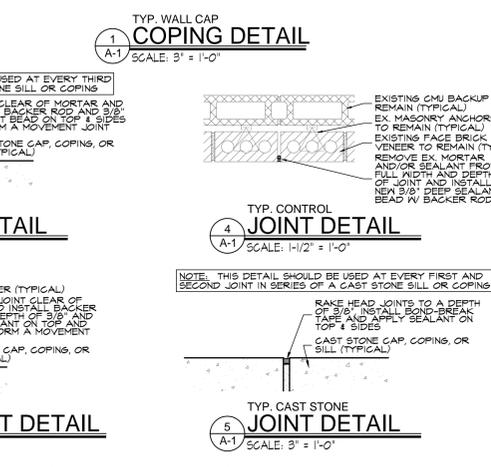
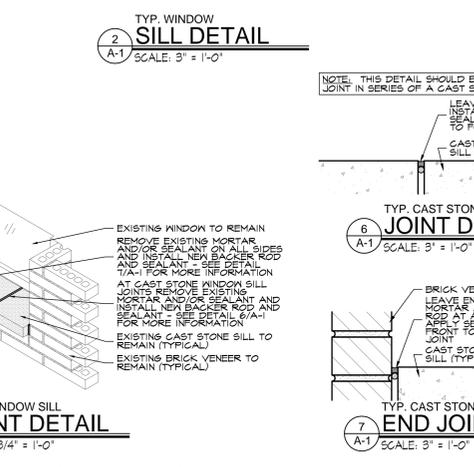
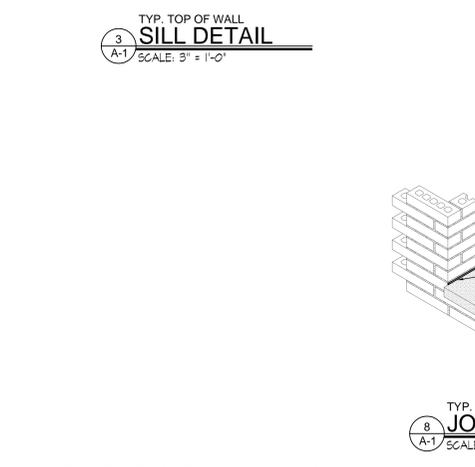
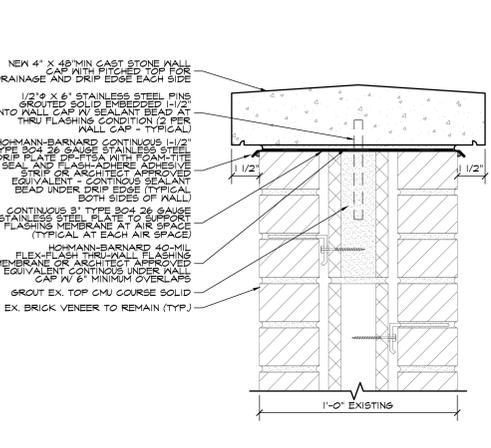
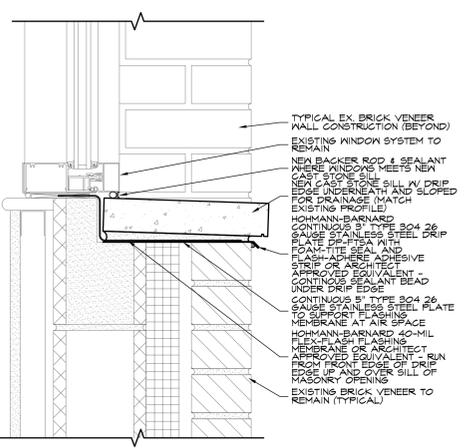
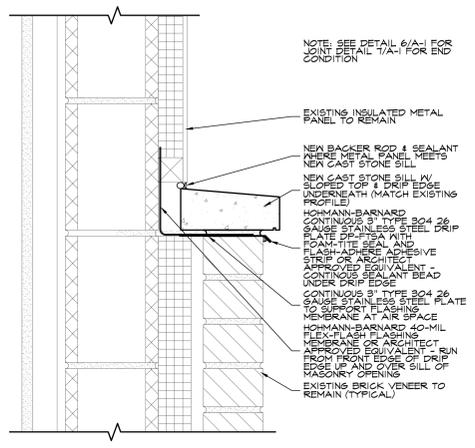
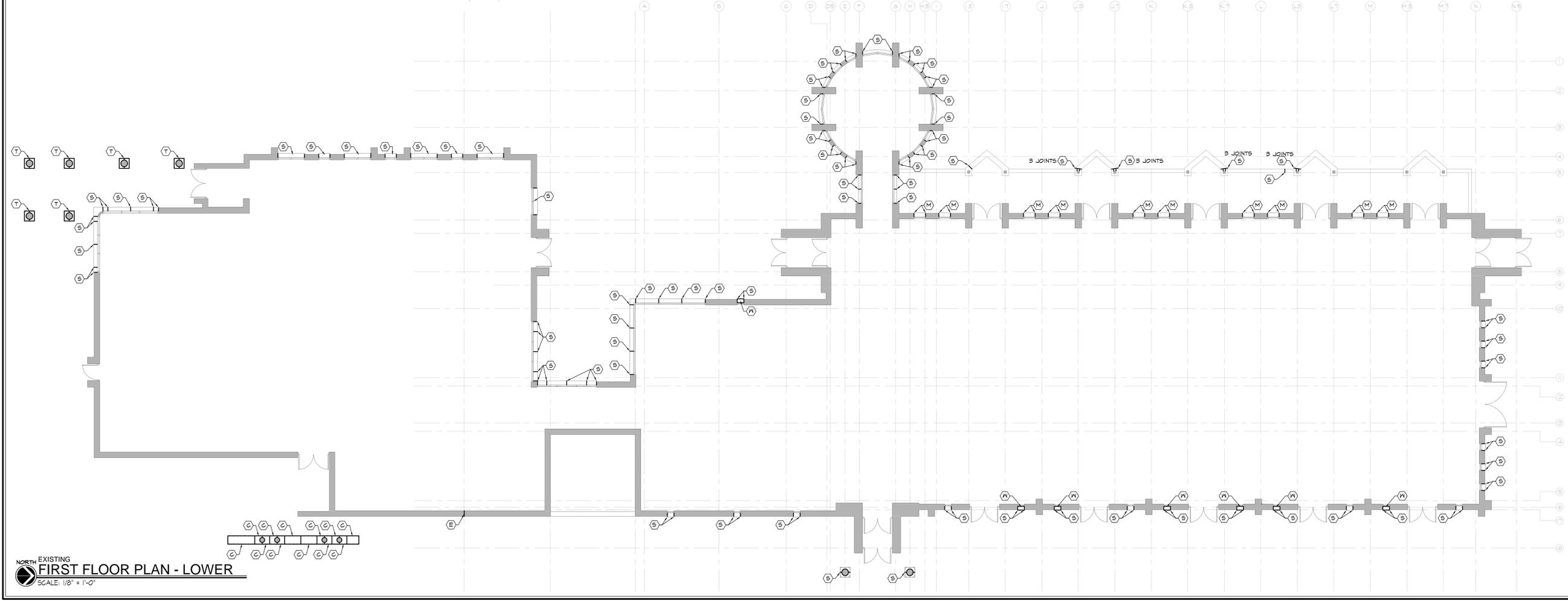
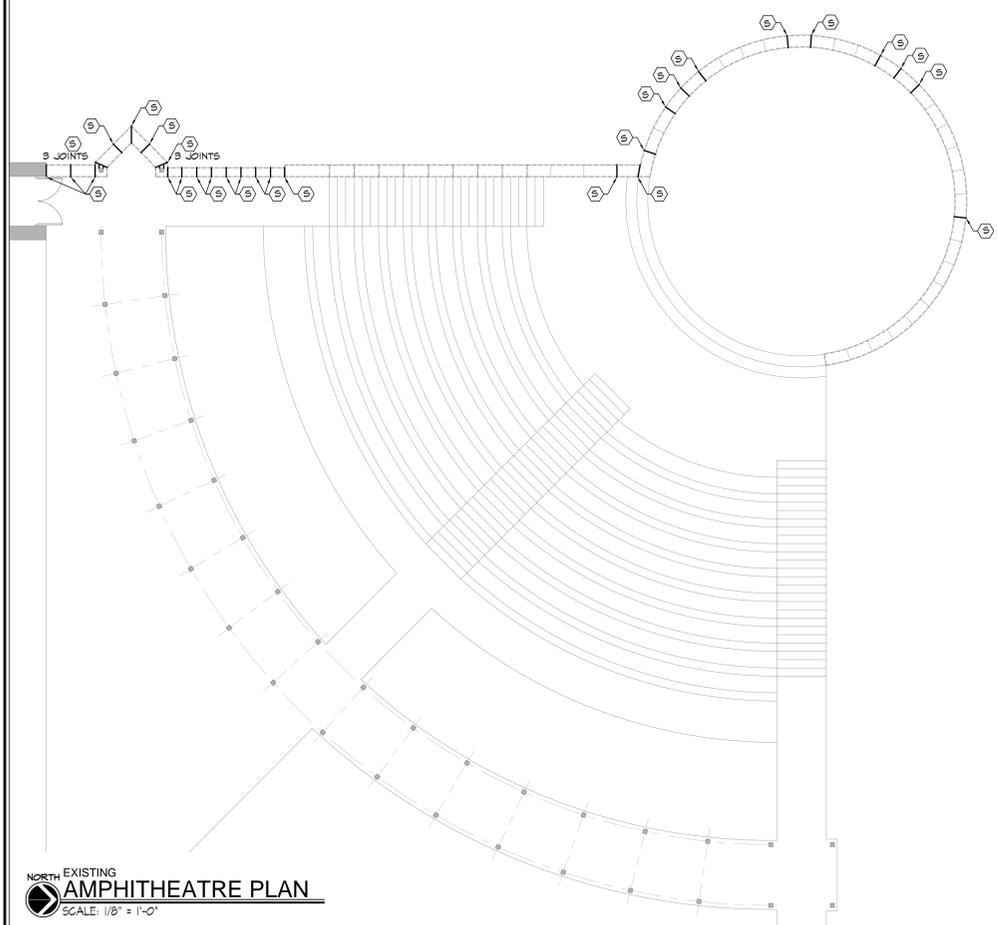




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- JOINT KEYNOTES:**
- (T) TUCKPOINT BRICK AT ALL SIDES OF COLUMN BASE (SEE SPECS).
  - (S) REMOVE ALL EXISTING SEALANT FROM JOINTS/AT ALL SIDES OF CAST STONE COPINGS/SILL AND REPLACE WITH NEW SEALANT AT ALL SIDES OF CAST STONE COPINGS/SILL (SEE DETAIL 8/A-1).
  - (M) REMOVE ALL EXISTING MORTAR FROM JOINTS/AT ALL SIDES OF CAST STONE COPINGS/SILL AND REPLACE WITH NEW SEALANT AT ALL SIDES OF CAST STONE COPINGS/SILL (SEE DETAIL 8/A-1).
  - (W) REMOVE EXISTING CAST STONE WINDOW SILL SECTION AND REPLACE WITH NEW CAST STONE WINDOW SILL SECTION - VERIFY SIZE IN FIELD (SEE DETAILS 2/A-1 & 8/A-1) AND SPECS).
  - (E) REMOVE ALL EXISTING MORTAR FROM VERTICAL CONTROL JOINT AND INSTALL NEW BACKER ROD AND SEALANT (SEE DETAIL 4/A-1) AND SPECS).
  - (R) REMOVE EXISTING CAST STONE SILL SECTION AND RESET WITH NEW FLASHING AND MORTAR (SEE DETAIL 8/A-1 AND SPECS).
  - (J) REMOVE ALL EXISTING SEALANT AND BACKER ROD FROM VERTICAL CONTROL JOINT AND INSTALL NEW BACKER ROD AND SEALANT (SEE DETAIL 4/A-1 AND SPECS).
  - (C) REMOVE EXISTING CAST STONE COPING SECTION AND REPLACE WITH NEW CAST STONE COPING SECTION TO MATCH PROFILE OF EXISTING - IF EXISTING COPING SECTION HAS A FLAT TOP REPLACE WITH NEW CAST STONE COPING WITH A RITCHED TOP AS SHOWN IN DETAIL - VERIFY SIZE IN FIELD (SEE DETAIL 1/A-1 AND SPECS). PROVIDE SEALANT AT ALL PENETRATIONS AND JOINTS (SEE DETAILS 8/A-1 & 8/A-1) AND SPECS).
  - (X) REMOVE EXISTING CAST STONE TOP OF WALL SILL SECTION AND REPLACE WITH NEW CAST STONE TOP OF WALL SILL SECTION - VERIFY SIZE IN FIELD (SEE DETAILS 8/A-1 & 8/A-1) AND SPECS).

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THIS CERTIFICATION APPLIES ONLY TO THE DOCUMENTS OR PORTIONS THEREOF UPON WHICH THE ARCHITECT'S SEAL APPEARS.

ARCHITECT'S SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
 MY CURRENT LICENSE EXPIRES ON 11/30/2012.



1	ISSUE FOR BIDDING	08/01/2012
No. Issues & Revisions	Date	

**MASONRY COPING/SILL REPAIR AND REPLACEMENT**  
**VILLAGE OF ORLAND PARK**  
 14650, 14700, & 14750 RAVINIA AVE  
 ORLAND PARK, IL 60462

Drawing Title: 12003B\_BASE.DWG  
**EXISTING CIVIC CENTER FIRST FLOOR PLAN-LOWER, JOINT DETAILS, & AMPHITHEATRE PLAN**  
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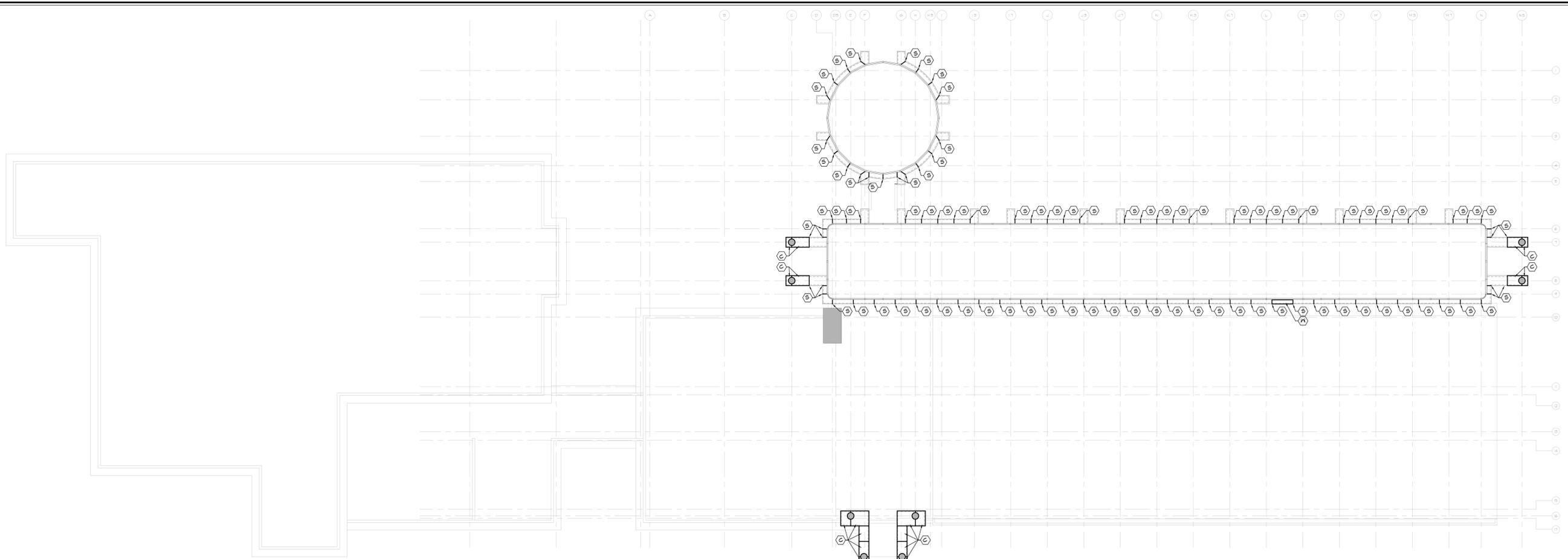


Project No. 12003B Drawing  
 Drawn By: BAL  
 Drawn By: NCK  
 Checked By: RLJ  
**A-1**  
 of EIGHT

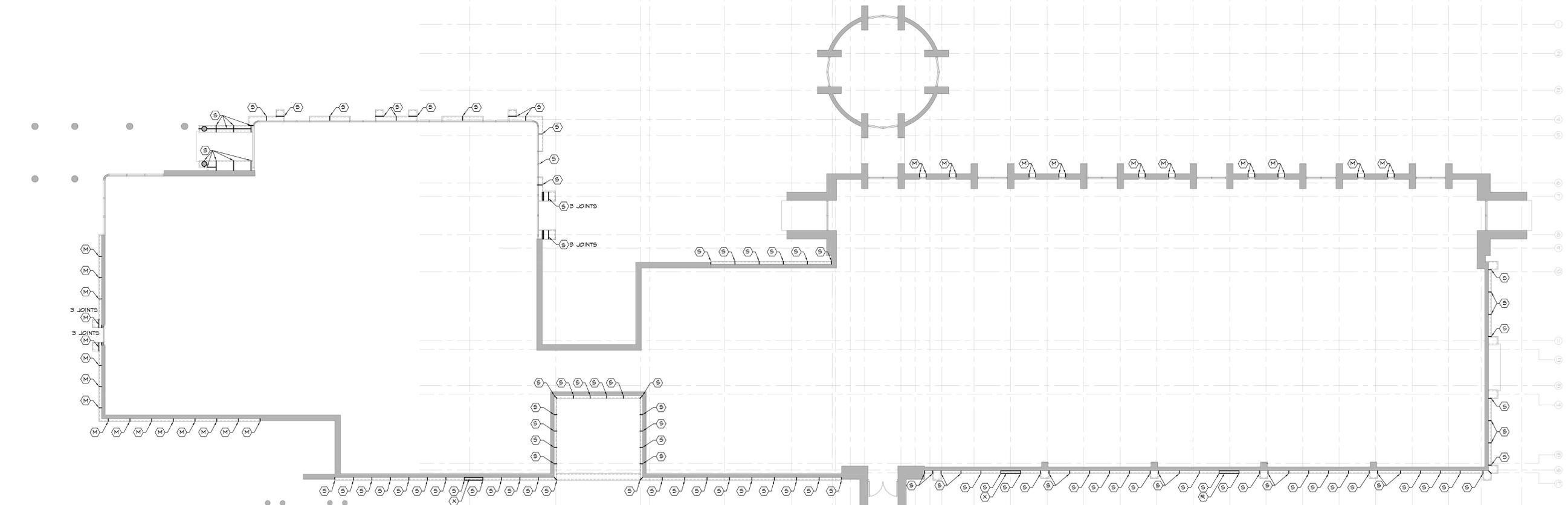
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- (E) REMOVE ALL EXISTING MORTAR FROM VERTICAL CONTROL JOINT AND INSTALL NEW BACKER ROD AND SEALANT (SEE DETAIL 4/A-1 AND SPECS)
- (R) REMOVE EXISTING CAST STONE SILL SECTION AND RESET WITH NEW FLASHING AND MORTAR (SEE DETAIL 3/A-1 AND SPECS)
- (J) REMOVE ALL EXISTING SEALANT AND BACKER ROD FROM VERTICAL CONTROL JOINT AND INSTALL NEW BACKER ROD AND SEALANT (SEE DETAIL 4/A-1 AND SPECS)
- (C) REMOVE EXISTING CAST STONE COPING SECTION AND REPLACE WITH NEW CAST STONE COPING SECTION TO MATCH PROFILE OF EXISTING - IF EXISTING COPING SECTION HAS A FLAT TOP REPLACE WITH NEW CAST STONE COPING WITH A RITCHED TOP AS SHOWN IN DETAIL - VERIFY SIZE IN FIELD (SEE DETAIL 1/A-1 AND SPECS). PROVIDE SEALANT AT ALL PENETRATIONS AND JOINTS (SEE DETAILS 3/A-1 & 8/A-1, AND SPECS).
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**NORTH EXISTING**  
**FIRST FLOOR PLAN - CLERESTORY**  
 SCALE: 1/8" = 1'-0"



**NORTH EXISTING**  
**FIRST FLOOR PLAN - UPPER**  
 SCALE: 1/8" = 1'-0"



SIGNATURE \_\_\_\_\_

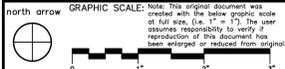
1	ISSUE FOR BIDDING	08/31/2012
No.	Issues & Revisions	Date
Project		

**MASONRY COPING/ SILL REPAIR AND REPLACEMENT**  
**VILLAGE OF ORLAND PARK**  
 14650, 14700, & 14750 RAVINIA AVE  
 ORLAND PARK, IL 60462

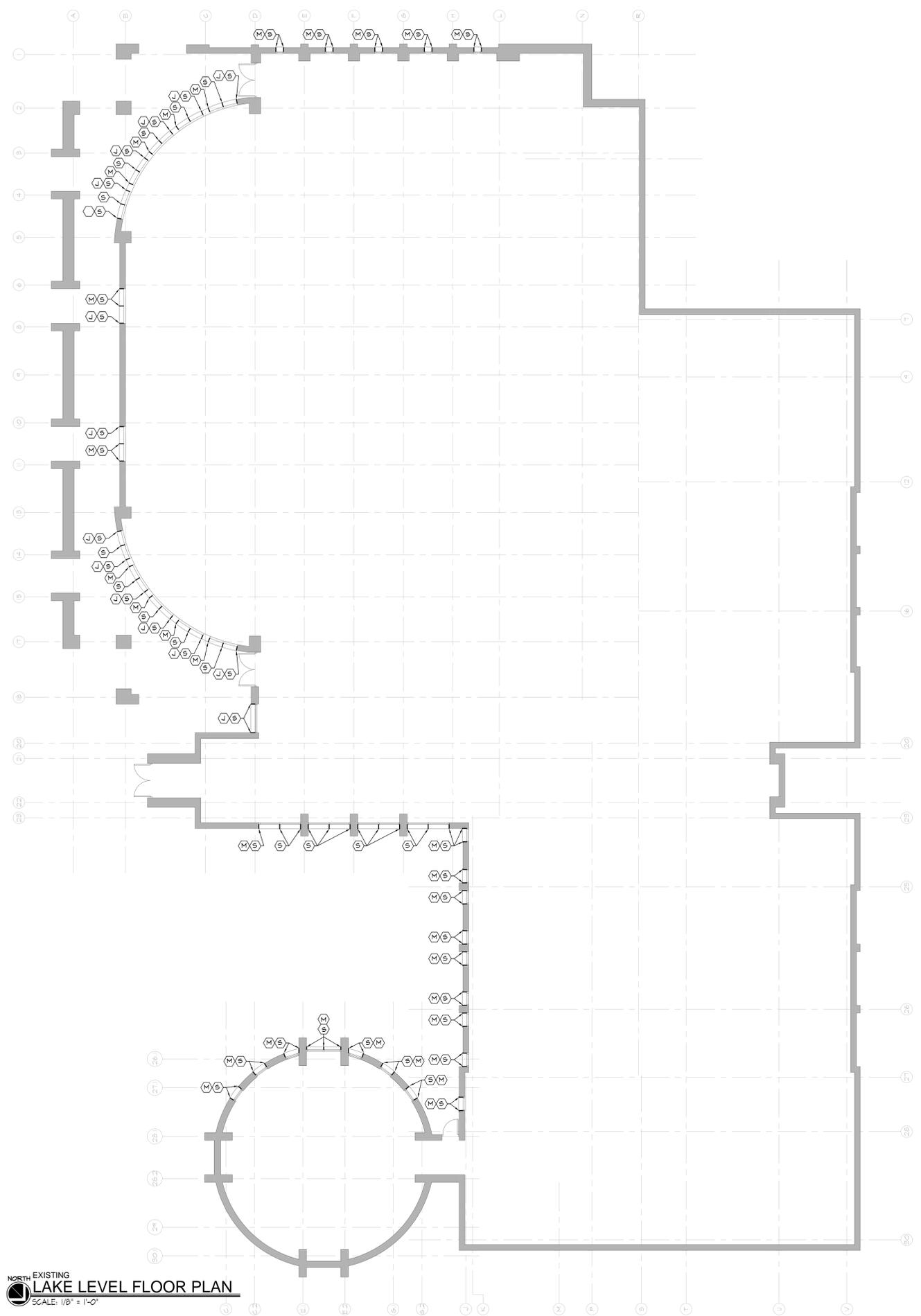
Drawing Title: 120038\_BASE.DWG  
**EXISTING CIVIC CENTER**  
**FIRST FLOOR**  
**PLAN-CLERESTORY & FIRST FLOOR PLAN- UPPER**

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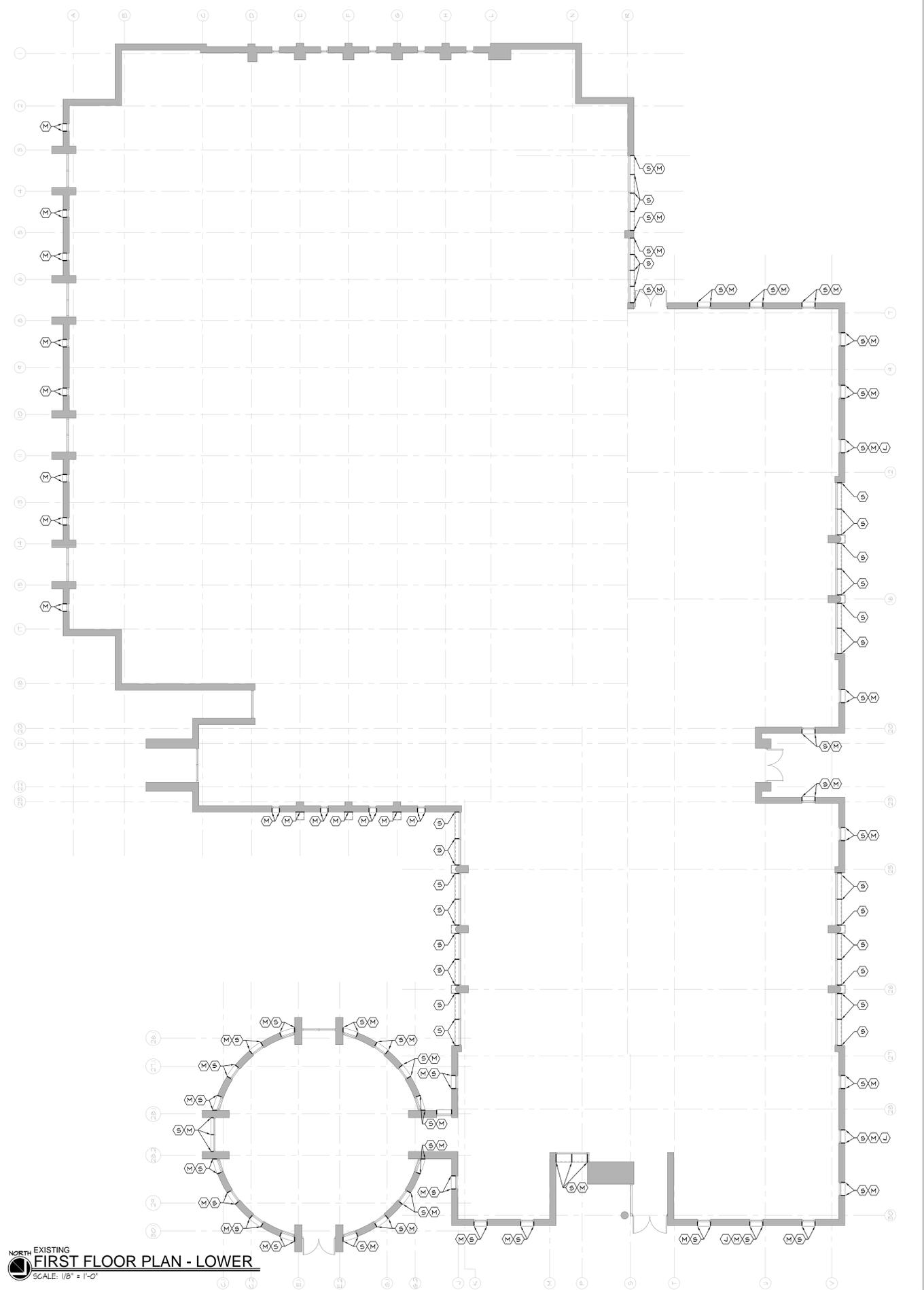
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Project No. 120038  
 Drawn By: BAL  
 Drawn By: NCK  
 Checked By: RLJ  
 Drawing: **A-2**  
 of Eight



**NORTH EXISTING  
LAKE LEVEL FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**NORTH EXISTING  
FIRST FLOOR PLAN - LOWER**  
SCALE: 1/8" = 1'-0"



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1	ISSUE FOR BIDDING	08/01/2012
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**MASONRY COPING/ SILL REPAIR AND REPLACEMENT**  
**VILLAGE OF ORLAND PARK**  
14650, 14700, & 14750 RAVINIA AVE  
ORLAND PARK, IL 60462

Drawing Title: 12003B\_BASE.DWG  
**EXISTING RECREATION CENTER LAKE LEVEL FLOOR PLAN & FIRST FLOOR PLAN-LOWER**

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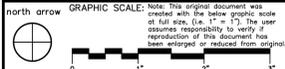


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1	ISSUE FOR BIDDING
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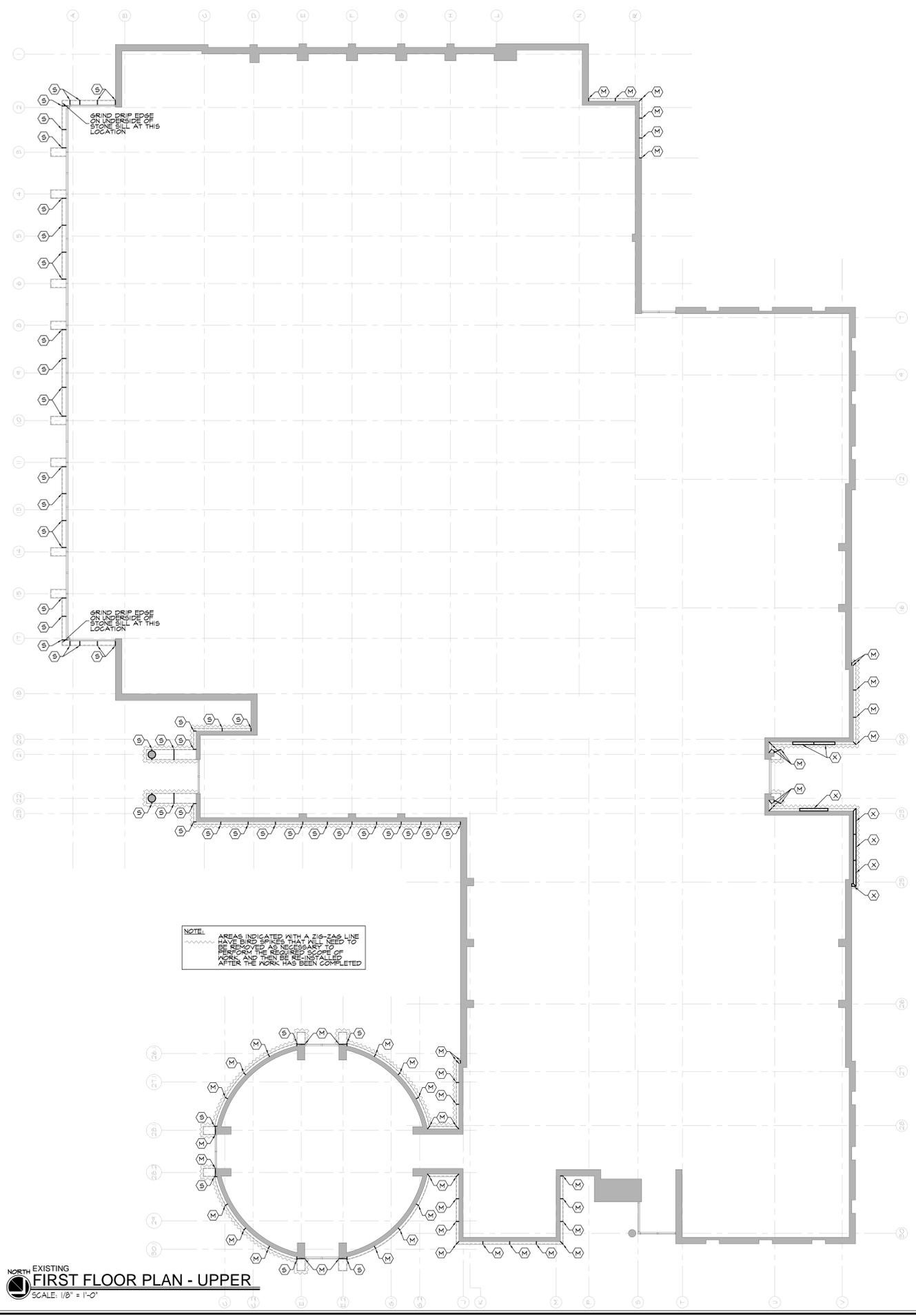
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**VILLAGE OF ORLAND PARK**  
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 ORLAND PARK, IL 60462

Drawing Title: 12003B\_BASE.DWG  
**EXISTING RECREATION CENTER FIRST FLOOR PLAN-UPPER & FIRST FLOOR PLAN- ROOF**  
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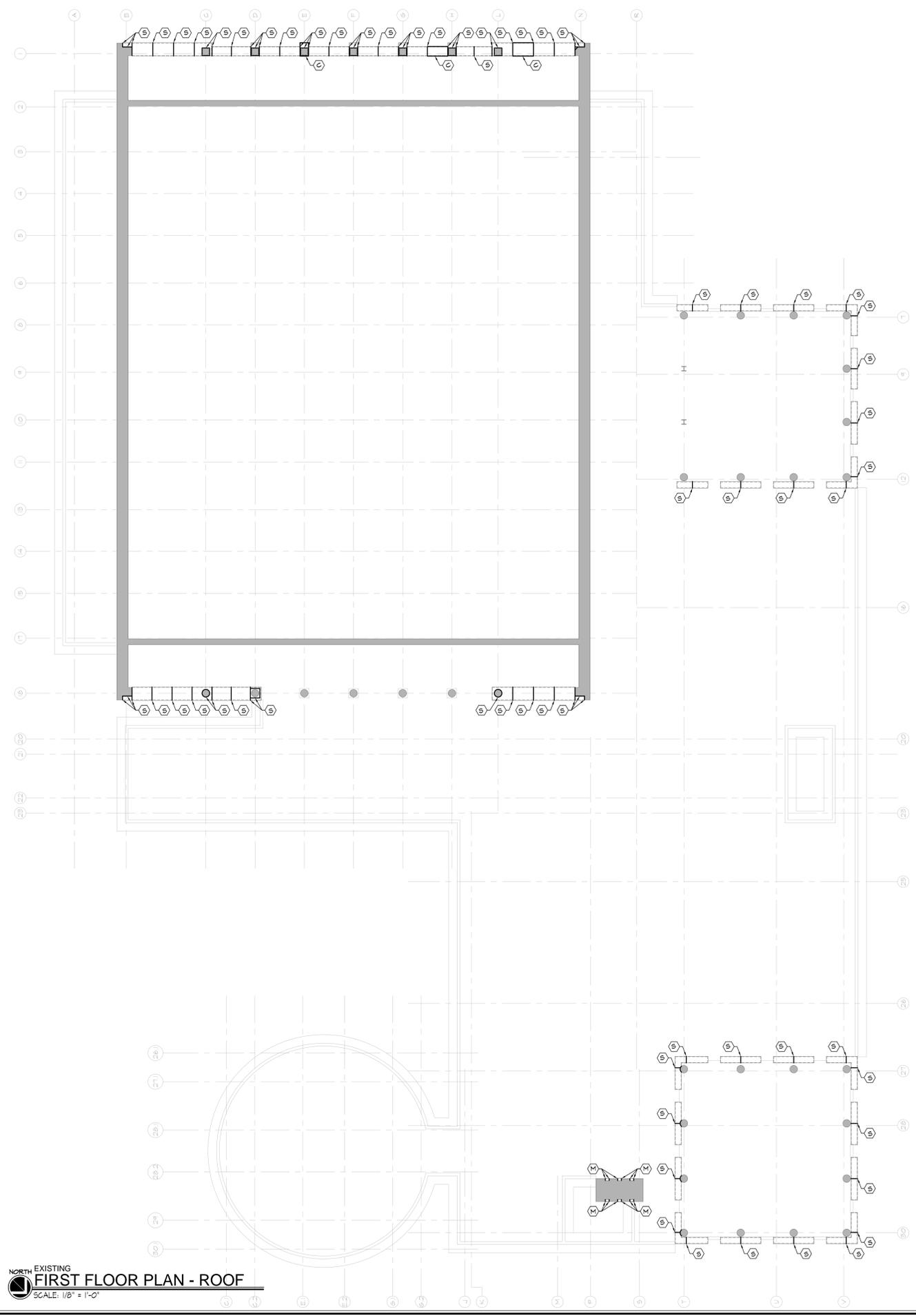
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Project No. 12003B	Drawn By BAL	Checked By RLJ
Drawn By NCK	Checked By RLJ	
Drawing		<b>A-4</b>
		of Eight



**NORTH EXISTING**  
**FIRST FLOOR PLAN - UPPER**  
 SCALE: 1/8" = 1'-0"



**NORTH EXISTING**  
**FIRST FLOOR PLAN - ROOF**  
 SCALE: 1/8" = 1'-0"



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- (E) REMOVE ALL EXISTING MORTAR FROM VERTICAL CONTROL JOINT AND INSTALL NEW BACKER ROD AND SEALANT (SEE DETAIL 4/A-1 AND SPECS).
- (R) REMOVE EXISTING CAST STONE SILL SECTION AND RESET WITH NEW FLASHING AND MORTAR (SEE DETAIL 3/A-1 AND SPECS).
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- (X) REMOVE EXISTING CAST STONE TOP OF WALL SILL SECTION AND REPLACE WITH NEW CAST STONE TOP OF WALL SILL SECTION - VERIFY SIZE IN FIELD (SEE DETAILS 5/A-1 & 5/A-1) AND SPECS).



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**MASONRY COPING/ SILL REPAIR AND REPLACEMENT**  
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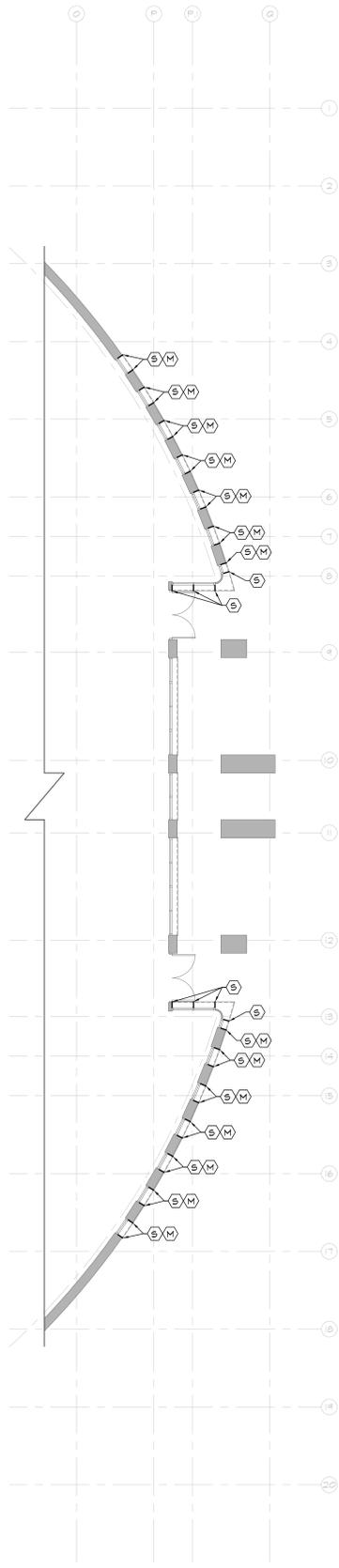
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**EXISTING VILLAGE HALL  
 LAKE LEVEL FLOOR PLAN &  
 FIRST FLOOR PLAN**

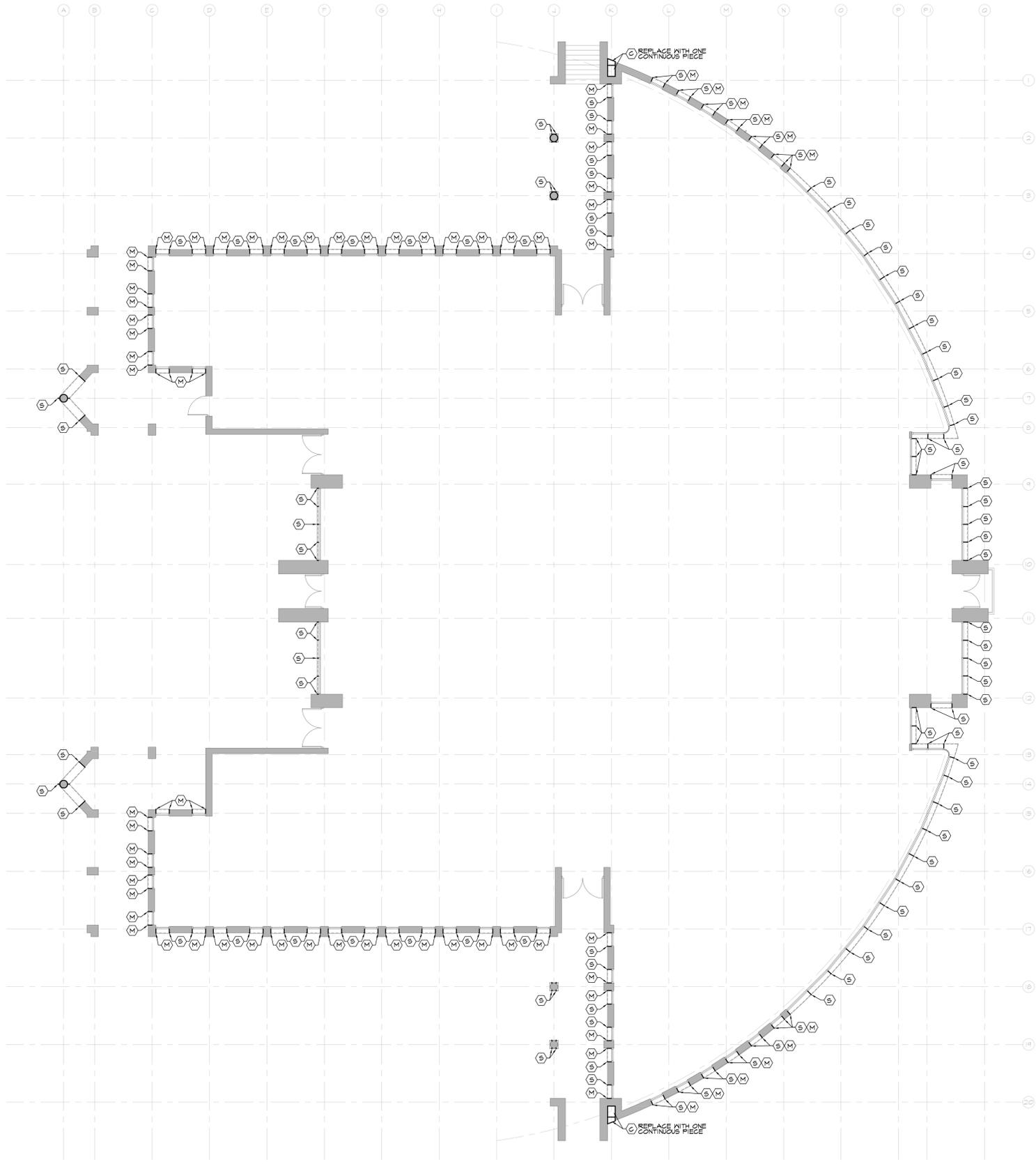
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 Drawn By BAL  
 Drawn By NCK  
 Checked By RLJ  
 of EIGHT



**PARTIAL EXISTING  
 LAKE LEVEL FLOOR PLAN**  
 SCALE: 1/8" = 1'-0"



**EXISTING  
 FIRST FLOOR PLAN**  
 SCALE: 1/8" = 1'-0"



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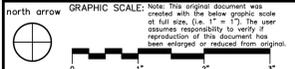


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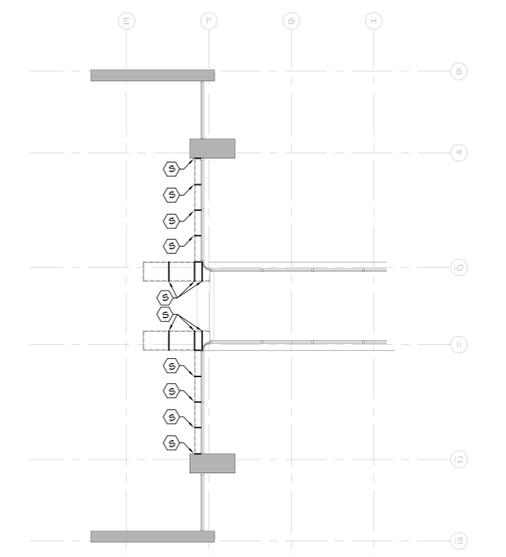
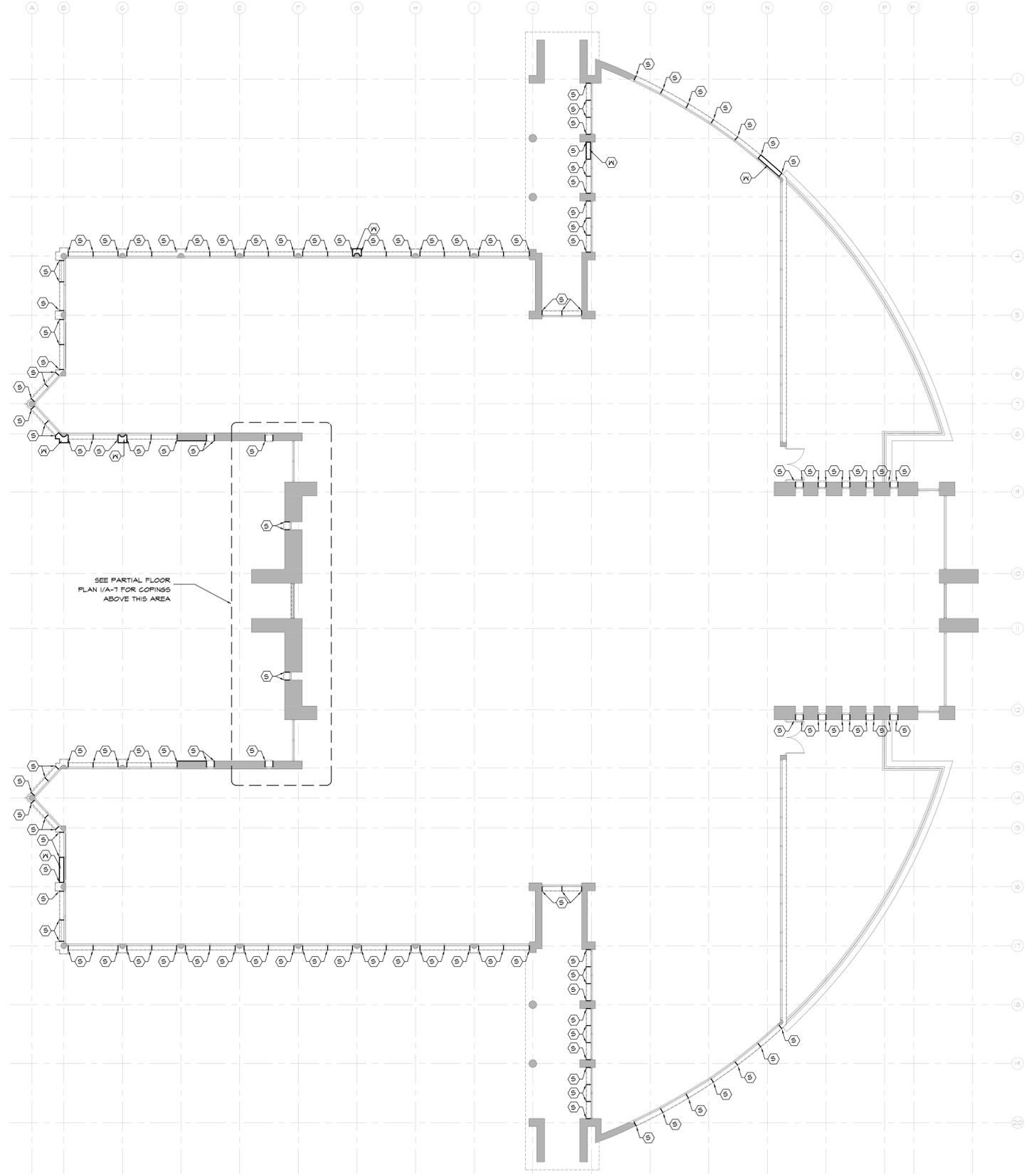
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 ORLAND PARK, IL 60462

Drawing Title 12003B\_BASE.DWG  
**EXISTING VILLAGE HALL  
 SECOND FLOOR PLAN-  
 LOWER & PARTIAL SECOND  
 FLOOR PLAN- UPPER**  
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Project No. 12003B	Drawn By BAL	Checked By RLJ	Drawn By NGK	Checked By RLJ
Drawing Title				<b>A-6</b>
of Eight				



EXISTING  
**PARTIAL SECOND FLOOR PLAN-UPPER**  
 SCALE: 1/8" = 1'-0"

NORTH EXISTING  
**SECOND FLOOR PLAN-LOWER**  
 SCALE: 1/8" = 1'-0"

**GENERAL NOTES AND SPECIFICATIONS**  
**BIDDING REQUIREMENTS** - See The Village of Orland Park's Bidding Requirements under separate cover.

**CONDITIONS OF THE CONTRACT** - See The Village of Orland Park's Conditions of the Contract under separate cover.

**1.0 SUMMARY OF THE WORK**  
**A.** The general scope of this work is for the Masonry Coping/Sill Repair and Replacement Project for the Village of Orland Park located at the existing Orland Park Village Hall at 14700 Ravinia Drive, the existing Orland Park Civic Center at 14750 Ravinia Drive and the existing Recreation Center at 14650 Ravinia Drive in Orland Park, Illinois. The work will include, but is not necessarily limited to, selective masonry coping sill repair and replacement, sealant joint replacement, and other related construction as shown on the Bid Documents for the existing 3 facilities for the Village of Orland Park.

**B.** Coordinate and coordinate all scheduling of work with the Building Manager/Owner in order to minimize conflicts and to facilitate full normal office operations. Schedule the work to accommodate these operations and provide all necessary enclosures, protections, temporary partitions and entrances, security, etc. to meet the Owner's requirements.

**1.1 GENERAL REQUIREMENTS**  
**A.** General contractor's duties:  
 1. Provide and pay for all labor, materials, tools, machinery, equipment, utilities, temporary facilities, permits, licenses, fees, bonds, insurance and services as necessary for proper execution and timely completion of the work.  
 2. Comply with all codes, ordinances, rules, regulations, codes and other legal requirements of public authorities, which bear on performance of work.  
 3. Project coordination:  
 a. Coordinate and supervise work of all employees and subcontractors to assure proper performance of work and compliance with schedules.  
 b. Resolve questions/conflicts which may arise. Consult with Architect to interpret the Contract Documents.  
 c. Process Shop Drawings. Review for compliance with Contract Documents prior to submittal to the Architect.  
 d. Schedule and administer regular Project meetings with the Owner, Architect and any necessary subcontractors/suppliers on a regular basis, but at intervals not exceeding 14 days. The General Contractor shall be responsible for maintaining minutes of these meetings and distribution afterwards of minutes to all major parties involved.  
 e. Schedule the work so that any work that will disrupt existing tenants be performed after building hours. This work shall be scheduled and arranged with the Property Manager.  
 f. The General Contractor shall update and distribute the Construction Schedule at least prior to each construction coordination meeting, but not to exceed intervals of 14 days.  
 g. Maintain existing & new construction in a structurally safe & stable condition at all times.  
 h. Field check & verify all dimensions as work progresses reporting any discrepancies to the Architect immediately.  
 i. Provide construction aids, temporary enclosures and barriers as required to facilitate execution of work and to provide protection of work as well as all construction personnel, possessory and existing facilities and landscaping. Contractor is responsible for the protection of all existing property, including existing utilities, finishes and existing routes used by trades. Repair or replacement of any property damaged during construction is the sole responsibility of the Contractor.  
 j. Provide & maintain all access roads and parking areas required by construction. Control & supervise all construction traffic. Maintain roads and parking areas in a clean condition. Maintain access for emergency vehicles at all times. Keep fire hydrants and water control valves free from obstruction.  
 k. Provide, install & maintain effective dust control, water control, pollution control, erosion control, fire prevention and project security programs throughout the construction period. Provide protection from welding. Protect against the weather, fire, theft, vandalism & injury.  
 l. All materials shall be new and of the highest quality.  
 m. All work by the General Contractor, sub-contractors and suppliers shall be performed by skilled tradespersons.  
 n. Incorporate all materials and equipment into the work in accord with all applicable standards, specifications, manufacturer's instructions and the Contract Documents. Separate all dissimilar metals.  
 o. Maintain all premises free from debris. The Owner's dumpsters will not be available for use during construction by the Contractors. Assume responsibility for final cleaning of all interior and exterior finished surfaces and fixtures. This cleaning shall include all final cleaning of all interior finished surfaces at the completion of the construction project, prior to beneficial occupancy.  
 p. Complete information on the operation and maintenance of all products and equipment.  
 q. Coordinate all cutting and patching. Install all bracing, reinforcing, etc., necessary to maintain building structural integrity. Repair and restore all areas and finishes to original condition.  
 r. Maintain project record documents including Contract Drawings, reviewed and stamped Shop Drawings, Change Orders, Field Change Authorizations, other modifications to the Contract and field test records. Provide one (1) complete set of binder printed and electronic copies at the end of the Project which have been kept by the General Contractors field superintendent and which have been continuously updated during the course of construction indicating minor changes in the field. The General Contractors field superintendent using a red ink pen. The changes shall include, but not necessarily limited to, revised partition locations, dimensions, equipment, electrical and mechanical devices, light fixture locations, etc.  
 s. General Contractor to submit standard AIA Certificates of Payment and an Itemized Sworn Statement not more frequently than once monthly with waivers of lien from all Contractors and major suppliers.  
 t. All changes must be authorized by the Architect on standard Change Order forms prior to commencement of the affected work.  
 u. Completion of the work.  
 v. When the General Contractor considers that the work or portions thereof which the Owner agrees to accept separately is substantially complete, the Contractor shall prepare a punchlist with the assistance of the Architect and Owner and distribute to all subcontractors. When these punchlist items are determined by the Architect to be substantially complete, he will issue a certificate of Substantial Completion. Upon substantial completion of the work or designated portion thereof, and upon application by the contractor, the Owner shall make payment, reflecting adjustment in retainage, if any, for such work or portions thereof as provided in the Contract Documents.  
 w. Submit all warranties, operating instructions, logs and final waivers at final payout.

**1.2 GENERAL NOTES**  
**A.** These are suggested minimum specifications (subcontractors shall verify with the General Contractor if these specifications are exceeded or changed).  
**B.** All work shall be performed in accordance with all applicable local, state and national codes and ordinances and all authorities having jurisdiction.  
**C.** All dimensions on the floor plans are nominal dimensions and are from the finished faces of masonry and concrete materials.  
**D.** The General Contractor and all subcontractors shall verify all dimensions and conditions before proceeding with work and notify superintendent at once of any discrepancies prior to commencing work.  
**E.** On-site verification of all dimensions and conditions shall be the responsibility of each subcontractor.  
**F.** The Architect shall not have control or charge of, and shall not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the work, or for the acts or omissions of the Contractor, Sub-contractors, or any other persons performing any of the work or for the failure of any of them to carry out the work in accordance with the intent of the contract documents. The Architect shall not be responsible for Structural Work and Scaffolding Acts.  
**G.** Contractor shall provide adequate bracing and/or shoring to insure structural stability of building during construction.  
**H.** Contractor shall provide adequate bracing and/or shoring to insure structural stability of building during construction.

**1.3 GENERAL STRUCTURAL NOTES**  
**A.** Allowable unit stresses and loading are in accordance with the applicable local building code(s)/current editions).  
**B.** Requirements and design data shall be followed entirely regardless whether they are given by both the specifications and drawings or either one only.  
**C.** Shop drawings prepared by the contractors, suppliers, etc. shall be reviewed by the Architect and/or the Structural Engineer only for conformance with design concept. One reproducible set of four blue-line prints of shop drawings shall be submitted for review. No work shall be started without such review. Before submitted to the architect, shop drawings shall be reviewed by the General Contractor and shall be stamped by him.  
**D.** Contractors to assume full responsibility supervision or periodic observation of construction for:  
 1. Compliance with the contract documents.  
 2. All dimensions to be confirmed and correlated on the job site and between individual drawings or sets of drawings.  
 3. For fabrication processes and construction techniques, including excavation, shoring, scaffolding, bracing, formwork, etc.)  
 4. For operation of the various trades.  
 5. For safe conditions on the job site.  
**E.** Unless otherwise noted all details, sections and notes on the drawings are intended to be typical for similar situations elsewhere.  
**F.** The information contained on the structural drawings is in itself incomplete and void unless used in conjunction with all the contract documents and with all the specifications, trade practices, or applicable standards, codes, etc. incorporated herein by reference which the contractor certifies knowledge of by signing the contract.  
**G.** The General Contractor shall be responsible for coordinating the structural drawings with architectural, mechanical and electrical drawings for location and placement of all inserts, hangers, sleeves, ductwork, openings, etc. that are required by the work and/or equipment, etc.

**1.4 MATERIALS & WORKMANSHIP**  
**A.** All work shall be performed in a neat workmanlike manner.  
**B.** Each subcontractor shall include labor, materials, tools, equipment, etc., for the complete construction of work indicated and specified by both the drawings and specifications, unless other written arrangements are made between the Contractor and the Owner.  
**C.** Materials as specified on drawings shall be used. Substitutions of materials will not be allowed without the written consent of the Owner and equivalent above listed materials.  
**D.** Each Sub-contractor shall remove and replace at his own cost, any defects or other faults in his workmanship and/or material.  
**E.** Each subcontractor is to clean up debris inside and outside the building site which has been caused by his work and place in a dumpster provided by the General Contractor.  
**F.** All material finishes and styles including but not limited to sealants, face brick, concrete copings, etc., not necessarily specified on the drawings shall be submitted to and approved by the Architect.

**DIVISION 2 - EXCAVATION, DRAINAGE & SITE WORK (NOT USED)**

**DIVISION 3 - CONCRETE (NOT USED)**

**DIVISION 4 - MORTAR**  
**4.1 CAST STONE MORTAR**  
**A.** Concrete masonry construction shall conform to the American Standard Building Code Requirements for Masonry issued by the U.S. Department of Commerce, latest edition, and to Building Code Requirements for Masonry Structures, issued by the American Concrete Institute/American Society of Civil Engineers/The Masonry Society (ACI 530-14S/ASCE 6-15/TMS 602-15).  
**B.** Unless specifically noted, composite masonry walls are designed as non-composite. Mortar joints shall remain free of mortar droppings to assure proper drainage. See Architectural drawings for flashing, neopholes, etc. Install cavity drainage material (Mortar Nest Block or equivalent) above flashing.  
**C.** Given design data assumes the existence of adequate field-testing and supervision of construction, fulfilling the "with inspection" criteria of the Code.  
**D.** Masonry materials shall conform to the latest editions of the Specifications:  
 1. Mortar - ASTM C270 Portland Cement-Lime (PCL) Type "N", natural (Mortar Proportions by volume); 1 part Portland Cement, 1 part lime and 6 parts sand.  
 2. Mortar color pigments shall be gray in color with concave tooled joints.  
 3. Mortar color pigments shall be natural/synthetic metallic oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with record of satisfactory performance in masonry mortars. Carbon black is not an acceptable pigment. Pigments are not to exceed 10% of the cement weight. Color mortar shall be pre-banded in a one-bag mix. Do not use pre-banded mortar mix or approved equivalent. Retempering of colored mortar shall not be permitted.  
 4. Acceptable manufacturers: Lafarge North America, Inc.  
 5. Portland Cement, Type 1 - ASTM C150  
 6. Hydrated lime, Type "S" - ASTM C207  
 7. Masonry Cement shall not be allowed.  
 8. Mortar Cement: Complying with the requirements of the mortar types specified and UBC Standard 21-14 for Mortar Cement (ASTM C144), and Coarse Aggregate (ASTM C404).  
 9. Water shall be clean and free of deleterious amounts of acids, alkalis, salts, or organic materials.  
 a. Metal wires used as ties and anchors: ASTM A62, galvanized in accordance with ASTM A193, Class B2 (1/2 oz per sq. ft.). Provide certification of galvanizing.  
 b. Reinforcement shall be ASTM A615, Grade 60.  
 c. Promoted control joints/filler strips: polyvinyl chloride complying with ASTM D2237 or styrene-butadiene rubber compound complying with ASTM D2000.  
**E.** Prior to delivery of masonry units to the job site, furnish the Architect with affidavits from an approved testing laboratory certifying that all units conform to their respective ASTM requirements.  
**F.** Mortar shall be tested by an approved testing laboratory in accordance with ASTM C270. Two sets of three mortar cubes shall be taken at random for each day of masonry work. Test one cube of each set at 7 and 28 days. The third cube to be tested at 56 days only if required by the Owner.  
**G.** Air entrainment, calcium chloride and/or admixtures containing same shall not be included in mortar of grout.  
**H.** No exterior masonry shall be laid when outside air temperature is less than 40 degrees F, unless adequate protection in accordance with Section 1.6.C, "Cold Weather Construction," of ACI 530-14S/ASCE 6-15/TMS 602-15. Specifications for Masonry Structures, is provided. For hot weather construction requirements refer to Section 1.6.D.  
**I.** Mortar used for reinforced masonry construction shall comply with the requirements of ASTM specifications C270. Standard Specifications for mortar for reinforced masonry, except that mortar shall also comply with the requirements of ASTM specifications C270.  
 Minimum compressive strength for mortar at 28 days shall be as follows:  
 TYPE N, 750 psi  
 TYPE S, 1850 psi  
**K.** Use of admixtures in mortar is not permitted unless accepted by structural engineer.  
**L.** Lap splices for reinforcement used in reinforced masonry construction shall be 50 bar diameters. Lap horizontal joint reinforcement in masonry shall be 30 bar diameters.  
**M.** Exterior Masonry/Pre-cast Concrete Selections:  
 1. Architectural (non model) Pre-cast Copings: In profiles indicated on drawings and as manufactured by Accusoft Products, LLC in color selected by owner.  
 2. Pre-cast concrete copings for Architect and Owner's review and approval.  
**O.** Use preformed stainless steel drip edge corners at all corner conditions. Flashing shall not protrude over the stainless steel metal drip edge, but rather shall be fully bonded to the top surface of the drip edge with mastic or flashing manufacturers approved sealant. The stainless steel metal drip edge shall be continuously sealed at the underside of the drip with the edge of the existing wall below. Keep holes shall be placed immediately above all flashing and shall be space no more than 24 inches on center. Provide sealed end-dams on all concealed flashing, lap joints a minimum of 6 inches and seal watertight. Turn flashing up vertical surface of walls a minimum height of 16 inches and seal against new waterproofing membrane with an approved termination bar and sealant.  
**P.** Execution:  
 1. Lay masonry units using the best masonry practices. Install only quality masonry units, reject all defective units.  
 2. Align masonry units level, plumb and true with uniform, concave tooled joints on the finished side of wall.  
 3. Joints: All exterior masonry joints shall be tooled concave.  
 4. Make all unit cuts, including those for bonding holes, boxes, etc., using motor-driven masonry saws, using either an abrasive or diamond blade. Cut neatly and locate for best appearance.  
 5. Fill all masonry head and bed joints as solidly as possible.  
 6. Install flashing at all locations shown on the drawings and where required to positively drain water to the outside of the masonry wall. Provide weep holes in the locations and at the spacing shown on the drawings.  
 7. Keep walls clean daily during installation using brushes. Do not allow excess mortar lumps or smears to harden on finish surfaces. Remove all grout.  
 8. Cover all walls each day after installation to keep open walls protected and dry. Handle masonry units carefully to avoid breakage and damage to finish surfaces.  
 9. Do not use acid or acid base solutions to clean masonry units. A detergent masonry cleaner shall be used following the manufacturer's instructions and the surface shall be thoroughly rinsed with clean water. Acceptable products: Sure Kleen No. 600 Detergent, ProSoco, Inc.

**DIVISION 5 - METALS (NOT USED)**

**DIVISION 6 - WOOD & PLASTICS (NOT USED)**

**DIVISION 7 - THERMAL & MOISTURE CONTROL**  
**7.1 JOINT SEALERS**  
**7.1.1 JOINT SEALERS**  
**A. GENERAL**  
 1. Include all labor, materials, equipment and related services to furnish and install the joint sealants indicated on the drawings and specified herein.  
 2. Perform work in accordance with the sealant manufacturer's requirements for preparation of surfaces and material installation instruction.  
**B. PRECONSTRUCTION COMPATIBILITY AND ADHESION TESTING:** Submit to joint-sealant manufacturer, for testing indicated below, samples of materials that will contact or affect joint sealants.  
 a. Use ASTM C 1021 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.  
 b. Submit not fewer than eight pieces of each kind of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.  
 c. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.  
 d. For materials field tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.

a. Testing will not be required if joint-sealant manufacturer submit joint preparation data that are based on previous testing not older than 24 months, of sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.  
 2. Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:  
 a. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.  
 b. Conduct field tests for each kind of sealant and joint substrate indicated.  
 c. Notify Architect seven days in advance of dates and times when test joints will be erected.  
 d. Each subcontractor is to take place with joint-sealant manufacturer's technical representative present.  
 1) Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Test in Appendix XI in ASTM C 1193 or Method A, Fall Procedure, in ASTM C 1521. For joints with dissimilar substrates, verify adhesion to each substrate separately, extend out along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.  
 2) Report whether sealant failed to adhere to joint substrates or tore or delaminated. Each subcontractor is to clean up debris behind sealant product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.  
 3) Sealants not evidencing adhesive failure from testing, in absence of other indications of non-compliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.  
**C. SUBMITTALS**  
 1. Product Data: For each joint-sealant product indicated.  
 2. Samples: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.  
 3. Joint-Sealant Schedule: Include the following information:  
 a. Joint-sealant application, joint location, and designation.  
 b. Joint-sealant manufacturer and product name.  
 c. Joint-sealant formulation.  
 d. Joint-sealant color.  
 4. Qualification Data: For qualified installer.  
 5. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.  
 6. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements indicated on drawings.  
 7. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:  
 a. Materials used in each kind of joint-sealant backings have been tested for compatibility and adhesion to joint substrates.  
 b. Interpretation of test results and written recommendations for primers and substrate preparation methods to be used.  
 8. Preconstruction Field-Adhesion Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates as tested in "Preconstruction Testing" Article.  
 9. Field-Adhesion Test Reports: For each sealant application tested.  
**D. QUALITY ASSURANCE**  
 1. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for the Project.  
 2. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.  
 3. Product Testing: Test joint sealants using a qualified testing agency.  
 a. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.  
**E. PROJECT CONDITIONS**  
 1. Do not proceed with installation of joint sealants under the following conditions:  
 a. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F.  
 b. When materials are wet.  
 c. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.  
 d. Where conditions containing interfering with adhesion have not yet been removed from joint substrates.  
 e. Whether sealants filled joint cavities and are free of voids.  
 f. Whether sealant dimensions and configurations comply with specified requirements.  
 g. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively, include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.  
 h. Record test results in a field-adhesion-test log, include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimension.  
 i. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.  
 j. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or non-compliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.  
 k. Clean off excess sealant or sealant smears adjacent to joints as the work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.  
**6. PROTECTION**  
 1. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

4) Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:  
 a) Metal.  
 b) Glass.  
 c) Porcelain enamel.  
 d) Glazed surfaces of ceramic tile.  
 e. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.  
 f. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.  
**3. INSTALLATION OF JOINT SEALANTS**  
**a. General:** Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.  
**b. Sealant Installation Standard:** Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.  
**c. Install sealant backings** of kind indicated to support sealants during application and at position required to produce cross-section and shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.  
 1) Do not leave gaps between sealant backings.  
 2) Do not stretch, twist, puncture, or tear sealant backings.  
 3) Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.  
 4. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.  
 5. Sealant application shall be done in a continuous, uniform, back-filling and at the same time backings are installed.  
 1) Place sealants so they directly contact and fully wet joint substrates.  
 2) Completely fill recesses in each joint configuration.  
 3) Produce uniform, cross-sectional shapes and depths relative to joint width that allow optimum sealant movement capability.  
 i. Tooling of Nonseal Sealants: Immediately after sealant application and before skimming or curing begins, tool sealants according to manufacturer's written instructions to produce uniform beads of configuration indicated, to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.  
 2) Use tooling agents that are approved in writing by joint manufacturer and that do not discolor sealants or adjacent surfaces.  
 3) Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.  
 4) Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.  
 5) Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.  
 6) Use masking tape to protect surfaces adjacent to recessed tooled joints.  
**4. FIELD QUALITY CONTROL**  
**a. Field-Adhesion Testing:** Field test joint-sealant adhesion to joint substrates as follows:  
 1) Extent of Testing: Test completed and cured sealant joints as follows:  
 a) Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.  
 b) Perform 1 test for each 1000 feet of joint length thereafter or 1 test per each floor per elevation.  
 2) Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Test in Appendix XI in ASTM C 1193 or Method A, Fall Procedure, in ASTM C 1521.  
 3) For joints with dissimilar substrates, verify adhesion to each substrate separately, extend out along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.  
 4) Inspect tested joints and report on the following:  
 a) Whether sealants filled joint cavities and are free of voids.  
 b) Whether sealant dimensions and configurations comply with specified requirements.  
 c) Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively, include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.  
 d. Record test results in a field-adhesion-test log, include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimension.  
 e. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.  
 f. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or non-compliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.  
 g. Clean off excess sealant or sealant smears adjacent to joints as the work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.  
**6. PROTECTION**  
 1. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

**DIVISION 8 - DOORS, WINDOWS, HARDWARE AND GLAZING (NOT USED)**  
**DIVISION 9 - FINISHES (NOT USED)**  
**DIVISION 10 - HEATINGS, VENTILATION & AIR CONDITIONING (NOT USED)**  
**DIVISION 11 - PLUMBING (NOT USED)**  
**DIVISION 12 - ELECTRICAL (NOT USED)**  
**END OF SPECIFICATIONS**

**1. EXAMINATION**  
 a. Examine joints indicated to receive joint sealants, with installer present, for compliance with requirements for joint configuration, installation instructions, and other conditions affecting joint sealant performance.  
 b. Proceed with installation only after unsatisfactory conditions have been corrected.  
**2. PREPARATION**  
 a. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:  
 1) Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, dirt, or other permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; old joint sealants, all grease, water-repellent water-repellent, water-repellent dirt, and frost.  
 2) Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Foreign joint substrates include the following:  
 a) Concrete.  
 b) Masonry.  
 3) Remove laitance and form-release agents from concrete.

**3. APPLICATION**  
 a. General: Provide joint sealant backings of material that are nonstaining, are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.  
 b. Cylindrical Sealant Backings (Backer Rod): ASTM C 1530, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.  
 c. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.  
**6. MISCELLANEOUS MATERIALS**  
**a. Primer:** Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.  
**b. Cleaners for Nonporous Surfaces:** Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.  
**c. Masking Tape:** Masking tape recommended by sealant manufacturer for use with joint sealants and surfaces adjacent to joints.  
**6. EXECUTION**  
**1. EXAMINATION**  
 a. Examine joints indicated to receive joint sealants, with installer present, for compliance with requirements for joint configuration, installation instructions, and other conditions affecting joint sealant performance.  
 b. Proceed with installation only after unsatisfactory conditions have been corrected.  
**2. PREPARATION**  
 a. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:  
 1) Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, dirt, or other permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; old joint sealants, all grease, water-repellent water-repellent, water-repellent dirt, and frost.  
 2) Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Foreign joint substrates include the following:  
 a) Concrete.  
 b) Masonry.  
 3) Remove laitance and form-release agents from concrete.

**3. APPLICATION**  
**a. General:** Provide joint sealant backings of material that are nonstaining, are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.  
**b. Cylindrical Sealant Backings (Backer Rod):** ASTM C 1530, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.  
**c. Bond-Breaker Tape:** Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.  
**6. MISCELLANEOUS MATERIALS**  
**a. Primer:** Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.  
**b. Cleaners for Nonporous Surfaces:** Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.  
**c. Masking Tape:** Masking tape recommended by sealant manufacturer for use with joint sealants and surfaces adjacent to joints.  
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