





**SECTION 04 2200 CONCRETE MASONRY UNITS PART 1 GENERAL**

**1.01 SUBMITTALS**

- A. SUBMIT PRODUCT DATA FOR MORTAR, WALL TIES, ANCHORS, AND OTHER ACCESSORIES. SUBMIT SAMPLES OF DECORATIVE BLOCK, FACE BRICK UNITS, AND MORTAR TO ILLUSTRATE COLOR, TEXTURE, AND EXTREMES OF COLOR RANGE.
- B. PROVIDE ALL MASONRY UNITS IN SIZES AND SHAPES AS SHOWN ON THE DRAWINGS.
- C. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

**2.01 MATERIALS**

- A. HOLLOW LOAD BEARING CONCRETE MASONRY UNITS: ASTM C90, TYPE II-NONMOISTURE CONTROLLED; STANDARD WEIGHT; DECORATIVE DESIGN AND COLOR AS SELECTED.
- B. PORTLAND CEMENT: ASTM C150, TYPE I, FINE AND COURSE AGGREGATE: ASTM C044, CLEAN AND PORTABLE WATER, 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS; 8-10 INCH SLUMP; PREMIXED TYPE, ASTM C64, TEST EACH LOAD IN ACCORDANCE WITH ASTM C1019.
- C. MORTAR: PREMIX TYPE, ASTM C307, TYPE I OR TYPE 3 CEMENT, 1,800 PSI COMPRESSIVE STRENGTH; MOISTURE CONTROL; HYDROSHIELD OR EQUIVALENT; ONE QUART PER BAG OF CEMENT; BONDING AGENT; LATEX TYPE, WATER, CLEAN AND PORTABLE. INSTALLATION: MJSJC SPEC. MANUFACTURED BY: SPECIFIED MIX, QUIKCRETE CO. OR EQUIVALENT. MORTAR COLOR: MINERAL OXIDE PIGMENT COLOR AS SELECTED OR MANUFACTURED BY SOLOMON, DAVIS, OR EQUIVALENT. DO NOT USE ANTI-FREEZE ADJUSTIVES.

**2.02 ACCESSORIES**

- A. SINGLE WYTHE JOINT REINFORCEMENT: LADDER TYPE; COLD DRAWN STEEL WIRE CONFORMING TO ASTM A501; HOT DIP GALVANIZED AFTER FABRICATION; 3/16 INCH RODS WITH CROSS TIES.
- B. REINFORCING STEEL: ASTM A615/A615M, 60 KSI YIELD GRADE, DEFORMED BILLET BARS, UNCOATED FINISH. MUST BEAR GRADE MARKINGS.
- C. WALL TIES: CORRUGATED FORMED SHEET METAL, 22 GAUGE THICK, OR W1.7 TIES, HOT DIP GALVANIZED TO ASTM A153/A153M B2 FINISH. LENGTH AS NECESSARY TO ENGAGE HORIZONTAL JOINT REINFORCEMENT. PLACE WALL TIES AT NO GREATER THAN 16 INCHES ON CENTER HORIZONTALLY AND VERTICALLY.
- D. FLASHING: COMPOSITE SHEET OF 32 MIL RUBBERIZED ASPHALT COMPOUND INTEGRALLY BONDED TO CROSS LAMINATED 8 MIL POLYETHYLENE, 40 MIL TOTAL THICKNESS; PERM-BARRIER MANUFACTURED BY W.R. GRABBE & CO.
- E. MOISTURE BARRIER: BUILDING WRAP MANUFACTURED BY TYVEK.
- F. WEEPS: MOLDED POLYVINYL CHLORIDE GRILLES; INSECT PROOF; #0A/1006 MANUFACTURED BY DUR-O-COR.
- G. JOINT FILLER: CLOGGED CELL POLYETHYLENE FOAM; OVERSIZED 50% TO JOINT WIDTH. SEAL EXPANSION; MAXIMUM LENGTHS POSSIBLE.
- H. CLEANING SOLUTION: NON-ACIDIC; NOT HARMFUL TO MASONRY WORK OR ADJACENT MATERIALS; AS RECOMMENDED BY THE MASONRY UNIT MANUFACTURER.
- I. PREFORMED CONTROL JOINTS: POLYVINYL CHLORIDE MATERIAL. PROVIDE WITH CORNER AND TIE ACCESSORIES; CEMENT FUSED JOINTS.

**3.01 PLACING AND BONDING**

- A. LAY MASONRY IN RUNNING BOND, UNLESS OTHERWISE INDICATED, WITH FULL HEAD AND BED JOINTS. LAY TO PROVIDE NOT LESS THAN 1/3 OF A UNIT AT CORNERS. ALL JOINTS SHALL BE UNIFORM WIDTH AND THICKNESS. 100% EXPOSED JOINTS TO UNIFORM FACE. INTERLOCK INTERSECTIONS AND EXTERNAL CORNERS. ISOLATE MASONRY PARTITIONS FROM VERTICAL STRUCTURAL MEMBERS WITH A CONTROL JOINT. ISOLATE TOP JOINT OF MASONRY FROM HORIZONTAL FRAMING MEMBERS, SLABS OR DECKS WITH COMPRESSIBLE JOINT FILLER. INSTALL WEEP HOLES IN WEERS AT 32 INCH ON CENTER ABOVE FLASHING, SHELF ANGLES, AND AT BOTTOM OF WALLS. INSTALL HORIZONTAL JOINT REINFORCEMENT 16 INCHES ON CENTER. PLACE JOINT REINFORCEMENT CONTINUOUS IN FIRST AND SECOND JOINT BELOW TOP OF WALLS. POUR LOOSE INSULATION IN BLOCK CORES AS SHOWN ON THE DRAWINGS.
- B. INSTALL WEEP HOLES AT 16 INCHES OC VERTICALLY AND 16 INCHES OC HORIZONTALLY. PLACE AT EVERY OTHER COURSE AROUND PERIMETER OF OPENINGS, WITHIN 12 INCHES OF OPENING. BEND END OF EACH TIE AROUND HORIZONTAL REINFORCEMENT.
- C. MAX. VARIATION FROM PLUMB AND STRAIGHT: 1/4 INCH IN 10 FT, 1/4 INCH IN 10 FT, 1/2 INCH IN 30 FT.
- D. CLEAN ALL WORK THOROUGHLY USING NON-METALLIC BRUSHES AND CLEANING SOLUTION AND RINSE WITH WATER. PROTECT ADJACENT FINISHES. ALL FINISHED SURFACES TO BE UNIMPAIRED.

**3.02 TOLERANCES**

- A. MAX. VARIATION FROM PLUMB AND STRAIGHT: 1/4 INCH IN 10 FT, 1/4 INCH IN 10 FT, 1/2 INCH IN 30 FT.
- B. CLEAN ALL WORK THOROUGHLY USING NON-METALLIC BRUSHES AND CLEANING SOLUTION AND RINSE WITH WATER. PROTECT ADJACENT FINISHES. ALL FINISHED SURFACES TO BE UNIMPAIRED.

**DIVISION 6 - CARPENTRY - NOT USED**

**DIVISION 7 - MOISTURE PROTECTION - NOT USED**

**DIVISION 8 - WINDOWS & DOORS**

**SECTION 08 7100 DOOR HARDWARE PART 1 GENERAL**

**1.01 ADMINISTRATIVE REQUIREMENTS**

- A. FURNISH TEMPLATES FOR DOOR AND FRAME PREPARATION TO MANUFACTURERS AND FABRICATORS OF PRODUCTS REQUIRING INTERNAL REINFORCEMENT FOR DOOR HARDWARE.
- B. CONVEY OWNERS KEYING REQUIREMENTS TO MANUFACTURERS.

**1.02 SUBMITTALS**

- A. HARDWARE SCHEDULE: DETAILED LISTING OF EACH ITEM OF HARDWARE TO BE INSTALLED ON EACH DOOR, USE DOOR NUMBERING SCHEME AS INCLUDED IN THE CONTRACT DOCUMENTS. IDENTIFY ELECTRICALLY OPERATED ITEMS AND INDICATE POWER REQUIREMENTS.

**1.03 QUALITY ASSURANCE**

- A. PROVIDE 10 YEAR WARRANTY FOR DOOR CLOSERS AND LOCKSETS.

**1.04 WARRANTY**

**KEY TO OWNERS EXISTING KEY SYSTEM WHERE KEYPED LOCKS (VERIFY WITH OWNER)**

**MANUFACTURERS USED:**

- HINGES: PBB
- LOCKSETS: SCHLAGE
- KICK PLATE: IVES
- WALL STOP: IVES
- CLOSER: SARGENT

**HARDWARE SET TYPICAL-VERIFY WITH OWNER**

- 3 EA HINGE 5B81 4.5X4.5 NRP 652 IVE
- 1 EA STOREROOM LOCK N80PDP RHO 626 SCH
- 1 EA SILENCER SR64 GRV IVE
- 1 EA THRESHOLD
- 1 SET WEATHERSTRIP
- 1 EA CLOSER 1430 PSH SARGENT
- 1 EA KICK PLATE K1050 32 ROCKWOOD

**DIVISION 9 - FINISHES - NOT USED**

**DIVISION 10 - SPECIALTIES - NOT USED**

**DIVISION 11 - EQUIPMENT - NOT USED**

**DIVISION 12 - FURNISHINGS - NOT USED**

**DIVISION 13 - SPECIAL CONSTRUCTION - NOT USED**

**DIVISION 14 - CONVEYING SYSTEMS - NOT USED**

**DIVISION 15 - MECHANICAL / PLUMBING**

SEE MECHANICAL DRAWINGS AND SPECIFICATIONS FOR DESIGN CRITERIA AND REQUIREMENTS OF ALL MECHANICAL AND PLUMBING.

**DIVISION 16 - ELECTRICAL**

SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DESIGN CRITERIA AND REQUIREMENTS OF ALL POWER AND LIGHTING.

**DIVISION 31 - EARTHWORK**

SEE LANDSCAPE DRAWINGS AND SPECIFICATIONS FOR DESIGN CRITERIA AND REQUIREMENTS OF ALL LANDSCAPE.

**DIVISION 32 - EXTERIOR IMPROVEMENTS**

SEE LANDSCAPE DRAWINGS AND SPECIFICATIONS FOR DESIGN CRITERIA AND REQUIREMENTS OF ALL LANDSCAPE.

**SECTION 04 2200 CONCRETE MASONRY UNITS PART 1 GENERAL**

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- B. PROVIDE ALL MASONRY UNITS IN SIZES AND SHAPES AS SHOWN ON THE DRAWINGS.
- C. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

**2.01 MATERIALS**

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- B. PORTLAND CEMENT: ASTM C150, TYPE I, FINE AND COURSE AGGREGATE: ASTM C044, CLEAN AND PORTABLE WATER, 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS; 8-10 INCH SLUMP; PREMIXED TYPE, ASTM C64, TEST EACH LOAD IN ACCORDANCE WITH ASTM C1019.
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**3.02 TOLERANCES**

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**DIVISION 6 - CARPENTRY - NOT USED**

**DIVISION 7 - MOISTURE PROTECTION - NOT USED**

**DIVISION 8 - WINDOWS & DOORS**

**SECTION 08 7100 DOOR HARDWARE PART 1 GENERAL**

**1.01 ADMINISTRATIVE REQUIREMENTS**

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**1.03 QUALITY ASSURANCE**

- A. PROVIDE 10 YEAR WARRANTY FOR DOOR CLOSERS AND LOCKSETS.

**1.04 WARRANTY**

**KEY TO OWNERS EXISTING KEY SYSTEM WHERE KEYPED LOCKS (VERIFY WITH OWNER)**

**MANUFACTURERS USED:**

- HINGES: PBB
- LOCKSETS: SCHLAGE
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- WALL STOP: IVES
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**HARDWARE SET TYPICAL-VERIFY WITH OWNER**

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**DIVISION 32 - EXTERIOR IMPROVEMENTS**

SEE LANDSCAPE DRAWINGS AND SPECIFICATIONS FOR DESIGN CRITERIA AND REQUIREMENTS OF ALL LANDSCAPE.

**DIVISION 2 - SITE WORK (SEE CIVIL SHEETS)**

**DIVISION 3 - CONCRETE**

**SECTION 03 0505 UNDERSLAB VAPOR BARRIER PART 1 GENERAL**

**1.01 SUBMITTALS**

- A. PRODUCT DATA: SUBMIT MANUFACTURER'S DATA ON MANUFACTURED PRODUCTS.
- B. SAMPLES: SUBMIT SAMPLES OF UNDERSLAB VAPOR BARRIER TO BE USED.
- C. MANUFACTURERS INSTALLATION INSTRUCTIONS: INCLUDE INSTALLATION PROCEDURES AND INTERFACE REQUIRED WITH ADJACENT CONSTRUCTION.

**2.01 MATERIALS**

- A. UNDERSLAB VAPOR BARRIER:
  1. WATER VAPOR PERMEANCE: NOT MORE THAN 0.010 PERMS. MAXIMUM.
  2. THICKNESS: 20 MILLS MILS.
  3. BASIS OF DESIGN:
    - A. STEBO INDUSTRIES LLC, STEBO VAPOR BARRIER (20-MIL); www.steboindustries.com.
    - B. SUBSTITUTIONS: SEE SECTION 01 6000 - PRODUCT REQUIREMENTS.
- B. ACCESSORY PRODUCTS: VAPOR BARRIER MANUFACTURERS RECOMMENDED TAPE, ADHESIVE, MASTIC, ETC. FOR SEALING SEAMS AND PENETRATIONS IN VAPOR BARRIER.

**3.06 CURING AND PROTECTION**

- A. COMPLY WITH REQUIREMENTS OF ACI 308R. IMMEDIATELY AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY.

**3.07 JOINT DEVICES & FILLER MATERIALS**

- A. JOINT FILLER: ASTM D1751; ASPHALT IMPREGNATED FIBERBOARD OR FELT, THICKNESS TO SUIT APPLICATION.

**3.08 FIELD QUALITY CONTROL**

- A. FIELD INSPECTION AND TESTING WILL BE PERFORMED IN ACCORDANCE WITH ACI 301 BY AN INDEPENDENT TESTING FIRM EMPLOYED BY THE CONTRACTOR. PROVIDE FREE ACCESS TO EACH CLASS OF CONCRETE TO INSPECT AND TESTING FIRM FOR REVIEW PRIOR TO COMMENCEMENT OF WORK. PERFORM TEST OF CEMENT AND AGGREGATES TO ENSURE CONFORMANCE WITH SPECIFIED REQUIREMENT.
- B. THREE CONCRETE TEST CYLINDERS WILL BE TAKEN FOR EVERY 75 OR LESS CU YDS OF EACH CLASS OF CONCRETE PLACED. ONE ADDITIONAL TEST CYLINDER WILL BE TAKEN DURING COLD WEATHER CONCRETING, CURED ON JOB SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS. ONE SLUMP TEST WILL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN. ONE AIR CONTENT TEST WILL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN. RECORD TEMPERATURE OF CONCRETE SAMPLE FOR EACH STRENGTH TEST AND ATMOSPHERIC TEMPERATURE AT THAT TIME.

**3.09 REINFORCING STEEL**

- A. ALL REINFORCED BARS SHALL BE DETAILED, BOLSTERED AND SUPPORTED IN ACCORDANCE WITH ACI 315 AND STRUCTURAL NOTES. PLACE STEEL IN CENTER OF WALL AND CORNER, UNLESS OTHERWISE INDICATED, TO FOOTING OR TO STRUCTURE ABOVE AND BELOW WITH SAME DOWEL AND SPACING AS VERTICAL REINFORCEMENT. ALL DOWELS SHALL HAVE AT LEAST 30 DIAMETERS EMBEDMENT. PROVIDE CORNER BARS AT ALL INTERSECTING CORNERS. USE SAME SIZE BAR AND SPACING AS HORIZONTAL WALL REINFORCEMENT.

**3.10 ANCHOR PLATE GROUT**

- A. COMMERCIAL NON-SHRINK GROUT CONFORMING TO DEPT. OF ARMY CORPS OF ENGINEERS CE-20-401 AND GRD-C5892 'EMBED' PRE-MIXING GROUT, MASTER BUILDERS CO., DIVISION OF AMERICAN MARITTA CO., CLEVELAND, OHIO. LITHOCHROME METALLIC GROUT, L.M. SCHOFIELD CO. LOS ANGELES, CALIFORNIA.

**3.11 GRAVEL UNDERBARS**

- A. GRAVEL TO BE 1/4 TO 1 INCH PLACED MINIMUM OF 4 INCHES LEVEL AND CONSOLIDATED THOROUGHLY.

**SECTION 03 4500 PRECAST ARCHITECTURAL CONCRETE PART 1 GENERAL**

**1.01 SUBMITTALS**

- A. SEE SECTION 01 3000 - ADMINISTRATIVE REQUIREMENTS, FOR SUBMITTAL PROCEDURES.
- B. PRODUCT DATA: MANUFACTURER'S INFORMATION ON ACCESSORY PRODUCTS, INCLUDING PIGMENTS, ADMIXTURES, INSERTS, PLATES, ETC.
- C. SHOP DRAWINGS: INDICATE LAYOUT, UNIT LOCATIONS, CONFIGURATION, UNIT IDENTIFICATION MARKS, REINFORCEMENT, INTERNAL INSULATION, INSULATED PANEL SYSTEM CONNECTORS, CONNECTION DETAIL, SUPPORT ITEMS, LOCATION OF LIFTING DEVICES, DIMENSIONS, OPENINGS, AND RELATIONSHIP TO ADJACENT MATERIALS. PROVIDE ERECTION DRAWINGS.
- D. MAINTENANCE DATA: INDICATE SURFACE CLEANING INSTRUCTIONS.

**1.02 QUALITY ASSURANCE**

- A. FABRICATOR QUALIFICATIONS:
  1. FIRM HAVING AT LEAST 2 YEARS OF DOCUMENTED EXPERIENCE IN PRODUCTION OF PRECAST CONCRETE OF THE TYPE REQUIRED.

**1.03 DELIVERY, STORAGE, AND HANDLING**

- A. HANDLING: LIFTING AND SUPPORT PRECAST UNITS ONLY FROM SUPPORT POINTS.
- B. PROTECT UNITS TO PREVENT STAINING, CHIPPING, OR SPALLING OF CONCRETE.

**PART 2 PRODUCTS**

**2.01 PRECAST UNITS, GENERAL**

- A. PRECAST ARCHITECTURAL CONCRETE UNITS: COMPLY WITH PCI MNL-120, PCI MNL-122, PCI MNL-123, PCI MNL-135, AND ACI CODE-318.
- B. CONCRETE FACE MIX: MINIMUM 5000 PSI, 28 DAY STRENGTH. AIR ENTRAINMENT TO 5 TO 7 PERCENT; COMPLY WITH ACI SPEC-301.
- C. FINISH TYPE: A. ENSURE EXPOSED TO VIEW FINISH SURFACES OF PRECAST UNITS ARE UNIFORM IN COLOR AND APPEARANCE. REPLACE ANY UNITS DEEMED NOT ACCEPTABLE BY THE ARCHITECT.
- D. HONE ANY EXPOSED TO VIEW EDGES WHICH ARE ROUGH OR OTHERWISE UNFINISHED LOOKING.

**2.02 REINFORCEMENT**

- A. REINFORCING STEEL: ASTM A615/A615M, GRADE 60 (60,000 PSI).
- B. DEFORMED BILLET-STEEL BARS.
- C. CURING AND ANTI-SPALLING COMPOUND: BOILED LINSEED OIL COMPOUND.
- D. CURING COMPOUND, NATURALLY DISSIPATING: CLEAR, WATER-BASED, LIQUID MEMBRANE-FORMING COMPOUND; COMPLYING WITH ASTM C309.
- E. CURING AND ANTI-SPALLING COMPOUND: BOILED LINSEED OIL COMPOUND.
- F. CURING COMPOUND, NATURALLY DISSIPATING: CLEAR, WATER-BASED, LIQUID MEMBRANE-FORMING COMPOUND; COMPLYING WITH ASTM C309.
- G. MOISTURE-RETAINING SHEET: ASTM C171.
- H. WATER: POTABLE; NOT DETRIMENTAL TO CONCRETE.

**2.03 CONCRETE MIX DESIGN**

- A. PROPORTIONING NORMAL WEIGHT CONCRETE: COMPLY WITH ACI 211.1 RECOMMENDATIONS.
- B. COLOR ADJUSTIVES: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
- C. WATER: ASTM C1602/C1602M; CLEAN, PORTABLE, AND NOT DETRIMENTAL TO CONCRETE.
- D. AIR ENTRAINMENT ADMIXTURE: ASTM C260/C260M.

**2.04 SUPPORT DEVICES**

- A. CONNECTING AND SUPPORT DEVICES; ANCHORS AND INSERTS:
  - 1. ASTM A36/A36M STEEL; HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153/A153M.
  - 2. CLEAN SURFACES OF RUST, SCALE, GREASE, AND FOREIGN MATTER.

**2.05 FABRICATION**

- A. FABRICATE IN COMPLIANCE WITH PCI MNL-117 AND PCI MNL-135.
- B. MAINTAIN CONSISTENT QUALITY DURING MANUFACTURE.
- C. FABRICATE CONNECTING DEVICES, PLATES, ANGLES, ITEMS FIT TO STEEL FRAMING MEMBERS, INSERTS, BOLTS, AND ACCESSORIES. FABRICATE TO PERMIT UNIFORM AND FULL ATTACHMENT.
- D. EMBED REINFORCING STEEL, ANCHORS, INSERTS PLATES, ANGLES, AND OTHER CAST-IN ITEMS.
- E. CURE UNITS TO DEVELOP CONCRETE QUALITY, AND TO MINIMIZE APPEARANCE BLEMISHES SUCH AS NON-UNIFORMITY, STAINING, OR SURFACE CRACKING.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. VERIFY THAT BUILDING STRUCTURE, ANCHORS, DEVICES, AND OPENINGS ARE READY TO RECEIVE WORK OF THIS SECTION.

**3.02 ERECTION**

- A. ERECT UNITS WITHOUT DAMAGE TO SHARPE OF FINISH. REPLACE OR REPAIR DAMAGED PANELS.
- B. ERECT UNITS LEVEL AND PLUMB WITH ALLOWABLE TOLERANCES.
- C. FASTEN UNITS IN PLACE WITH MECHANICAL CONNECTIONS.

**3.03 PROTECTION**

- A. PROTECT INSTALLED WALL CAPS AND WINDOW SILLS FROM SUBSEQUENT CONSTRUCTION OPERATIONS.

**3.04 SCHEDULES**

- A. PROFILES: SEE ARCHITECTURAL DRAWINGS FOR PROFILES.

**DIVISION 2 - SITE WORK (SEE CIVIL SHEETS)**

**DIVISION 3 - CONCRETE**

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- C. MANUFACTURERS INSTALLATION INSTRUCTIONS: INCLUDE INSTALLATION PROCEDURES AND INTERFACE REQUIRED WITH ADJACENT CONSTRUCTION.

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  1. WATER VAPOR PERMEANCE: NOT MORE THAN 0.010 PERMS. MAXIMUM.
  2. THICKNESS: 20 MILLS MILS.
  3. BASIS OF DESIGN:
    - A. STEBO INDUSTRIES LLC, STEBO VAPOR BARRIER (20-MIL); www.steboindustries.com.
    - B. SUBSTITUTIONS: SEE SECTION 01 6000 - PRODUCT REQUIREMENTS.
- B. ACCESSORY PRODUCTS: VAPOR BARRIER MANUFACTURERS RECOMMENDED TAPE, ADHESIVE, MASTIC, ETC. FOR SEALING SEAMS AND PENETRATIONS IN VAPOR BARRIER.

**3.06 CURING AND PROTECTION**

- A. COMPLY WITH REQUIREMENTS OF ACI 308R. IMMEDIATELY AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY.

**3.07 JOINT DEVICES & FILLER MATERIALS**

- A. JOINT FILLER: ASTM D1751; ASPHALT IMPREGNATED FIBERBOARD OR FELT, THICKNESS TO SUIT APPLICATION.

**3.08 FIELD QUALITY CONTROL**

- A. FIELD INSPECTION AND TESTING WILL BE PERFORMED IN ACCORDANCE WITH ACI 301 BY AN INDEPENDENT TESTING FIRM EMPLOYED BY THE CONTRACTOR. PROVIDE FREE ACCESS TO EACH CLASS OF CONCRETE TO INSPECT AND TESTING FIRM FOR REVIEW PRIOR TO COMMENCEMENT OF WORK. PERFORM TEST OF CEMENT AND AGGREGATES TO ENSURE CONFORMANCE WITH SPECIFIED REQUIREMENT.
- B. THREE CONCRETE TEST CYLINDERS WILL BE TAKEN FOR EVERY 75 OR LESS CU YDS OF EACH CLASS OF CONCRETE PLACED. ONE ADDITIONAL TEST CYLINDER WILL BE TAKEN DURING COLD WEATHER CONCRETING, CURED ON JOB SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS. ONE SLUMP TEST WILL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN. ONE AIR CONTENT TEST WILL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN. RECORD TEMPERATURE OF CONCRETE SAMPLE FOR EACH STRENGTH TEST AND ATMOSPHERIC TEMPERATURE AT THAT TIME.

**3.09 REINFORCING STEEL**

- A. ALL REINFORCED BARS SHALL BE DETAILED, BOLSTERED AND SUPPORTED IN ACCORDANCE WITH ACI 315 AND STRUCTURAL NOTES. PLACE STEEL IN CENTER OF WALL AND CORNER, UNLESS OTHERWISE INDICATED, TO FOOTING OR TO STRUCTURE ABOVE AND BELOW WITH SAME DOWEL AND SPACING AS VERTICAL REINFORCEMENT. ALL DOWELS SHALL HAVE AT LEAST 30 DIAMETERS EMBEDMENT. PROVIDE CORNER BARS AT ALL INTERSECTING CORNERS. USE SAME SIZE BAR AND SPACING AS HORIZONTAL WALL REINFORCEMENT.

**3.10 ANCHOR PLATE GROUT**

- A. COMMERCIAL NON-SHRINK GROUT CONFORMING TO DEPT. OF ARMY CORPS OF ENGINEERS CE-20-401 AND GRD-C5892 'EMBED' PRE-MIXING GROUT, MASTER BUILDERS CO., DIVISION OF AMERICAN MARITTA CO., CLEVELAND, OHIO. LITHOCHROME METALLIC GROUT, L.M. SCHOFIELD CO. LOS ANGELES, CALIFORNIA.

**3.11 GRAVEL UNDERBARS**

- A. GRAVEL TO BE 1/4 TO 1 INCH PLACED MINIMUM OF 4 INCHES LEVEL AND CONSOLIDATED THOROUGHLY.

**SECTION 03 6000 CAST-IN-PLACE CONCRETE PART 1 GENERAL**

**1.01 SUBMITTALS**

- A. PRODUCT DATA: SUBMIT MANUFACTURER'S DATA ON MANUFACTURED PRODUCTS SHOWING COMPLIANCE WITH SPECIFIED REQUIREMENTS AND INSTALLATION INSTRUCTIONS.

**1.02 QUALITY ASSURANCE**

- A. PERFORM WORK OF THIS SECTION IN ACCORDANCE WITH ACI 301 AND ACI 318.
- B. FOLLOW RECOMMENDATIONS OF ACI 308R WHEN CONCRETING DURING HOT WEATHER.
- C. FOLLOW RECOMMENDATIONS OF ACI 308R WHEN CONCRETING DURING COLD WEATHER.

**PART 2 PRODUCTS**

**2.01 FORMWORK**

- A. FORM MATERIALS: CONTRACTOR'S CHOICE OF STANDARD PRODUCTS WITH SUFFICIENT STRENGTH TO WITHSTAND HYDROSTATIC HEAD WITHOUT DISTORTION IN EXCESS OF PERMITTED TOLERANCES.
  1. FORM FACING FOR EXPOSED FINISH CONCRETE: CONTRACTORS CHOICE OF MATERIALS THAT WILL PROVIDE SMOOTH, STAIN-FREE FINAL APPEARANCE.
  2. FORM COATING: RELEASE AGENT THAT WILL NOT ADVERSELY AFFECT CONCRETE OR INTERFERE WITH APPLICATION OF COATINGS.
  3. FORMAL TIES: TAPER REMOVABLE BOLT TYPE THAT WILL LEAVE NO METAL WITHIN 1-1/2 INCHES OF CONCRETE SURFACE.

**2.02 REINFORCEMENT**

- A. REINFORCING STEEL: ASTM A615/A615M, GRADE 60 - 60,000 PSI.
  1. TYPE: DEFORMED BILLET-STEEL BARS.
  2. FINISH: UNFINISHED, UNLESS OTHERWISE INDICATED.
- B. STEEL WELDED WIRE REINFORCEMENT: ASTM A 163A 185M, PLAIN TYPE.
- C. REINFORCEMENT ACCESSORIES:
  1. TIE WIRE: ANNEALED, MINIMUM 16 GAGE, 0.0508 INCH.
  2. CHAIRS, BOLTERS, BAR SUPPORTS, SPACERS; SIZED AND SHAPED FOR ADEQUATE SUPPORT OF REINFORCEMENT DURING CONCRETE PLACEMENT.

**2.03 CONCRETE MATERIALS**

- A. CEMENT: ASTM C150, TYPE I - NORMAL PORTLAND TYPE.
- B. FINE AND COARSE AGGREGATES: ASTM C 33.
- C. FLY ASH: ASTM C618, CLASS C OR F.
- D. WATER: CLEAN AND NOT DETRIMENTAL TO CONCRETE.
- E. FIBER REINFORCEMENT: ALKALI-RESISTANT POLYPROPYLENE COMPLYING WITH ASTM C1116/C1116M.

**2.04 ADMIXTURES**

- A. DO NOT USE CHEMICALS THAT WILL RESULT IN SOLUBLE CHLORIDE IONS IN EXCESS OF 0.1 PERCENT BY WEIGHT OF CEMENT.

**2.05 ACCESSORY MATERIALS**

- A. UNDERSLAB VAPOR RETARDER: MULTI-LAYER, FABRIC, CORD-, GRID-, OR ALUMINUM-REINFORCED POLYETHYLENE OR EQUIVALENT, COMPLYING WITH ASTM E1745, CLASS A, STARTED BY MANUFACTURER AS SUITABLE FOR INSTALLATION IN CONTACT WITH SOIL OR GRANULAR FILL UNDER CONCRETE SLABS. THE USE OF SINGLE PLY POLYETHYLENE IS PROHIBITED.
- B. NON-SHRINK CEMENTITIOUS GROUT: PREMIXED COMPOUND CONSISTING OF NON-METALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING AGENTS.

**2.06 CURING MATERIALS**

- A. CURE CONCRETE ACCORDING TO ACI 308.1 BY ONE OR MORE OF THE FOLLOWING METHODS:
  1. EVAPORATION REDUCER: LIQUID THIN-FILM-FORMING COMPOUND THAT REDUCES RAPID MOISTURE LOSS CAUSED BY HIGH TEMPERATURE, LOW HUMIDITY, AND HIGH WINDS, INTENDED FOR APPLICATION IMMEDIATELY AFTER CONCRETE PLACEMENT.
  2. CURING COMPOUND, NATURALLY DISSIPATING: CLEAR, WATER-BASED, LIQUID MEMBRANE-FORMING COMPOUND; COMPLYING WITH ASTM C309.
  3. CURING AND ANTI-SPALLING COMPOUND: BOILED LINSEED OIL COMPOUND.
  4. CURING COMPOUND, NATURALLY DISSIPATING: CLEAR, WATER-BASED, LIQUID MEMBRANE-FORMING COMPOUND; COMPLYING WITH ASTM C309.
  5. MOISTURE-RETAINING SHEET: ASTM C171.
  6. WATER: POTABLE; NOT DETRIMENTAL TO CONCRETE.

**CLOSEOUT PROCEDURES**

- A. MAINTAIN AREAS FREE OF WASTE MATERIALS, DEBRIS, AND RUBBISH. MAINTAIN SITE AS RECEIVED. REMOVE SUBMITTALS AS APPROPRIATE. INSTRUCT PARTIES TO PROMPTLY REPORT ANY INABILITY TO COMPLY WITH REQUIREMENTS.
- J. SUBMITTALS NOT REQUESTED WILL NOT BE RECOGNIZED OR PROCESSED.

**3.02 PROTECTION OF INSTALLED WORK**

- A. MAINTAIN AREAS FREE OF WASTE MATERIALS, DEBRIS, AND RUBBISH. MAINTAIN SITE AS RECEIVED. REMOVE SUBMITTALS AS APPROPRIATE. INSTRUCT PARTIES TO PROMPTLY REPORT ANY INABILITY TO COMPLY WITH REQUIREMENTS.
- J. SUBMITTALS NOT REQUESTED WILL NOT BE RECOGNIZED OR PROCESSED.

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- J. SUBMITTALS NOT REQUESTED WILL NOT BE RECOGNIZED OR PROCESSED.

**3.04 FINAL CLEANING**

- A. USE CLEANING MATERIALS THAT ARE NON-HAZARDOUS.
- B. CLEAN INTERIOR AND EXTERIOR GLASS, SURFACES EXPOSED TO VIEW; REMOVE TEMPORARY LABELS, STAINS AND FOREIGN SUBSTANCES; POLISH TRANSPARENT AND GLOSSY SURFACES; VACUUM CARPETED AND SOFT SURFACES.
- C. REMOVE ALL LABELS THAT ARE NOT PERMANENT, DO NOT PAINT OR OTHERWISE COVER FIRE TEST LABELS OR NAMEPLATES ON MECHANICAL AND ELECTRICAL EQUIPMENT.
- D. CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION WITH CLEANING MATERIALS APPROPRIATE TO THE SURFACE AND MATERIAL BEING CLEANED.

**3.05 CLOSEOUT PROCEDURES**

- A. MAINTAIN AREAS FREE OF WASTE MATERIALS, DEBRIS, AND RUBBISH. MAINTAIN SITE AS RECEIVED. REMOVE SUBMITTALS AS APPROPRIATE. INSTRUCT PARTIES TO PROMPTLY REPORT ANY INABILITY TO COMPLY WITH REQUIREMENTS.
- J. SUBMITTALS NOT REQUESTED WILL NOT BE RECOGNIZED OR PROCESSED.





# GENERAL STRUCTURAL NOTES

## GENERAL

- Code: I.B.C 2021
- Notes: Notes apply to all drawings unless noted otherwise.
- Design Criteria:
  - Occupancy Cat. II
  - Importance Factors= 1.0 (Snow) 1.0 (Seismic)
  - Seismic Design Cat D (S1 < 0.75)
  - Ss = 1.51 Sds = 1.01
  - S1 = 0.50 Sd1 = 0.50
  - Fa = 1.00
  - Fv = 1.50
  - R = 5.0 Special Masonry SW
  - Cs = 0.2015 (ULT)
  - Wind Speed 115 mph Ultimate, Exposure C
  - Roof Snow Load= 30 psf + Drift (includes I=1.0)
  - Live Load= 20 psf
  - Dead Load= 15 psf + Mech Units
  - Floor Live Load = 100 PSF
  - Dead Load = 40 psf (@ 4" SLAB)
  - Soil Bearing Pressure . . . . . 1500 psf on Native Soil (ASSUMED – CONTRACTOR TO VERIFY)
  - Soil Site Class . . . . . "D" (ASSUMED)

- Coordination: Check with conditions at the job site and with all other subcontractors.
- Details: Details, sections, and notes as shown on the drawings are intended to be typical and shall apply to all similar situations elsewhere unless noted otherwise.

## FOUNDATION

- No Soils Report has been prepared for this project. If and report becomes available, all recommendations within shall be strictly followed.
- All footings shall be supported on natural undisturbed earth granular fill, or properly installed compacted structural fill, per a project Soils Report. Unless noted otherwise in a project Soils Report, removed top 12" minimum of topsoil and vegetation from building site.
- Unless noted otherwise in the soils report, all interior slabs on grade shall be supported on 6" of clean ¾" minus material, over undisturbed native soils, or properly placed and compacted structural fill.
- Structural fill: refer to a project Soils Report for all fill properties and requirements. Fill shall be placed in 8" maximum loose lifts and compacted to 95% of Modified Proctor.
- Frost protection: All exterior footings shall be placed a minimum of 30" below finish grade.
- Center all footings under walls, columns or grid lines unless noted otherwise on plans.
- The Contractor is responsive to verify the existing subsols are capable of support superimposed loading of 1500 psf with negligible settlement. The Contractor is responsible to improve subsols as required to achieve the 1500 psf bearing capacity.

## REINFORCING STEEL

- Grade: ASTM A615, Grade 60.
- Dowel and lap lengths: Provide 48 bar diameters minimum for concrete, and 64 bar diameters for masonry.
- Detailing and fabrication: Reference "American Concrete Institute" (ACI 318–19).
- Field bending: Reinforcing steel shall not be bent or straightened in a manner injurious to the concrete or steel.
- Welded wire fabric shall conform to ASTM A185 and shall be lapped one full mesh at side and end splices and wired together.
- Embedments and dowels are to be securely tied to formwork or adjacent reinforcement prior to concrete placement.

## EPOXY

- All epoxy shall be Simpson brand or equivalent Hilti brand.
  - The following systems shall be used:
    - Hollow CMU – Simpson SET-XP with screen tubes, or equivalent Hilti system.
    - Concrete or grouted masonry – Simpson SET-XP, or equivalent Hilti system.
- Install all epoxied anchors per manufacturer's instructions and recommendations.
- All holes shall be sized properly and cleaned thoroughly prior to placement of epoxy adhesive.

## CONCRETE

- Concrete Density: Normal Weight Concrete – approximately 145 pcf.
- Strength, Exposure, Properties: Minimum ultimate 28-day compressive strength:
 

Location	Strength	Exposure Class	Max W/C	% air
Footings	3000 psi	F0	0.5	1–2%
Interior Slabs	4000 psi	F0	0.45	1–2%
Exterior Slabs on Grade	4500 psi	F3	0.45	6–7%
Foundation Walls & Piers	4500 psi	F1	0.45	4.5–6%
All other site cast concrete	4500 psi	F1	0.45	4.5–6%
GUNITE	4500 PSI	F1	0.45	4.5%
- Control & Construction Joints: By Contractor. Contractor shall be responsible for timing, locating, and spacing all joints. Joints shall be placed to minimize uncontrolled cracking of slabs. **Control joints shall not be placed in suspended slabs.**

- Slabs: Slabs are to be placed in as large of sections as possible. Where construction joints are necessary, provide bulkhead shear keyways and reinforcing dowels as required to maintain full section capacity. Control joints shall be installed in slabs on grade so the length to width ratio of the slab is no more than 1.25:1. Control joints in slabs on grade shall be completed within 12 hours of concrete placement. Control joints in slabs on grade may be installed by saw cut or tooled joints a depth of 1/4 the thickness of the slab. **All exterior flatwork (concrete) shall be treated with lithium based admixture during ready mixing, to prevent aggregate reactivity.**

- Cast-in-place all reinforcing: Unless noted otherwise on the drawings, reinforce all concrete wall as follows:

THICKNESS	HORIZONTAL	VERTICAL
6"---Wall	SEE SCHEDULE ON S-003	SEE SCHEDULE ON S-003
8"---Wall	-	-
12"---Wall	-	-
16"---Wall	-	-
20"---Wall	-	-

- Provide corner bars at intersecting wall corners using the same size and spacing as horizontal wall reinforcing. Dowel vertical reinforcing to the footing or structure below with the same size and spacing as wall, column, or pier reinforcing above. Footing dowels shall terminate with a 90 degree standard hook.

- Concrete protection for reinforcing steel: **SEE SCHEDULE ON S-001**

- Slab Reinforcing: Reinforcing steel shall be adequately supported on precast concrete units or chairs, to keep the reinforcing to the heights specified or indicated. Lifting the reinforcing during placement will not be permitted.

- Suspended Slabs: Follow all provisions of current ACI 117, 301, 302, and related references for slab placement.

- Openings: Unless otherwise notes on the drawings, reinforce around all sides of openings with (2) #5 bars, extending 48" beyond the corners. Bars shall be within 4" of edges of openings.

- Submittals:
  - Submit the following:
    - Design mixtures shall be submitted in accordance with ACI 318–14 section 5.3, submittals shall contain 30 consecutive tests minimum. If 30 consecutive tests can not be provided test records shall be provided showing the average compressive strength is equal to 1200 psi greater than the design strength. Submittals that are not prepared as stated above or in ACI 318–14 will be rejected.
    - Steel reinforcement shop drawings

- Reinforcement shall be clean of ice and other deleterious coatings.

- Mixing: per ACI recommendations

- All debris and ice shall be removed from spaces to be occupied by concrete

- Items to be embedded in concrete are to be securely tied in place prior to placing concrete. Repositioning of embedded items after concrete has been placed will not be permitted.

- Do not add water to concrete during delivery, at project site, or during placement without prior approval from engineer.

- Concrete shall be conveyed from mixer to place of final deposit by methods that will prevent separation or loss of materials. Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. After placement has started, it shall be carried on as a continuous operation. Concrete that has partially hardened or been contaminated by foreign materials shall not be deposited in the structure.

- All concrete shall be consolidated by a mechanical vibrator. Vibrator shall be inserted vertically at a medium pace and retracted immediately. Do not use vibrator to transport concrete.

- Concrete shall be maintained above 50 degrees F, and in a moist condition for at least 7 days after placement. Accelerated schedules are permissible provided an accelerated curing plan is provided to and approved by Architect/ Engineer.

- Shoring and bracing shall remain in place until concrete has obtained full design strength.

- Concrete protection shall be provided if hot/cold weather conditions are present during placement of concrete.

## MASONRY

- Concrete Masonry Units: Medium Weight Grade N, Type I (f'm = 1500 psi). Quartet Units: Minimum Compressive Strength= 4000 psi (f'm = 1500psi for design purposes. f'm shall be verified by the prism test method, with (3) prisms being prepared and tested at the beginning of masonry construction, and one set of 3(3) prisms every 5000 square feet of wall.

- Mortar: Only type "S" mortar consisting of portland cement, lime, and aggregate shall be used. Provide 1800 psi minimum compressive strength.

- Grout: 2000 psi minimum strength at 28 days. (f'm = 1500)

- Placement: All units shall be laid with full mortar beds. All head joints shall be filled solidly with mortar for a distance in from the face of the units not less than the thickness of the longitudinal face shells. At the time of laying, all masonry units shall be free of excessive dirt and debris.

- Wall reinforcing: Unless noted otherwise on the drawings, reinforce all masonry walls as follows:
  - See Schedule on S-003

Vertical reinforcing steel shall be doweled to footing or structure below and to structure above with same dowel size and spacing as vertical wall steel. Horizontal reinforcement shall be continuous at all intersecting walls and at all corners. All corners and end of walls shall have vertical reinforcement in grouted cells.

- Openings in masonry: Unless otherwise indicated on the drawings, for 8" walls provide (2) #4 bars ((2) #5 for 12" walls) in grouted space around each side of all openings which exceed 24 inches in any one direction. Bars shall extend 24 inches beyond the corners of the openings.

- Masonry beams: All masonry beams shall be grouted solid unless noted otherwise on drawings. Masonry beams shall have no penetrations without permission of engineer.

- Grouting: All cells containing reinforcement shall be filled solidly with grout. Grout shall be a workable mix suitable for pumping without segregation and shall be thoroughly mixed. Grout shall be consolidated by mechanical vibration immediately after placement, and re-vibrated after excess moisture has been absorbed into the masonry units, but before workability is lost. "Pudding" of vertical reinforcement is not permitted. The grouting of any section of a wall shall be completed in one day with no interruptions greater than one hour. When grouting is stopped for one hour or longer, horizontal construction joints shall be formed by stopping the pour of grout 1–1/2 inch above or below a bed joint.

- Clearances: Vertical cells to be filled shall have vertical alignment sufficient to maintain a clear, unobstructed continuous vertical cell measuring not less than 2 inches by 3 inches. All reinforcing bars shall be held in position at the top, bottom, and at intervals not farther apart than 192 bar diameters.

- All reinforcing steel shall be tied in place prior to grouting. All vertical reinforcing steel shall be secured in place at the top and bottom with tie wire or approved positioners. Laps in horizontal steel shall be tied and secured in place. "Wet-sticking" of reinforcing is not permitted.

- Embedded items: Grout solid around all embedded steel bolts, studs, joists, and beams

- Control joint locations shall be the responsibility of the Masonry Contractor, and shall be located to minimize shrinkage cracking. Joints shall not be located within 24" of window or door openings. Continue all horizontal reinforcing through control joints.

## SPECIAL INSTRUCTION

- The project specifications are not superseded by the General Structural Notes but are intended to be complementary to them. Consult the specification for additional requirements in each section. Notes and details on the drawings shall take precedence over General Structural Notes and typical details.

- All omissions or conflicts between the various elements of the working drawings and/or specifications shall be brought to the attention of the Architect and Structural Engineer before proceeding with any work involved. In case of conflict, follow the most stringent requirement as directed by the Architect without additional cost to the owner.

- "STRUCTURAL OBSERVATION PROGRAM" – The Engineer shall be notified forty-eight hours prior to each of the following items. **A final STRUCTURAL OBSERVATION REPORT shall be submitted to the Building Official upon completion of the structural systems.** This report shall note any identified deficiencies that have not been corrected. **STRUCTURAL OBSERVATION for Seismic and Wind** by the Engineer, or his representatives, is required for the following:
  - Placing concrete in any footing.
  - Closing any concrete wall or column forms.
  - Placing concrete in suspended slabs/beams.
  - Completion of Diaphragm fastening.
  - Completion of structural field welding.
  - Grouting of Structural Masonry.

**Observation visits to the site by the Engineer's field representatives shall not be construed as inspection, Special Inspection, or approval of construction.**

- Shoring and Bracing Requirements:
  - Roof Structures – The CONTRACTOR is solely responsible for the means, methods, and sequence of all structural erection and bracing. He shall provide temporary shoring and bracing as his method of erection requires to provide adequate vertical and lateral support. Shoring and bracing shall remain in place as the chosen method requires until all permanent members are in place and all final connections are completed, including all roof attachments. The building shall not be considered stable until all connections and diaphragms are complete.
  - Walls above grade shall be braced until the structural system is complete. Walls shall not be considered to be self supporting.

- Submittals: A copy of all shop drawings that have been submitted for review must be kept at the construction site for reference. These drawings must bear the appropriate review stamps. The shop drawing review shall not relieve the contractor of the responsibility of completing the project according to the contract documents. The CONTRACTOR shall review and mark all shop drawings prior to submitting them to the Architect for his review. Shop Drawings made from reproductions of (these) contract drawings will be rejected. Review of shop drawings is for general compliance only and is not intended for approval. The shop drawings review shall not relieve the contractor from the responsibility of completing the project according to the contract documents

- Reproduction of these contract documents for use as shop drawings will not be permitted and will be rejected.

- The Contractor shall coordinate with all other trades any items that are to be integrated into the structural system such as openings, penetrations, mechanical and electrical equipment, etc. Sizes and locations of mechanical and other equipment that differ from those shown on the contract drawings shall be reported to the architect / engineer.

- Project Coordination: It shall be the responsibility of the CONTRACTOR to coordinate with all trades any and all items that are to be integrated into the structural system. Openings or penetrations through, or attachments to the structural system that are not indicated on these drawings shall be the responsibility of the CONTRACTOR and shall be coordinated with the Architect/Engineers. The order of construction is the responsibility of the CONTRACTOR. It is the contractor's obligation to provide all items necessary for his chosen procedure.

- Contractor shall field verify all dimensions, and conditions. If the contract drawings do not represent actual conditions, contractor shall notify Architect/Engineer prior to fabrication or construction within that area.

CONCRETE PROTECTION FOR REINFORCEMENT		
	APPLICATION	MINIMUM CLEAR COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	1. ALL APPLICATIONS EXCEPT SLABS ON GRADE	3"
	2. SLABS ON GRADE - CLEAR DISTANCE FROM TOP OF SLAB	1"
CONCRETE EXPOSED TO EARTH OR WEATHER	1. NO. 6 BARS AND LARGER	2"
	2. NO. 5 BARS AND SMALLER	2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR IN CONTACT WITH GROUND	1. SLABS, WALLS, JOISTS	2"
	2. BEAM OR COLUMN TIES, STIRRUPS, OR PRIMARY REINFORCEMENT	2"
NOTES	1. TOLERANCE FOR CONCRETE COVER AND REINFORCEMENT LOCATION IS ±3/8"	

MARK:	DATE:	DESCRIPTION:

PROJECT #: 823278  
 DRAWN BY:  
 CHECKED BY:  
 ISSUED: 02/13/2025



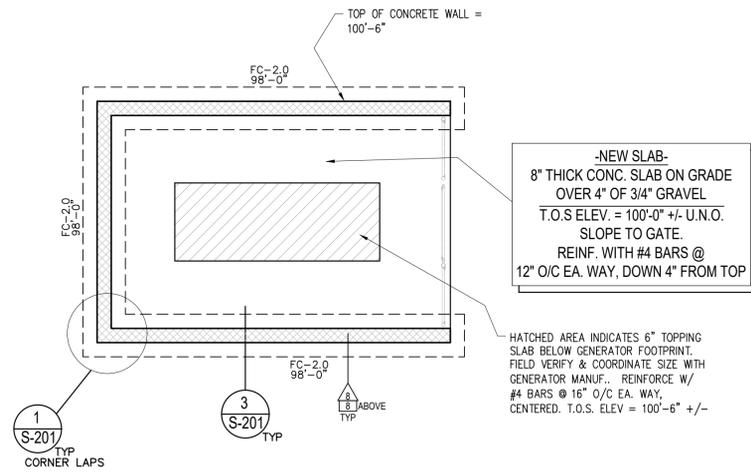
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GENERAL  
STRUCTURAL  
NOTES

S-001



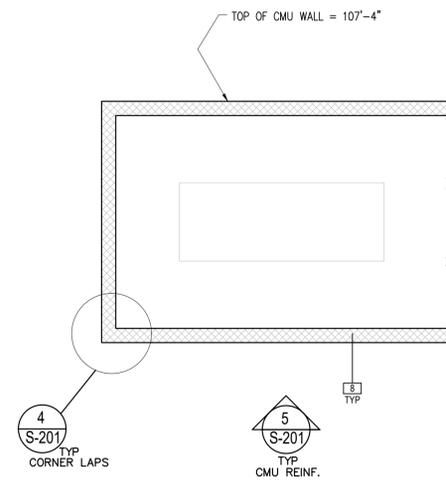




**S2 FOOTING & FOUNDATION PLAN**  
 S-102 SCALE: 1/4" = 1'-0"

**FOOTING & FOUNDATION PLAN NOTES:**

- COORDINATE & VERIFY THIS DRAWING WITH SITE, ELECTRICAL, MECHANICAL, AND ARCHITECTURAL DRAWINGS, PRIOR TO START OF CONSTRUCTION. COORDINATE ALL EXCAVATIONS AND SOIL IMPROVEMENT WITH THE PROJECT SOILS REPORT.
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN ON THIS DRAWING.
- REFER TO GENERAL STRUCTURAL NOTES (S-001) & THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- REFER TO SCHEDULES ON SHEET S-003 FOR ALL STRUCTURAL SCHEDULES.
- ALL DETAILS ARE TYPICAL AT ALL APPLICABLE LOCATIONS UNLESS NOTED OTHERWISE.
- VERIFY EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.
- EXTEND HOOKED VERTICAL LAP DOWELS OUT OF TOPS OF FOOTINGS OR FOUNDATION WALLS TO MATCH SIZE, SPACING, AND LAYOUT OR ALL MASONRY WALL AND COLUMN VERTICAL REINFORCING.
- SPOT FOOTINGS SHALL BE CENTERED BELOW THE SUPPORTED COLUMNS, AND CONTINUOUS FOOTINGS SHALL BE CENTERED BELOW THE SUPPORTED WALLS, EXCEPT WHERE NOTED OTHERWISE.
- COORDINATE ALL FOOTING DEPTHS AND WIDTHS WITH INTERIOR AND EXTERIOR PIPES, DRAINS, CONDUITS, DUCTS, ETC. THAT MAY INTERFERE. LOWER FOOTINGS IF REQ'D.
- VAPOR BARRIERS BELOW ALL SLABS PER ARCHITECTURAL PLANS AND SPEC. REFER TO DETAIL (2/S-201) FOR TYPICAL SLAB ON GRADE CONTROL JOINT, AND CONSTRUCTION JOINT DETAIL.



**S1 WALL FRAMING PLAN**  
 S-102 SCALE: 1/4" = 1'-0"

**PLAN NOTES:**

- COORDINATE & VERIFY THIS DRAWING WITH ELECTRICAL, MECHANICAL, ARCHITECTURAL, CIVIL/SITE, AND SHOP DRAWINGS PRIOR TO START OF CONSTRUCTION.
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN ON THIS DRAWING.
- REFER TO GENERAL STRUCTURAL NOTES (S-001) & THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- REFER TO DETAIL (1/S-201 & 4/S-201) FOR TYPICAL REINFORCEMENT LAP DETAILS.
- REFER TO SCHEDULES ON SHEET S-003 FOR FOOTING, PIER, COLUMN, & WALL REQUIREMENTS.
- ALL DETAILS ARE TYPICAL AT ALL APPLICABLE LOCATIONS UNLESS NOTED OTHERWISE.
- EXTEND VERTICAL REINFORCING LAP DOWELS OUT OF TOPS OF FOOTINGS SUPPORTING MASONRY WALLS & COLUMNS. DOWEL SIZES & SPACING SHALL CORRESPOND W/ VERT. REINF. IN MASONRY WALLS AND COLUMNS. SEE S-101 FOR MASONRY WALL & COLUMN LOCATIONS & DESIGNATIONS.

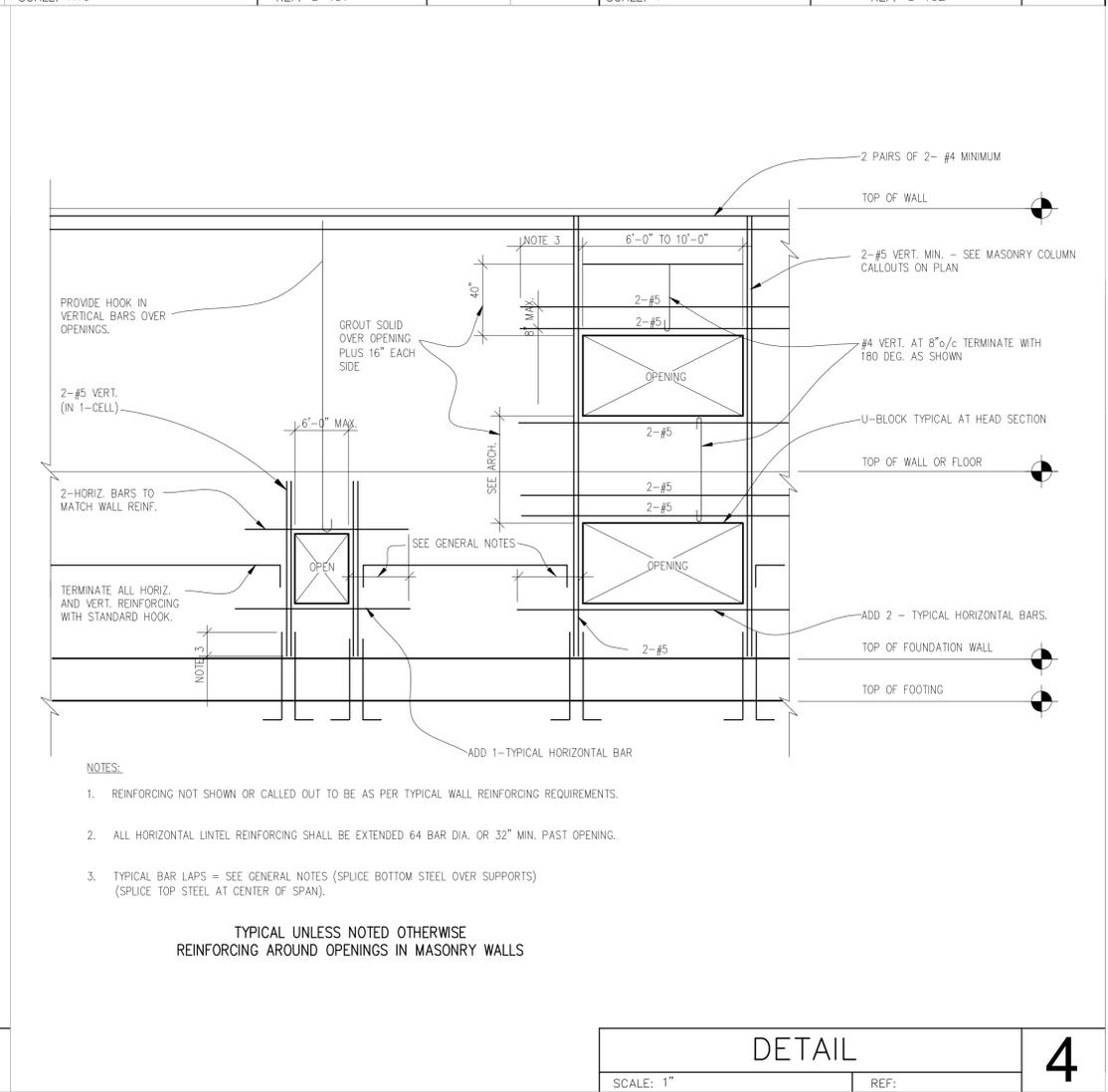
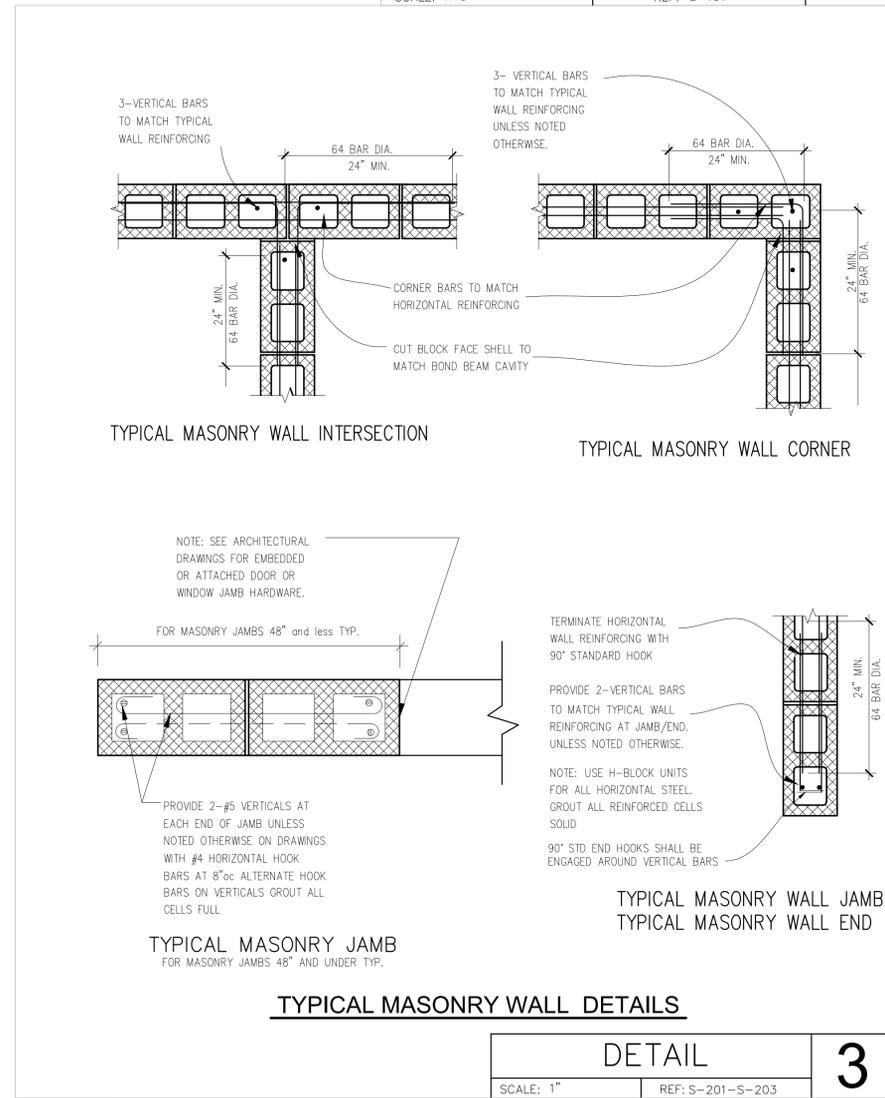
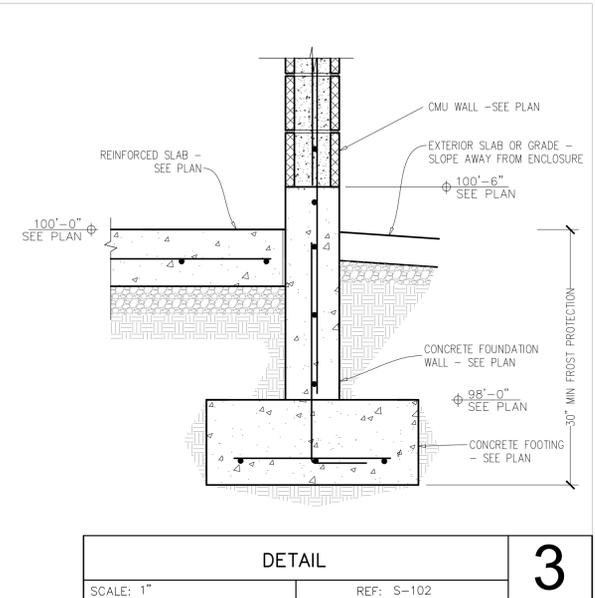
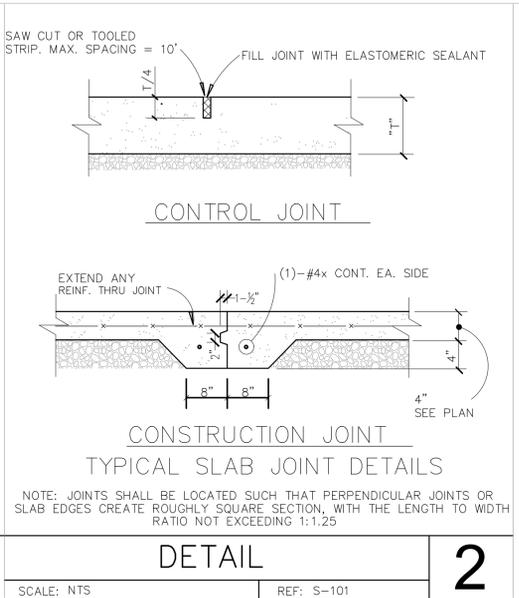
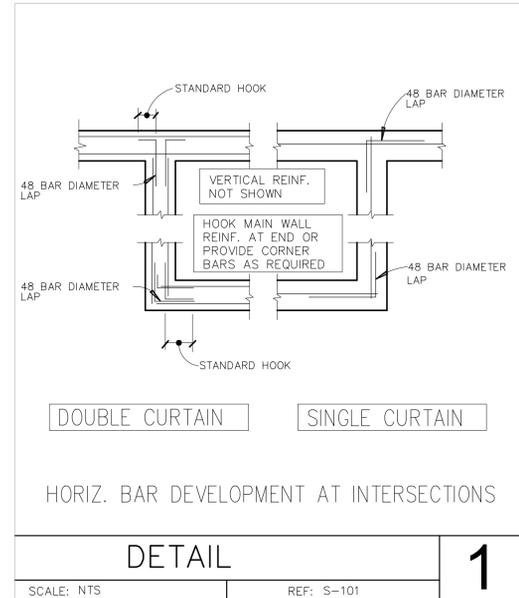
SYMBOL LEGEND	
FT-*	FOOTING DESIGNATION, SEE SCHEDULE ON S-003
**--**	TOP OF FOOTING ELEVATION
△	CONCRETE WALL DESIGNATION, SEE SCHEDULE ON S-003
□	MASONRY WALL DESIGNATION, SEE SCHEDULE ON S-003
MB-*	MASONRY BEAM DESIGNATION, SEE SCHEDULE ON S-003
MC-*	MASONRY COLUMN/PIER DESIGNATION, SEE S-003
**--**	TOP OF MASONRY PIER ELEVATION WHERE APPLICABLE.

MARK	DATE	DESCRIPTION

PROJECT #: 823278  
 DRAWN BY:  
 CHECKED BY:  
 ISSUED: 02/13/2025



2-13-25  
**GENERATOR ENCLOSURE FOUNDATION & WALL PLANS**

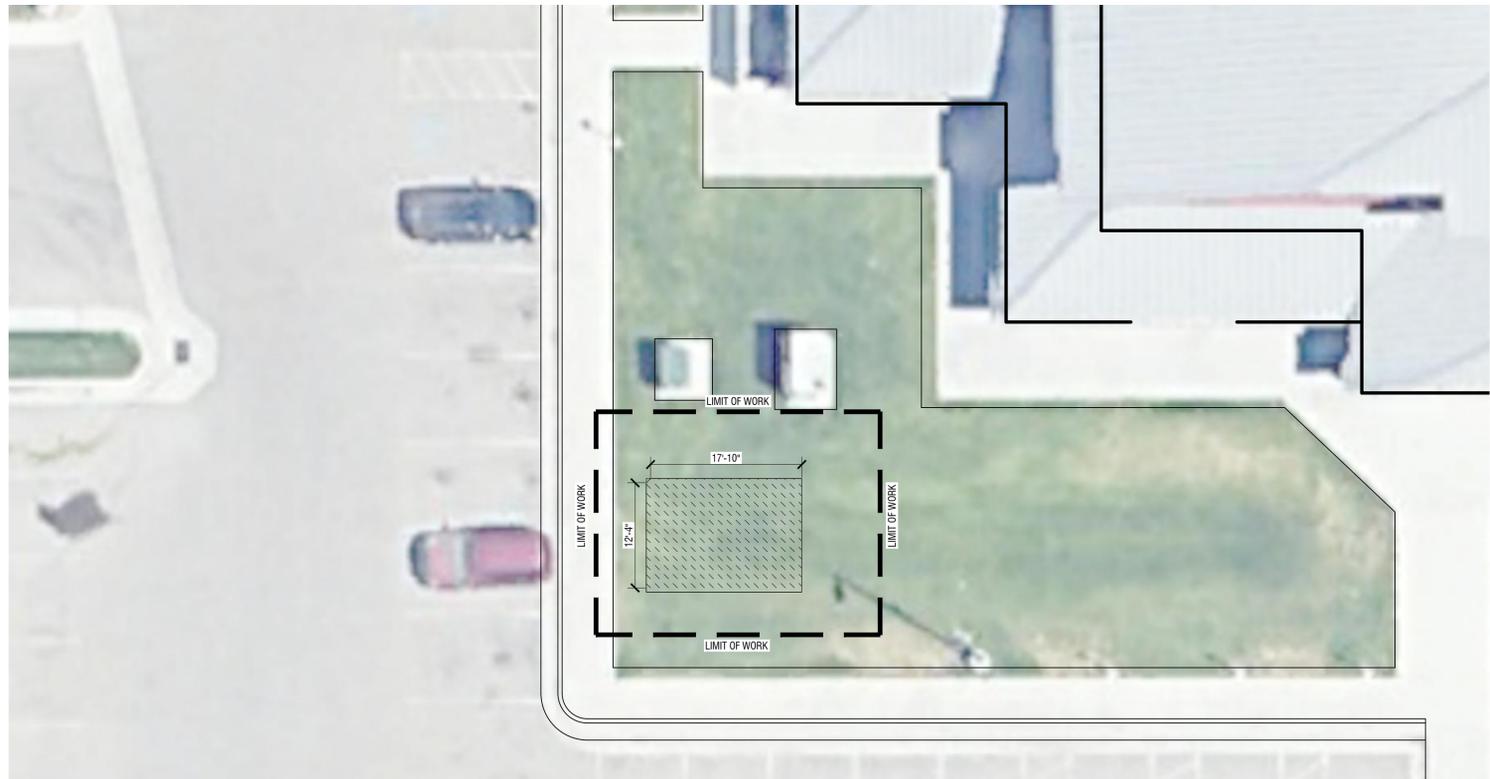


MARK	DATE	DESCRIPTION

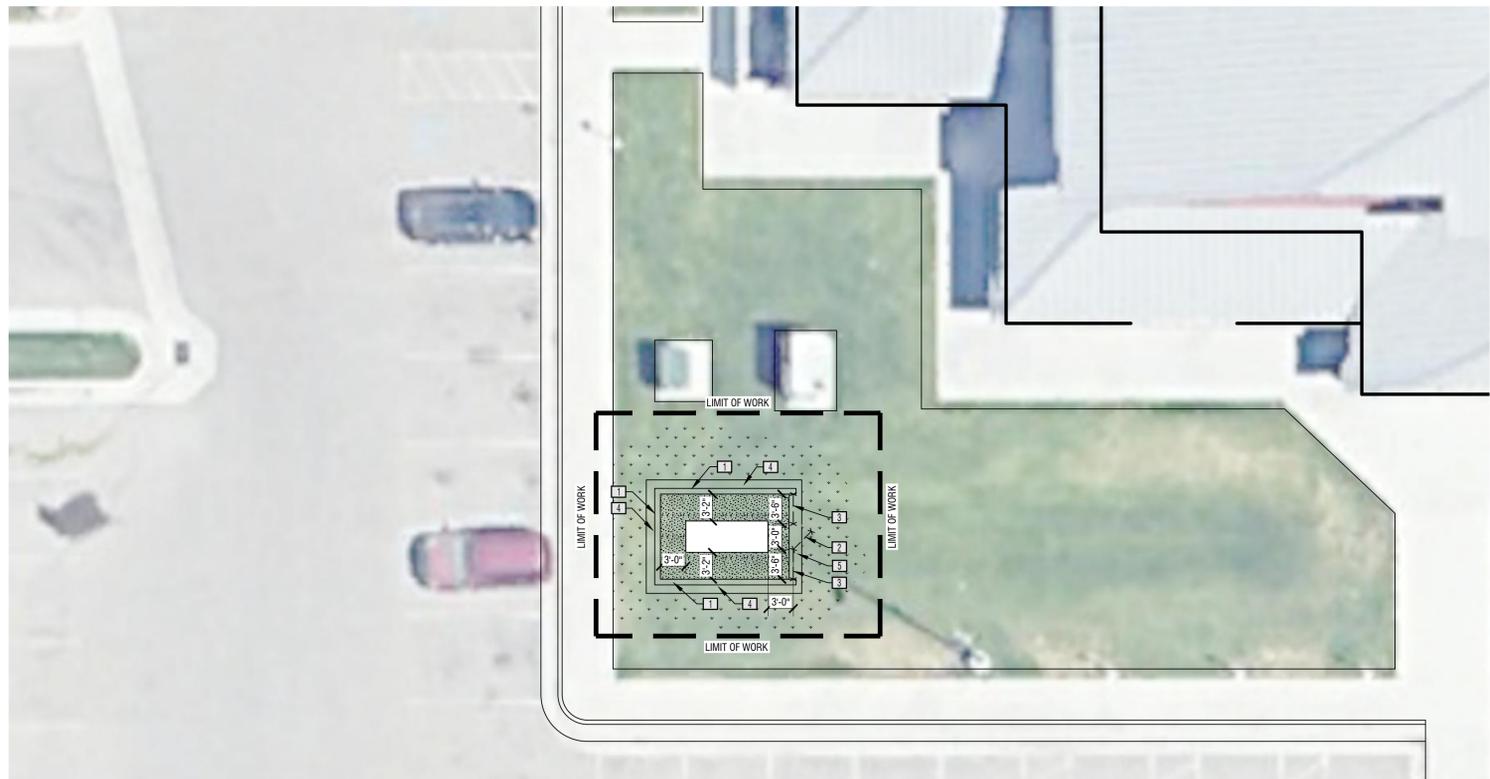
PROJECT #: 823278  
 DRAWN BY:  
 CHECKED BY:  
 ISSUED: 02/13/2025







DEMOLITION PLAN



SITE PLAN

**DEMOLITION NOTES**

1. REMOVE OBSTRUCTIONS, GRASS, AND OTHER VEGETATION TO PERMIT INSTALLATION OF NEW CONSTRUCTION.
2. CUT MINOR ROOTS AND BRANCHES OF TREES INDICATED TO REMAIN IN A CLEAN AND CAREFUL MANNER WHERE SUCH ROOTS AND BRANCHES OBSTRUCT INSTALLATION OF NEW CONSTRUCTION.
3. GRIND STUMPS AND REMOVE ROOTS, OBSTRUCTIONS, AND DEBRIS EXTENDING TO A DEPTH OF 18 INCHES BELOW EXPOSED SUBGRADE.
4. FILL DEPRESSIONS CAUSED BY CLEARING AND GRUBBING OPERATIONS WITH SATISFACTORY SOIL MATERIALS IN HORIZONTAL LAYERS NOT EXCEEDING 8-INCH LOOSE DEPTH, AND COMPACT EACH LAYER TO A DENSITY EQUAL TO ADJACENT GROUND.
5. STRIP SUITABLE TOPSOIL TO WHATEVER DEPTHS ARE ENCOUNTERED IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER WASTE MATERIALS.
6. STOCKPILE SURPLUS TOPSOIL MATERIALS AWAY FROM EDGE OF EXCAVATIONS WITHOUT INTERMIXING WITH SUBSOIL. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST. COORDINATE LOCATION WITH OWNER'S REPRESENTATIVE OR AT LOCATION SHOWN ON PLANS.
7. REMOVE EXISTING ABOVE- AND BELOW-GRADE STRUCTURES AS INDICATED AND AS NECESSARY TO FACILITATE NEW CONSTRUCTION.
8. AT ALL LOCATIONS WHERE EXISTING PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING PAVEMENT SHALL BE SAW CUT TO A CLEAN SMOOTH EDGE.
9. PROTECT EXISTING BUILDINGS, WALKS, DRIVES, CURBS, EXISTING VEGETATION, ETC. THAT ARE TO REMAIN. REPAIR ANY DAMAGES THAT MAY OCCUR TO EXISTING ITEMS TO BE PROTECTED.
10. ALL ITEMS TO BE REMOVED FROM THE PROJECT AND EXCESS MATERIALS SHALL BE LEGALLY DISPOSED OF OFFSITE BY THE CONTRACTOR
11. CONTINUOUSLY CLEAN-UP AND REMOVE WASTE MATERIALS FROM SITE. DO NOT ALLOW MATERIALS TO ACCUMULATE ON SITE.
12. DO NOT BURN OR BURY MATERIALS ON SITE. LEAVE SITE IN CLEAN CONDITION.

**DEMOLITION PLAN LEGEND**

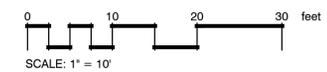
SYMBOL	DESCRIPTION	QTY	DETAIL
	REMOVE LAWN - clear and grub	245 sf	

**GENERAL NOTES**

1. THE CONTRACTOR SHALL INSPECT THE SITE TO BE FULLY AWARE OF ALL PERTINENT EXISTING CONDITIONS PRIOR TO SUBMITTING BID OR PROPOSAL.
2. NO WORK IS TO BEGIN UNTIL NECESSARY PERMITS HAVE BEEN OBTAINED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY FOR ALL PERMITS.
3. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL MEET WITH THE OWNER'S REPRESENTATIVE TO DETERMINE METHOD OF MAINTAINING PUBLIC ACCESS TO THE BUILDING DURING CONSTRUCTION. CONTRACTOR SHALL MAINTAIN APPROVED ACCESS TO THE BUILDING THROUGHOUT THE DURATION OF CONSTRUCTION AND SHALL PROVIDE ALL TEMPORARY RAMPS, BARRIERS, ETC. AS REQUIRED TO MAINTAIN PUBLIC SAFETY.
4. PRIOR TO THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY HIS WORK. THE CONTRACTOR SHALL PROTECT THOSE UTILITIES THAT ARE TO REMAIN AND BE RESPONSIBLE FOR THE REPAIR OF DAMAGES TO SUCH UTILITIES.
5. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES WHEN CONSTRUCTION WORK BEGINS NEAR ANY UTILITY LINES AND ARRANGE FOR A UTILITY REPRESENTATIVE TO BE PRESENT IF THE CONTRACTOR'S CLOSE OPERATIONS COULD CREATE A HAZARDOUS CONDITION.
6. THE CONTRACTOR SHALL PROTECT EXISTING BUILDINGS, WALKS, DRIVES, CURBS, ETC. THAT ARE TO REMAIN AND SHALL REPAIR ANY DAMAGE THAT MAY RESULT FROM THE WORK.
7. THE CONTRACTOR HAS THE RESPONSIBILITY OF VERIFYING ALL GRADES, ELEVATIONS, DIMENSIONS, MEASUREMENTS, CORNERS, CURBS AND ANGLES FOR WORK TO BE PERFORMED WITHIN THIS CONTRACT. REPORT ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL CONDITION TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.
8. THE CONTRACTOR IS RESPONSIBLE FOR ANY UNAUTHORIZED DAMAGE INSIDE AND OUTSIDE THE LIMIT OF WORK LINE DUE TO CONSTRUCTION OPERATIONS AND SHALL RESTORE DAMAGED AREAS TO ORIGINAL CONDITION AT NO COST.

**SITE PLAN LEGEND**

SYMBOL	DESCRIPTION	QTY	DETAIL
	CMU SCREEN WALL - see architectural drawings for detail		
	6' TALL CHAINLINK SINGLE GATE	A3/AS-501	
	6' TALL CHAINLINK FENCE	A4/AS-501	
	12' WIDE MOWSTRIP	B4/AS-501	
	MOWSTRIP UNDER FENCE	B5/AS-501	
	SOD - 3 cultivar kentucky bluegrass blend, match species of existing turf	372 sf	C5/AS-501
	PEA GRAVEL - 3/8" minus, 3" depth, weed barrier beneath, gray in color	116 sf	



D

C

B

A



MARK	DESCRIPTION
PROJECT #:	823278
DRAWN BY:	KL
CHECKED BY:	KL
ISSUED:	02/14/2025



BID/PERMIT SET

**GENERAL NOTES**

- KEYNOTES: THE FIRST TWO NUMBERS REPRESENT THE RELATED CSI MASTERFORMAT DIVISION, THE SECOND SET OF NUMBERS REPRESENTS AN IDENTIFYING MARK VALUE. NOT ALL VALUES MAY BE USED OR OCCUR IN THE DOCUMENT SET.  
ADDITIONALLY, KEYNOTES RETAIN THEIR ASSIGNED VALUE UNIVERSALLY THROUGHOUT THE SET. THE KEYNOTES LISTED BELOW, REPRESENT THE KEYNOTES FOUND AND UTILIZED ON THIS SHEET AND EACH LIST WILL DIFFER RESPECTIVE TO ITS' SHEET, THEREFORE, BASED ON ACTUAL KEYNOTES UTILIZED ON A GIVEN SHEET OF DRAWINGS, GAPS IN THE SEQUENCING WILL OCCUR.
- CONTRACTOR SHALL BE FAMILIARIZED WITH THE LAY-OUT OF STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. ANY QUESTIONS SHALL BE SUBMITTED VIA REQUEST FOR INFORMATION (RFI).
- WALL TYPES SHOWN AS [S6A] ARE SHOWN ON SHEET A-101. FOR OTHER WALLS SEE BUILDING AND WALL SECTIONS.
- SLOPE ALL FLOORS TO FLOOR DRAINS (FD) U.N.O.
- INSTALL CONTROL JOINTS EVERY 20'-0" MIN.
- MEASUREMENTS SPECIFYING "EQ" = EQUAL LENGTH OR WIDTH TO FILL REMAINDER OF LENGTH REQUIRED.

**KEYNOTES**

#	DESCRIPTION
31.01	GRAVEL FILL - SEE AS-101
32.01	CHAIN LINK FENCE - SEE AS-101

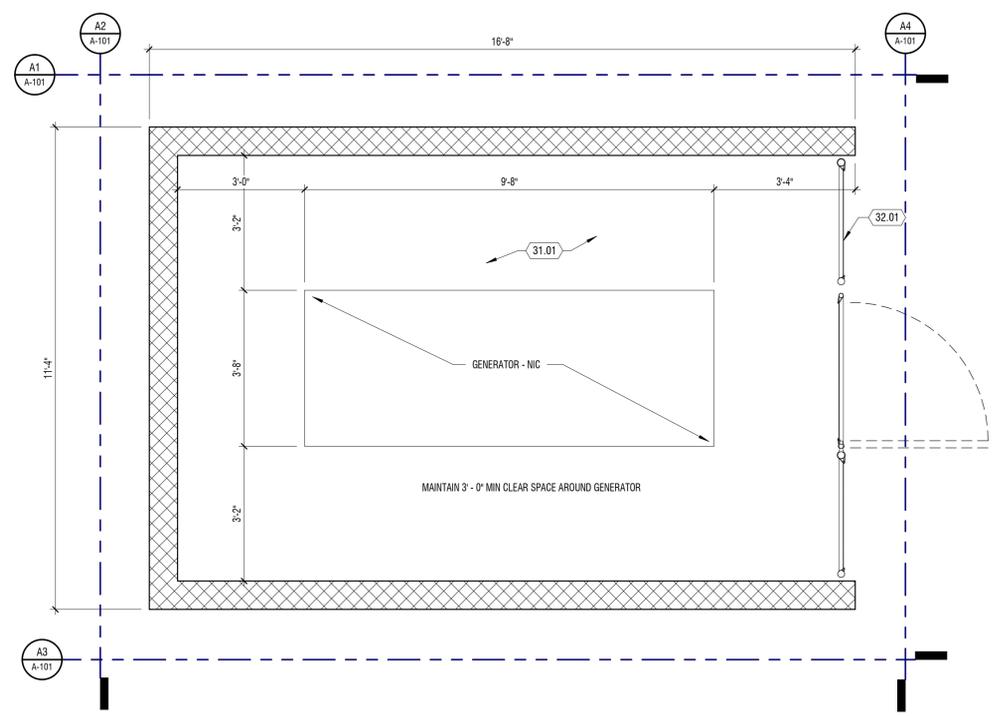
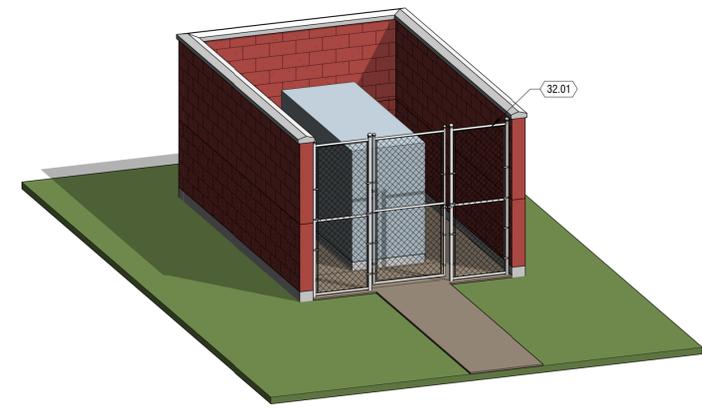
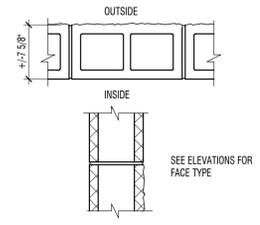
**EXTERIOR MATERIALS**

MARK	DESCRIPTION
DIVISION 04: UNIT MASONRY	
M1	HONED CMU (COLOR: BY ARCHITECT FROM MANUFACTURERS FULL RANGE)
M2	SPLIT FACE CMU (COLOR: BY ARCHITECT FROM MANUFACTURERS FULL RANGE)

**WALL ASSEMBLIES**

**M8**

DESCRIPTION	ASSEMBLY	FIRE RATING	TESTING SOURCE	SIC RATING	TESTING SOURCE
CMU WALL	8" REINFORCEABLE CMU	N/A	N/A	N/A	N/A

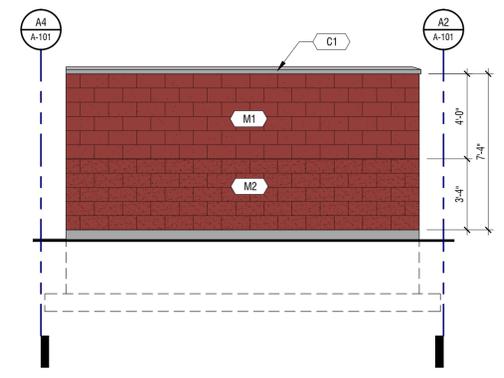


**C1 PERSPECTIVE**

NTS

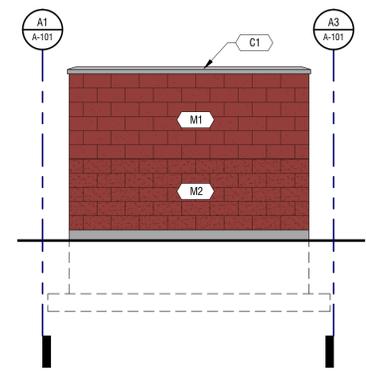
**C2 PLAN**

1/2" = 1'-0"



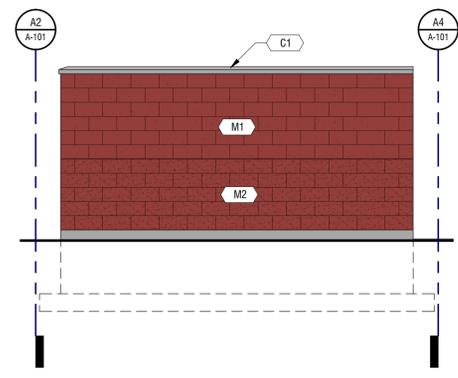
**A1 ELEVATION**

1/4" = 1'-0" NORTH



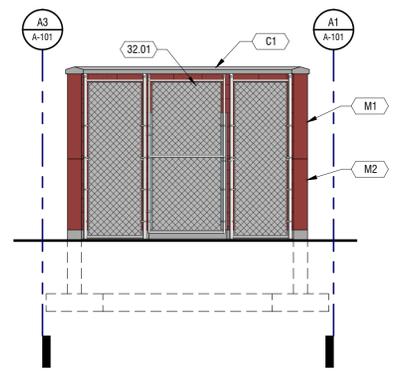
**A2 ELEVATION**

1/4" = 1'-0" WEST



**A3 ELEVATION**

1/4" = 1'-0" SOUTH



**A4 ELEVATION**

1/4" = 1'-0" EAST





