CMU	UNO	UNLESS NOTED OTHERWISE
CJ	CONTROL JOINT			PL	PLATE, PLASTIC LAMINATE	U/S	UNDERSIDE
CL	CENTERLINE	FRVR	FLAME RESISTANT VAPOR BARRIER	P-LAM	PLASTIC LAMINATE	VB	VAPOR BARRIER
CLG	CEILING	FT	FOOT, FEET	PLWD	PLYWOOD	VCT	VINYL COMPOSITION TILE
CLR	CLEAR (-ANCE)	FTG	FOOTING	PNL	PANEL	VERT	VERTICAL
CMT	CERAMIC MOSAIC TILE	FWC	FABRIC WALL COVERING	PORC. TILE	PORCELAIN TILE	VGF	VINYL GYM FLOORING
CMU	CONCRETE MASONRY UNIT	GA	GAUGE	PR	PAIR	VIF	VINYL INDUSTRIAL FLOORING
CO	CLEAN OUT	GALV	GALVANIZED	PSF	POUNDS PER SQUARE FOOT	VR	VAPOR RETARDER
COL	COLUMN	GH	GARMENT HOOK	PSI	POUNDS PER SQUARE INCH	VT	VINYL TILE
CONC	CONCRETE	GMM	GLASS MESH MORTAR BOARD	PT	PAINT, PRESSURE TREATED	VWF	VINYL WALL FABRIC
CONT	CONTINUOUS, CONTINUE	GYP BD	GYPSUM BOARD	PTD	PAPER TOWEL DISPENSER	W	WEST
CORR	CORRIDOR	HB	HOSE BIB	QT	QUARTZ TILE	W/C	WATER CLOSET
CP	CARPET	HC	HANDICAPPED	R	RISER, RADIUS	WD	WOOD
CS	CONCRETE SLAB, SEALED	HDR	HEADER	RB	RESILIENT BASE	W/D	WASHER & DRYER
CT	CERAMIC TILE	HM	HOLLOW METAL	RD	ROOF DRAIN	WDO	WINDOW
CTJ	CONTROL JOINT	HORIZ	HORIZONTAL	RO	ROUGH OPENING	WF	WALL FABRIC
CTR	COUNTER (-TOP)	HT	HEIGHT	RR	RESTROOM	WFV	WOOD FACE VENEER
DBL	DOUBLE	HVAC	HEATING/VENTILATING/ AIR CONDITIONING	RSF	RUBBER SHEET FLOORING	WG	WIRE GUARD
DET	DETAIL			S	SOUTH	WGL	WIRED GLASS
DIA	DIAMETER	ILO	IN LIEU OF	SC	SOLID CORE	WM	WIRE MESH
DIM	DIMENSION	INSUL	INSULATION	SCU	STRUCTURAL CLAY UNIT	W/O	WITHOUT
DF	DRINKING FOUNTAIN	INT	INTERIOR	SD	SOAP DISPENSER	WOC	WALK-OFF CARPET
DP	DEEP	JNT	JOINT	SDSV	STATIC DISIPATIVE SHEET VINYL	WP	WATERPROOFING
DR	DOOR	KD	KNOCK DOWN	SF	SPECIALTY FINISH	WPS	WALL PROTECTION SYSTEM
DS	DOWNSPOUT	LAV	LAVATORY	SFGL	SAFETY GLASS	WR	WATER RESISTANT
DWG	DRAWING	MCFP	MULTI-COLORED FINISH PAINT SYSTEM	SHTG	SHEATHING	WRGB	WATER RESISTANT GYPSUM WALLBOARD
E	EAST			SIM	SIMILAR		
(E)	EXISTING	MDO	MEDIUM DENSITY OVERLAY PLYWOOD	SL	SLOPE	WWF	WELDED WIRE FABRIC
EA	EACH			SND	SANITARY NAPKIN DISPENSER	W/	WITH

DRAWING INDEX

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TA603	VIDEO & CONTROL SYSTEM DIAGRAMS
TT601	DATA NOTES, DIAGRAM, DETAILS, & SCHEDULE

1

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AUDIO/VIDEO ENGINEER:
SPECTRUM ENGINEERS
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SALT LAKE CITY, UTAH 84111
PHONE: 801-328-5151

LANDSCAPE ARCHITECT:
BRECKON LANDDESIGN
6661 NORTH GLENWOOD STREET
GARDEN CITY, IDAHO 83714
PHONE: 208-376-5153

PROJECT INFORMATION

GOVERNING BUILDING CODES:

BUILDING CODE:	2018 INTERNATIONAL BUILDING CODE (IBC)
PLUMBING CODE:	2018 INTERNATIONAL PLUMBING CODE (IPC)
MECHANICAL CODE:	2018 INTERNATIONAL MECHANICAL CODE (IMC)
ELECTRICAL CODE:	2018 NATIONAL ELECTRICAL CODE (NEC)
FIRE CODE:	2018 INTERNATIONAL FIRE CODE (IFC)
ENERGY CONSERVATION:	2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
ACCESSIBILITY:	2017 ANSI 117.1 & 2021 IBC
OCCUPANCY GROUP: A-3	FIRE SPRINKLERED: YES
BUILDING TYPE: V-B	MATERIALS: WOOD FRAME WITH MASONARY VENEER

OWNER DRAWING APPROVALS

AEC PROJECT MANAGER — DATE
STAKE PRESIDENT — DATE
DATE
DATE

MUNICIPAL DRAWING APPROVALS

PLANNING DEPARTMENT — DATE
BUILDING DEPARTMENT — DATE
CITY ENGINEERING — DATE
FIRE DEPARTMENT — DATE

CITY STAMP

GENERAL NOTES:

1. ALL WORK SHALL MEET CURRENT ADOPTED STATE, LOCAL CODES, ORDINANCES, & 2018 IBC
2. ALL MECHANICAL, ELECTRICAL, & PLUMBING WORK SHALL MEET ALL CURRENT APPLICABLE STATE & LOCAL CODES.
3. ALL UTILITIES SHALL BE PROPERLY IDENTIFIED & LOCATED BEFORE WORK BEGINS ON PROJECT.
4. CONTRACTOR SHALL VERIFY ALL CONDITIONS & DIMENSIONS AT THE JOB SITE & NOTIFY THE ARCHITECT OF ANY DIMENSIONAL ERRORS, OMISSIONS, OR DISCREPANCIES BEFORE BEGINING OR FABRICATING ANY WORK.
5. DO NOT SCALE DRAWINGS.
6. ALL DOOR HANDLES SHALL BE LEVER TYPE, ALL DOOR HARDWARE SHALL BE A.D.A COMPLIANT AS PER CURRENT ANSI 117.1
7. AT MAIN ENTRANCE DOOR SHALL HAVE SINGLE ACTION LOCKING DEVICE &/ OR SIGNED "THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED."

TWIN FALLS FIRE DEPARTMENT NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INSURE THAT ALL DEFERRED SUBMITTALS REQUIRED BY THE FIRE DEPARTMENT **HAVE BEEN APPROVED BY THE STATE PRIOR TO THE INSTALLATION OF A FIRE ALARM AND/OR FIRE SPRINKLER SYSTEM.** IT SHALL ALSO BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY THAT ALL APPROPRIATE TESTING AND/OR INSPECTIONS HAVE BEEN PERFORMED BEFORE COVERING OR CALLING FOR A FINAL INSPECTION.
2. FIRE SPRINKLER UNDERGROUND PIPING
   THE UNDERGROUND FIRE SPRINKLER LINE MUST MEET NFPA 24 AND THE CITY OF TWIN FALLS STANDARDS. THE INSPECTION AND TESTING OF THE UNDERGROUND FIRE SPRINKLER LINE SHALL BE OVERSEEN BY THE TWIN FALLS FIRE MARSHALL.
3. SPRINKLER SYSTEM(S)
   SPRINKLER SYSTEM PLANS SHALL BE SENT TO THE STATE FIRE MARSHAL OFFICE AND DESIGNED IN ACCORDANCE WITH CURRENT NFPA 13 STANDARDS.
   IDAHO STATE FIRE MARSHAL
   700 WEST STATE STREET, 3RD FLOOR
   BOISE, IDAHO 83720
   PLANS SHALL MEET CURRENT IFC, NFPA 13R AND IDAHO STATE PLUMBING CODES, AND BE APPROVED PRIOR TO INSTALLATION.
4. FDC VISUAL ALARM A VISUAL ALARM DEVICE (EXTERIOR HORN/STROBE) SHALL BE PROVIDED IN THE AREA OF THE FDC.
5. FIRE ALARM AND DETECTION SYSTEM SHALL BE MODIFED AS REQUIRED.
6. FIRE SPRINKLER SYSTEM SHALL BE MODIFIED AS REQUIRED.

Architect / Engineer:
Laughlin Ricks Architecture
architecture/planning
134 3RD Ave East, * Twin Falls, Idaho 83301
(208) 736-8050

Stamp:
LICENSED ARCHITECT AR-985708
R. COLBY RICKS STATE OF IDAHO

THE NORTH POINT LDS CHURCH
1134 N College Rd W, Twin Falls, ID 83301

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date	Description
1	10/07/24	Revision 1

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title: TITLE SHEET

Sheet: G001

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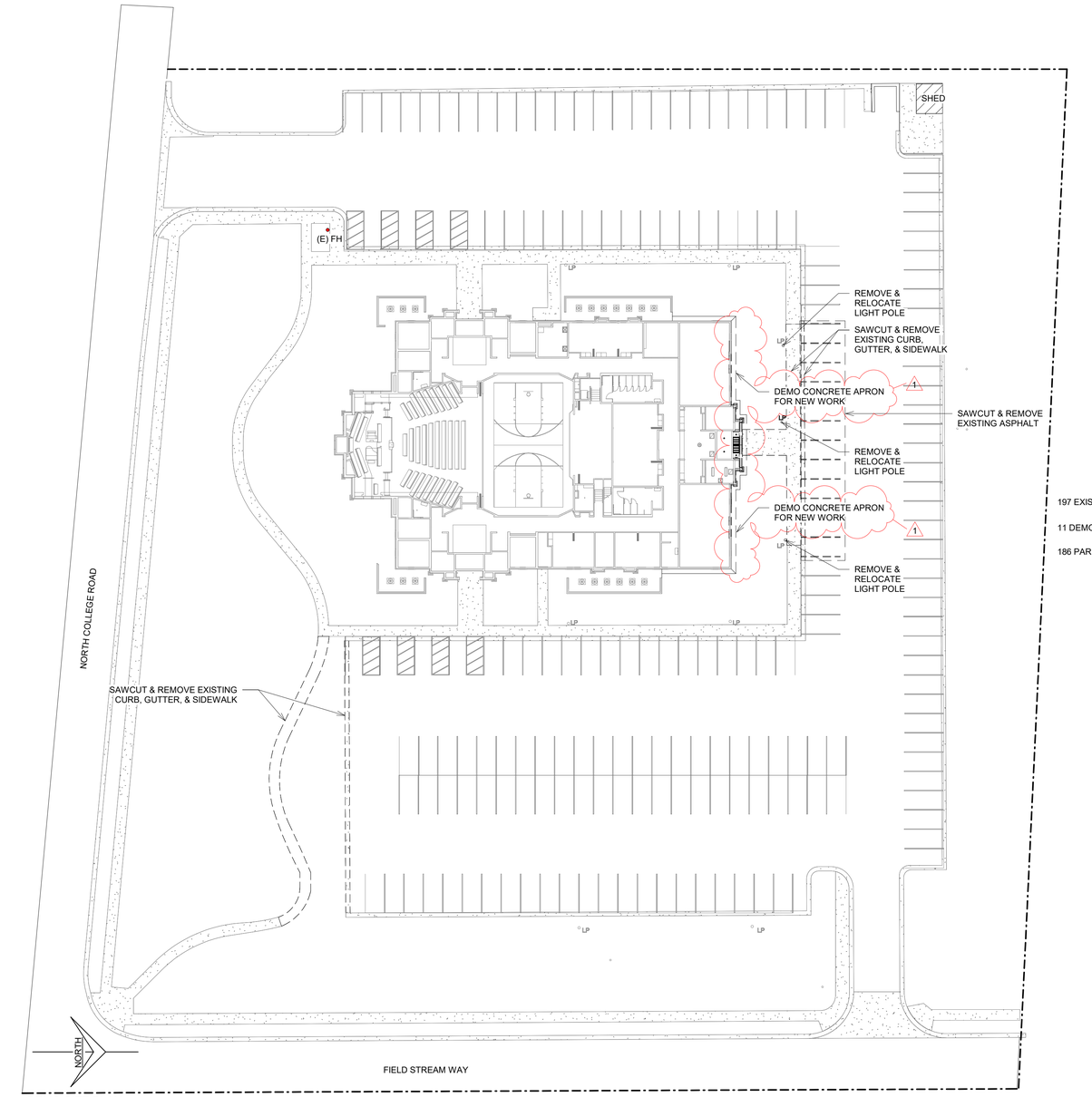


197 EXISTING PARKING LOT SPACES

11 DEMO PARKING SPACES

186 PARKING SPACES AFTER REMODELED

1 DEMO SITE PLAN
1" = 30'-0"

Architect / Engineer:
Laughlin Ricks Architecture
architecture/planning
134 3RD Ave East, * Twin Falls, Idaho 83301
(208) 736-8050

Stamp:
LICENSED ARCHITECT AR-985708
R. COLBY RICKS
STATE OF IDAHO

THE NORTH POINT LDS CHURCH
1134 N College Rd W, Twin Falls, ID 83301

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

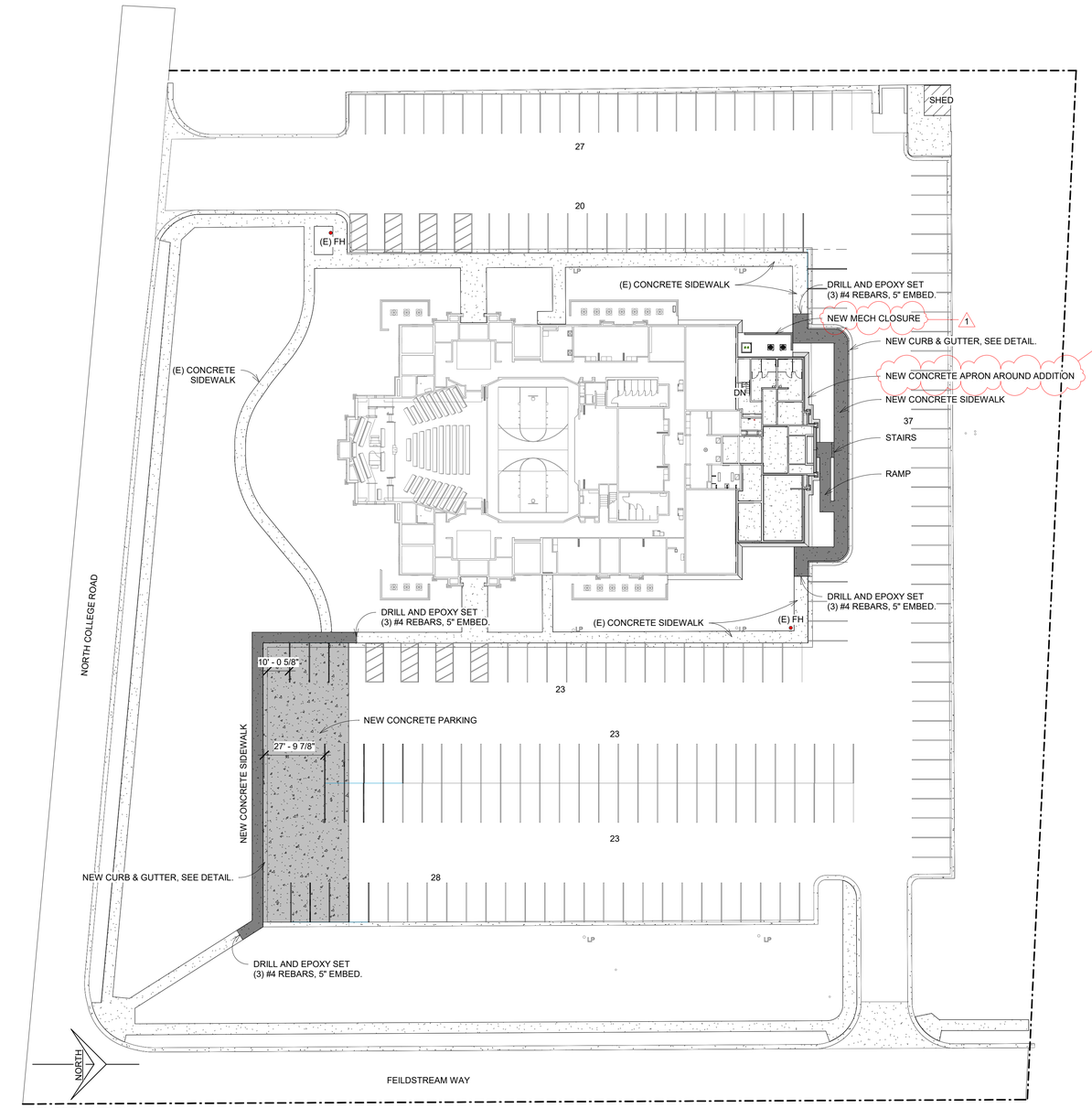
Mark	Date (D.M.Y)	Description
1	10/07/24	Revision 1

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title: DEMO SITE PLAN

Sheet: A001

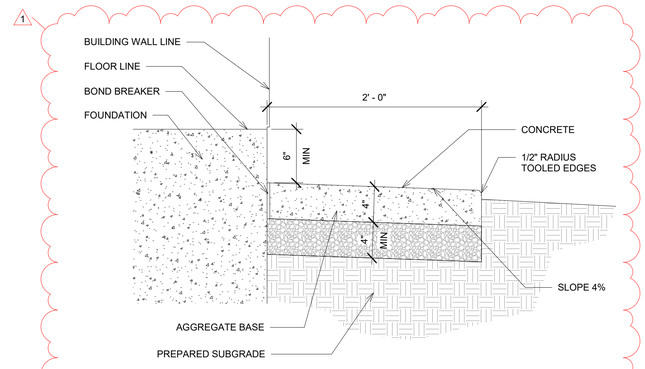
10/7/2024 11:55:38 AM



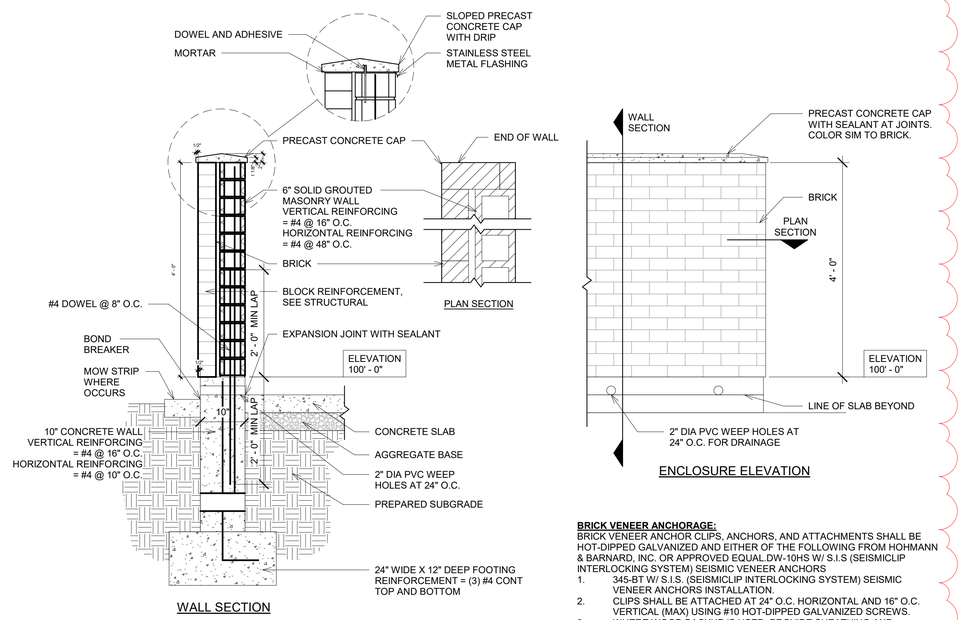
1 REMODEL SITE PLAN
1" = 30'-0"

PARKING REQUIRED
BENCH = 391' 2" / 6 = 65 SPACES
GYM = 2676.17 SF /35 = 76 SPACES
TOTAL REQUIRED = 141 SPACES
PROVIDED 186 SPACES

10-10-6 PARKING REQUIREMENTS BASED ON USE:
CHURCH, RECTORY, OR OTHER PLACE OF WORSHIP: 1 PARKING SPACE FOR EACH 3 FIXED SEATS, OR 6 FEET OF BENCH, IN ALL AREAS THAT MAY BE SIMULTANEOUSLY USED FOR ASSEMBLY. WHERE THERE IS NO FIXED SEATING OR A COMBIINATION OF ASSEMBLY AREAS WITH AND WITHOUT FIXED SEATING, 1 PARKING SPACE SHALL BE PROVIDED FOR WACH 35 SQUARE FEET OF ASEMBLY



2 CONC APRON NEXT TO BUILDING
1 1/2" = 1'-0"



BRICK VENEER ANCHORAGE:
BRICK VENEER ANCHOR CLIPS, ANCHORS, AND ATTACHMENTS SHALL BE HOT-DIPPED GALVANIZED AND EITHER OF THE FOLLOWING FROM HOHMANN & BARNARD, INC. OR APPROVED EQUAL.DW-10HS W/ S.I.S (SEISMICLIP INTERLOCKING SYSTEM) SEISMIC VENEER ANCHORS

1. 345-BT W/ S.I.S. (SEISMICLIP INTERLOCKING SYSTEM) SEISMIC VENEER ANCHORS INSTALLATION.
2. CLIPS SHALL BE ATTACHED AT 24" O.C. HORIZONTAL AND 16" O.C. VERTICAL (MAX) USING #10 HOT-DIPPED GALVANIZED SCREWS.
3. WHERE WOOD BACKUP IS USED, PROVIDE SHEATHING AND WATERPROOFING AS REQUIRED.
4. PROVIDE CONTINUOUS HOT-DIPPED GALVANIZED WIRE (9-GAUGE OR 3/16" DIA) ATTACHED TO EACH CLIP.

WALL SECTION

MASONRY MECHANICAL ENCLOSURE SCREEN WALL
NO SCALE

Architect / Engineer:
Laughlin Ricks Architecture
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134 3RD Ave East, * Twin Falls, Idaho 83301
(208) 736-8050

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LICENSED ARCHITECT AR-985708
R. COLBY RICKS
STATE OF IDAHO

THE NORTH POINT LDS CHURCH
1134 N College Rd W, Twin Falls, ID 83301

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

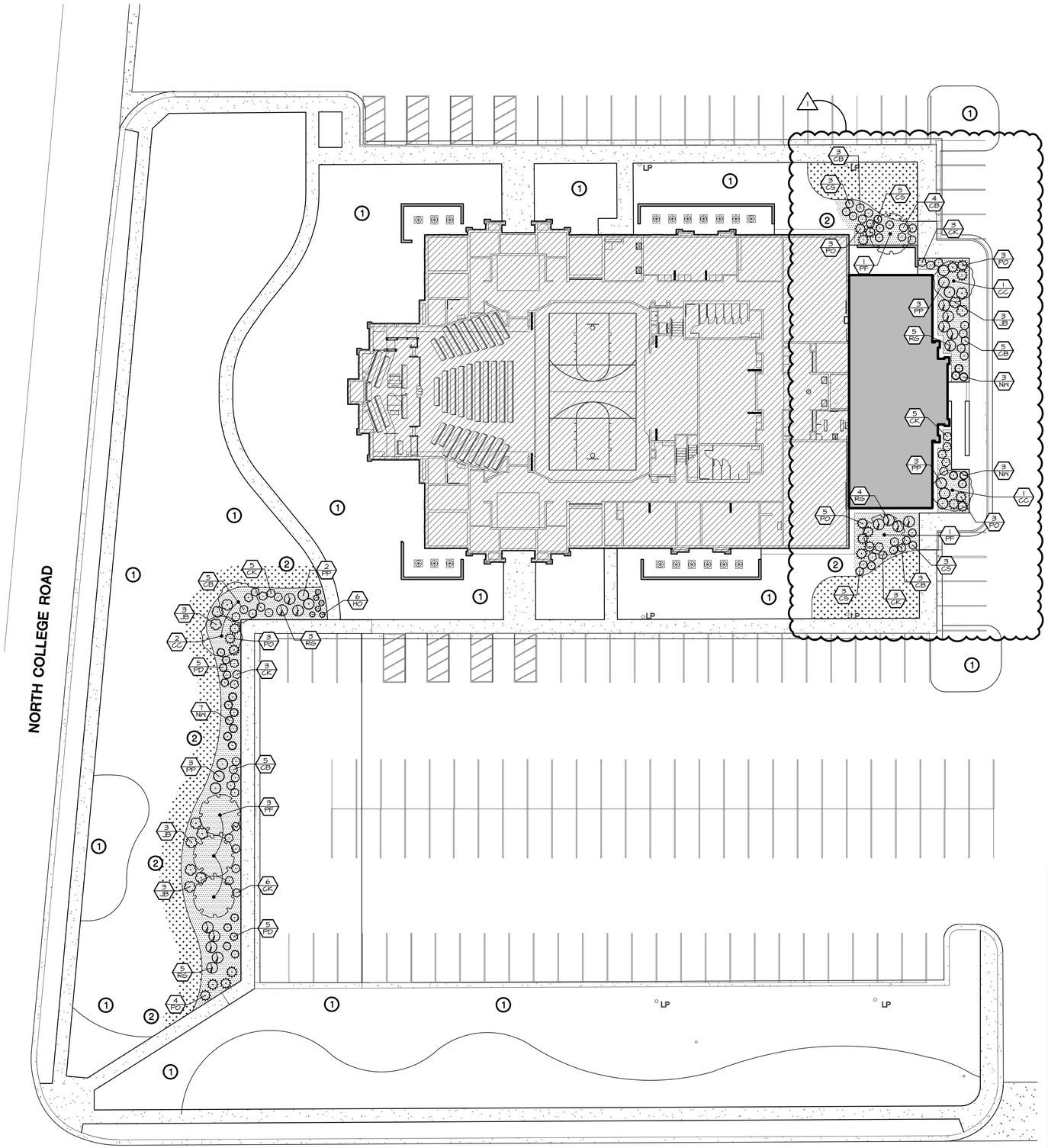
Mark	Date (M/D/Y)	Description
1	10/07/24	Revision 1

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title: REMODEL SITE PLAN

Sheet: A100

10/7/2024 11:55:38 AM



LANDSCAPE PLAN

SCALE: 1"= 30'-0"

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6661 North Glenwood Street
Garden City, Idaho 83714

LANDSCAPE LEGEND

- PLANTS TO BE INSTALLED
- VERTICAL CURBING LOCATION
- CURB AND GUTTER LOCATION
- SCORE JOINT (TYPICAL)
- EXPANSION JOINT (TYPICAL)
- ACCESSIBLE RAMP LOCATION WITH DETECTABLE WARNING SURFACE
- NEW CONCRETE FLATWORK
- 10 JB — QUANTITY / PLANT IDENTIFICATION KEY
- TURF SOD OVER APPROVED TOPSOIL AS SPECIFIED
- 1" PERMA-BARK AT 3" DEPTH OVER DEWITT 5 PRO WEED BARRIER FABRIC AND TOPSOIL AS SPECIFIED OR APPROVED EQUAL
- EXISTING BUILDING
- PROPOSED BUILDING ADDITION

CALLOUT LEGEND

1. SAVE AND PROTECT EXISTING LANDSCAPE
2. PATCH BACK TO MATCH EXISTING

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES						
	CC	4	Cotinus coggygria	Smoke Tree	15 Gallon	1 Ring 0.4 GPH emitter @ 18" oc
	PF	5	Pinus flexilis 'Vanderwolf's Pyramid'	Vanderwolf's Pyramid Limber Pine	7'-8'Ht. B&B	2 Ring 0.4 GPH emitter @ 18" oc
SHRUBS						
	CK	25	Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	5 gal.	1 GPH Emmiter
	CB	25	Caryopteris x clandonensis 'Blue Mist'	Blue Mist Bluebeard	5 gal.	2 GPH Emmiter
	CS	14	Cornus sericea 'Kelseyi'	Kelsey's Dwarf Red Twig Dogwood	5 gal.	2 GPH Emmiter
	HO	6	Hemerocallis x 'Stella de Oro'	Stella de Oro Daylily	1 gal.	1 GPH Emmiter
	JB	12	Juniperus horizontalis 'Blue Chip'	Blue Chip Creeping Juniper	1 gal.	1 GPH Emmiter
	NW	13	Nepeta x faassenii 'Walker's Low'	Walker's Low Catmint	1 gal.	1 GPH Emmiter
	PP	11	Pinus mugo 'Pumilio'	Dwarf Mugo Pine	5 gal.	2 GPH Emmiter
	PD	10	Potentilla fruticosa 'Gold Drop'	Gold Drop Bush Cinquefoil	5 gal.	1 GPH Emmiter
	PD	21	Prunus laurocerasus 'Otto Luyken'	Otto Luyken English Laurel	5 gal.	2 GPH Emitter
	RG	17	Ribes alpinum 'Green Mound'	Green Mound Alpine Currant	5 gal.	2 GPH Emitter

Architect / Engineer:

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architecture/planning
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Stamp:

STATE OF IDAHO — JON FRITZ BREWER — LA-16536 — 8/2/2024 — LICENSED LANDSCAPE ARCHITECT

The North Point LDS Church
1134 N College Rd W, Twin Falls, ID 83301

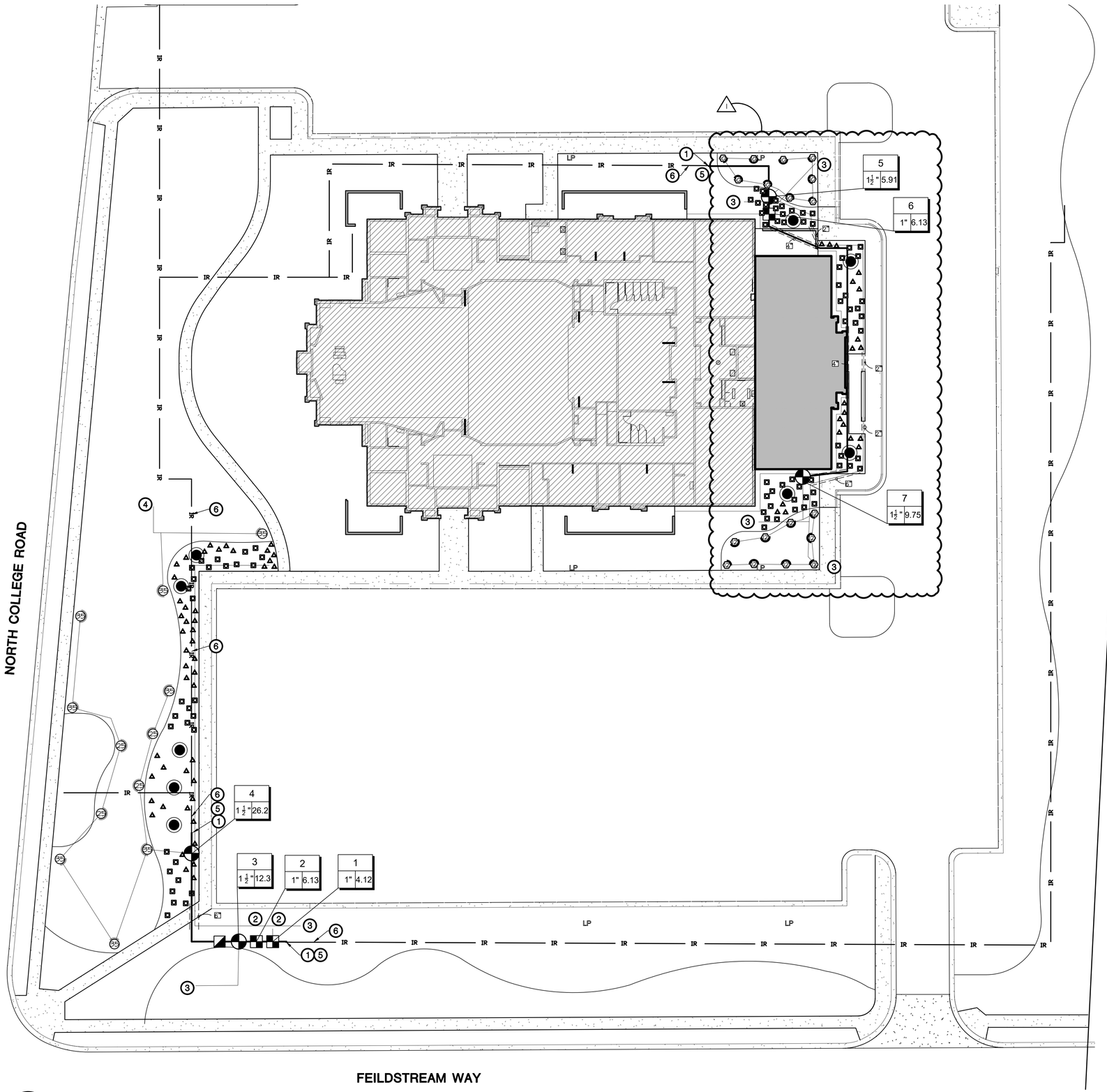
Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (D-M-Y)	Description
1	10/7/2024	REVISION ONE

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title: REMODEL LANDSCAPE PLAN

Sheet: **L1.0**



IRRIGATION PLAN

SCALE: 1" = 20'-0"

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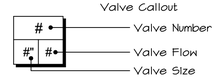
6661 North Glenwood Street
Garden City, Idaho 83714

IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
Q T H P	Rain Bird 1806–SAM–PRS 10 Series MPR Turf Spray 6.0in. Pop–Up Sprinkler with Co–Molded Wiper Seal. 1/2in. NPT Female Threaded Inlet. With Seal–A–Matic Check Valve, and Pressure Regulating.
Q T H TQ P	Rain Bird 1806–SAM–PRS 12 Series MPR Turf Spray 6.0in. Pop–Up Sprinkler with Co–Molded Wiper Seal. 1/2in. NPT Female Threaded Inlet. With Seal–A–Matic Check Valve, and Pressure Regulating.
25	Rain Bird 5004–PC–SAM–MPR 25 Turf Rotor, 4in. Pop–Up, Plastic Riser, Matched Precipitation Rotor (MPR nozzle). Arc and Radius as per Symbol. 25 ft=red, 30 ft=green, 35ft=beige. With Seal–A–Matic Check Valve.
30	Rain Bird 5004–PC–SAM–MPR 30 Turf Rotor, 4in. Pop–Up, Plastic Riser, Matched Precipitation Rotor (MPR nozzle). Arc and Radius as per Symbol. 25 ft=red, 30 ft=green, 35ft=beige. With Seal–A–Matic Check Valve.
35	Rain Bird 5004–PC–SAM–MPR 35 Turf Rotor, 4in. Pop–Up, Plastic Riser, Matched Precipitation Rotor (MPR nozzle). Arc and Radius as per Symbol. 25 ft=red, 30 ft=green, 35ft=beige. With Seal–A–Matic Check Valve.
	Rain Bird XCZ–100–PRB–COM Wide Flow Drip Control Kit for Commercial Applications. 1in. Ball Valve with 1in. PESB Valve and 1in. Pressure Regulating 40psi Quick–Check Basket Filter. 5 GPM–20 GPM.
1.0 2.0	Rain Bird XBT–PC Single Outlet, Pressure Compensating Drip Emitters. Flow rates of 0.5 GPH=blue, 1.0 GPH=black, and 2.0 GPH=red. Comes with a 1/2in. FPT inlet x barb outlet.
	Rain Bird PEB 1in., 1–1/2in., 2in., 3in. Plastic Industrial Remote Control Valve. Low Flow Operating Capability, Globe Configuration.
	Rain Bird 44–LRC 1in. Brass Quick–Coupling Valve, with Corrosion–Resistant Stainless Steel Spring, Locking Thermoplastic Rubber Cover, and 2–Piece Body.
	Inline drip tree ring. See plant schedule for type.
	Irrigation Lateral Line: PVC Schedule 40 Only lateral transition pipe sizes 1" and above are indicated on the plan, with all others being 3/4".
	Irrigation Mainline: 2" PVC Schedule 40
	Irrigation Sleeving: See plans for sizing
IR	Existing Irrigation Mainline to remain

Valve Callout



CALLOUT LEGEND

1. Connect new 2" mainline to existing mainline in this approximate location. Contractor to field verify location and size. Provide a water tight and fully functional connection.
2. Reconnect existing lateral to new valve and insure that all heads on existing lateral line are operational. Provide a water tight and fully functional connection.
3. Connect new lateral line to existing lateral line in this approximate location. Insure that all heads on existing lateral line are operational. Provide a water tight and fully functional connection.
4. Connect new lateral line to existing sprinkler head in this approximate location. Insure that all heads on existing lateral line are operational. Provide a water tight and fully functional connection.
5. Splice existing control wires at new mainline intersection and connect to new control valve on new mainline as required. Locate all splices in 10" round valve box with black lid. All other wires are to remain untouched.
6. Save and protect existing mainline and adjacent lateral lines.

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architecture/planning
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Stamp:

The North Point
LDS Church
1134 N College Rd W, Twin Falls, ID 83301

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (D-M-Y)	Description
1	10/7/2024	REVISION ONE

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title: REMODEL IRRIGATION PLAN

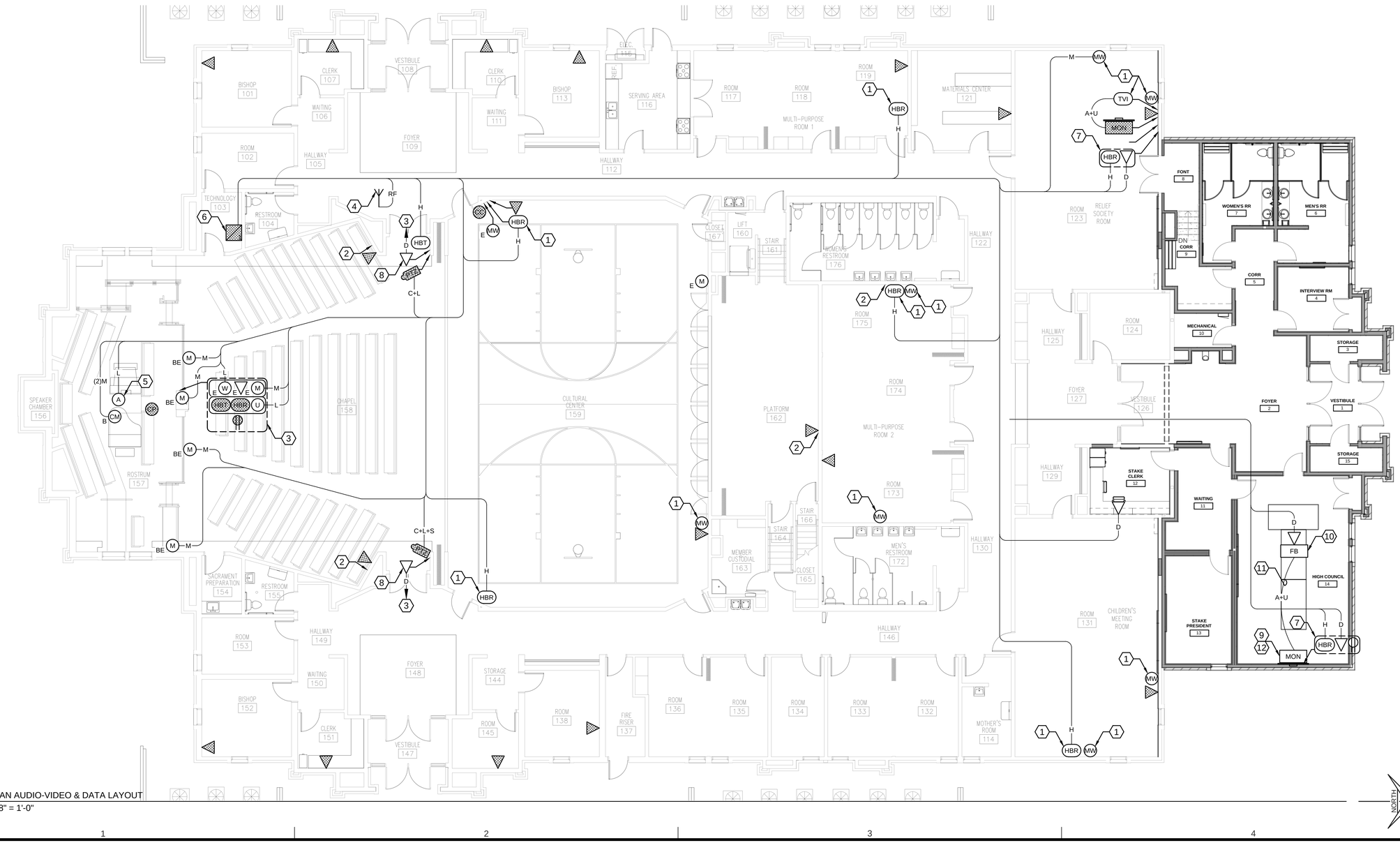
Sheet: **L2.0**

SYMBOL LEGEND

EQUIPMENT CABINET, EXISTING, DO NOT REPLACE	HDMI INPUT
EXISTING DEVICE, DO NOT REPLACE	HDMI OUTPUT
SINGLE MICROPHONE INPUT	DATA OUTLET
MICROPHONE, AUX INPUT	AUXILIARY AUDIO INPUT
ORGAN INPUT	AUDIO RECORD OUTPUT
CHOIR MICROPHONE AUDIO INPUTS	FLAT SCREEN TV CONNECTION PANEL
CULTURAL CENTER AUDIO CONTROL PANEL, EXISTING, DO NOT REPLACE	FLAT SCREEN TV WALL MOUNT
CHAPEL AUDIO CONTROL PANEL, EXISTING, DO NOT REPLACE	PAN/TILT/ZOOM CAMERA, EXISTING, DO NOT REPLACE
FLOOR BOX	ASSISTED LISTENING ANTENNA

SHEET KEYNOTES

1. REMOVE EXISTING DEVICE & CABLE, & INSTALL INDICATED DEVICE IN EXISTING LOCATION. EXISTING BACK BOX MAY BE REUSED.
2. REMOVE EXISTING DEVICE & COVER W/ A HIGH IMPACT NYLON BLANK PLATE.
3. SEE SHEET TA501 FOR MOUNTING OF DEVICES ON SIDE OF PULPIT.
4. POSSIBLE LOCATION FOR 'ALS' ANTENNA. AV INTEGRATOR SHALL INSTALL ANTENNA IN A LOCATION THAT PROVIDES OPTIMAL 'ALS' RECEIVER PERFORMANCE IN CHAPEL & CULTURAL CENTER SPACES. ANTENNA SHALL BE INSTALLED IN A VERTICAL ORIENTATION. IF MORE CABLE IS NEEDED TO POSITION ANTENNA CLOSER TO CHAPEL, USE 'RG-8' TYPE CABLE.
5. ORGAN INPUT. MUTE INPUT ON DSP. LEAVE 5'-0" PIGTAIL, & CONNECT IF ORGAN IS MODIFIED.
6. AV INTEGRATOR SHALL COORDINATE WITH FACILITY MANAGER PRIOR TO AV INSTALLATION
7. TO ENSURE EQUIPMENT CABINET ROOM IS READY FOR CABINET INSTALLATION, PER FACILITIES MANAGEMENT GROUP RESPONSIBILITIES LISTED ON SHEET ET001.
7. MOUNT DEVICES BEHIND FLAT SCREEN TV.
8. INSTALL DATA JACK BEHIND PTZ CAMERA. PROVIDE PATCH CABLE AND CONNECT TO CAMERA.
9. NEW WALL MOUNTED TV MONITOR. COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
10. MOUNT DATA OUTLET, HDMI, & USB CONNECTION PANELS IN FLOOR BOX. REFER TO DETAIL A3/ET601 FOR CONDUIT SIZES & DESTINATIONS.
11. 1.25" CONDUIT UNDER SLAB, INSIDE WALL, TO J-BOX ON WALL BEHIND TV MONITOR.
12. COORDINATE EXACT LOCATION OF DEVICES WITHIN ROOM WITH ARCHITECT PRIOR TO INSTALLATION.



A1 FLOOR PLAN AUDIO-VIDEO & DATA LAYOUT
SCALE: 1/8" = 1'-0"

NORTH

SPECTRUM ENGINEERS
324 S. State St., Suite 400
Salt Lake City, UT 84111
801.328.2262 fax 801.328.5155
www.spectrumengineers.com

SDI JOB #: AV2432289WK
DATE: 9 OCT 2024

Architect / Engineer:
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(208) 736-8050

Stamp:

THE NORTH POINT LDS CHURCH
1134 N College Rd W, Twin Falls, ID 83301

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (D-Mo-Y)	Description

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title: FLOOR PLAN AUDIO-VIDEO & DATA LAYOUT

Sheet: ET101

GENERAL SHEET NOTES

1. NO CHANGES SHALL BE MADE WITHOUT THE PROJECT SOUND/ACOUSTICAL CONSULTANT'S WRITTEN CONSENT.
2. REFER TO DRAWINGS FOR EXACT NUMBER OF COMPONENTS USED IF NOT SPECIFIED IN THE EQUIPMENT LISTS. AV INTEGRATOR IS RESPONSIBLE FOR QUANTITIES, INCLUDING QUANTITIES LISTED IN EQUIPMENT LISTS.
3. RUN CABLES IN SEPARATE CONDUITS. DO NOT MIX CABLE GROUPS IN THE SAME CONDUIT. CABLE GROUPS ARE: MICROPHONE CABLES; UTP; SOUND SYSTEM CONTROLS; TELEPHONE, VIDEO OR ATC CABLES; SPEAKER CABLES; ANTENNA CABLES.
4. CABLES LISTED ON EQUIPMENT LIST ARE NOT PLENUM RATED. PLENUM CABLE IS REQUIRED IN PLENUM SPACES IF NOT IN CONDUIT.
5. STUB 1 EACH 3/4" EMPTY CONDUIT INTO THE ATTIC FOR HEARING IMPAIRED ANTENNA. DO NOT REUSE EXISTING ANTENNA CABLE. DO NOT RUN OTHER CABLES W/ ANTENNA CABLES. MOUNT ANTENNA FOR IMPAIRED HEARING SYSTEM IN ATTIC SPACE @ LOCATION WHERE BEST PERFORMANCE IS OBTAINED IN CHAPEL & CULTURAL CENTER. INSTALL IN VERTICAL POSITION. IF MORE CABLE IS NEEDED TO POSITION ANTENNA CLOSER TO CHAPEL, USE 'RG-8' CABLE SPECIFIED IN CABLE EQUIPMENT LIST ON SHEET TT601.
6. HOME RUN NEW MICROPHONE OR CONTROL CABLE FROM DEVICE LOCATION TO EQUIPMENT CABINET. LOOP EXTRA CABLES THROUGH JUNCTION BOXES. DO NOT CUT.
7. AV INTEGRATOR SHALL CHECK SETTINGS ON ALL HDMI-EQUIPPED FLAT PANEL MONITORS IN BUILDING TO ENSURE THEY DISPLAY SYSTEM VIDEO SIGNAL CORRECTLY.
8. AV INTEGRATOR IS RESPONSIBLE FOR PATCHING, PAINTING, &/OR REPAIRING SURFACES AROUND DEVICES TO MATCH SURROUNDING SURFACE AS REQUIRED. ALL REPAIRS MUST BE TO THE SATISFACTION OF THE FACILITY MANAGER.
9. ALL DEVICES ARE WHITE UNLESS NOTED OTHERWISE; SEE SYMBOL LEGEND, SHEET TA601.
10. E=EXISTING. HATCHING APPLIED TO ANY DEVICE DENOTES "EXISTING, DO NOT REPLACE".
11. ALL CABLING SHOWN ON DRAWINGS TO BE REPLACED.
12. LOOP EXTRA CABLES THROUGH JUNCTION BOXES. DO NOT CUT.
13. SURFACE RACEWAY IS TO BE USED AS A LAST RESORT. OBTAIN APPROVAL FROM FACILITIES MANAGER PRIOR TO INSTALLATION OF ANY SURFACE RACEWAY.

SPECTRUM ENGINEERS
SDI JOB #: AV243289WK
DATE: 9 OCT 2024

Architect / Engineer:
Laughlin Ricks Architecture
architecture/planning
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Stamp:

THE NORTH POINT LDS CHURCH
1134 N College Rd W, Twin Falls, ID 83301

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (D-M-Y)	Description

Project Number: 24001
Property Number: 5978778

Sheet Title:
FLOOR PLAN
AUDIO-VIDEO NOTES

Sheet: ET101A

SYMBOL LEGEND

Symbol	Description
(hatched box)	EQUIPMENT CABINET, EXISTING, DO NOT REPLACE
(shaded circle)	EXISTING DEVICE, DO NOT REPLACE
V	SPEAKER VOLUME CONTROL
SV	SPEAKER VOLUME CONTROL & SELECTOR SWITCH
SVM	MOTHER'S ROOM SPEAKER VOLUME CONTROL & SELECTOR SWITCH
IR	INFRARED DOOR SENSOR EXISTING, DO NOT REPLACE
WAP	DATA PORT, FOR 'WAP'
(triangle in circle)	WIRELESS ACCESS POINT (WAP)
S 4	LOUDSPEAKER, 4", EXISTING, DO NOT REPLACE
S 6	LOUDSPEAKER, 6", EXISTING, DO NOT REPLACE
M S 4	LOUDSPEAKER, 4" MASKING, EXISTING, DO NOT REPLACE
S Z F4	LOUDSPEAKER, 4" SELF-CONTAINED, BLIND-MOUNT, W/ GRILLE, T-BAR SUPPORTS & SEISMIC CABLE
M S BZ 4G	LOUDSPEAKER, 4" MASKING, BLIND MOUNT, W/ GRILLE, & SEISMIC CABLE
M S BZT 4G	LOUDSPEAKER, 4" MASKING, BLIND MOUNT, W/ GRILLE, T-BAR SUPPORTS, & SEISMIC CABLE

SHEET KEYNOTES

1. PROVIDE SEISMIC CABLE PER DETAIL A2/TA502.
2. REMOVE EXISTING 'WAP' & REINSTALL ON NEARBY FOYER CEILING.
3. EXISTING 'WAP' INSIDE CABINET TO BE INSTALLED ON CEILING ABOVE.
4. REMOVE EXISTING DEVICE, & INSTALL INDICATED DEVICE IN EXISTING LOCATION. EXISTING BACK BOX MAY BE REUSED IF AVAILABLE.

GENERAL SHEET NOTES

1. REPLACE INDICATED SPEAKERS SHOWN ON DRAWINGS W/ NEW GRILLES, TRANSFORMERS & NEW SPEAKERS. PROVIDE INSULATION AS NEEDED FOR EXISTING ENCLOSURES. REPORT ANY SPEAKERS THAT DO NOT HAVE PROPER ENCLOSURES TO AV CONSULTANT.
2. CEILING MOUNTED SPEAKERS SHALL BE INSTALLED IN A SYMMETRICAL PATTERN AS SHOWN ON DRAWINGS. IF ANY SPEAKER MUST BE MOVED MORE THAN ONE FOOT, MEASURED FROM THE CENTERS, CONTACT AV CONSULTANT.
3. SUPPORT SPEAKER ENCLOSURES INSTALLED IN DROP-IN CEILING TILE. OBSERVE ALL SEISMIC CODES & CODE REQUIREMENTS. SEISMIC CABLE TO BE INSTALLED PER IBC 1613.1; ASCE 7-05, CHAPTER 13; & SPECIFICATION 27 5117 SECTION 3.3.D.7.
4. AV INTEGRATOR IS RESPONSIBLE FOR PATCHING, PAINTING, &/OR REPAIRING CEILING SURFACES AROUND SPEAKER ENCLOSURES TO MATCH SURROUNDING CEILING SURFACE AS REQUIRED. ALL REPAIRS MUST BE TO THE SATISFACTION OF THE FACILITY MANAGER.
5. ALL DEVICES ARE WHITE UNLESS NOTED OTHERWISE; SEE SYMBOL LEGEND, SHEET TA601.
6. M=MASKING. E=EXISTING. HATCHING APPLIED TO ANY DEVICE DENOTES "EXISTING, DO NOT REPLACE".
7. ALL CABLING SHOWN ON DRAWINGS TO BE REPLACED.

A1 REFLECTED CEILING AUDIO-VIDEO & DATA LAYOUT
SCALE: 1/8" = 1'-0"

SPECTRUM ENGINEERS
324 S. State St., Suite 400, Salt Lake City, UT 84111
800-678-7077 801-328-5151
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SDI JOB #: AV243289WK
DATE: 9 OCT 2024

File Name: N:_LDS-ARCHITECT\597-8778 Twin Falls ID West Stake Suite Addition (North Point) - Courtney Barton\Drawings\5 Drawings\ET102_5978778.dwg Last Plotted: 2024-10-07 @2:16:50 PM By: CLT Template: Digital-REV-24-002

Architect / Engineer:
Laughlin Ricks Architecture
architecture/planning
134 3RD Ave East, * Twin Falls, Idaho 83301
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Stamp:

THE NORTH POINT
LDS CHURCH
1134 N College Rd W, Twin Falls, ID 83301

Project for:
THE CHURCH OF
JESUS CHRIST
OF LATTER-DAY SAINTS

Mark	Date (D-M-Y)	Description

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title:
REFLECTED CEILING PLAN AUDIO-VIDEO & DATA LAYOUT

Sheet:
ET102

ELECTRICAL NOTES

1. AT EXISTING AV EQUIPMENT CABINET LOCATION, BOND EXISTING GROUND WIRE TO BOTH CABINETS. ENSURE GROUND WIRE IS CONNECTED AND BONDED AT ELECTRICAL PANEL OR AS APPROPRIATE.
2. INSTALL ONE 110VAC DUPLEX OUTLET IN HIGH COUNCIL FLOOR BOX AND IN HIGH COUNCIL TV JUNCTION BOX.

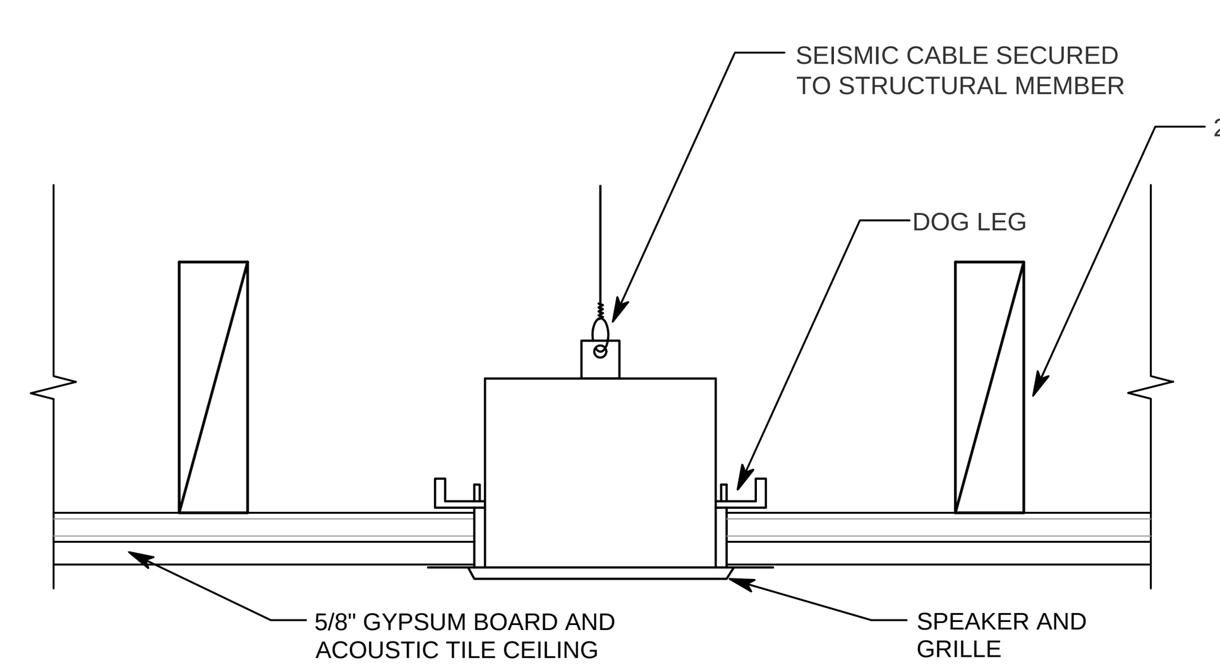
GENERAL PROJECT NOTES

1. NO CHANGES SHALL BE MADE WITHOUT THE PROJECT AV/STRUCTURED CABLING CONSULTANT'S WRITTEN CONSENT.
2. REFER TO DRAWINGS FOR EXACT NUMBER OF COMPONENTS USED IF NOT SPECIFIED IN EQUIPMENT LIST.
3. PROVIDE CONDUIT FOR ALL LOW VOLTAGE CABLES SHOWN ON ET SHEETS AS FOLLOWS:
   - 3.1. PROVIDE CONDUIT FOR CABLES FROM DEVICE TO MECHANICAL EQUIPMENT PLATFORM. CABLES MAY THEN RUN EXPOSED AND STUB DOWN TO EQUIPMENT RACK. PROTECT EXPOSED CABLING ACCORDING TO DIVISION 27. ALLOW NO OTHER CABLE TO ATTACH TO TECHNOLOGY CABLES.
   - 3.2. ALL CABLING IN WALLS SHALL BE IN CONDUIT.
   - 3.3. SIZE CONDUIT AS NOTED OR ACCORDING TO CODE WHICHEVER IS GREATER WITH 0.75" MINIMUM.
   - 3.4. INSTALL DIFFERENT CABLE TYPES IN SEPARATE CONDUITS UNLESS NOTED OTHERWISE. SEPARATE CABLE TYPES OUTSIDE OF CONDUIT BY 12" MINIMUM
   - 3.5. ALL CONDUITS WITH OR WITHOUT CABLES SHALL HAVE A PULL STRING.
   - 3.6. LABEL ALL CONDUITS WITH DESTINATION.
   - 3.7. DEBUR ALL CONDUIT STUBS AND FIT WITH PLASTIC BUSHING
   - 3.8. RACEWAY SHALL BE FURNISHED AND INSTALLED BY DIVISION 26. CABLING IS FURNISHED AND INSTALLED BY DIVISION 27. RACEWAY, CABLING, AND TERMINATIONS SHALL BE ACCORDING TO 27 1501.
4. DIVISION 26 INSTALLER IS TO PROVIDE ALL ROUGH-IN INDICATED FOR DIVISION 27 INSTALLER. ALL ROUGH-IN SHALL COMPLY WITH ANSI/TIA/EIA 569-B STANDARDS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE LIMITATION OF (2) 90° BEND FOR CONDUIT. IT IS THE DIVISION 26 INSTALLERS RESPONSIBILITY TO ENSURE COMPLIANCE WITH STANDARD.
5. SPEAKER TRIM RINGS AND BACKBOXES ARE FURNISHED BY DIVISION 27 AND INSTALLED BY DIVISION 26.
6. "ET" SHEETS SHOW WORK AND MATERIALS BY DIVISION 26 AND DIVISION 27. SEE SPECIFICATIONS AND DRAWING NOTES FOR RESPONSIBILITY FOR EACH ITEM.
7. DIVISION 26 SHALL FURNISH AND INSTALL SEISMIC RESTRAINT CABLE TO ALL SPEAKER BACKBOXES. DIVISION 27 SHALL ATTACH SEISMIC RESTRAINT CABLE TO SPEAKERS.
8. ALL EXISTING SOUND & DATA EQUIPMENT & CABLING NOT SHOWN ON PLANS ARE TO REMAIN UNTOUCHED. SOUND INSTALLER TO VERIFY FUNCTIONALITY OF EXISTING SYSTEM AFTER CONSTRUCTION IS COMPETE.

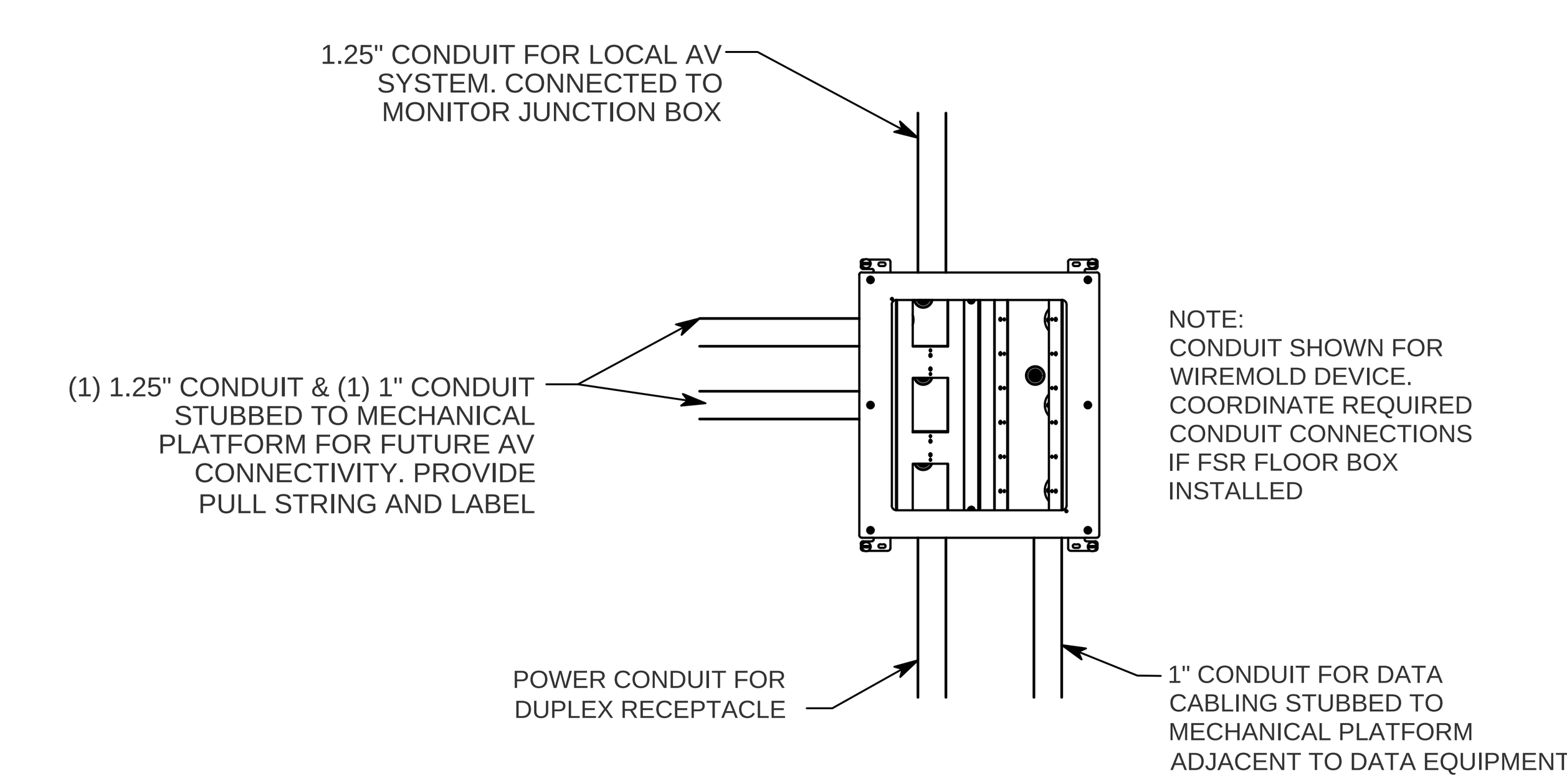
ELECTRICAL SYSTEM EQUIPMENT LIST

SYM	DESCRIPTION	QTY	NOTES
V	2-1/8" DEEP, 4" SQUARE BOX W/ 5/8" DEEP, SINGLE GANG PLASTER RING MOUNTED AT ELECTRICAL SWITCH HEIGHT	OFP	
	3" DEEP, DOUBLE GANG BOX W/ SINGLE GANG PLASTER RING. MOUNTED FLUSH IN CEILING.	OFP	
	EXISTING DEVICE, DO NOT DISTURB	0	
MON	LARGE CAPACITY JUNCTION BOX, INCLUDING FLANGE KIT & COVER, MOUNTED IN WALL AS NOTED ON PLAN SHEET	OFP	CHIEF PAC 525FCW, SEE DETAIL A4/ET601
S BZ 4G M S BZT 4G M	SPEAKER ENCLOSURE, SEE DETAIL B3/ET601	OFP	FURNISHED BY DIVISION 27, INSTALLED BY DIVISION 26
S Z F4	SPEAKER MOUNTING RING, SEE DETAIL B3/ET601	OFP	FURNISHED BY DIVISION 27, INSTALLED BY DIVISION 26
X E	AUDIO OR VIDEO JUNCTION BOX, EXISTING	0	
∇ #	3" DEEP, DOUBLE GANG BOX MOUNTED AT ELECTRICAL OUTLET HEIGHT WITH SINGLE PLASTER RING, OR AS NOTED	OFP	
SVM	MOTHER'S ROOM SOURCE/VOLUME LOCATION 2-1/8" DEEP, 4" SQUARE BOX W/ 5/8" DEEP, DOUBLEGANG PLASTER RING MOUNTED AT ELECTRICAL OUTLET HEIGHT	OFP	
A	3" DEEP, SINGLE GANG BOX MOUNTED IN RECESS FOR ORGAN CONSOLE	1	
CM	3" DEEP, SINGLE GANG BOX MOUNTED IN VERTICAL FACE OF RISER	OFP	
FB	FLOOR BOX, MIN. 4" STEEL, WITH ACCESSORIES REQUIRED TO INSTALL ON-GRADE ARCHITECT TO CHOOSE COLOR AND TYPE OF COVER	1	WIREMOLD RFB-9-OG FSR FL-500P-4-B / FL-ROO-X / FL-GRD4 SEE DETAIL A3/ET601, AND B1/TA502

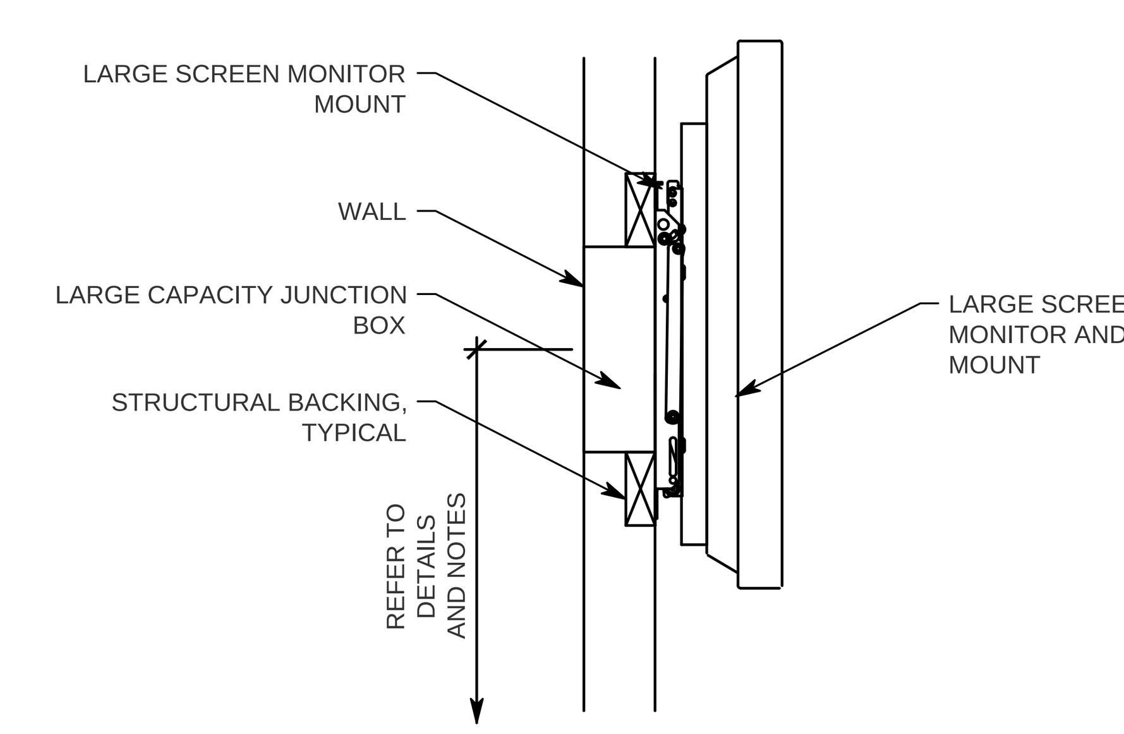
MANUFACTURER'S NAMES AND TELEPHONE NUMBERS ARE LISTED IN THE SPECIFICATIONS
A/R = AS REQUIRED, OFP = OBTAIN FROM PLANS



A2 SPEAKER SEISMIC DETAIL
NO SCALE



A3 HIGH COUNCIL FLOOR BOX DETAIL
NO SCALE
FB



A4 WALL MOUNTED FLAT PANEL DETAIL
NO SCALE
MON

SPECTRUM ENGINEERS
SDI JOB #: AV243289WK
DATE: 9 OCT 2024

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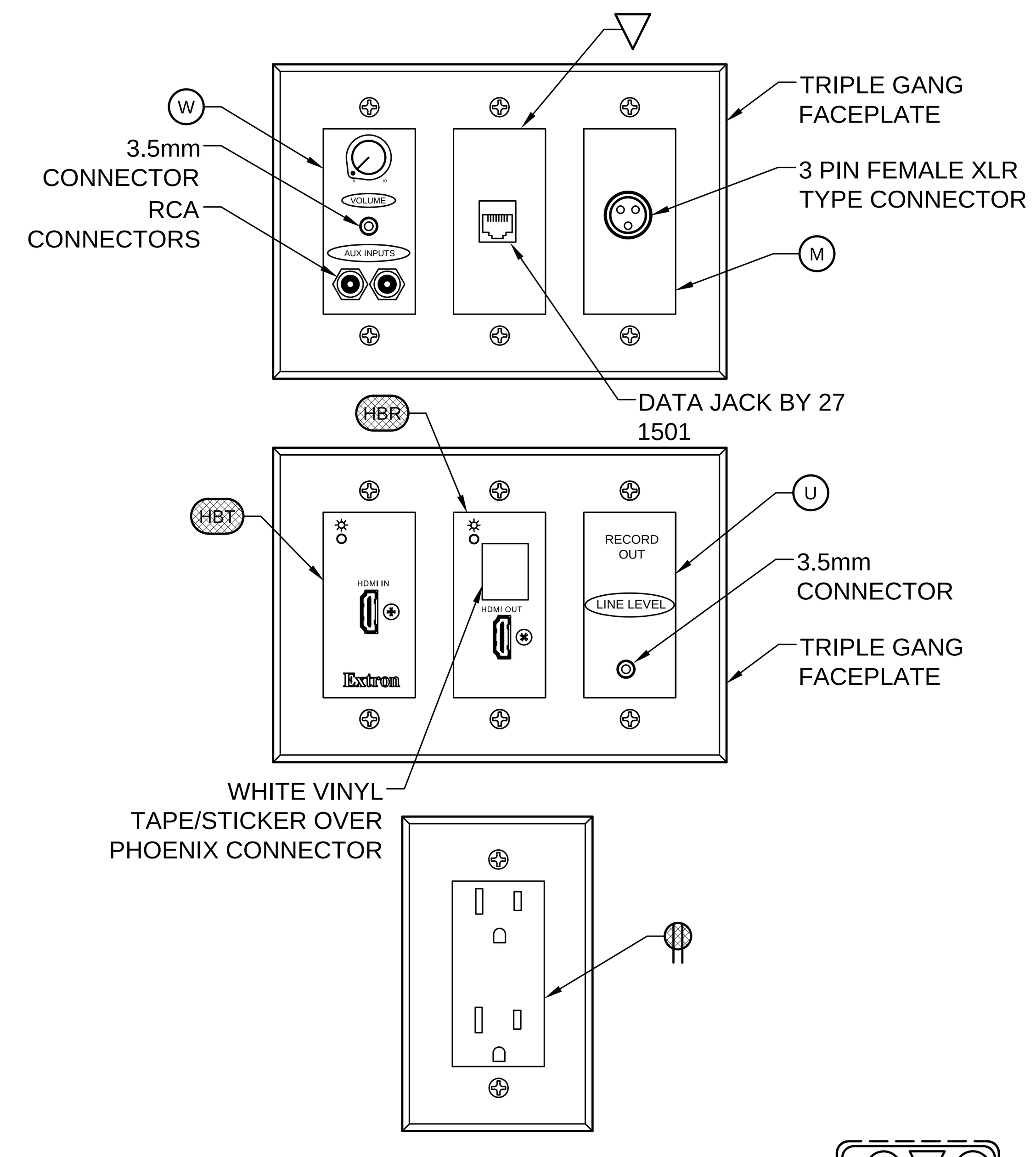
THE NORTH POINT LDS CHURCH
1134 N College Rd W, Twin Falls, ID 83301

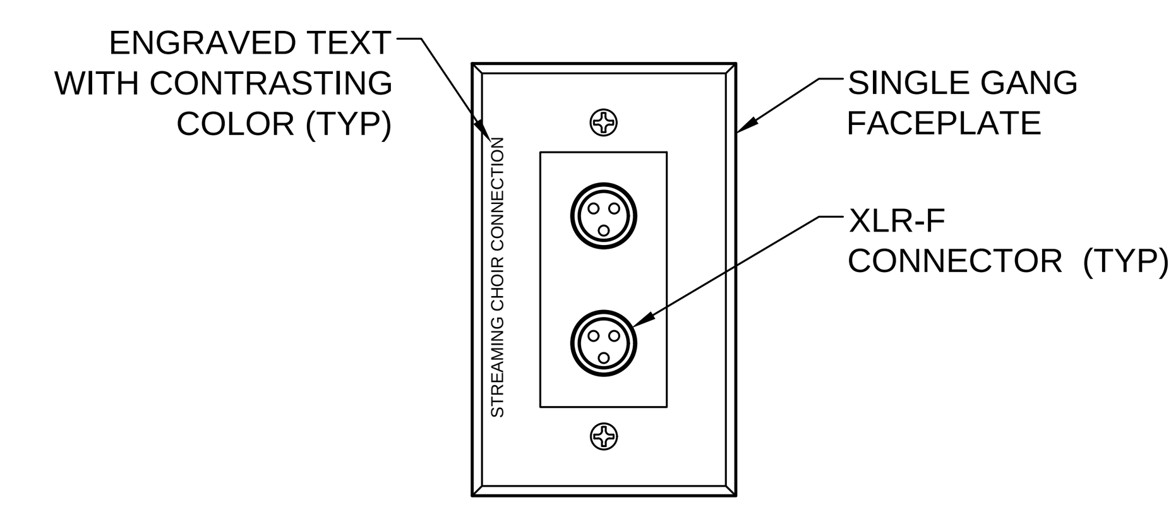
Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (D-M-Y)	Description

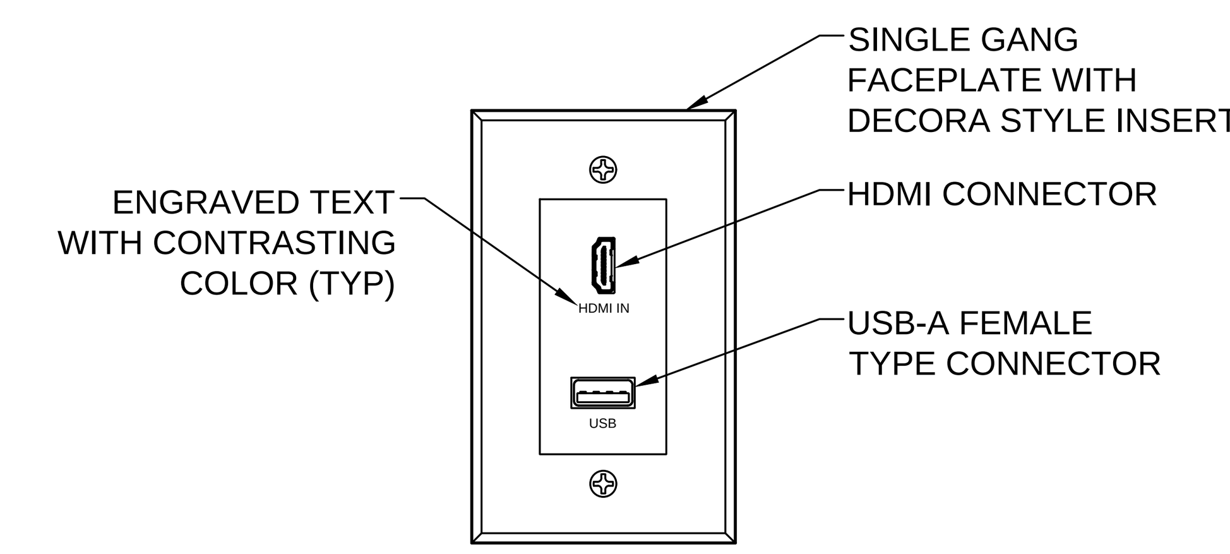
Project Number: 24001
Plan Series:
Property Number: 5978778
Sheet Title: AV ROUGH-IN DIAGRAMS
Sheet: ET601



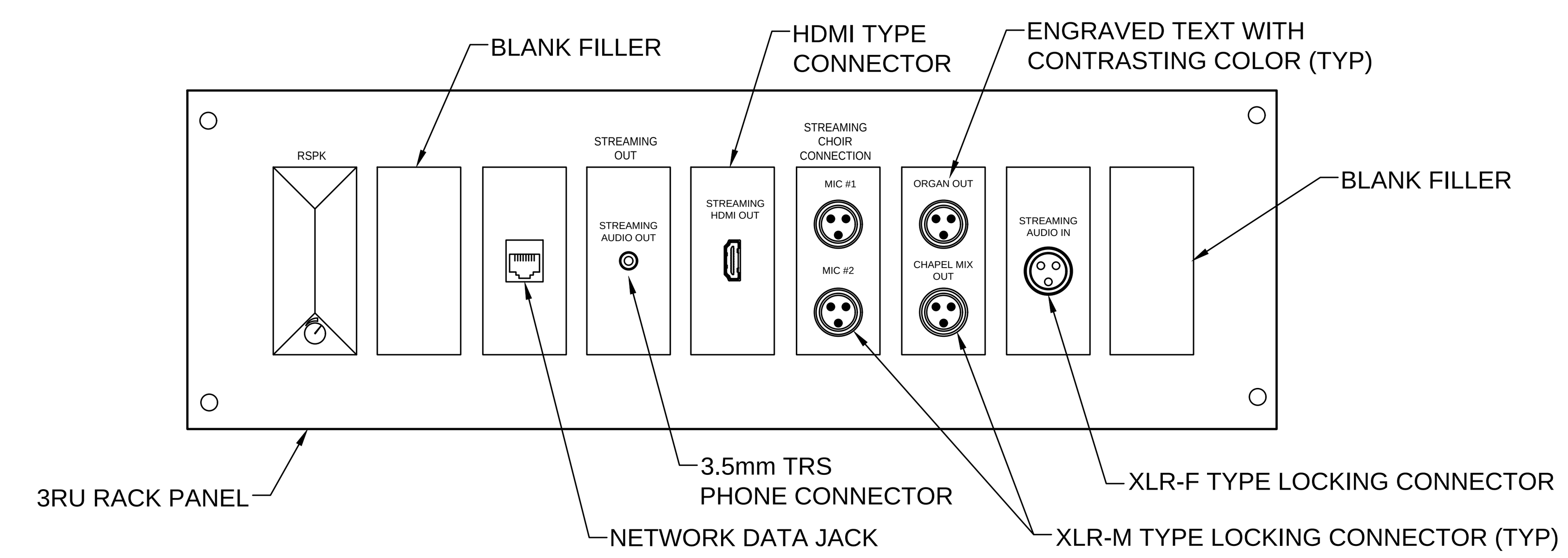
C2 PULPIT CONNECTIONS DETAIL
SCALE: 6" = 1'-0"



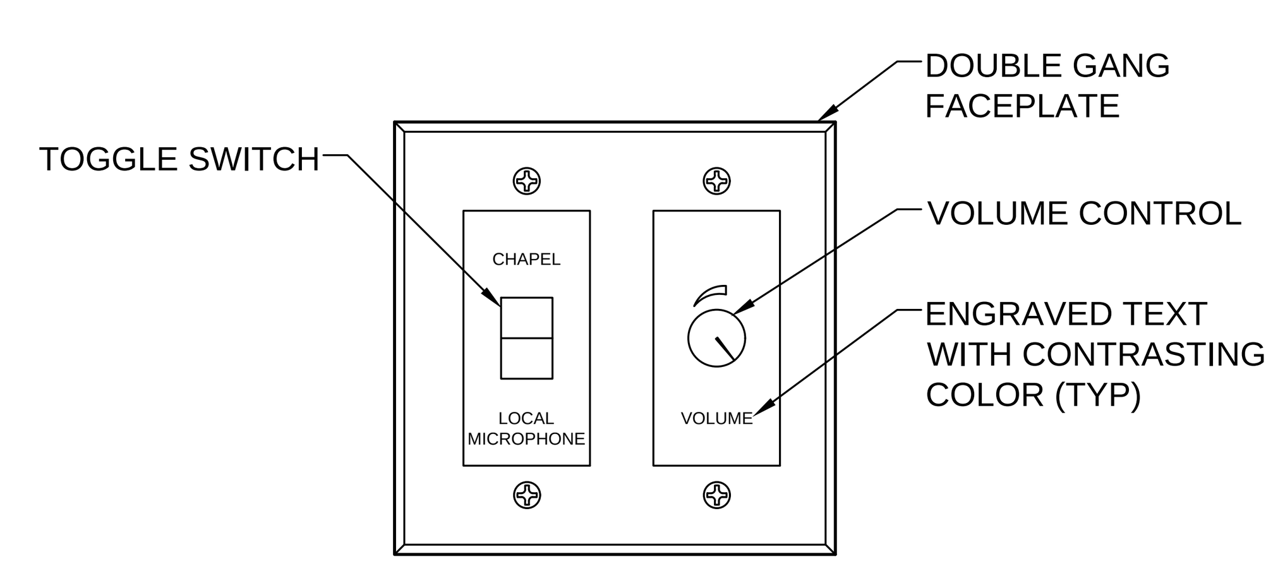
D3 CHAPEL STREAMING CHOIR MIC DETAIL (CM)
SCALE: 6" = 1'-0"



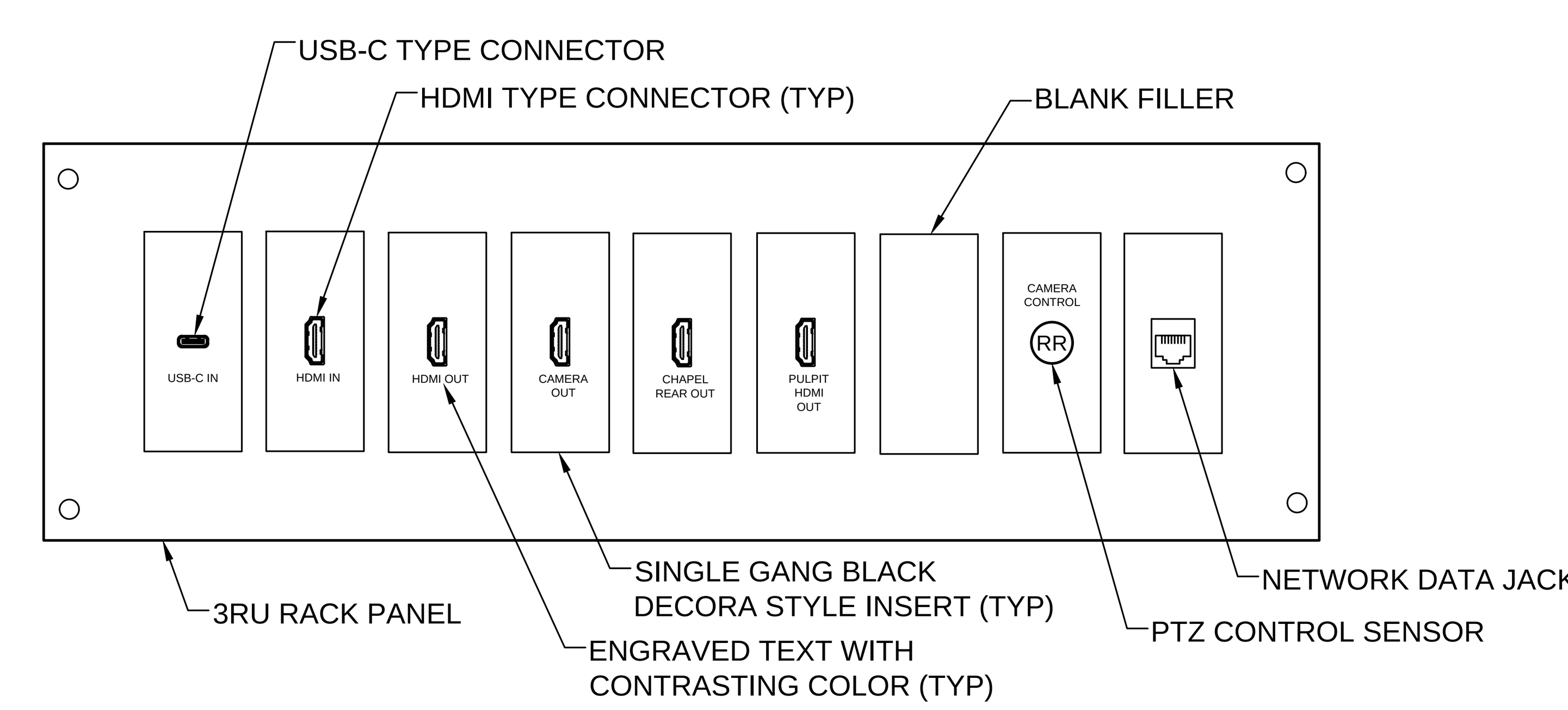
D4 FLAT PANEL TV CONNECTION DETAIL (TVI)
SCALE: 6" = 1'-0"



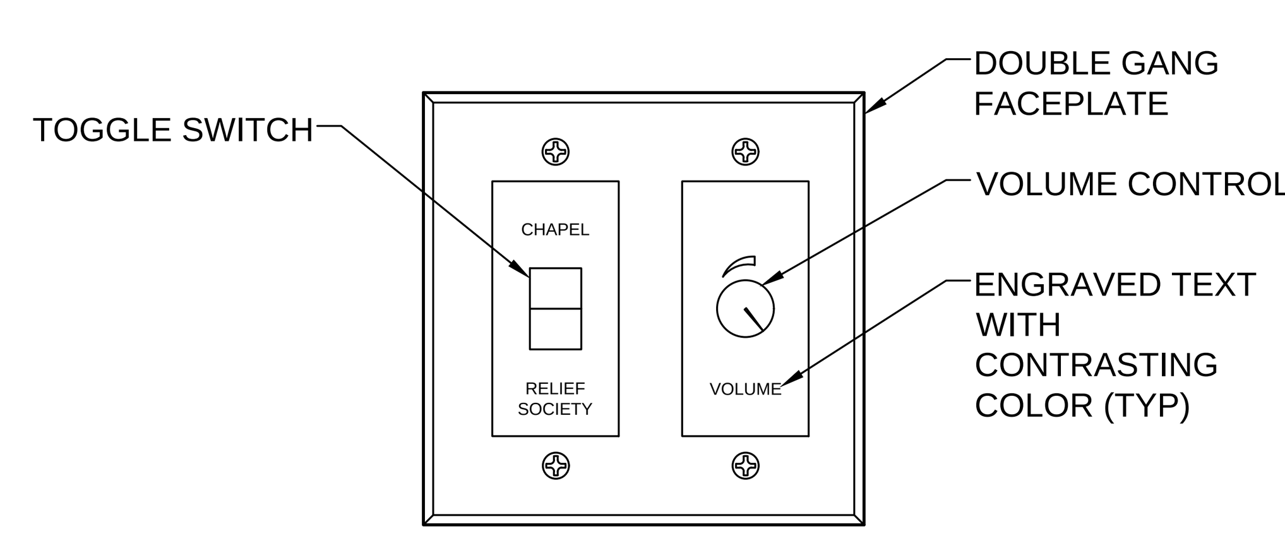
C3 CONNECTION PANEL #1 DETAIL (CP1)
SCALE: 6" = 1'-0"



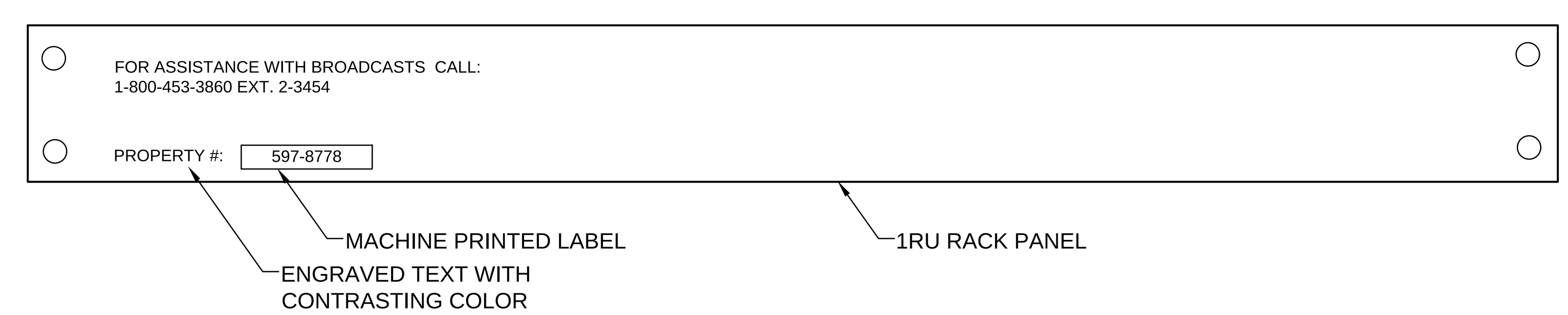
B2 SOURCE & VOLUME CONTROL DETAIL (SV)
SCALE: 6" = 1'-0"



B3 CONNECTION PANEL #2 DETAIL (CP2)
SCALE: 6" = 1'-0"



A2 MOTHER'S ROOM CONTROLLER DETAIL (SVM)
SCALE: 6" = 1'-0"



A3 HELP DESK PANEL DETAIL (HDP)
SCALE: 6" = 1'-0"

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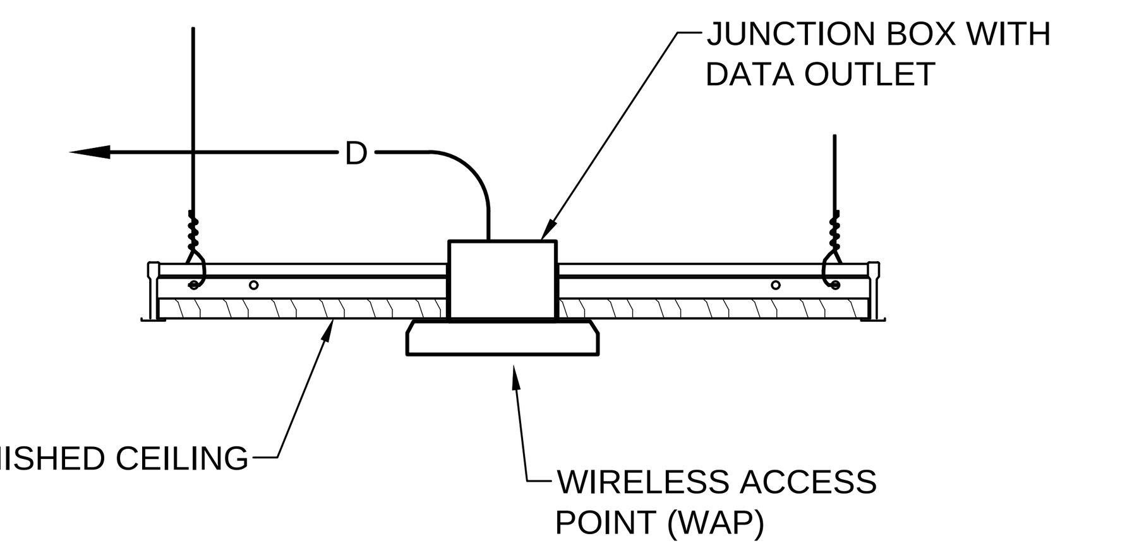
Project for: THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (D-M-Y)	Description

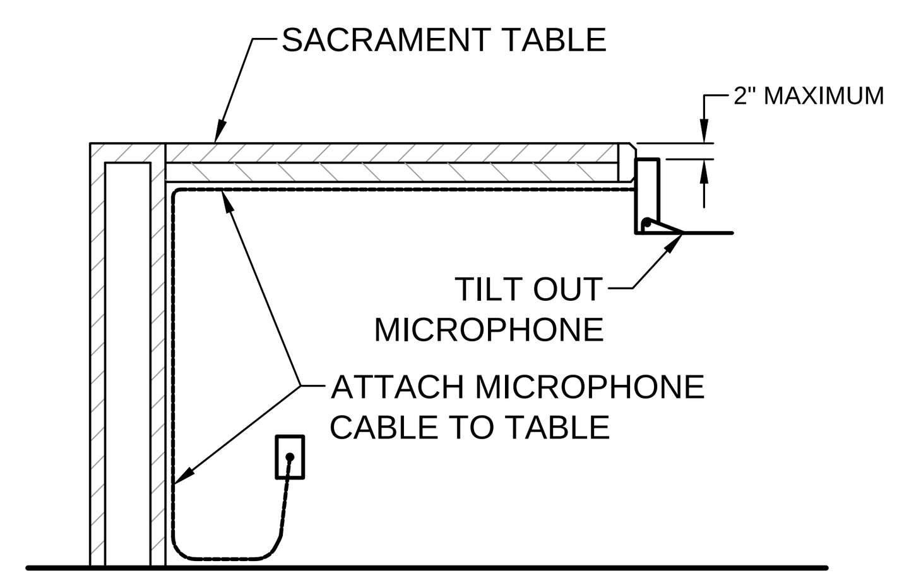
Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title: AUDIO, VIDEO, & CONTROL SYSTEM DETAILS

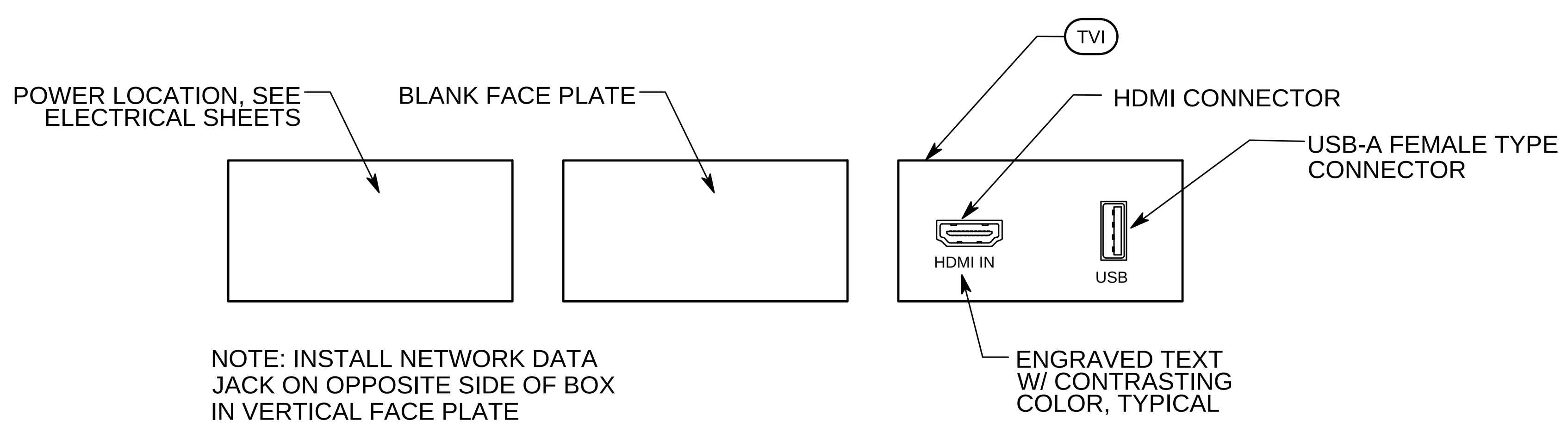
Sheet: TA501



D3 WIRELESS ACCESS POINT DETAIL
SCALE: 3" = 1'-0"

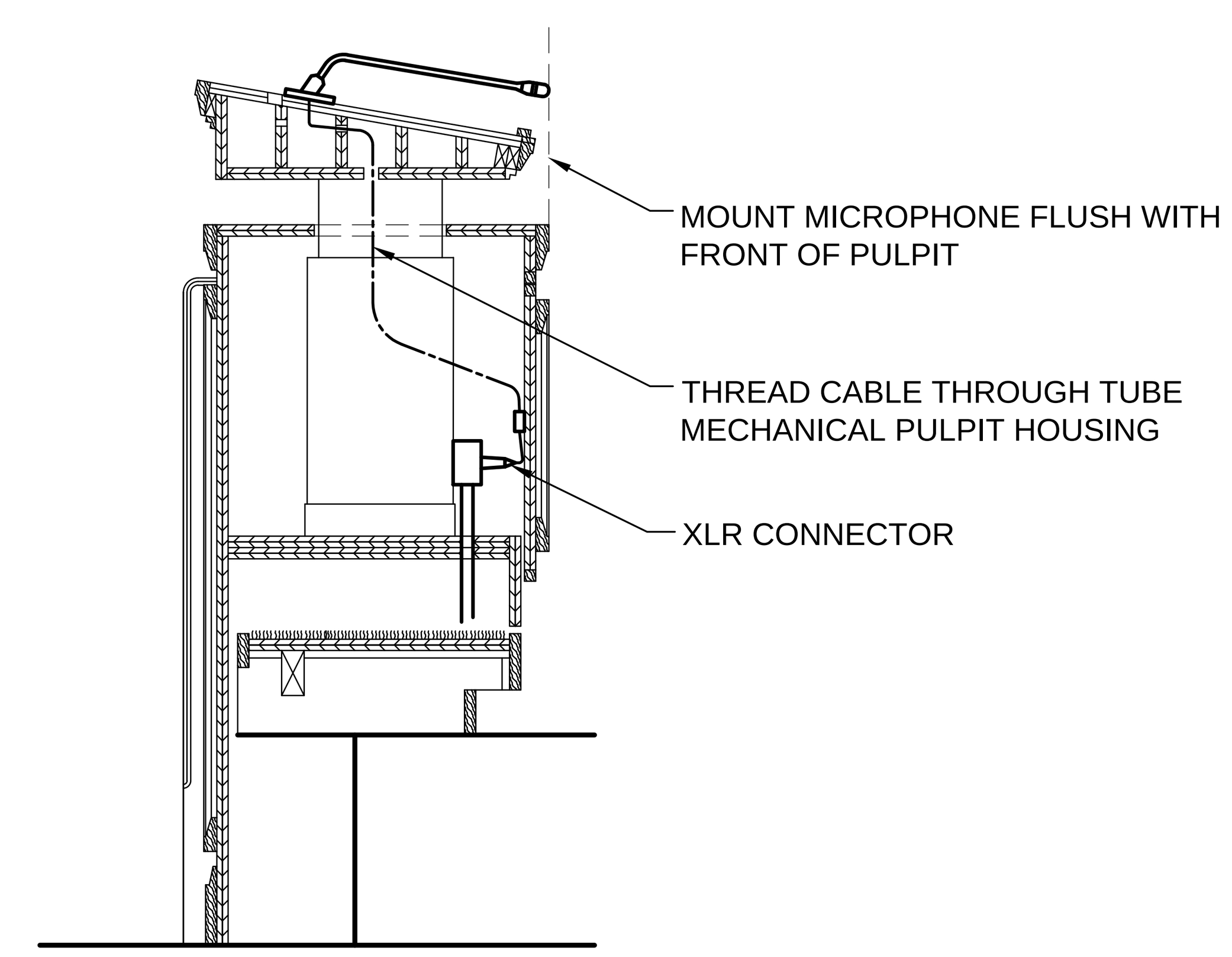


C2 SACRAMENT MICROPHONE DETAIL
SCALE: NOT TO SCALE

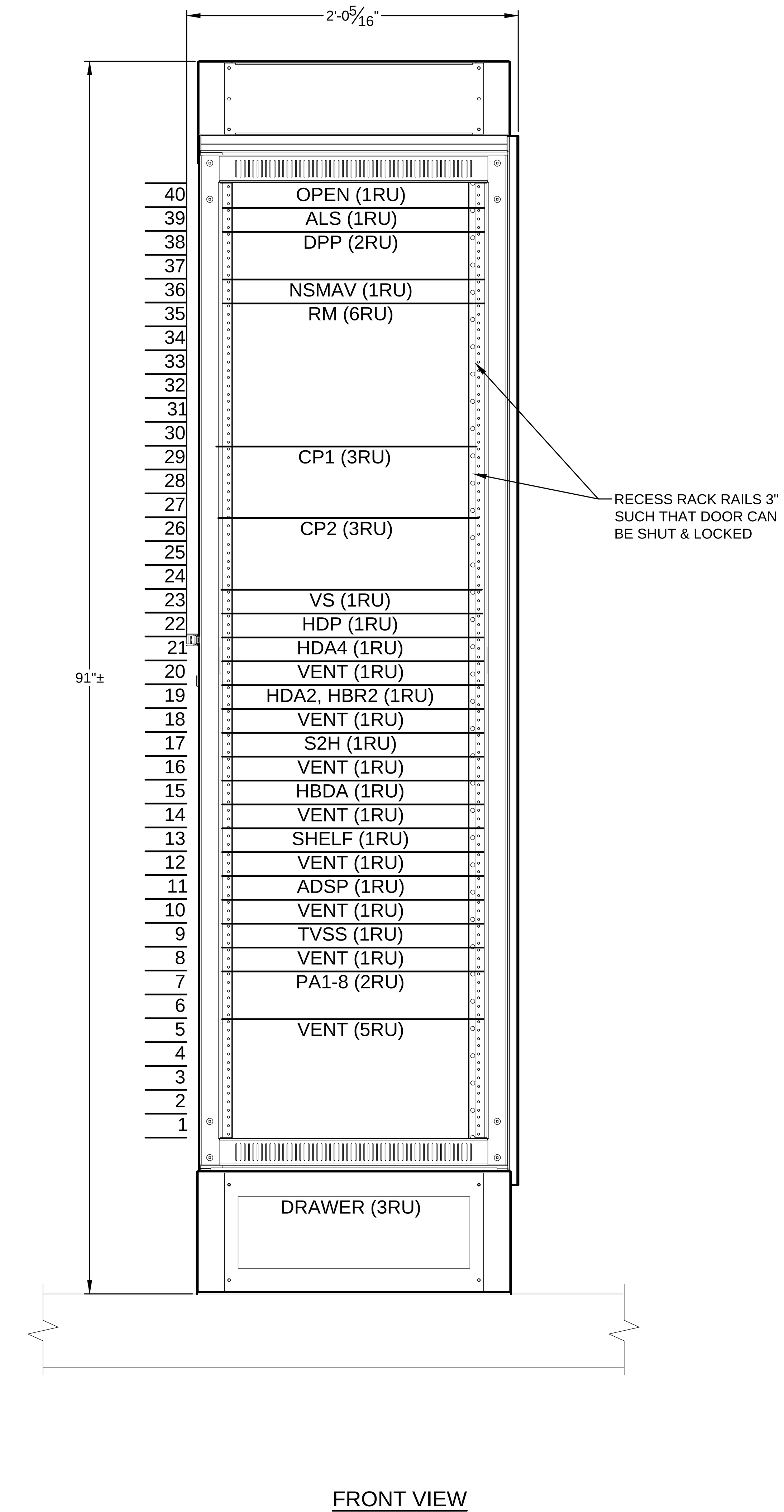


B1 CONNECTION PANEL 'FB' DETAIL
SCALE: NONE

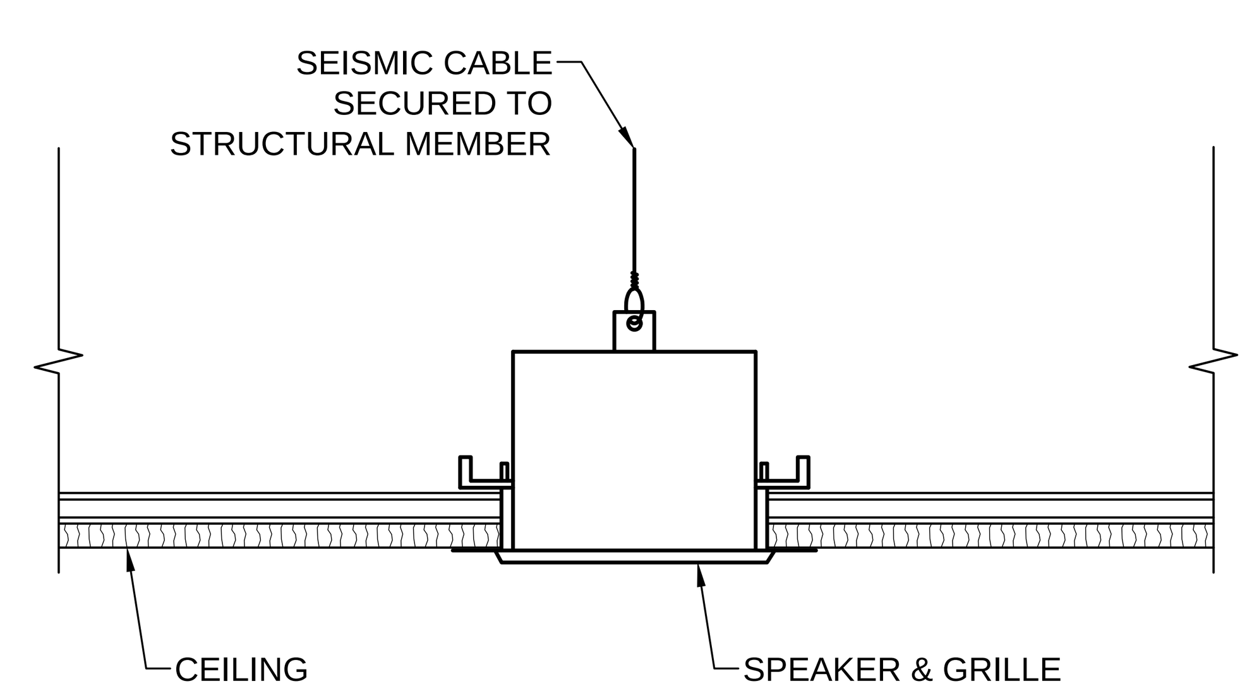
FB



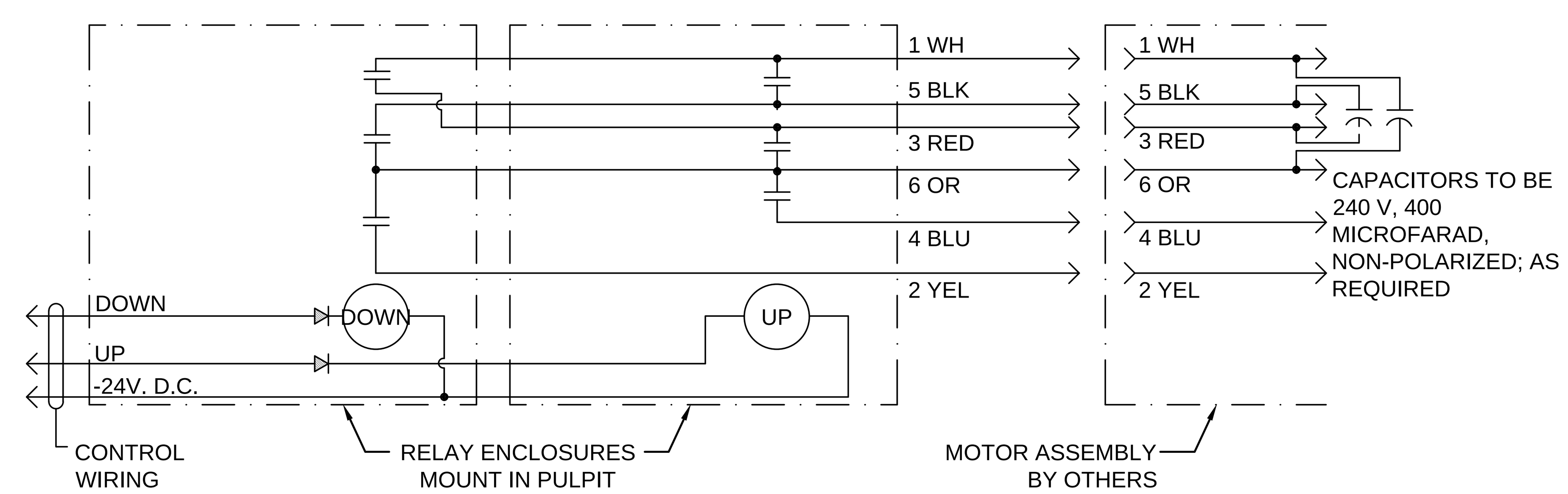
B3 CHAPEL PULPIT SECTION
SCALE: 1" = 1'-0"



B4 EQUIPMENT RACK DETAIL
SCALE: 1 1/2" = 1'-0"



A2 SPEAKER SEISMIC DETAIL
SCALE: 3" = 1'-0"



A3 PULPIT MOTOR CONTROL POWER WIRING
SCALE: NO SCALE

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Project for:
THE CHURCH OF
JESUS CHRIST
OF LATTER-DAY SAINTS

Mark	Date (D-M-Y)	Description

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title:
AUDIO, VIDEO, & CONTROL SYSTEM DETAILS

Sheet:
TA502

AUDIO-VIDEO SYSTEM EQUIPMENT LIST

SYM	DESCRIPTION	QTY	MANUFACTURER & MODEL NUMBER
	AMPLIFIER, 8 CHANNEL W/ 8 LINE INPUTS, EXISTING	0	DO NOT REPLACE
ADSP	AUDIO MIXER, DIGITAL SIGNAL PROCESSOR W/ POWER SUPPLY, I/O MODULES, RELAYS, & ACCESSORIES AS REQUIRED, EXISTING	0	DO NOT REPLACE
IOE	GPIO EXPANDER, EXISTING	0	DO NOT REPLACE
IPCC	IP CONTACT CLOSURE MODULE	OFP	GLOBAL CACHE iTACH IP2CC
	24V POWER SUPPLY	OFP	RDL PS-24AS
WMR	WIRELESS MICROPHONE RECEIVER, EXISTING	0	DO NOT REPLACE
FB	CONNECTION PANEL 'FB'	OFP	EMTECH MSV-TVI RCI MI 9511 OR CUSTOM PLATE THAT INTERFACES W/ INSTALLED FLOOR BOX HDMI HIGHSPEED CABLE USB 3.0 CABLE
CP	CHAPEL TOUCH SCREEN, 5 INCH, EXISTING	0	DO NOT REPLACE
CC	CULTURAL CENTER TOUCH SCREEN, EXISTING	0	DO NOT REPLACE
IR	INFRARED DETECTORS, EXISTING	0	DO NOT REPLACE

SPEAKER SYMBOL LEGEND

SYMBOL	SAMPLES
OTHER/COLOR/EXISTING (S) MOUNTING TYPE & HEIGHT / SPEAKER SIZE, TYPE & GRILLE / POWER	M (S) BZ 4G 4W E (S) 4G 4W

SPEAKER SIZE & GRILLE		ABBREVIATION	
SPEAKER SIZE		4, 6, 8, 12	
SELF CONTAINED		F	
LOW PROFILE		L	
GRILLE REQUIRED		G	
MOUNT TYPE	**ABV.**	**OTHER**	**ABV.**
BLIND	B	WHITE	W
CUSTOM	C	BLACK	BL
SURFACE	S	BROWN	B
T-BAR SUPPORTS	T	IVORY	V
SEISMIC CABLE	Z	GRAY	G
RING	R	EXISTING	E
		MASKING	M

DEVICE SYMBOL LEGEND

SYMBOL	SAMPLES
DEVICE TYPE / OTHER/COLOR/EXISTING (#) MOUNTING TYPE / POWER	BE (W) S

DEVICE TYPE

REFER TO EQUIPMENT LIST FOR DEVICE TYPE

MOUNT TYPE	ABV.	OTHER	ABV.
SURFACE	S	WHITE	W
FLOOR	F	BLACK	BL
OVERHEAD	O	BROWN	B
CUSTOM	C	IVORY	V
RECESSED IN WALL		GRAY	G
		EXISTING	E

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AUDIO-VIDEO SYSTEM EQUIPMENT LIST

SYM	DESCRIPTION	QTY	MANUFACTURER & MODEL NUMBER
	EXISTING DEVICE OR SPEAKER	0	DO NOT REPLACE
	EQUIPMENT CABINET, EXISTING	0	DO NOT REPLACE
	RACK DRAWER, EXISTING	0	DO NOT REPLACE
	SLIDING RACK SHELF, EXISTING	0	DO NOT REPLACE
RM	FLAT SCREEN TV, 19", FRONT PANEL, EXISTING	0	DO NOT REPLACE
	DIODE-INSTALL ON ALL RELAYS, FOR CLICK SUPPRESSION	A/R	100 PIV, 1 AMP
	BRIDGING TRANSFORMERS	A/R	RADIO DESIGN LAB TX-10B OR TX-1A
	RFI FERRITE SUPPRESSION MODULE - 6 INPUTS	A/R	RADIO DESIGN LAB RDL ST-F56
	MATCHING ISOLATION TRANSFORMERS 600:600 OHMS	1	PRO CO LOT-1 RADIO DESIGN LAB TX-1A
	RFI REJECTION TRANSFORMERS (MICROPHONE LEVEL)	A/R	JENSEN ISO-MAX DIN-MS-2P (3P, 4P)
	TRANSIENT RFI SUPPRESSOR	A/R	RADIO DESIGN LAB TS-1D
STS	STANDARD TERMINAL STRIP	OFP	
TVSS	SURGE SUPPRESSOR & SWITCHER IP ENABLED W/ UL LISTED PLUG STRIP	OFP	MIDDLE ATLANTIC RLNK-P920R-SP W/ RLINK-TEMP & RLINK-CONT
	POWER STRIP, UL LISTED	A/R	6 OUTLET POWER STRIP OR EQUAL
	TVSS/ADSP RELAY INTERFACE	A/R	24 VDC RELAY, POWER SUPPLY & BASE
HDP	HELP DESK PANEL, 1 RU	1	CUSTOM LABELING, SEE DETAIL A3/TA501
STR	HDMI TO USB CONVERTER	OFP	RAZER RIPSAW X
RSPK	RACK MONITOR SPEAKER, DECORA	OFP	RDL DB-PSP1 W/ PS-24AS
CP1	CONNECTION PANEL #1	OFP	LOWELL D9P-ID-3 CUSTOM XLR INPUT CUSTOM XLR OUTPUT CUSTOM NETWORK JACK CUSTOM AUDIO OUTPUT CUSTOM HDMI OUTPUT *CUSTOM DEVICES MUST BE FABRICATED ON METAL DECORA INSERTS SEE DETAIL C3/TA501
CP2	CONNECTION PANEL #2	OFP	LOWELL D9P-ID-3 CUSTOM HDMI INPUT CUSTOM HDMI OUTPUT CUSTOM USB-C INPUT CUSTOM NETWORK JACK *CUSTOM DEVICES MUST BE FABRICATED ON METAL DECORA INSERTS SEE DETAIL B3/TA501
RR IR HUB	INFRARED RECEIVER W/ HUB, POWER SUPPLY, & FLASHER	A/R	ATLAS M-1AJW, M-1CB4B, F-1, OR EQUAL
ALS	ASSISTED LISTENING SYSTEM	1	LISTEN TECHNOLOGIES MH-01-01
V	VOLUME CONTROL MODULE	OFP	EMTECH MSC-V10 OR V35 AS APPROPRIATE FOR SPEAKER LOAD
SVM	SOURCE & VOLUME CONTROL FOR MOTHER'S ROOM	OFP	EMTECH MSC-S2 W/ EMTECH MSC-V10 SEE DETAIL A2/TA501
SV	SOURCE & VOLUME CONTROL	OFP	EMTECH MSC-S W/ EMTECH MSC-V35 SEE DETAIL B2/TA501
S 4 / M S 4	4" LOUDSPEAKER, EXISTING	0	DO NOT REPLACE
S 6	6" LOUDSPEAKER, EXISTING	0	DO NOT REPLACE
S Z F4	4" LOUDSPEAKER, SELF CONTAINED W/ LOUDSPEAKER GRILLE LOUDSPEAKER TRIM RING LOUDSPEAKER ENCLOSURE LOUDSPEAKER T-BAR SUPPORT	OFP	BIAMP DESONO DX-IC4 JBL CONTROL 14C/T W/ MTC-24NC
	Z = SEISMIC CABLE	OFP	12 GAUGE CABLE ATTACHED PER SPECIFICATION
M S BZ 4G	4" LOUDSPEAKER, MASKING W/ TRANSFORMER	OFP	ATLAS IED FC104-T87 LOWELL JR410-T870
M S BZT 4G	G = LOUDSPEAKER GRILLE, ROUND	OFP	ATLAS IED T720-4BT LOWELL CN-4M
	B = BLIND ENCLOSURE	OFP	ATLAS IED BMT95-4-7
	Z = SEISMIC CABLE	OFP	12 GAUGE CABLE ATTACHED PER SPECIFICATION
	T = T-BAR SUPPORT	OFP	ATLAS IED 180-2 CHANNEL SUPPORTS OR EQUAL

AUDIO-VIDEO SYSTEM EQUIPMENT LIST

SYM	DESCRIPTION	QTY	MANUFACTURER & MODEL NUMBER
W	AUX AUDIO INPUT	OFP	EMTECH MSC-W3R
U	AUDIO RECORD OUTPUT	OFP	EMTECH MSC-U
M	MICROPHONE INPUT MODULE	OFP	EMTECH MSC-M
MW	MICROPHONE/AUX INPUT MODULE	OFP	EMTECH MSC-MW3
VS	HDMI SWITCHER	OFP	EXTRON IN1806/IN1808
HBR2	HDBaseT RACK RECEIVER	OFP	EXTRON DTP HDMI 4K 330 RX
S2H	SDI TO HDMI CONVERTER	OFP	DECIMATOR MD-LX
HBT	HDMI HDBaseT WALL TRANSMITTER	OFP	EXTRON DTP T HWP 4K 331 D
HBR	HDBaseT WALL RECEIVER	OFP	EXTRON DTP R HWP 4K 331 D
HDA2	HDMI DISTRIBUTION AMPLIFIER, 2 PORT	OFP	EXTRON DA2 HD 4K W/ POWER SUPPLY
	RACK SHELF	1	EXTRON RSB 123
HDA4	HDMI DISTRIBUTION AMPLIFIER, 4 PORT, EXISTING	0	DO NOT REPLACE
HBDA	HDBaseT DISTRIBUTION AMPLIFIER, 8-PORT	OFP	EXTRON DTP HD DA8 4K 330
	INSTALLED HDMI INTERCONNECT CABLE, 3'	A/R	HDMI HIGH SPEED
	INSTALLED HDMI INTERCONNECT CABLE, 6'	A/R	
	HDMI CABLE, 15 FEET, FOR OWNER	2	
	HDMI CABLE, 50 FEET, FOR OWNER	1	
	USB-C TO DISPLAY PORT CABLE INSTALLED BETWEEN CP2 & VS	1	
CM	MICROPHONE INPUT, DUAL, W/ CUSTOM LABEL	OFP	EMTECH MSC-D SEE DETAIL D3/TA501
A	ORGAN INPUT, CABLE MOUNTED MICROPHONE CONNECTOR	OFP	NEUTRIK NC3FX-BAG SWITCHCRAFT A3FB
	TRANSFORMER, LINE LEVEL	1	PRO CO ITXQ
	50'-0" MICROPHONE EXTENSION CABLES W/ BLACK CONNECTORS	1	WHIRLWIND MK450
	25'-0" MICROPHONE EXTENSION CABLES W/ BLACK CONNECTORS	2	WHIRLWIND MK425
	MICROPHONE, GENERAL USE	2	AUDIO-TECHNICA ATM610 A/S
	MICROPHONE, CHAPEL PULPIT, EXISTING	0	DO NOT REPLACE
	MICROPHONE, SACRAMENT TABLE	1	EMTECH BLU-SM
	MICROPHONE,GOOSENECK. INSTALL ON PRIMARY ROOM PULPIT W/ METAL PLATE-MOUNTED FEMALE XLR WIRED TO MALE XLR INSIDE PULPIT IN WIREMOLD BOX.	1	AUDIO TECHNICA U855QL W/ CABLE, JUNCTION BOX, & RCI LDS002-RCI-PMJ
	10'-0" MICROPHONE EXTENSION CABLE W/ BLACK CONNECTORS	1	WHIRLWIND MK410
	15'-0" MICROPHONE EXTENSION CABLE W/ BLACK RIGHT ANGLE MALE CONNECTOR FOR PRIMARY ROOM MICROPHONE	1	WHIRLWIND MK415
	12'-0" PEDESTRIAN STRIP	1	TECH FLEX DURA RACE DRN3.00BK
	MICROPHONE STAND, FLOOR TYPE	1	ATLAS IED MS20E W/PB21XEB KÖNIG & MEYER 210/9
MON	FLAT SCREEN TV	OFP	OWNER SUPPLIED, INTEGRATOR INSTALLED
	FLAT PANEL WALL MOUNT	OFP	OWNER SUPPLIED, INTEGRATOR INSTALLED
TVI	FLAT SCREEN TV CONNECTION PANEL	OFP	EMTECH MSV-TVI OR RCI MI 9511 SINGLE GANG DECORA SURROUND SEE DETAIL D4/TA501
PTZ	CAMERA, PTZ, EXISTING	0	DO NOT REPLACE

GENERAL SHEET NOTES

1. UNLESS OTHERWISE NOTED, MODULES SHALL BE PURCHASED FROM MANUFACTURER LISTED, NOT CUSTOM MADE. COLOR OF INSERTS & COVER PLATES TO MATCH ELECTRICAL DEVICES.
2. RU=RACK UNIT; IEA=INTERNET ENABLED APPLIANCE
3. MANUFACTURER'S NAMES & WEBSITES ARE LISTED IN THE SPECIFICATIONS.
4. QUANTITIES ABBREVIATIONS: A/R=AS REQUIRED PER DRAWING, OFP=OBTAIN FROM PLAN, 0=EXISTING EQUIPMENT TO BE REUSED, OSCI=OWNER SUPPLIED/CONTRACTOR INSTALLED.

AV INTEGRATOR NOTES

1. ALL EQUIPMENT MUST BE NEW UNLESS NOTED OTHERWISE.
2. CONTACT AV CONSULTANT IMMEDIATELY REGARDING ANY ERRORS, CHANGES, OR OMISSIONS.
3. SYSTEM MUST FUNCTION AS PER AV CONSULTANT'S DESIGN WHEN COMPLETE. AV INTEGRATOR IS RESPONSIBLE FOR FURNISHING, INSTALLING, & PROGRAMMING COMPONENTS TO MAKE SYSTEM FUNCTION PROPERLY.
4. AV INTEGRATOR AGREES TO & IS RESPONSIBLE FOR PROGRAMMING OF SYSTEM AS SPECIFIED WITHIN THESE DRAWINGS & SPECIFICATION. AV INTEGRATOR IS TO USE MOST CURRENT SOFTWARE/FIRMWARE ON ALL EQUIPMENT AS PER MANUFACTURER RELEASE. SYSTEM MUST BE FULLY OPERATIONAL @ COMPLETION OF THE INSTALLATION AS PER SPECIFICATION 27-5117 SECTION 3.4 FIELD QUALITY CONTROL.
5. PROVIDE CONNECTIVITY REPORT @ COMPLETION OF THE INSTALLATION AS PER SPECIFICATION 27-1501 SECTION 3.2 FIELD QUALITY CONTROL.
6. PROVIDE COMPLETED DIGIDOC @ COMPLETION OF THE INSTALLATION AS PER 27-5117 SECTION 3.4 FIELD QUALITY CONTROL.
7. AV INTEGRATOR WILL BE RESPONSIBLE TO INCLUDE ALL ROUGH-IN WORK EXCEPT FOR HIGH VOLTAGE (110 VAC) TO BE DONE BY LICENSED ELECTRICAL CONTRACTOR. COORDINATE WORK TO BE DONE BY ELECTRICAL CONTRACTOR.
8. NO CHANGES SHALL BE MADE WITHOUT AV CONSULTANT'S PRIOR WRITTEN CONSENT.
9. SOUND SYMBOLS ARE SHOWN APPROXIMATELY 2 1/2 TIMES ACTUAL SIZE OF COMPONENT FOR CLARITY. IF THERE IS ANY QUESTION REGARDING EXACT LOCATION, CONTACT AV CONSULTANT.
10. REFER TO DRAWINGS FOR EXACT NUMBER OF COMPONENTS USED IF NOT SPECIFIED IN THE EQUIPMENT LISTS. AV INTEGRATOR IS RESPONSIBLE FOR QUANTITIES, EVEN FOR QUANTITIES LISTED IN EQUIPMENT LISTS.
11. EXISTING SOUND & VIDEO WIRING, CONDUITS & DEVICES NOT SCHEDULED FOR MODIFICATION MAY NOT BE SHOWN ON DRAWINGS & SHALL REMAIN AS IS. COMPONENTS AFFECTED BY CONSTRUCTION SHALL BE SAFEGUARDED UNTIL AV INTEGRATOR REINSTALLS THEM.
12. OLD EQUIPMENT BEING REPLACED W/ NEW EQUIPMENT SHALL BE DISCONNECTED & GIVEN TO THE FACILITIES MANAGEMENT GROUP. COORDINATE SECURE STORAGE LOCATION W/ FACILITIES MANAGEMENT GROUP.
13. INSTALL EQUIPMENT CABINET SO THERE IS ADEQUATE CLEARANCE FOR IT TO OPEN FULLY.
14. DO NOT MIX CABLE GROUPS IN THE SAME CONDUIT. CABLE GROUPS ARE: MICROPHONE CABLES; CAT-5, SOUND SYSTEM CONTROLS, TELEPHONE, VIDEO OR ATC CABLES; SPEAKER CABLES; ANTENNA CABLES.
15. CONDUIT IS NOT REQUIRED FOR NEW SOUND & VIDEO CABLE IN CONCEALED SPACES IN BUILDING UNLESS REQUIRED BY LOCAL CODES. CONDUIT IS NOT REQUIRED WITHIN THE SPEAKER LINE ARRAY. ALL SOUND CABLE MUST BE CONCEALED. THE USE OF RACEWAY & WOOD TRIM IS REQUIRED WHERE THE CABLE IS EXPOSED TO VIEW. RACEWAY MUST ONLY BE USED AS A LAST RESORT, & MUST BE APPROVED BY FACILITIES MANAGEMENT GROUP. PROVIDE A HARDWOOD SURROUND W/ ROUNDED CORNERS WHERE PRE-FINISHED BOXES ARE SURFACE MOUNTED. CABLES RUNNING THROUGH CLOSETS & MECHANICAL SPACES, OR OTHER SERVICE SPACES MUST ALWAYS BE IN CONDUIT.
16. INSTALL NEW SOUND CABLES IN CONCEALED SPACES IN CONDUIT AS PER SPECIFICATIONS. CABLE SHALL BE CONTINUOUS, WITHOUT SPLICES (NEW CONSTRUCTION). FOR CABLES NOT INSTALLED IN CONDUIT, DO NOT RUN CABLES WITHIN 10 INCHES OF VOLTAGE CONDUCTORS/RACEWAYS. MAINTAIN 10 INCHES MINIMUM BETWEEN THE FOLLOWING EXPOSED CABLE GROUPS-MICROPHONE CABLES; UTP/STP, SOUND SYSTEM CONTROLS, TELEPHONE, VIDEO OR ATC CABLES; SPEAKER CABLES; ANTENNA CABLES. ATTIC CABLING MUST BE NEATLY DRESSED & KEPT OUT OF THE WAY.
17. CABLES LISTED ON EQUIPMENT LIST ARE NOT PLENUM RATED. PLENUM CABLE IS REQUIRED IN PLENUM SPACES IF NOT IN CONDUIT.
18. PROTECT ORGAN & PIANO FROM ALL CONSTRUCTION DUST & DEBRIS. AV INTEGRATOR IS RESPONSIBLE FOR DAMAGES TO ORGAN & PIANO DURING INSTALLATION.
19. AV INTEGRATOR IS RESPONSIBLE FOR PROVIDING & INSTALLING NECESSARY PARTS TO ELIMINATE STATIC NOISE (POPPING) FROM THE CHAPEL PULPIT UP/DOWN SWITCH.
20. UTILIZE TRANSFORMERS, CAPACITORS, & SHIELDING AS NECESSARY TO ISOLATE RFI FROM THE SYSTEM.
21. CLEAN & REINSTALL EXISTING ELECTRONICS AS INDICATED IN EQUIPMENT CABINET. VERIFY ALL FUNCTIONS ARE OPERATING NORMALLY.
22. SEE SHEET TT601 FOR ADDITIONAL COORDINATION.
23. SECURE ALL NEW LOUDSPEAKER ENCLOSURES W/ SEISMIC RESTRAINTS. MOUNT ALL LOUDSPEAKER ASSEMBLIES IN SUSPENDED TILE CEILINGS ON TILE BRIDGES EVEN IF NOT SHOWN IN EQUIPMENT LIST.
24. EXISTING SCOREBOARD CABLES & CONNECTORS TO REMAIN UNDISTURBED.
25. COORDINATE W/ FACILITIES MANAGEMENT GROUP TO VERIFY THAT EXTERNAL AUDIO OUTPUT CONNECTION HAS BEEN INSTALLED ON ORGAN & CONNECT.

Architect / Engineer:
Laughlin Ricks Architecture
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134 3RD Ave East, * Twin Falls, Idaho 83301
(208) 736-8050

Stamp:

THE NORTH POINT LDS CHURCH
1134 N College Rd W, Twin Falls, ID 83301

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (D-M-Y)	Description

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title: AUDIO-VIDEO SYSTEM EQUIPMENT LIST & NOTES

Sheet: TA601

A1 AUDIO SYSTEM RISER DIAGRAM

SCALE: NO SCALE

SPECTRUM ENGINEERS

SDI JOB #: AV243289WK

DATE: 9 OCT 2024

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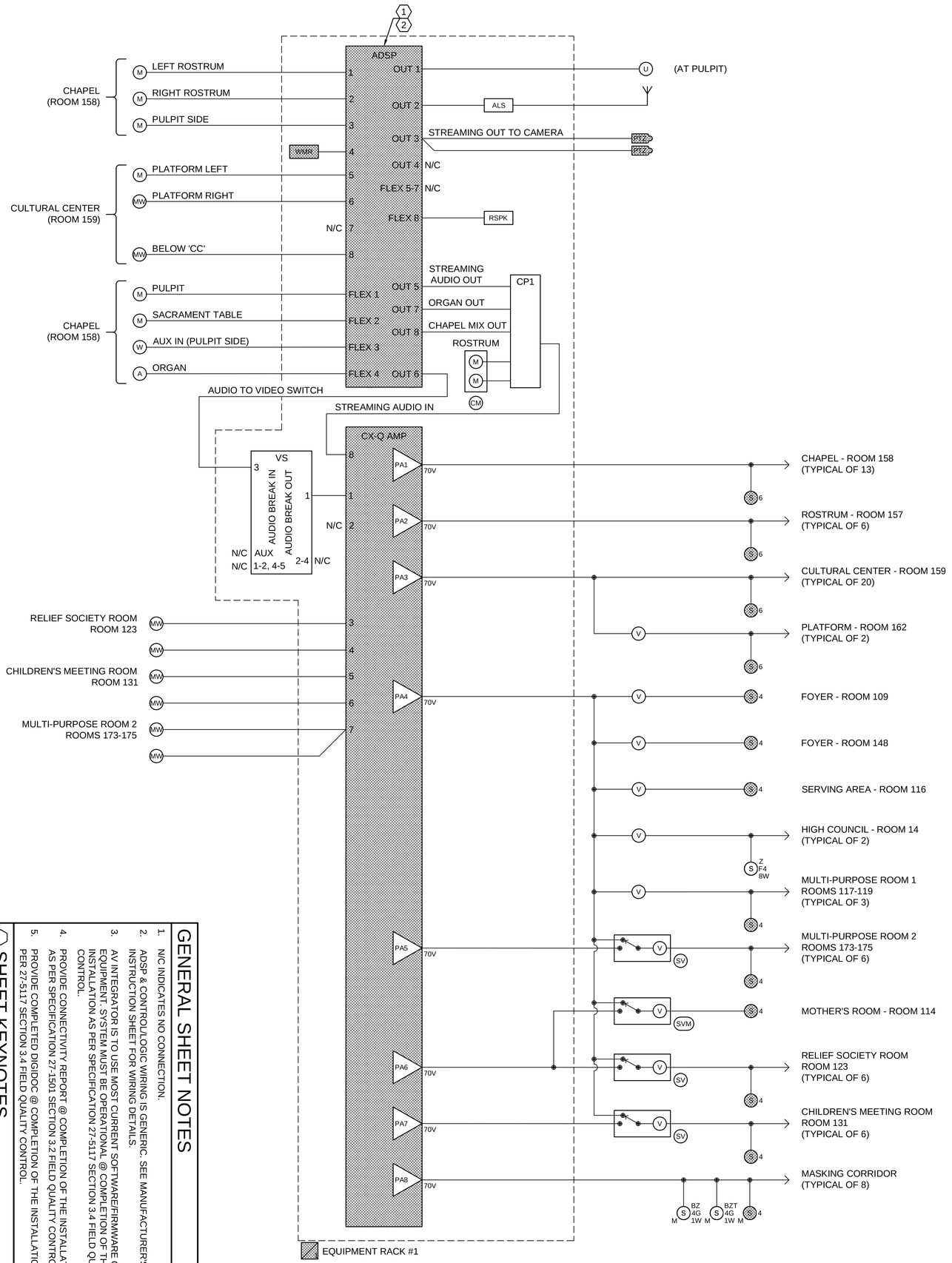

GENERAL SHEET NOTES

1. N/C INDICATES NO CONNECTION.
2. ADSP & CONTROLLOGIC WIRING IS GENERIC. SEE MANUFACTURER'S INSTRUCTION SHEET FOR WIRING DETAILS.
3. AV INTEGRATOR IS TO USE MOST CURRENT SOFTWARE/FIRMWARE ON ALL EQUIPMENT. SYSTEM MUST BE OPERATIONAL @ COMPLETION OF THE INSTALLATION AS PER SPECIFICATION 27-5117 SECTION 3.4 FIELD QUALITY CONTROL.
4. PROVIDE CONNECTIVITY REPORT @ COMPLETION OF THE INSTALLATION AS PER SPECIFICATION 27-1501 SECTION 3.2 FIELD QUALITY CONTROL.
5. PROVIDE COMPLETED DIGIDOC @ COMPLETION OF THE INSTALLATION AS PER 27-5117 SECTION 3.4 FIELD QUALITY CONTROL.

SHEET KEYNOTES

1. AV INTEGRATOR IS TO USE MOST CURRENT SOFTWARE/FIRMWARE. MOST CURRENT SOFTWARE MUST BE INSTALLED @ TIME OF COMMISSIONING.
2. AV INTEGRATOR IS TO USE LATEST APPROVED OWNER'S DSP TEMPLATE. MODIFY AS NEEDED TO SUIT CURRENT PROJECT.

Sheet:	Sheet Title:	Project Number:	Property Number:	Plan Series:
TA602	AUDIO SYSTEM RISER DIAGRAM	24001	5978778	

Mark	Date (D-M-Y)	Description

Project for:

THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

THE NORTH POINT LDS CHURCH

1134 N College Rd W, Twin Falls, ID 83301

Stamp:

Architect / Engineer:

Laughlin Ricks Architecture

architecture/planning

134 3RD Ave East, * Twin Falls, Idaho 83301

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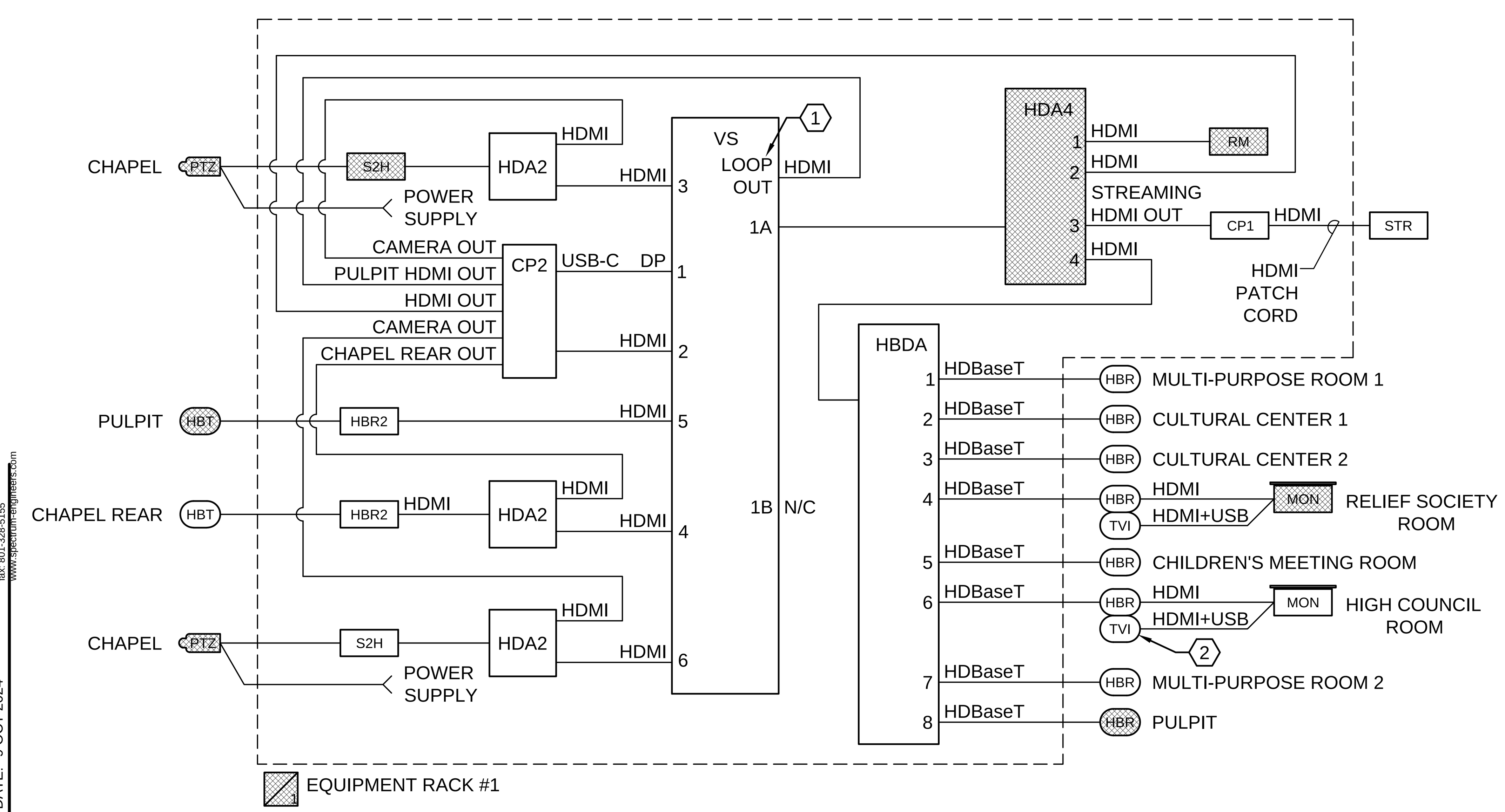
SHEET KEYNOTES

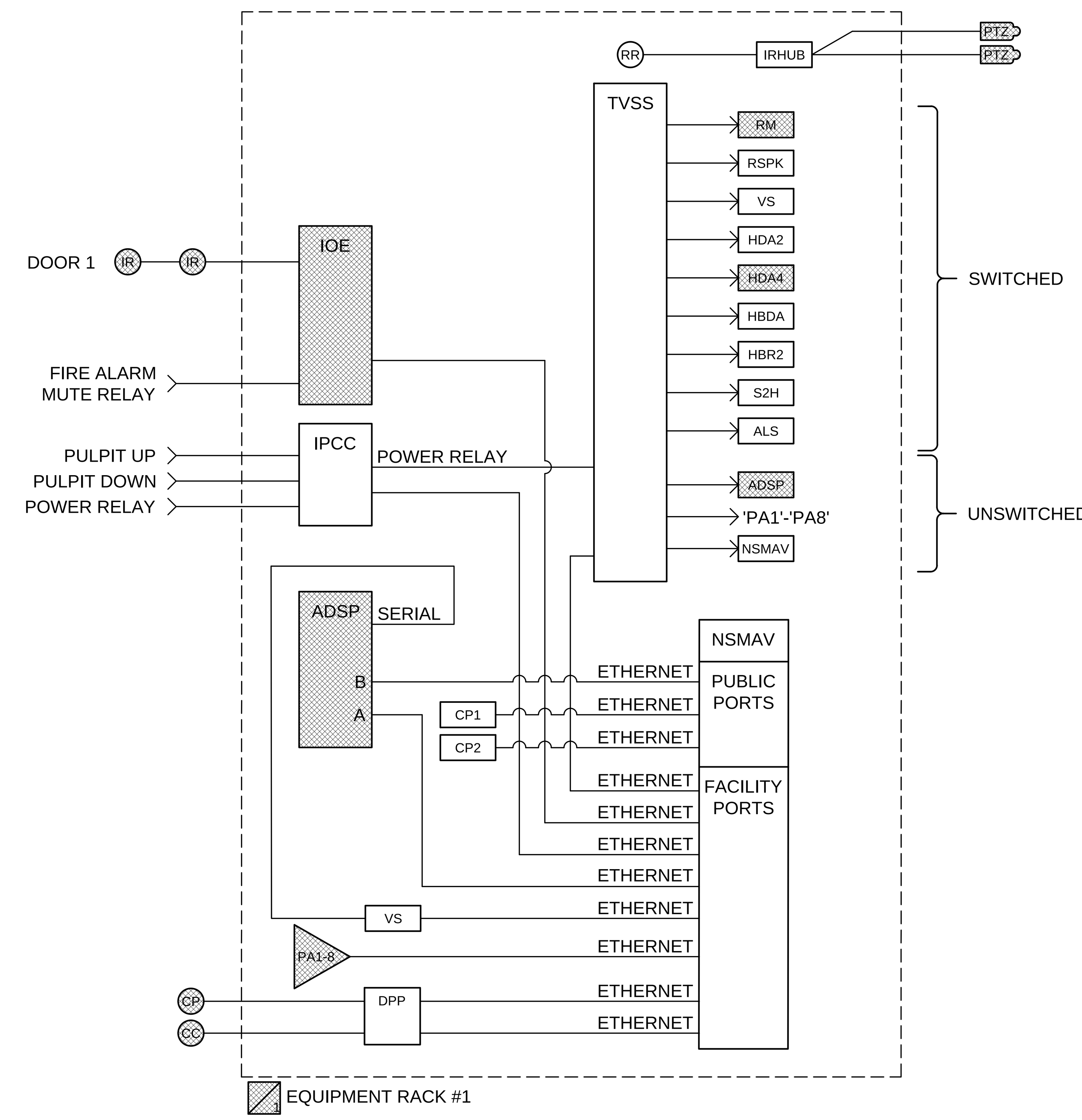
1. PROGRAM 'VS' TO FEED PULPIT 'HBT' TO LOOP OUT.
2. DEVICE IS LOCATED INSIDE FLOOR BOX.

GENERAL SHEET NOTES

1. WHERE MULTIPLE DEVICES ARE SHOWN ON A SINGLE 'TVSS' OUTLET, PROVIDE PLUG STRIPS AS REQUIRED.
2. QSC TOUCHPANEL DEVICES MUST BE CONNECTED TO POE PORTS.
3. HDBaseT & QSC DEVICES ARE IP COMMUNICATIONS PROTOCOL DEVICES. TWISTED PAIR CABLES MUST MEET STANDARDS DEFINED IN THE HORIZONTAL COMMUNICATIONS SPECIFICATIONS.
4. N/C INDICATES NO CONNECTION.
5. ADSP & CONTROL/LOGIC WIRING IS GENERIC. SEE MANUFACTURER'S INSTRUCTION SHEET FOR WIRING DETAILS.
6. IP ADDRESSES SHALL BE DYNAMICALLY ASSIGNED VIA DHCP.
7. 'TVSS' DEVICES CAN PROVIDE EMAIL NOTIFICATION WHEN POWER & TEMPERATURE THRESHOLDS ARE EXCEEDED. SET EMAIL NOTIFICATIONS TO BE SENT TO FACILITIES MANAGEMENT GROUP PROVIDED EMAILS ADDRESS WHEN MANUFACTURER RECOMMENDED POWER & TEMPERATURE LIMITS ARE EXCEEDED.
8. CONNECTION OF AUDIOVISUAL EQUIPMENT TO BUILDING NETWORK MUST BE DONE IN ACCORDANCE WITH OWNER REQUIREMENTS. AV INTEGRATOR SHALL COORDINATE WITH OWNER IN ADVANCE OF SYSTEM INSTALLATION TO ENSURE NECESSARY NETWORK EQUIPMENT WILL BE AVAILABLE AND NETWORK CONFIGURATION WILL BE PREPARED TO ACCOMMODATE AUDIOVISUAL DEVICES TO BE CONNECTED.
9. CONTACT AEC VIA EMAIL A MINIMUM OF ONE MONTH IN ADVANCE OF PROJECT START DATE TO COORDINATE UPDATE OF FIREWALL CONFIGURATION NECESSARY FOR NETWORKING OF AV COMPONENT.
10. CONFIGURE RLNK TO PROVIDE 2 LEVELS OF POWER RESET. LEVEL 1 SHALL TURN OFF ALL "SWITCHED DEVICES." LEVEL 2 SHALL BE TRIGGERED AT 3AM AND INCLUDE AMPLIFIER IN ADDITION TO LEVEL 1 DEVICES. USE IP TRIGGERS.
11. CONFIGURE 'ADSP' TO PROVIDE SERIAL CONTROL OF 'VS', INCLUDING INPUT SELECTION AND VIDEO MUTE. WHEN VIDEO IS MUTED, "LOGO: SCREEN SHALL BE DISPLAYED. UPLOAD STANDARD "MEETING IN PROGRESS" IMAGE FILE TO 'VS'.



A1 VIDEO SYSTEM RISER DIAGRAM
SCALE: NO SCALE



A3 CONTROL/LOGIC RISER DIAGRAM
SCALE: NO SCALE

SPECTRUM ENGINEERS

SDI JOB #: AV243289WK
DATE: 9 OCT 2024

Architect / Engineer:
Laughlin Ricks Architecture
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THE NORTH POINT LDS CHURCH
1134 N College Rd W, Twin Falls, ID 83301

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (D-M-Y)	Description

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title: VIDEO & CONTROL SYSTEM DIAGRAMS

Sheet: TA603

SHEET KEYNOTES

1. ALL CONNECTIONS TO NETWORK SWITCHES TERMINATING OUTSIDE CABINET WHERE NETWORK SWITCH IS LOCATED MUST PASS THROUGH A DATA PATCH PANEL. IF NO PATCH PANEL EXISTS AT NETWORK LOCATION, ONE SHALL BE INSTALLED & ALL EXISTING & NEW DATA CABLES SHALL BE ROUTED THROUGH THE PATCH PANEL.

CABLE EQUIPMENT LIST

SYM	DESCRIPTION	QTY	MANUFACTURER & MODEL NUMBER
A	HDMI CABLE	A/R	BELDEN HD 800-XX LIBERTY HD 1000-XX (XX=LENGTH REQUIRED)
(#)C	CONTROL CABLE, WHITE JACKET, (#) INDICATES NUMBER OF CABLES, IF MORE THAN ONE	A/R	BELDEN 1872A LIBERTY 24-4P-L6-EN WEST PENN 4246
(#)D	STATION CABLE, DATA-CAT 6, DATA, BLUE JACKET, (#) INDICATES NUMBER OF CABLES, IF MORE THAN ONE	A/R	SEE SPECIFICATION 271501
(#)H	HDBaseT CABLE, BLACK JACKET, (#) INDICATES NUMBER OF CABLES, IF MORE THAN ONE	A/R	COMMSCOPE 1291B F/UTP WEST PENN 4346AF
(#)L	LINE LEVEL CABLE, (#) INDICATES NUMBER OF CABLES, IF MORE THAN ONE	A/R	BELDEN 9451 LIBERTY 22-1P-EZ WEST PENN 454
LC	PULPIT MOTOR CONTROL CABLE, 3 CONDUCTOR, 22 AWG	A/R	BELDEN 8443 WEST PENN 231
(#)M	MICROPHONE CABLE (#) INDICATES NUMBER OF CABLES, IF MORE THAN ONE	A/R	BELDEN 9451 LIBERTY 22-1P-EZ WEST PENN 454
RF	ANTENNA CABLE, RG-8, EXTEND ASSISTED LISTENING SYSTEM (ALS) ANTENNA CABLE AS REQUIRED	A/R	BELDEN 7733A WEST PENN 98G8
(#)S	SPEAKER CABLE, (#) INDICATES NUMBER OF CABLES, IF MORE THAN ONE	A/R	BELDEN 8471 LIBERTY 16-2C-GRY WEST PENN 225
U	USB CABLE	A/R	LIBERTY U026-20M (USB 2.0 OR GREATER, PREMADE)

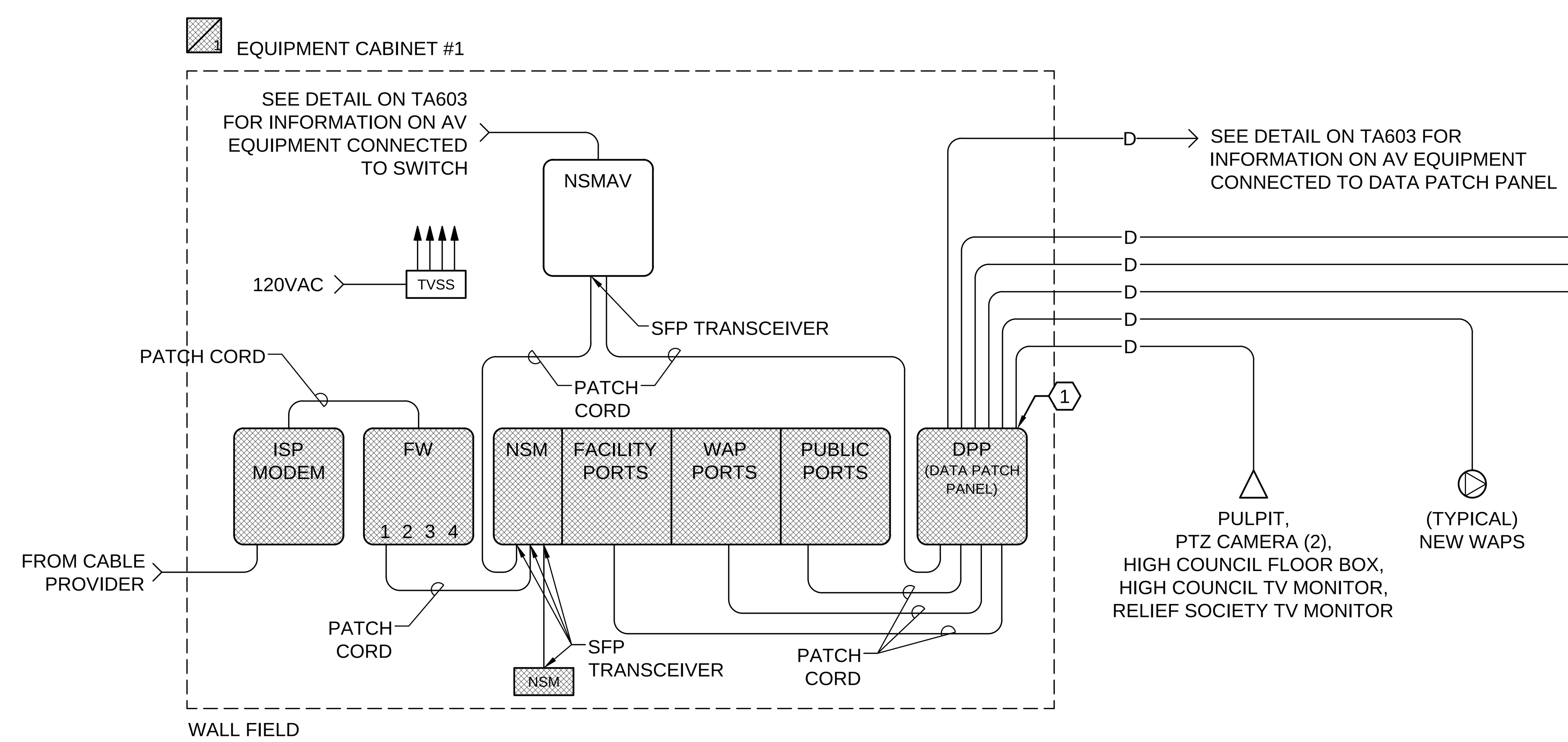
VOICE & DATA SYSTEM EQUIPMENT LIST

THE FOLLOWING IS A PARTIAL LIST OF MATERIALS FOR THE DATA SYSTEM. REFER TO SPECIFICATION 27 1501 FOR FULL REQUIREMENTS. VERIFY ALL PART NUMBERS WITH MANUFACTURER'S CATALOG NUMBERS & NOTIFY AV CONSULTANT OF DISCREPANCIES PRIOR TO BIDDING. FURNISH MISCELLANEOUS HARDWARE NOT LISTED TO PROVIDE A COMPLETE SYSTEM.

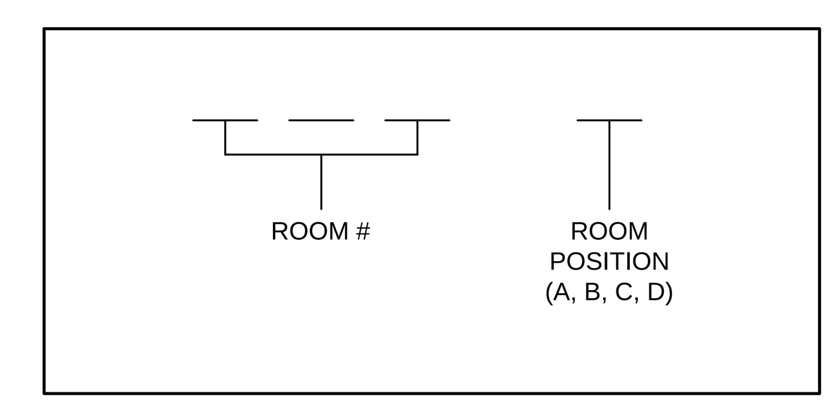
SYM	DESCRIPTION	QTY	MANUFACTURER & MODEL NUMBER
▽	DATA OUTLET SINGLE GANG BEZEL	OFP	SEE SPECIFICATION 271501
	BEZEL INSERTS	A/R	SEE SPECIFICATION 271501
	CAT 6 JACK-DATA (1)	A/R	SEE SPECIFICATION 271501
	COPPER CAT 6 PATCH CABLES	A/R	SEE SPECIFICATION 271501
	CAT 6 J-HOOKS	A/R	CADDY CAT32Z34
NSM	CHURCH STANDARD NETWORK SWITCH, MANAGED, EXISTING	0	DO NOT REPLACE
FW	INTERNET FIREWALL, CHURCH STANDARD, EXISTING	0	DO NOT REPLACE
ISP MODEM	INTERNET SERVICE MODEM, EXISTING	0	DO NOT REPLACE
NSMAV	CHURCH STANDARD NETWORK SWITCH, MANAGED, 24 PORT	OFP	CISCO MERAKI MS120-24P SEE GENERAL NOTE 13
▷	WIRELESS ACCESS POINT, CHURCH STANDARD.	OFP	CISCO MERAKI MR33-HW SEE GENERAL NOTE 13
DPP	PATCH PANEL, DATA, 48 PORT, EXISTING	0	DO NOT REPLACE

DATA PROJECT NOTES

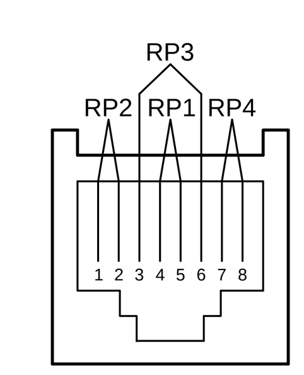
1. LABEL ALL CABLE REGARDLESS OF LENGTH.
2. THE EQUIPMENT LABELING IDENTIFIED ON DETAILS IN THESE DRAWINGS ARE EXAMPLES ONLY. PRIOR TO FABRICATION, SUBMIT THE NOMENCLATURE FOR ALL CABLING & EQUIPMENT TO THE CONSULTANT FOR APPROVAL.
3. COIL 5' OF EXTRA CABLE @ THE TECHNOLOGY ROOM & 18"' @ THE OUTLET FOR EACH CABLE RUN.
4. USE CADDY CLIPS OR BRIDLE RINGS FOR ALL CABLE OUTSIDE OF CONDUIT.
5. ALL CABLE & UTP TO TERMINATE ON BOTH ENDS.
6. ALL DATA OUTLETS ON WALLS SHALL BE MOUNTED WITHIN 6" OF A POWER OUTLET. IF CONTRADICTIONS ARISE ON PLANS, NOTIFY AV CONSULTANT.
7. REFER TO SHEET ET101 FOR DATA JACK LOCATIONS & ROUTING OF AV CABLE.
8. ALL DATA CABLING & EQUIPMENT SHALL BE INSTALLED ACCORDING TO DIVISION 27 1501.
9. INSTALL OWNER FURNISHED CHURCH NETWORK EQUIPMENT SHOWN. AS PART OF INSTALLATION SET UP & CONFIGURE DEVICES IN ACCORDANCE WITH CHURCH REQUIREMENTS. COORDINATE WITH LOCAL FACILITIES MANAGEMENT GROUP.
10. COORDINATE WITH FACILITIES MANAGEMENT GROUP & PROJECT MANAGER WELL IN ADVANCE OF PROJECT COMPLETION TO ENSURE INSTALLATION OF ALL OWNER FURNISHED EQUIPMENT IS INSTALLED & SET UP PROPERLY. IN ADDITION, ENSURE OWNER PROVIDES INTERNET SERVICE TO BUILDING PRIOR TO FINAL INSTALLATION OF AV & VOICE DATA EQUIPMENT.
11. FURNISH & INSTALL ALL AUDIO-VIDEO CABLE SHOWN. PROVIDE 3' EXTRA CABLE @ OUTLET END & 15' EXTRA CABLE @ EQUIPMENT RACK. COIL & LABEL.
12. CONNECTION OF AUDIOVISUAL EQUIPMENT TO BUILDING NETWORK MUST BE DONE IN ACCORDANCE WITH OWNER REQUIREMENTS. AV INTEGRATOR SHALL COORDINATE WITH OWNER IN ADVANCE OF SYSTEM INSTALLATION TO ENSURE NECESSARY NETWORK EQUIPMENT WILL BE AVAILABLE AND NETWORK CONFIGURATION WILL BE PREPARED TO ACCOMMODATE AUDIOVISUAL DEVICES TO BE CONNECTED.
13. "CISCO MERAKI" NETWORK EQUIPMENT MUST BE PURCHASED THROUGH COMPUNET ON BEHALF OF THE CHURCH, AND MAY NOT INTEGRATE PROPERLY WHEN OBTAINED FROM OTHER SOURCES. CONTACT BRYON LEAVITT AT 801-747-5066 OR BLEAVITT@COMPUNET.BIZ
14. SEE "TA" & "ET" SHEETS FOR DEVICE LOCATIONS & ADDITIONAL COORDINATION.
15. MANUFACTURER'S NAMES & WEB ADDRESSES ARE LISTED IN THE SPECIFICATIONS.
16. A/R=AS REQUIRED PER DRAWING, OFP=OBTAIN FROM PLAN, 0=EXISTING EQUIPMENT TO BE REUSED, OSCI=OWNER SUPPLIED/CONTRACTOR INSTALLED, E=EXISTING LOCATION, B=BROWN DEVICE & COVER PLATE, HATCHING APPLIED TO ANY DEVICE DENOTES "EXISTING, DO NOT REPLACE"
17. ALL NEW DATA CABLES CALLED OUT IN THIS PROJECT SHALL BE CERTIFIED IN ACCORDANCE WITH INDUSTRY STANDARDS. A NETWORK CONNECTIVITY REPORT SHALL BE PROVIDED TO CONSULTANT BEFORE FINAL COMMISSIONING VISIT.
18. INSTALL, PATCH IN & SET-UP WIRELESS ACCESS POINTS.



A1 STRUCTURED CABLING RISER DIAGRAM
SCALE: NO SCALE



B4 CABLE LABEL DETAIL
SCALE: NO SCALE



PIN #	RP/COLOR
5	T1-W/BL
4	R1-BL/W
1	T2-W/O
2	R2-0/W
3	T3-W/GR
6	R3-GR/W
7	T4-W/BR
8	R4-BR/W

A4 OUTLET PINNING DETAIL
SCALE: NO SCALE

SPECTRUM ENGINEERS
SDI JOB #: AV243289WK
DATE: 9 OCT 2024

Architect / Engineer:
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architecture/planning
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(208) 736-8050

Stamp:

THE NORTH POINT LDS CHURCH
1134 N College Rd W, Twin Falls, ID 83301

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (D-M-Y)	Description

Project Number: 24001
Plan Series:
Property Number: 5978778

Sheet Title:
DATA NOTES, DIAGRAM, DETAILS, & SCHEDULE

Sheet:
TT601

laughlin ricks architecture

134 3rd Ave East
Twin Falls, ID 83301
208.736.8050

Pre-Bid MEETING MINUTES

PROJECT NAME:	Twin Falls ID SSA
DATE:	September 26, 2024
TIME:	2:30 p.m.
LOCATION:	1134 N College Rd W. Twin Falls, ID
IN ATTENDANCE:	Via Phone, Logan King, Keven Blomquist, Refer to attached sign-in sheet

1. Bidding Information
    a. Bids are by invitation only.
    b. Contractors and subcontractors must be licensed in the area where the project is located.
    c. The successful bidder must supply:
        1) Workers Compensation Insurance.
        2) Commercial Liability Insurance.
        3) Automobile Liability Insurance.
        4) Bonds (if required in the General Conditions).
        5) Builders Risk Insurance (if the project is over $5 million).
        6) Government taxes are to be included in bid amount, with the exception of Canada (GST, PST, HST, etc.) and when directed by the Project Manager in U.S. states (such as State Sales Tax).
2. Contractor Requirements
    a. Contractor will comply with all applicable laws, ordinances, rules, regulations, and orders of any public authorities relating to performance of the Work.
    b. Contractors are alerted that the Owner will strictly enforce the requirements of Safety as in the contract documents on this project.
    c. Contractor must use company legal name on bid form
3. Addenda
    a. All addenda will be issued by the consultant
    b. All verbal agreements or instructions must be confirmed by written addendum.
    c. Contractors are to bid the contract documents.
    d. Requests for clarification shall be in writing and received by the architect three working days minimum prior to bid opening.
    e. Final addendum will be issued 48 hours prior to bid.
4. Bid Opening
    a. Bids will be received by owners preferred method up to the previously specified time, immediately thereafter, bids will be reviewed.
    b. Bids are to be submitted as outlined in the specification.
    c. The bid form used will be that provided on the owners online bidding tool.
    d. The owner reserves the right to reject any or all bids and to waive any irregularity therein.

e. If all addenda are not acknowledged by number (1,2,3, etc.), on the bid form or if the bid form is not signed, the bid may be considered not-responsive and be rejected immediately without considering the bid amount.
f. The bid amount is to be listed in both written and numerical form. If there is a discrepancy between the two, the written amount will be used.

5. New Square Footage is approximately 2,344

6. Bid Opening Date and Time: Tuesday October 15 @ 1:45 p.m. MDT. Bid shall be placed through conslog

7. Calendar days for project: 180

8. liquidated damages / day = $250

9. The facility will remain occupied during construction. A dust wall will need to be provided.

10. A laydown area on the north side parking lot will be allowed. The exact location will be reviewed during the pre-construction meeting.

11. A concrete apron around building perimeter will be added to the plans in addendum.

12. A mechanical closure for the new equipment will be added to the site plan for the new mechanical equipment in addendum.

13. AV/data drawings are currently in design and will be provided through addendum.

14. Walked the site to review site conditions, area of demolition, and the new parking lot location.

laughlin ricks architecture

SIGN-IN SHEET

NAME	COMPANY	PHONE #	E-MAIL
COLBY RICKS	LRA	2087368050	COLBY@lralic.com
Tim Pollard	Starr	208-969-1305	time@starrcorporation.com
CJ Anderson	Gary Jones	949-572-4182	CJ@garyjonesconstruction.com
Cade Jones		208-670-4935	cade@garyjonesconstruction.com