

GENERAL STRUCTURAL AND CONSTRUCTION NOTES

1.0 GENERAL

- 1. ALL WORK SHALL CONFORM TO THE '2015 INTERNATIONAL BUILDING CODE' AND TO ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
2. IN CASE OF CONFLICT BETWEEN THE GENERAL NOTES AND DETAILS, THE MOST RIGID REQUIREMENTS SHALL GOVERN.
3. WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES SHALL BE REPEATED.
4. JOB SITE SAFETY AND CONSTRUCTION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE FOR DEWATERING AS REQUIRED DURING EXCAVATION AND CONSTRUCTION. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. THE CONTRACTOR SHALL COORDINATE OPENINGS, SLEEVES, CONCRETE HOUSEKEEPING PADS, INSERTS, AND DEPRESSIONS SHOWN ON THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE WEIGHT OF SUPERIMPOSED DEAD LOADS RESULTING FROM MEP EQUIPMENT INSTALLED IN THE FIELD DOES NOT EXCEED THE ALLOWABLE MEP LOADS DESIGNATED ON THE LOAD MAPS. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER IF THE WEIGHT OF MEP EQUIPMENT EXCEEDS THAT SHOWN ON THE LOAD MAPS AND PROVIDE REINFORCING AS NECESSARY AT HIS OWN EXPENSE.
7. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF MASONRY AND DRYWALL NON-LOAD BEARING PARTITIONS. PROVIDE SLIP CONNECTIONS THAT ALLOW VERTICAL MOVEMENT AT THE HEADS OF ALL SUCH PARTITIONS. CONNECTIONS SHALL BE DESIGNED TO SUPPORT THE TOP OF THE WALLS LATERALLY FOR THE CODE-REQUIRED LATERAL LOAD.
8. ALL COSTS OF INVESTIGATION AND/OR REDESIGN DUE TO CONTRACTOR IMPROPER INSTALLATION OF STRUCTURAL ELEMENTS OR OTHER ITEMS NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS SHALL BE AT THE CONTRACTOR'S EXPENSE.
9. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS. IF THERE IS A DISCREPANCY BETWEEN DRAWINGS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ARCHITECT PRIOR TO PERFORMING THE WORK.
10. THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION SHOWN (DIMENSIONS, ELEVATIONS, ETC.) AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT.
11. THE CONTRACTOR SHALL VERIFY AND/OR ESTABLISH ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. FAILURE TO NOTIFY ARCHITECT/ENGINEER OF UNSATISFACTORY CONDITIONS CONSTITUTES ACCEPTANCE OF UNSATISFACTORY CONDITIONS.
12. IF THE EXISTING FIELD CONDITIONS DO NOT PERMIT THE INSTALLATION OF THE WORK IN ACCORDANCE WITH THE DETAILS SHOWN, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY AND PROVIDE A SKETCH OF THE CONDITION WITH HIS PROPOSED MODIFICATION OF THE DETAILS GIVEN ON THE CONTRACT DOCUMENTS. DO NOT COMMENCE WORK UNTIL CONDITION IS RESOLVED AND MODIFICATION IS APPROVED BY THE ARCHITECT.
13. WHERE ALTERATIONS INVOLVE THE EXISTING SUPPORTING STRUCTURE, THE CONTRACTOR SHALL PROVIDE SHORING AND PROTECTION REQUIRED TO ENSURE THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE.
14. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE ALLOWABLE CONSTRUCTION LOADS AND TO PROVIDE DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, STAGINGS, BRACING, SHEETING, AND SHORING, ETC.
15. CONTRACTOR TO PROVIDE SHEETING, BRACING, AND UNDERPINNING AS NECESSARY TO PREVENT ANY LATERAL OR VERTICAL MOVEMENTS OF EXISTING BUILDINGS, STREETS, AND ANY EXISTING UTILITY LINES. IN NO CASE SHALL HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'-0" FROM ANY FOUNDATION WALL. IF IT IS NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THAN 8'-0" TO THE WALL, THE CONTRACTOR SHALL BE THE SOLE RESPONSIBLE PARTY AND, AT HIS OWN EXPENSE, SHALL PROVIDE ADEQUATE SUPPORTS OR BRACE THE WALL TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH EQUIPMENT. NO BLASTING SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL.
16. SHOP DRAWINGS FOR ALL STRUCTURAL MATERIALS TO BE SUBMITTED TO ARCHITECT FOR REVIEW PRIOR TO THE START OF FABRICATION OR COMMENCEMENT OF WORK. REVIEW PERIOD SHALL BE A MINIMUM OF TWO (2) WEEKS.
17. REPRODUCTION OF ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR RESUBMITTAL AS SHOP DRAWINGS IS PROHIBITED. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED.
18. SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL WHICH SHALL CONSTITUTE CERTIFICATION THAT THE CONTRACTOR HAS VERIFIED ALL CONSTRUCTION CRITERIA, MATERIALS, AND SIMILAR DATA AND HAS CHECKED EACH DRAWING FOR COMPLETENESS, COORDINATION, AND COMPLIANCE WITH THE CONTRACT DOCUMENTS.
19. THE SHOP DRAWINGS SHALL INCLUDE DIMENSIONED FLOOR AND ROOF EDGES, OPENINGS AND SLEEVES AT ALL FLOORS REQUIRED FOR ALL TRADES.
20. THE DRAWINGS HAVE BEEN PRODUCED ENTIRELY ON PENNONI CADD SYSTEM. ANY OTHER LETTERING, LINES OR SYMBOLS, OTHER THAN PROFESSIONAL STAMPS AND SIGNATURES, HAVE BEEN MADE WITHOUT THE AUTHORIZATION OF PENNONI ARE INVALID.
21. THE STRUCTURAL DRAWINGS SHALL GOVERN THE WORK FOR ALL STRUCTURAL FEATURES, UNLESS NOTED OTHERWISE. THE ARCHITECT'S DRAWINGS SHALL GOVERN THE WORK FOR ALL DIMENSIONS.
22. INSPECTION IS REQUIRED OF ALL CONSTRUCTION DELINEATED ON THE STRUCTURAL DRAWINGS AND/OR SPECIFICATIONS. THE OWNER (CONTRACTOR) SHALL EMPLOY A TESTING/INSPECTION AGENCY WHICH SHALL PROVIDE PERSONNEL WITH THE FOLLOWING MINIMUM QUALIFICATIONS:
A. CERTIFIED BY INSTITUTE OF CERTIFIED ENGINEERING TECHNICIANS, OR OTHER RECOGNIZED COMPARABLE ORGANIZATION, AND,
\* FOR INSPECTION, SAMPLING, TESTING CONCRETE AND MASONRY: ACI CERTIFIED CONCRETE FIELD-TESTING TECHNICIAN, GRADE I; AND CONSTRUCTION INSPECTOR, LEVEL II.
\* STRUCTURAL STEEL INSPECTION: AWS CERTIFIED WELDING INSPECTOR.
23. SUBMIT PERIODIC REPORTS WITHIN ONE BUSINESS DAY AFTER RECEIPT BY THE CONTRACTOR TO ARCHITECT/ENGINEER AND THE CONSTRUCTION CODE OFFICIAL DURING CONSTRUCTION. SUBMIT FINAL INSPECTION REPORT SUMMARY FOR EACH DIVISION OF WORK, CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER, THAT INSPECTIONS WERE PERFORMED AND THAT WORK WAS PERFORMED IN ACCORDANCE WITH CONTRACT DOCUMENTS.
24. THE OWNER SHALL ENGAGE A TESTING AGENCY TO PROVIDE TESTING SERVICES AS INDICATED IN EACH SECTION OF THESE GENERAL NOTES.
25. ALL MATERIALS SHALL BE STORED TO PROTECT THEM FROM EXPOSURE TO THE ELEMENTS.

2.0 EARTHWORK

- 1. ENGINEERED (CONTROLLED COMPACTED) FILL WITHIN THE BUILDING AREA SHALL BE CONSTRUCTED PRIOR TO FOOTING (OR PILE CAP) EXCAVATION. SEE SPECIFICATIONS FOR REQUIREMENTS OF CONTROLLED COMPACTED FILL.
2. EXCAVATION SHALL BE PERFORMED SO AS NOT TO DISTURB EXISTING ADJACENT BUILDINGS, STREETS, AND UTILITY LINES. VERIFY LOCATION OF ALL UTILITIES PRIOR TO COMMENCEMENT OF WORK. HAND EXCAVATE AROUND UTILITIES AS REQUIRED.
3. SEE THE SPECIFICATIONS AND GEOTECHNICAL REPORT FOR EXCAVATION, BACKFILL AND PREPARATION OF THE FOUNDATION AND SLAB-ON-GRADE SUBGRADE, INCLUDING COMPACTION REQUIREMENTS.
4. SATISFACTORY FILL MATERIALS ARE THOSE COMPLYING WITH ASTM D2487, GROUPS GW, GP, GM, SM, SW, AND SP. ON SITE BORROW MATERIAL SHALL BE TESTED TO DETERMINE SUITABILITY FOR USE AS FILL MATERIAL.
5. COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DENSITY OF MODIFIED PROCTOR (ASTM D1557):
\* UNDER BUILDING FOUNDATIONS - 98%
\* UNDER BUILDING SLABS, STEPS, PAVEMENTS - 95%
6. REMOVE EXISTING VEGETATION, TOPSOIL, AND UNSATISFACTORY SOIL MATERIALS. PROOF ROLL SUBGRADE TO OBTAIN UNIFORMLY DENSIFIED SUBSTRATA PRIOR TO PLACING FILL MATERIAL EVENLY IN 8" THICK (MAXIMUM) LAYERS AND COMPACTING TO REQUIRED DENSITY.
7. THE OWNER SHALL RETAIN THE SERVICES OF A PROFESSIONAL GEOTECHNICAL ENGINEER, SUBJECT TO THE APPROVAL OF THE ARCHITECT, TO PERFORM SOIL TESTING AND INSPECTION. THE ENGINEER SHALL INSPECT THE SUBGRADE TO VERIFY BEARING LEVELS AND ENSURE THAT THE SAFE BEARING CAPACITY MEETS OR EXCEEDS THE DESIGN VALUE INDICATED BELOW. REPORTS SHALL BE SUBMITTED TO THE ARCHITECT OUTLINING THE WORK PERFORMED AND TEST RESULTS.
8. BACKFILL SHALL BE BROUGHT UP SIMULTANEOUSLY ON EACH SIDE OF WALLS AND GRADE BEAMS, WITH A GRADE DIFFERENCE NOT TO EXCEED 2'-0" AT ANY TIME.
9. DO NOT BACKFILL AGAINST BASEMENT WALLS UNTIL BASEMENT SLAB ON GRADE AND ALL FRAMED SLABS ARE IN PLACE AND HAVE ATTAINED THE SPECIFIED DESIGN STRENGTH. PROVIDE TEMPORARY SHORING WHERE REQUIRED.

3.0 FOUNDATIONS

- 1. FOUNDATIONS HAVE BEEN DESIGNED AND FOOTING ELEVATIONS ESTABLISHED IN ACCORDANCE WITH THE INFORMATION SHOWN ON THE EXISTING BUILDING DRAWINGS AND IN ACCORDANCE WITH IBC 2015 SECTION 1806. A NEW SUBSURFACE INVESTIGATION REPORT, WITH FOUNDATION RECOMMENDATIONS, HAS NOT BEEN PROVIDED BY THE OWNER FOR THIS PROJECT AT THIS TIME. THE SOIL INFORMATION AND BEARING CAPACITY SHALL BE VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER DURING CONSTRUCTION.
2. FOOTINGS SHALL BEAR ON UNDISTURBED STRATUM OR ENGINEERED FILL WITH A MINIMUM BEARING CAPACITY OF 2,500 PSF USING TABLE 1806.2 AND ASSUMED SOIL TYPE OF SAND, SILTY SAND, CLAYEY SAND, SILTY GRAVEL, AND CLAYEY GRAVEL (SW, SP, SM, SC, GM AND GC).
3. FOOTINGS SHALL BEAR ON UNDISTURBED STRATUM OR ENGINEERED FILL WITH A MINIMUM BEARING CAPACITY OF PSF.
4. PRIOR TO FOOTING CONCRETE PLACEMENT, THE FOOTING SUBGRADE SHALL BE APPROVED BY THE INSPECTING GEOTECHNICAL ENGINEER. IF CONDITIONS PROVE TO BE UNACCEPTABLE AT ELEVATIONS SHOWN, FOOTING BOTTOMS SHALL BE LOWERED TO ACCEPTABLE SUBGRADE MATERIAL. FILL OVER-EXCAVATION WITH LEAN CONCRETE (2,500 PSI).
5. THE BOTTOM OF EXTERIOR FOOTINGS SHALL BE A MINIMUM OF THREE (3) FEET BELOW FINISHED GRADE, OR AS REQUIRED BY LOCAL BUILDING CODES.
6. THE BEARING ELEVATIONS OF NEW FOOTINGS ADJACENT TO EXISTING FOOTINGS ARE TO MATCH THE ADJACENT EXISTING FOOTING BEARING ELEVATIONS UNLESS INDICATED OTHERWISE ON PLANS. SLABS ON GRADE SHALL BEAR ON MECHANICALLY COMPACTED SOIL CAPABLE OF SUPPORTING 150 PSF. DRAINAGE FILL UNDER SLABS SHALL BE COMPACTED GRAVEL OR CRUSHED STONE.
7. CONCRETE FOR FOUNDATIONS SHALL BE POURED ON THE SAME DAY THE SUBGRADE IS APPROVED BY THE GEOTECHNICAL ENGINEER.
8. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL.
9. PROVIDE A CONTINUOUS WATERSTOP AT ALL HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS IN THE ELEVATOR PIT AND ALL OTHER PIT WALLS.
10. THE CONTRACTOR SHALL OBSERVE WATER CONDITIONS AT THE SITE AND TAKE THE NECESSARY PRECAUTIONS TO ENSURE THAT THE FOUNDATION EXCAVATIONS REMAIN DRY DURING CONSTRUCTION. ANY SHEETING OR SHORING REQUIRED FOR DEWATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

4.0 CAST-IN-PLACE CONCRETE

- 1. CONCRETE SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI-318), AND CONSTRUCTED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE 28-DAY STRENGTH OF 4,000 PSI. AIR ENTRAINMENT 4% TO 6% IN ALL EXPOSED CONCRETE WORK. MAXIMUM WATER/CEMENT RATIO OF 0.45.
3. REINFORCING STEEL - ASTM A615 GRADE 60.
4. WELDED WIRE REINFORCEMENT: (WWR) ASTM A-185.
5. LEVELING GROUT SHALL BE NON-SHRINK, NON-METALLIC TYPE, FACTORY PRE-MIXED GROUT IN ACCORDANCE WITH CE-CRD-C621 OR ASTM C109. WITH A MINIMUM COMPRESSIVE 28-DAY STRENGTH OF 5,000 PSI. REINFORCING STEEL CLEAR COVER SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

Table with 2 columns: REINFORCING STEEL IN CONCRETE and 3". Rows include CAST AGAINST SOIL, EXPOSED TO SOIL OR WEATHER, #5 BARS AND SMALLER (1 1/2"), and #6 BARS AND LARGER (2").

NOTE: TOLERANCE FOR CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 117

- 7. SUBMIT TO ARCHITECT/ENGINEER REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL AND MIX DESIGNS FOR REVIEW PRIOR TO PLACING ANY CONCRETE.
A. REINFORCING STEEL PLACING DRAWINGS SHALL BE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 314-02, DETAILS AND DETAILING OF CONCRETE REINFORCING. THE PLACING DRAWINGS SHALL SHOW ALL INFORMATION NECESSARY TO FABRICATE AND PLACE THE REINFORCING STEEL.
B. THE SPACING OF ALL REINFORCING STEEL MUST BE COMPUTED BY THE REINFORCING STEEL DETAILER AND MUST BE INDICATED ON THE PLACING DRAWINGS. EXTENT ARROWS MUST BE USED TO CLEARLY INDICATE THE LOCATIONS WHERE GROUPS OF REINFORCING BARS ARE TO BE INSTALLED.
C. A LIST OF ALL APPLICABLE REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE INDICATED ON ALL REINFORCING STEEL PLACING DRAWINGS. PLACING DRAWINGS THAT DO NOT SHOW SUFFICIENT INFORMATION NEEDED TO PLACE THE REINFORCING STEEL WILL BE REJECTED.
8. ALL REINFORCEMENT SHALL BE IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS, STIRRUPS OR CHAIRS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.
9. LAP WELDED WIRE REINFORCEMENT TWO (2) FULL WIRE SPACES AT SPLICES AND WIRE TOGETHER. PROVIDE PLASTIC TIPPED BOLSTERS AND CHAIRS AT ALL LOCATIONS WHERE THE CONCRETE SURFACE IS IN CONTACT WITH THE BOLSTERS OR CHAIRS IS EXPOSED.
10. PLACING OF CONCRETE SHALL NOT START UNTIL THE PLACEMENT OF REINFORCING HAS BEEN APPROVED BY THE INSPECTION AGENCY.
11. BONDING AGENT SHALL BE USED WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE. EPOXY ADHESIVE SHALL BE USED WHERE DOWELS ARE TO BE INSTALLED INTO EXISTING CONCRETE. SUBMIT MANUFACTURER INFORMATION FOR ENGINEER REVIEW.
12. NO SLEEVE SHALL BE PLACED THROUGH ANY CONCRETE ELEMENT UNLESS SHOWN ON THE APPROVED SHOP DRAWINGS OR SPECIFICALLY AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF ALL SLOTS, PIPE SLEEVES, ETC. AS REQUIRED FOR MECHANICAL TRADES BEFORE CONCRETE IS PLACED.
13. PIPES OR CONDUITS PLACED IN SLABS SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 THE SLAB THICKNESS AND SHALL NOT BE PLACED CLOSER THAN 3 DIAMETERS ON CENTER. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN SLABS WITHIN 12 INCHES OF COLUMN FACE OR FACE OF BEARING WALL. NO CONDUITS MAY BE PLACED IN EXTERIOR SLABS OR SLABS SUBJECTED TO FLUIDS.
14. PRIOR TO PLACING CONCRETE, THE CONTRACTOR SHALL SUBMIT FOR REVIEW BY THE STRUCTURAL ENGINEER, A CONCRETE POUR SCHEDULE SHOWING LOCATION OF ALL PROPOSED CONSTRUCTION JOINTS AND WATERSTOPS.
15. PRIOR TO CONCRETE PLACEMENT, THE CONTRACTOR SHALL SUBMIT TO THE STRUCTURAL ENGINEER FOR REVIEW, CONCRETE MIX DESIGNS PREPARED IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS INDICATED IN THE GENERAL NOTES.
16. CONCRETE SHALL NOT BE PUMPED THROUGH ALUMINUM PIPES AND SHALL NOT BE PLACED IN CONTACT WITH ALUMINUM FORMS, MIXING DRUMS, BUGGIES, CHUTES, CONVEYORS OR OTHER EQUIPMENT MADE OF ALUMINUM.
17. ALL INSERTS AND SLEEVES SHALL BE CAST-IN-PLACE WHENEVER FEASIBLE. DRILLED OR POWDER DRIVEN FASTENERS WILL BE PERMITTED WHEN PROVEN TO THE SATISFACTION OF THE STRUCTURAL ENGINEER THAT THE FASTENERS WILL NOT SPALL THE CONCRETE AND HAVE THE SAME CAPACITY AS CAST-IN-PLACE INSERTS.
18. WHEN INSTALLING EXPANSION BOLTS OR ADHESIVE ANCHORS, THE CONTRACTOR SHALL TAKE MEASURES TO AVOID DRILLING OR CUTTING OF ANY EXISTING REINFORCING AND DESTRUCTION OF CONCRETE. HOLES SHALL BE BLOWN CLEAN PRIOR TO PLACING BOLTS OR ADHESIVE ANCHORS. CHAMFER ALL EXPOSED CONCRETE CORNERS UNLESS NOTED OTHERWISE ON ARCHITECTURAL DRAWINGS.
19. THE CONCRETE SLABS SHALL BE FINISHED FLAT AND LEVEL WITHIN TOLERANCE, TO THE ELEVATION INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL CONCRETE REQUIRED DUE TO FORMWORK, METAL DECK, AND FRAMING DEFLECTION TO ACHIEVE THIS FINISHED TOP OF SLAB ELEVATION. THE CONTRACTOR SHALL PROVIDE FOR A MINIMUM OF 5/8" AVERAGE THICKNESS FOR ADDITIONAL CONCRETE DURING PLACEMENT FOR ALL SLABS SUPPORTED AND FORMED ON STEEL DECK OVER THE ENTIRE FLOOR AREA. THE CONTRACTOR SHALL PROVIDE THE MEANS BY WHICH THE MAXIMUM AND MINIMUM CONCRETE SLAB THICKNESS CAN BE MONITORED AND VERIFIED DURING AND AFTER THE PLACING AND FINISHING OPERATIONS.
20. CONSTRUCTION JOINTS FOR MILD-REINFORCED CONCRETE SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF SPAN. PROPOSED CONSTRUCTION JOINT LOCATIONS SHALL BE SHOWN ON REINFORCING STEEL SHOP DRAWINGS. ANY STOP IN CONCRETE WORK MUST BE MADE WITH VERTICAL BULKHEADS AND HORIZONTAL KEYS, UNLESS OTHERWISE SHOWN. ALL REINFORCING IS TO BE CONTINUOUS THROUGH JOINTS.
21. EARLY DRYING OUT OF CONCRETE, ESPECIALLY DURING THE FIRST 24 HOURS, SHALL BE CAREFULLY GUARDED AGAINST. ALL SURFACES SHALL BE MOIST CURED OR PROTECTED USING A MEMBRANE CURING AGENT APPLIED AS SOON AS FORMS ARE REMOVED. IF MEMBRANE CURING AGENT IS USED, EXERCISE CARE NOT TO DAMAGE COATING.
22. COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI-306. HOT WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI-309R.
23. THROUGHOUT CONSTRUCTION, THE CONCRETE WORK SHALL BE ADEQUATELY PROTECTED AGAINST DAMAGE DUE TO EXCESSIVE LOADING, CONSTRUCTION EQUIPMENT, MATERIALS OR METHODS, ICE, RAIN, SNOW, EXCESSIVE HEAT, AND FREEZING TEMPERATURES.
24. PREPARE CONCRETE TEST CYLINDERS FROM EACH DAY'S POUR. CYLINDERS SHALL BE PROPERLY CURED AND STORED. SAMPLE FRESH CONCRETE IN ACCORDANCE WITH ASTM C172.
25. RETAIN LABORATORY TO PROVIDE TESTING SERVICE. SLUMP PERCENT 143 AIR CONTENT PER ASTM C231 OR C173, CYLINDER TESTS PER ASTM C31 AND C39. ONE SET OF SIX (6) CYLINDERS FOR EACH 50 CUBIC YARDS FOR EACH MIX USED. REPORTS OF ALL TESTS TO BE SUBMITTED TO THE ARCHITECT.

DELEGATED DESIGN

- 1. ALL DESIGN REQUIREMENTS, LOADING, PERFORMANCE CRITERIA, SUBMISSION STANDARDS AND ANY OTHER APPLICABLE INFORMATION IS LOCATED IN THE GENERAL NOTES, DESIGN DATA, PLANS, SECTIONS, DETAILS AND SPECIFICATIONS (CONSTRUCTION DOCUMENTS) FOR THE DELEGATED DESIGN OF THE COMPONENTS NOTED. BY BIDDING ON THIS PROJECT, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR THE DESIGN OF THE COMPONENTS DELEGATED BY THESE CONTRACT DOCUMENTS AND ACCEPTS THAT THERE IS ADEQUATE INFORMATION SHOWN ON THE CONTRACT DOCUMENTS TO PERFORM THE DELEGATED DESIGN.
2. A BID SUBMISSION THAT DOES NOT INCLUDE THE REQUIRED DELEGATED DESIGN WILL RESULT IN THE REJECTION OF ANY AND ALL CONSTRUCTION PHASE SUBMISSIONS, RFIS AND SHOP DRAWINGS.
3. THE ARCHITECTURAL AND STRUCTURAL DRAWINGS MAY SHOW DETAILS FOR DELEGATED DESIGN COMPONENTS, INCLUDING MINIMUM OR MAXIMUM ASSEMBLY REQUIREMENTS (I.E. DEPTH, GAGE, LENGTH, SPAN OR SPACING), OR SUGGESTED ATTACHMENT METHODS. THESE DETAILS AND INFORMATION ARE INTENDED TO BE SCHEMATIC IN NATURE, AND ARE NOT INTENDED TO BE USED FOR BID QUANTITIES. THE CONTRACTOR SHALL MAKE ALLOWANCES IN THEIR BID TO ACCOMMODATE THE COST OF THE ACTUAL ASSEMBLIES AFTER DELEGATED DESIGN IS COMPLETE.
4. THE DESIGN OF DELEGATED COMPONENTS IS THE RESPONSIBILITY OF THE CONTRACTOR'S ENGINEER, WHO MUST BE REGISTERED IN THE PROJECT'S JURISDICTION. ALL SUBMITTALS SHALL BEAR THIS ENGINEER'S SEAL AND SIGNATURE. THE ENGINEER MUST BE QUALIFIED TO DESIGN THE DESIGNATED ASSEMBLY AND MUST BE ABLE TO DEMONSTRATE PRIOR EXPERIENCE WITH THE DESIGN OF THE ASSEMBLY. REVIEW SHALL BE FOR GENERAL CONFORMANCE WITH THE PROJECT REQUIREMENTS AS INDICATED ON THE DRAWINGS AND IN THE GENERAL NOTES.
5. THE CONTRACTOR SHALL SUBMIT, FOR REVIEW, DRAWINGS AND CALCULATIONS FOR ALL PERFORMANCE ASSEMBLIES IDENTIFIED BELOW.

DELEGATED DESIGNS:

- A. BRACING, SHEETING, SHORING, ETC.; REQUIRED TO INSURE THE STRUCTURAL INTEGRITY OF THE EXISTING BUILDINGS OR NEW CONSTRUCTION, SIDEWALKS, UTILITIES, ETC., SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER ENGAGED BY THE CONTRACTOR. CONTRACTOR TO PROVIDE TEMPORARY SUPPORT OF EXPOSED UTILITIES WITHIN EXCAVATED AREAS. DETAILED SIGNED AND SEALED SHOP DRAWINGS SHALL BE PREPARED INDICATING ALL WORK TO BE PERFORMED. SUBMIT THE SHOP DRAWINGS IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS.



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GENERAL NOTES

BUCKS COUNTY, PA

Table with 4 columns: NO., DATE, REVISIONS, BY.

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON THE EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES, AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

Table with 2 columns: PROJECT (BUICPD20007), DATE (12/1/2020), DRAWING SCALE (AS NOTED), DRAWN BY (Author), APPROVED BY (Approver).

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ISSUED FOR BID/ PERMIT DATE: 12/01/2020

5.0 CONCRETE/MASONRY ANCHORS CAST IN PLACE ANCHORS

CAST IN PLACE ANCHORS

- ALL HEADED CONCRETE ANCHORS SHALL BE MANUFACTURED FROM MATERIAL WHICH CONFORMS TO ASTM A108 FOR LOW CARBON STEEL.
- ALL WELDS SHALL BE MADE IN ACCORDANCE WITH THE STRUCTURAL WELDING CODE, ANSII/AWS D1.1, LATEST EDITION AND WITH THE RECOMMENDATIONS OF THE STUD MANUFACTURER.
- THE SPACING, MINIMUM EMBEDMENT, AND INSTALLATION OF THE ANCHORS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES.
- STUD ANCHORS SHALL CONFORM TO ASTM A108 AND THE NUTS SHALL CONFORM TO ASTM A563.

POST-INSTALLED ANCHORS

- EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES AS PROVIDED BY HILTI, INC. OR APPROVED EQUAL:

EXPANSION ANCHORS INTO CONCRETE	HILTI KWIK BOLT-TZ
SCREW ANCHORS INTO CONCRETE	HILTI KWIK HUS-EZ
ADHESIVE ANCHORS INTO CONCRETE	HILTI HIT RE 500-SD OR HILTI HIT-HY 200 ADHESIVE ANCHORING SYSTEM WITH SAFE SET HILTI HIT-Z ANCHORS OR HILTI HAS-E THREADED ROD INSTALLED IN HAMMER-DRILLED HOLES, DRY OR WATER SATURATED.
REBAR INTO CONCRETE	HILTI HIT-HY 200 ADHESIVE ANCHORING SYSTEM
ADHESIVE ANCHORS INTO GROUT FILL CONCRETE BLOCK OR SOLID BRICK	HILTI HIT-HY 270 ADHESIVE ANCHORING SYSTEM WITH HILTI HAS-E THREADED ROD
ADHESIVE ANCHORS INTO HOLLOW CONCRETE BLOCK, BRICK WITH HOLES, AND MULTI WYTHE MASONRY	HILTI HIT-HY 270 ADHESIVE ANCHORING SYSTEM WITH HILTI HAS-E THREADED ROD AND APPROPRIATE SIZE MESH SCREEN TUBE

- ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY HILTI OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OR RECORD. SUBSTITUTION REQUEST FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE SIGNED AND SEALED CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC EST SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
- INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, UNLESS NOTED OTHERWISE.
- ANCHORING TO CONCRETE SHALL BE IN CONFORMANCE WITH ACI 318, APPENDIX D, POST-INSTALLED ANCHORS ARE REQUIRED TO BE PRE-QUALIFIED PER ACI 308.2 TESTING.
- DRILL AND GROUT REINFORCING BAR DOWELS AS SHOWN ON THE PLANS AND AS APPROVED, UNLESS NOTED OTHERWISE. EMBED BARS AS REQUIRED TO DEVELOP THE FULL TENSION CAPACITY OF THE BAR. THE ANCHOR MANUFACTURER SHALL MAKE A REPRESENTATIVE AVAILABLE TO PROVIDE ON-SITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED ON THE STRUCTURAL DRAWINGS. TRAINING SHALL BE AT THE CONTRACTOR'S REQUEST AND AT NO ADDITIONAL CHARGE TO THE CONTRACTOR, OWNER OR ENGINEER.
- ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO THE EDGE OF CONCRETE OR MASONRY SURFACE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
- EXISTING REINFORCING BARS IN THE CONCRETE OR MASONRY STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS INDICATED ON THE STRUCTURAL DRAWINGS. UNLESS NOTED OTHERWISE, THE REINFORCING BARS MAY NOT BE CUT. THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS (IF AVAILABLE) AND SHALL TAKE STEPS TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS USING NON-DESTRUCTIVE TESTING (FERROSCAN, GPR, X-RAY OR OTHER APPROVED METHOD).

6.0 MASONRY

- MASONRY HAS BEEN DESIGNED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530/ASCE 5) AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1/ASCE 6), EXCEPT WHERE OTHERWISE MODIFIED BY THESE GENERAL NOTES AND SPECIFICATIONS.
- MORTAR SHALL CONFORM TO ASTM C270, TYPE M OR S. ALL PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE I. LIME SHALL CONFORM TO ASTM C207 AND MASONRY CEMENT SHALL CONFORM TO ASTM C91.
- GROUT SHALL CONFORM TO ASTM C476 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI. SLUMP OF GROUT SHALL BE 8 TO 10 INCHES AND THE MAXIMUM AGGREGATE SIZE SHALL BE 3/8" (AGGREGATE GRADED TO PRODUCE FINE GROUT IN CONFORMANCE WITH ASTM C476 AND C404).
- CONCRETE BLOCK UNITS:
  - SOLID AND HOLLOW LOAD BEARING UNITS PER ASTM C90, TYPE N-1, AS REQUIRED TO PROVIDE 28 DAY COMPRESSIVE STRENGTH, F<sub>m</sub> AS NOTED BELOW.
  - MINIMUM 28-DAY COMPRESSIVE STRENGTH OF MASONRY, F<sub>m</sub> SHALL BE 1500 PSI, UNLESS NOTED OTHERWISE.
  - FULL BED AND HEAD JOINTS SHALL BE PROVIDED.
  - HORIZONTAL JOINT REINFORCING: ASTM A325 9-GAGE TRUSS-TYPE, GALVANIZED.
  - DEFORMED BAR REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 AND SHALL BE FULL HEIGHT OF WALLS UNLESS OTHERWISE NOTED. PROVIDE BAR SPACERS AND POSITIONERS AS REQUIRED TO PROPERLY LOCATE AND STABILIZE REINFORCING DURING GROUTING OPERATIONS. GROUT ALL REINFORCED CELLS SOLID WITH GROUT.
  - BUILD AND TEST MASONRY PRISMS DURING CONSTRUCTION TO VERIFY F<sub>m</sub> FOR EACH CLASS OF MASONRY CONSTRUCTION. PRISM TESTS SHALL BE IN ACCORDANCE WITH ASTM E447, METHOD B.
  - HOLLOW CONCRETE UNITS BELOW GRADE AND SLAB ON GRADE SHALL BE NORMAL WEIGHT AND HAVE ALL CELLS GROUTED SOLID.
  - PROVIDE AND INSTALL TEMPORARY BRACING REQUIRED INSURING STABILITY OF ALL WALLS DURING CONSTRUCTION AND UNTIL ERECTION OF ATTACHED STRUCTURAL FRAMING IS COMPLETED.
  - PROVIDE GALVANIZED HORIZONTAL JOINT REINFORCEMENT IN ALL WALLS AND PARTITIONS AT 16" O.C. UNLESS OTHERWISE SHOWN OR NOTED. PROVIDE ONE (1) PIECE PREFABRICATED UNITS AT 8" O.C. AT ALL WALL CORNERS AND INTERSECTIONS.
  - LAP SPLICES FOR DEFORMED REINFORCING BARS USED IN MASONRY CONSTRUCTION SHALL BE 50 BAR DIAMETERS.
  - SUBMIT GROUT MIX DESIGN AND MASONRY UNIT CERTIFICATIONS TO THE ARCHITECT FOR REVIEW.
  - GROUT PLACEMENT SHALL NOT START UNTIL THE PLACEMENT OF REINFORCING HAS BEEN APPROVED BY THE INSPECTION AGENCY.
  - FILL ALL CELLS IN TOP TWO COURSES BELOW FINISHED FLOOR, CMU LINTELS, BOND BEAMS, AND BEAM BEARINGS AND CELLS WITH REINFORCEMENT FULL HEIGHT SOLID WITH GROUT.
  - ALLOW GROUT IN REINFORCED CMU WALLS TO CURE A MINIMUM OF 48 HOURS BEFORE IMPOSING CONCENTRATED OR OTHER LOADS FROM ABOVE.
  - ALL PIERS AND PARTITIONS SHALL BE BONDED OR ANCHORED TO ADJACENT MASONRY WALLS. PROVIDE TIES TO ADJACENT FLOOR AND ROOF CONSTRUCTION IN ACCORDANCE WITH DETAILS ON DRAWINGS. NO OPENINGS SHALL BE PLACED ABOVE ANY LINTEL WITHIN A HEIGHT LESS THAN OR EQUAL TO THE WIDTH OF THE CLEAR OPENING BELOW THE LINTEL, UNLESS SPECIFICALLY SHOWN OR APPROVED BY THE STRUCTURAL ENGINEER.
  - ALL MASONRY WORK TO BE EXECUTED IN COLD WEATHER SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS FOR COLD WEATHER CONSTRUCTION FOUND IN THE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-05/ASCE 5-05) AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1-05/ASCE 6-05) WITH THE FOLLOWING ADDITIONS: FOR ALL CONDITIONS WHEN TEMPERATURES FALL BELOW 40 DEGREES F. THE TEMPERATURE OF THE NEWLY LAID MASONRY OR NEWLY GROUTED MASONRY SHALL BE MAINTAINED ABOVE 32 DEGREES F FOR A MINIMUM OF 24 HOURS USING THE METHODS DESCRIBED IN ACI 530.1.
  - THE TESTING AND INSPECTION AGENCY SHALL MONITOR THE PROPORTIONING, MIXING, AND CONSISTENCY OF MORTAR AND GROUT; THE PLACEMENT OF MORTAR, GROUT, AND MASONRY UNITS; AND THE PLACEMENT OF REINFORCING STEEL FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.
  - THE CONTRACTOR SHALL PREPARE ONE (1) SET OF PRISMS FOR TESTING AT SEVEN (7) DAYS AND ONE (1) SET FOR TESTING AT 28 DAYS. TESTS ARE TO BE CONDUCTED BY THE INSPECTION AND TESTING AGENCY FOR EACH 3,000 SQUARE FEET OF WALL INSTALLED, BUT NOT LESS THAN TWO (2) TESTS.
  - ALL WALL SECTIONS AND PIERS LESS THAN TWO SQUARE FEET IN CROSS-SECTIONAL AREA SHALL BE FULLY GROUTED. PROVIDE VERTICAL MASONRY CONTROL JOINTS AT MAXIMUM 25'-0" ON CENTER UNLESS DETAILED ON ARCHITECTURAL DRAWINGS, COORDINATE LOCATIONS WITH ARCHITECT.

7.0 STRUCTURAL STEEL

- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE "STEEL CONSTRUCTION MANUAL", AMERICAN INSTITUTE OF STEEL CONSTRUCTION INCLUDING SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, AND AISC CODE OF STANDARD PRACTICE.
- ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS AND SHALL CONFORM TO "STRUCTURAL WELDING CODE ANSII/AWS D1.1", AMERICAN WELDING SOCIETY.
- MATERIALS:

SHAPE	SPECIFICATION
STRUCTURAL SHAPES AND PLATES:	ASTM A36, A572 OR A992.
STEEL PIPE:	ASTM A53, GRADE B.
ANCHOR RODS	ASTM F1554, GRADE 36, UNLESS NOTED OTHERWISE.
BOLTED CONNECTION	ASTM A325 HIGH STRENGTH BOLTS 3/4" MINIMUM DIAMETER, UNLESS NOTED OTHERWISE.

- CONNECTIONS:
  - ALL BOLTED CONNECTIONS SHALL BE WITH ASTM A325 HIGH STRENGTH BOLTS 3/4" MINIMUM DIAMETER, UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE INSTALLED SNUG TIGHT UNLESS NOTED OTHERWISE IN CONTRACT DOCUMENTS OR AISC.
  - ALL CONNECTIONS SHALL BE SYMMETRICAL ABOUT THE AXIS OF THE MEMBER CONNECTED. PROVIDE ONLY ONE GRADE OF BOLT FOR EACH BOLT DIAMETER TO BE USED IN THE CONNECTIONS. DO NOT MIX GRADE OF BOLTS.
- SUBMIT SHOP DRAWINGS FOR FABRICATION AND ERECTION OF STRUCTURAL STEEL. CLEARLY INDICATE COORDINATED DIMENSIONS OF MECHANICAL UNIT AND ROOF PENETRATION SIZES. SHOP AND ERECTION DRAWINGS MUST SHOW ALL SHOP/FLOOR AND FIELD WELDS. INITIAL SHOP DRAWING SUBMITTAL SHALL INCLUDE PROPOSED CONNECTION DETAILS AND JOB STANDARDS. PROVIDE SIGNED AND SEALED CALCULATIONS FOR ALL CONNECTION DESIGNS NOT INDICATED ON THE DRAWINGS. CALCULATIONS SHALL SHOW DESIGN CAPACITIES FOR ALL CONNECTIONS.
- THE GENERAL CONTRACTOR AND STEEL ERECTOR SHALL NOTIFY THE STRUCTURAL ENGINEER OF ANY FABRICATION OR ERECTION ERRORS OR DEVIATIONS AND RECEIVE WRITTEN APPROVAL BEFORE ANY FIELD CORRECTIONS ARE MADE.
- WELDING TO THE EXISTING STEEL WILL NOT BE ALLOWED AND THE CONTRACTOR SHALL ANTICIPATE USING FIELD BOLTED CONNECTIONS TO THE EXISTING STEEL.
- ALL STEEL SHALL BE PAINTED WITH SHOP STANDARD PRIMER UNLESS NOTED OTHERWISE.
- STEEL ANGLES AND PLATES ALONG WITH BOLTS AND WASHERS, IN DIRECT CONTACT WITH EXTERIOR FINISH MASONRY, AND ALL EXTERIOR EXPOSED STRUCTURAL STEEL, SHALL BE HOT-DIPPED GALVANIZED.
- STEEL ANGLES AND PLATES ALONG WITH BOLTS AND WASHERS, IN DIRECT CONTACT WITH EXTERIOR FINISH MASONRY, AND ALL EXTERIOR EXPOSED STRUCTURAL STEEL, SHALL BE PAINTED WITH INORGANIC ZINC PRIMER EQUIVALENT TO SOUTHERN COATINGS CHEMTEC 600.
- ALL EXTERIOR EXPOSED STRUCTURAL STEEL SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123. ALL STEEL SHALL BE THOROUGHLY CLEANED BY POWER TOOLS, CLEANING PRIOR TO PAINTING. ALL ARCHITECTURALLY EXPOSED STRUCTURAL STEEL SHALL BE CLEANED WITH COMMERCIAL BLAST CLEANING.
- ALL DISSIMILAR METALS SHALL BE TREATED OR PROPERLY SEPARATED TO PREVENT GALVANIC AND/OR CORROSIVE EFFECTS.

8.0 STRUCTURAL WOOD

- DESIGN, FABRICATION, AND CONSTRUCTION OF WOOD FRAMING SHALL CONFORM WITH THE FOLLOWING CODES AND STANDARDS:
  - "NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION" (WITH SUPPLEMENT), AMERICAN FOREST AND PAPER ASSOCIATION.
  - "TIMBER CONSTRUCTION MANUAL", FOURTH EDITION, AS ADOPTED BY THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION, INCLUDING THE "CODE OF STANDARD PRACTICE", AITC 106.
  - ANSI/TPI 1 "DESIGN SPECIFICATIONS FOR METAL PLATE-CONNECTED WOOD TRUSS CONSTRUCTION AND COMMENTARY", TRUSS PLATE INSTITUTE.
  - BUILDING COMPONENT SAFETY INFORMATION BCSP 1-03 "GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES"; WOOD TRUSS COUNCIL OF AMERICA AND TRUSS PLATE INSTITUTE.
- BASE DESIGN VALUES FOR ROOF/FLOOR JOIST FRAMING: DOUG-FIR NO. 1 AND NO.2 (FB = 850 PSI, FV = 180 PSI, E = 1,600,000 PSI) MINIMUM.
- BASE DESIGN VALUE FOR WOOD STUDS AND BRACING: DOUG FIR STUD MINIMUM COMPRESSION PARALLEL TO GRAIN FC = 850 PSI, MINIMUM TENSION PARALLEL TO GRAIN, FT = 400 PSI, MINIMUM COMPRESSION PERPENDICULAR TO GRAIN, 625 PSI.
- ALL PLYWOOD SHEATHING SHALL COMPLY WITH APA. PLYWOOD SHALL MEET C-D INTERIOR APA, STRUCTURAL I AND II C-D INTERIOR APA, OR STRUCTURAL I AND II C-C EXTERIOR APA. ATTACHMENT TO BE IN ACCORDANCE WITH IBC REQUIREMENTS. ALL PLYWOOD TO HAVE EXTERIOR GLUE.
- ROOF SHEATHING SHALL BE APA RATED SHEATHING, 19/32" THICK, 42/20.
- FLOOR SHEATHING SHALL BE APA RATED STURD-I-FLOOR, 3/4" THICK, 48/24.
- PROVIDE NAILING PATTERN IN COMPLIANCE WITH IBC RECOMMENDED FASTENING SCHEDULE WHEN JOINING TWO OR MORE FRAMING MEMBERS.
- BASE DESIGN VALUE FOR ALL OTHER STRUCTURAL WOOD FRAMING: MINIMUM EXTREME FIBER IN BENDING, FB = 850 PSI, MINIMUM HORIZONTAL SHEAR, FV = 180 PSI; MINIMUM COMPRESSION PARALLEL TO GRAIN, FC = 1,400 PSI.
- HANGER CONNECTIONS FOR JOISTS, BEAMS, TRUSSES, AND MANUFACTURED WOOD FRAMING SHALL BE STRONG-TIE CONNECTORS BY SIMPSON (TRUS JOIST MACMILLAN).
- SEE INTERNATIONAL BUILDING CODE FOR MINIMUM BRACING AND FASTENING REQUIREMENTS.
- MEMBERS SHALL BE SET WITH CROWN UP AND HAVE A MINIMUM OF 3" BEARING.
- PROVIDE ADDITIONAL JOIST UNDER PARALLEL NON-LOADING BEARING PARTITIONS THAT RUN MORE THAN 1/3 THE SPAN OF THE JOIST.
- SPLICE DOUBLE SOLE PLATES DIRECTLY OVER STUD. STAGGER SPLICE OF EACH PLATE.
- ALL JOISTS AND RAFTERS SHALL BE RIGIDLY BRIDGED AT INTERVALS NOT EXCEEDING 8'-0".
- GUYS AND OTHER BRACING REQUIRED TO PROVIDE LATERAL STABILITY TO WOOD FRAMES SHALL BE ADEQUATELY SIZED AND ANCHORED. THIS BRACING SHALL REMAIN UNTIL PERMANENT BRACING ELEMENTS AND ATTACHED CONSTRUCTION IS INSTALLED.
- ALL BOLTS AND LAG BOLTS SHALL BE FITTED WITH GALVANIZED, MALLEABLE IRON OR STEEL PLATE WASHERS.
- ALL WOOD MEMBERS EXPOSED TO EXTERIOR TO BE PRESSURE TREATED.
- PROVIDE FASTENERS, ANCHORS AND CONNECTORS WITH ADEQUATE CORROSION PROTECTION, WHERE IN CONTACT WITH TREATED WOOD. PROVIDE MINIMUM ZMAX COATING WHERE SIMPSON CONNECTORS ARE USED IN CONTACT WITH TREATED WOOD.

9.0 SPECIAL INSPECTIONS, TESTING AND OBSERVATIONS

GENERAL

- ACTING AS THE SPECIAL INSPECTION COORDINATOR, THE STRUCTURAL ENGINEER OF RECORD (SER) WILL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS (SSI) TO THE BUILDING OFFICIAL AS REQUIRED TO COMPLY WITH CHAPTER 17 (SPECIAL INSPECTIONS) OF THE 2018 INTERNATIONAL BUILDING CODE (IBC). STRUCTURAL OBSERVATION AND MATERIAL TESTING WILL BE REQUIRED FOR THE FOLLOWING BUILDING SYSTEMS. IN ADDITION, THE CONTRACTOR WILL SUBMIT A STATEMENT OF RESPONSIBILITY FOR WIND OR SEISMIC SITES AND PROJECTS IF INDICATED BELOW.

BUILDING SYSTEM, ELEMENT OR COMPONENT	IBC 2018 SECTION	INSPECTION REQUIRED
SOILS	1705.6	YES
VERTICAL MASONRY FOUNDATION	1705.4.2	YES
CONCRETE	1705.3	YES

- SEE ARCHITECTURAL AND MEP DRAWINGS FOR SPECIAL INSPECTION REQUIREMENTS FOR EIFS AND SMOKE CONTROL DEVICES.
- UNLESS OTHERWISE NOTED, SPECIAL INSPECTIONS ARE OWNER FURNISHED AS REQUIRED BY CHAPTER 17 OF THE IBC.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PROVIDING ACCESS TO THE WORK FOR REQUIRED SPECIAL INSPECTIONS AND TO PROVIDE NOTICE OF REQUIRED SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS.
- THE SER IS NOT RESPONSIBLE FOR CONSTRUCTION SITE SAFETY AND IS NOT REQUIRED TO INSPECT THE WORK FOR COMPLIANCE WITH OSHA REGULATIONS.
- SHOP INSPECTIONS OF ANY APPROVED FABRICATORS MAY BE WAIVED BY THE BUILDING OFFICIAL OR SER, IF SHOP INSPECTIONS ARE WAIVED A FABRICATOR'S CERTIFICATE OF COMPLIANCE SHALL BE SUBMITTED TO THE SER.

SPECIAL INSPECTION AND TESTS

- SPECIAL INSPECTIONS AND TESTS WILL COMPLY WITH CHAPTER 17 OF THE IBC TOGETHER WITH LOCAL AND STATE AMENDMENTS AND THE PROJECT SPECIFICATIONS.
- SPECIAL INSPECTIONS WILL BE PROVIDED BY A CERTIFIED OR QUALIFIED INSPECTOR. INSPECTORS FOR EACH SYSTEM OR MATERIAL WILL BE ICC CERTIFIED OR OTHERWISE APPROVED BY THE BUILDING OFFICIAL. TESTING WILL BE PERFORMED BY AN APPROVED AND ACCREDITED AGENCY. CREDENTIALS FOR THE SELECTED INSPECTION AND TESTING AGENCIES SHALL BE SUBMITTED TO THE SER FOR REVIEW AND APPROVAL.
- UNLESS OTHERWISE NOTED THE OWNER WILL SECURE AND PAY FOR THE SERVICES OF THE AGENCY TO PERFORM ALL SPECIAL INSPECTION AND ASSOCIATED TESTS.
- THE SPECIAL INSPECTOR WILL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONTRACT DOCUMENTS AND SUBMIT RECORDS OF INSPECTION. ALL DISCREPANCIES WILL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
- SPECIAL INSPECTION AND ASSOCIATED TESTING REPORTS WILL BE SUBMITTED TO THE ENGINEER, CONTRACTOR, BUILDING OFFICIAL AND OWNER WITHIN ONE WEEK OF INSPECTION OR WITHIN ONE WEEK OF TEST COMPLETION.
- IN ADDITION TO THE SUBMISSION OF ONGOING INSPECTION REPORTS, THE APPROVED INSPECTION AND TESTING AGENCIES SHALL SUBMIT AN AGENT'S FINAL REPORT OF SPECIAL INSPECTIONS TO THE SER. THE SER WILL SUBMIT A FINAL REPORT OF SPECIAL INSPECTIONS AFTER REVIEW AND APPROVAL OF THE AGENT'S FINAL REPORT OF SPECIAL INSPECTIONS. PERIODIC INSPECTION IS DEFINED AS PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.
- CONTINUOUS INSPECTION IS DEFINED AS FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AFTER COMPLETION OF THE WORK.

STRUCTURAL OBSERVATIONS

- THE PROJECT IS EXEMPT FROM THE REQUIREMENTS OF IBC SECTION 1710 FOR STRUCTURAL OBSERVATIONS.

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AAMBC AT CORE CREEK PARK  
867 NEWTOWN/ANGHORNE ROAD  
LANGHORNE, PA  
GENERAL NOTES  
BUCKS COUNTY, PA

NO.	DATE	REVISIONS	BY

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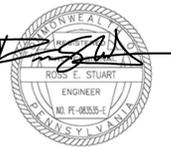
PROJECT	BUICPD20007
DATE	12/1/2020
DRAWING SCALE	AS NOTED
DRAWN BY	Author
APPROVED BY	Approver

**S-002**  
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AAMBC AT CORE CREEK PARK

BASEMENT/FOUNDATION PLAN  
 867 NEWTOWN/LLANGHORNE  
 ROAD  
 LANGHORNE, PA  
 BUCKS COUNTY,  
 PA

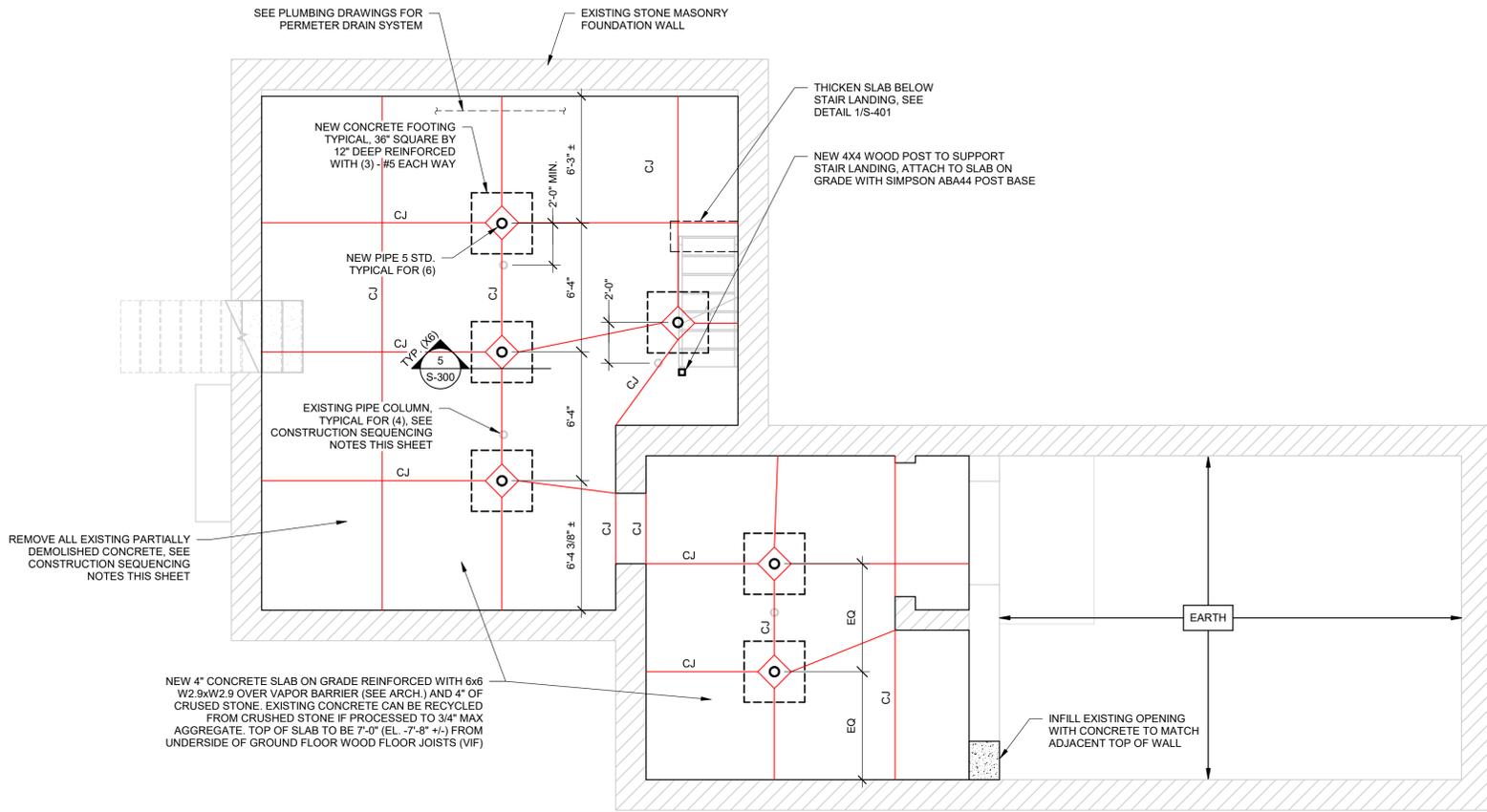
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DRAWING SCALE	AS NOTED
DRAWN BY	Author
APPROVED BY	Approver

**S-100**

SHEET 42 OF 102

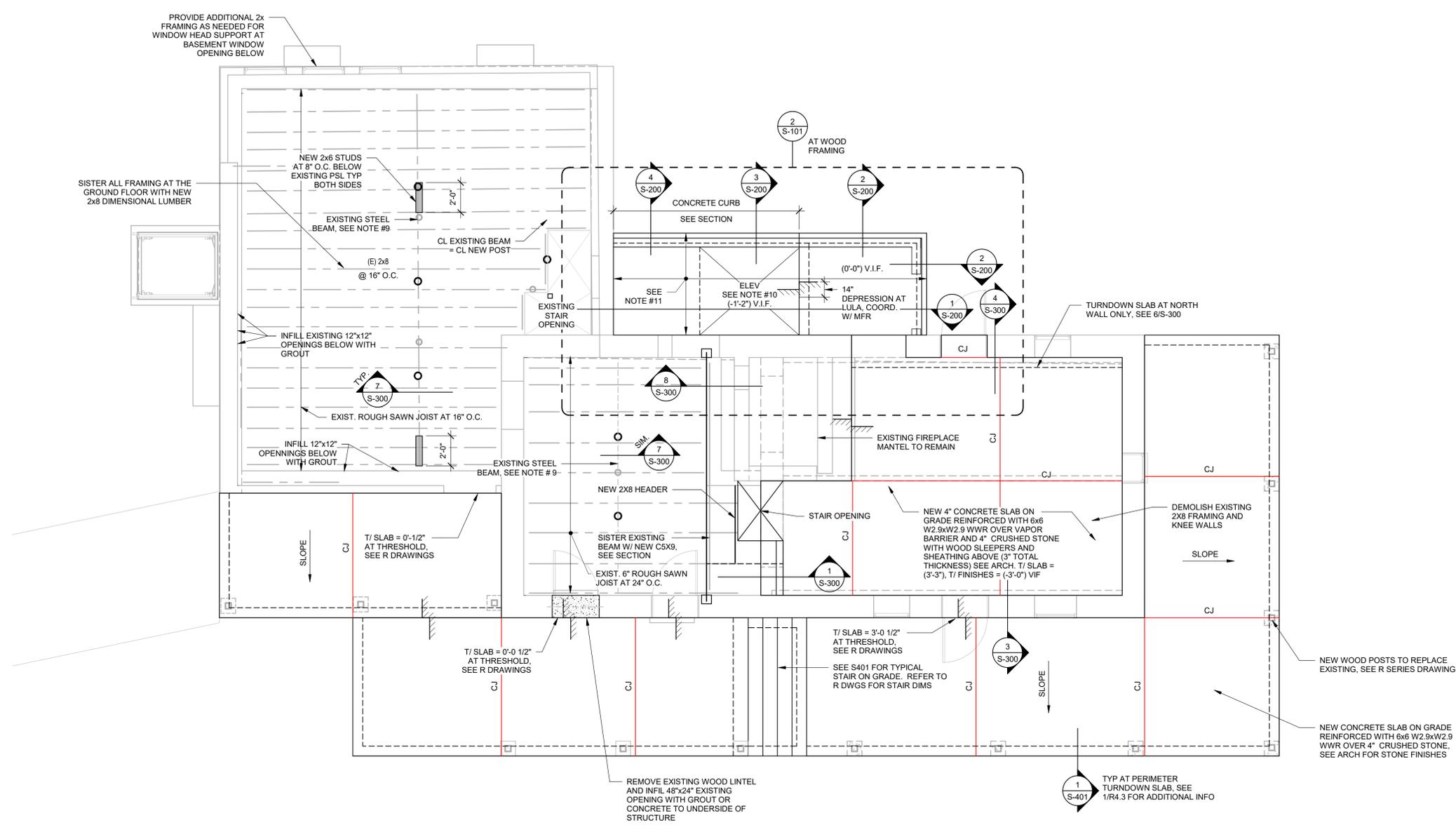


**1 BASEMENT PLAN**  
 1/4" = 1'-0"

- PLAN NOTES:**
- DATUM ELEVATION (0'-0") IS TOP OF FINISHED 83.80 FLOOR SLAB. SEE FINAL SITE DRAWINGS FOR ACTUAL ELEVATION.
  - TOP OF SLAB ELEVATION IS AT ELEVATION (0'-0"), UNLESS OTHERWISE NOTED THUS (+, -, ") FROM DATUM EL. 0'-0".
  - CJ - DENOTES CONTROL OR CONSTRUCTION JOINT, UNLESS NOTED OTHERWISE ON PLAN. SEE TYPICAL DETAIL ON T/D/S-401 FOR ADDITIONAL INFORMATION.
  - SF - DENOTES STEP FOOTING, SEE TYPICAL DETAIL 4/S-401 FOR ADDITIONAL INFORMATION.
  - SEE DRAWING S-001 SERIES FOR DESIGN CRITERIA, AND GENERAL NOTES.
  - SEE DRAWING S-400 SERIES FOR TYPICAL CONSTRUCTION DETAILS.
  - SEE GENERAL STRUCTURAL NOTES FOR WORK INVOLVING MODIFICATION OF THE EXISTING STRUCTURE.
  - SEE ARCHITECTURAL DRAWINGS FOR DEMOLITION OF EXISTING CONSTRUCTION NOT SHOWN.
  - SEE ARCH. DRAWINGS FOR WATERPROOFING AND INSULATING REQUIREMENTS AND LOCATIONS.

- BASEMENT CONSTRUCTION SEQUENCE:**
- REMOVE OR RECYCLE EXISTING PARTIALLY DEMOLISHED CONCRETE BASEMENT SLAB. DO NOT DISTURB EXISTING COLUMNS OR COLUMN FOUNDATION.
  - INSTALL NEW CONCRETE FOOTINGS
  - INSTALL NEW STEEL COLUMNS
  - DEMO EXISTING COLUMNS AND/OR FOUNDATIONS
  - INSTALL NEW SLAB ON GRADE.

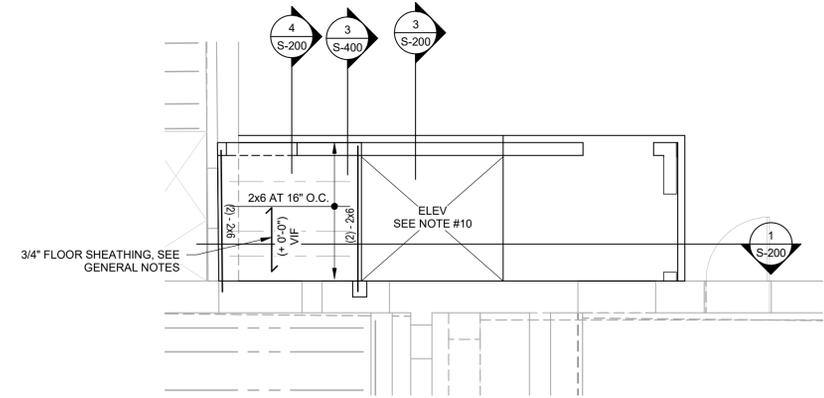
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1 GROUND FLOOR AND SLAB ON GRADE FRAMING PLAN  
1/4" = 1'-0"

- PLAN NOTES:
- DATUM ELEVATION (0'-0") IS TOP OF FINISHED 83.80 FLOOR SLAB. SEE FINAL SITE DRAWINGS FOR ACTUAL ELEVATION.
  - TOP OF SLAB ELEVATION IS AT ELEVATION (0'-0"), UNLESS OTHERWISE NOTED THUS (+) FROM DATUM EL. 0'-0".
  - CJ - DENOTES CONTROL OR CONSTRUCTION JOINT, UNLESS NOTED OTHERWISE ON PLAN. SEE TYPICAL DETAIL ON TD1/S-401 FOR ADDITIONAL INFORMATION.
  - SEE DRAWING S-001 SERIES FOR DESIGN CRITERIA, LOADING MAPS AND GENERAL NOTES.
  - SEE DRAWING S-400 SERIES FOR TYPICAL CONSTRUCTION DETAILS.
  - SEE GENERAL STRUCTURAL NOTES FOR WORK INVOLVING MODIFICATION OF THE EXISTING STRUCTURE.
  - SEE ARCHITECTURAL DRAWINGS FOR DEMOLITION OF EXISTING CONSTRUCTION NOT SHOWN.
  - SEE ARCH. DRAWINGS FOR WATERPROOFING AND INSULATING REQUIREMENTS AND LOCATIONS.
  - CLEAN PER SSPC SP3 OR APPROVED METHOD TO REMOVE MAJORITY OF LATEN RUST SCALE AND OIL. PAINT WITH INTERIOR GRADE INHIBITING COATING
  - GC TO COORDINATE FINAL DIMENSIONS WITH MANUFACTURER OR SUBCONTRACTOR
  - NEW CONCRETE SLAB ON GRADE REINFORCED WITH 6x6 W2.9xW2.9 WWR OVER 4" CRUSHED STONE, SEE ARCH FOR STONE FINISHES

2 PARTIAL GROUTN FLOOR FRAMING PLAN  
1/4" = 1'-0"



12/1/2020 11:53:29 AM BM 180/BUCPD20007 - Aachen - Aachen Museum - Core Creek Park - AMBC - A Core Creek Park - STRUCT - Central - V01.rvt

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AAMBC AT CORE CREEK PARK  
 867 NEWTOWN/ LANGHORNE  
 ROAD  
 LANGHORNE, PA.  
**GROUND FLOOR PLAN**  
 BUCKS COUNTY,  
 PA.

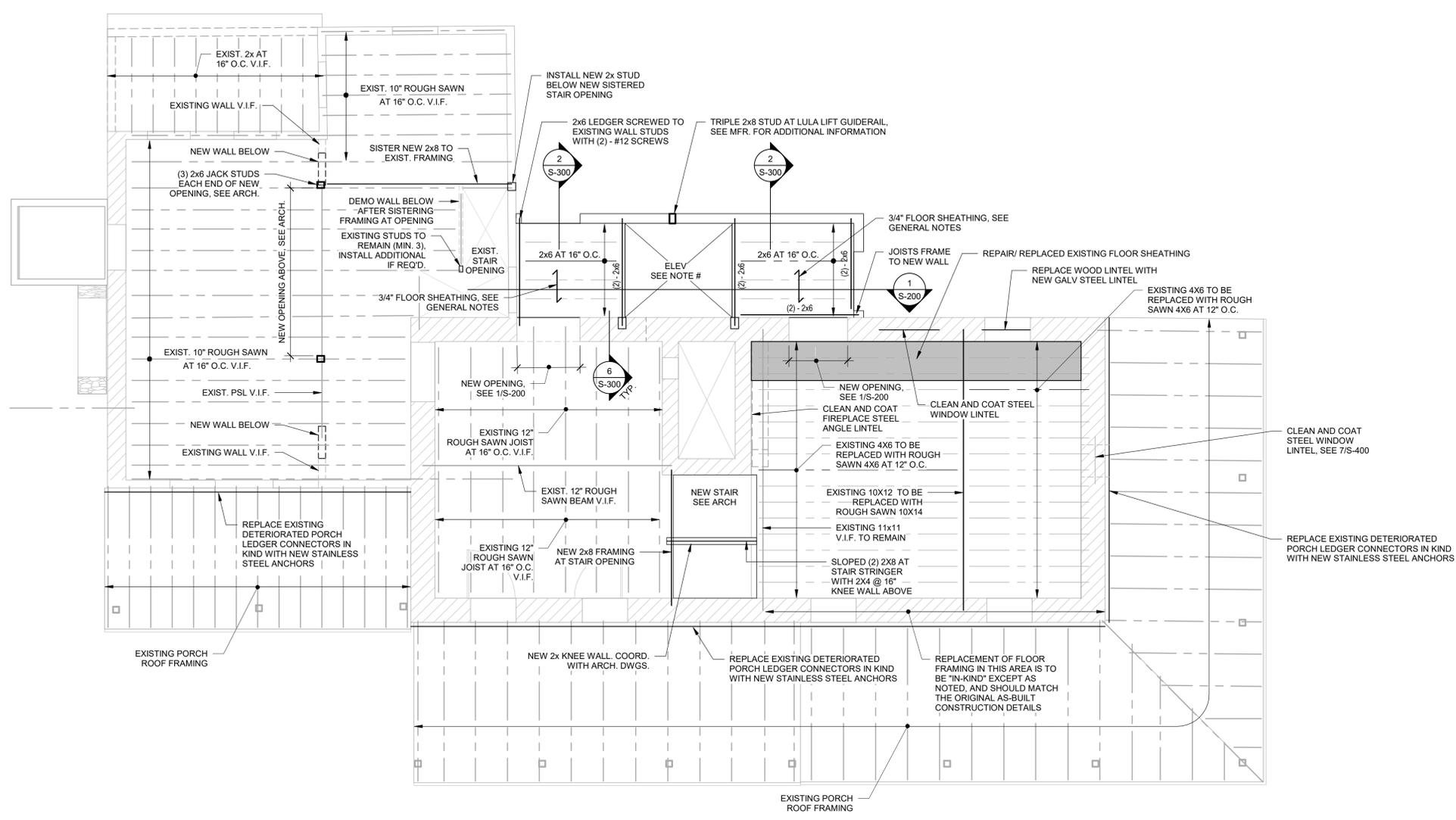
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DRAWING SCALE	AS NOTED
DRAWN BY	Author
APPROVED BY	Approver

**S-101**  
 SHEET 43 OF 102

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1 SECOND FLOOR FRAMING PLAN  
1/4" = 1'-0"

12/1/2020 11:53:29 AM BM 180/BUCPD20007 - Aachen - Aachen Museum at Core Creek Park - AAMBC at Core Creek Park - STRUCT - Central\_V01.dwg

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AAMBC AT CORE CREEK PARK  
 867 NEWTOWN/LANGHORNE ROAD  
 LANGHORNE, PA  
**SECOND FLOOR FRAMING PLAN**  
 BUCKS COUNTY, PA

NO.	DATE	REVISIONS	BY

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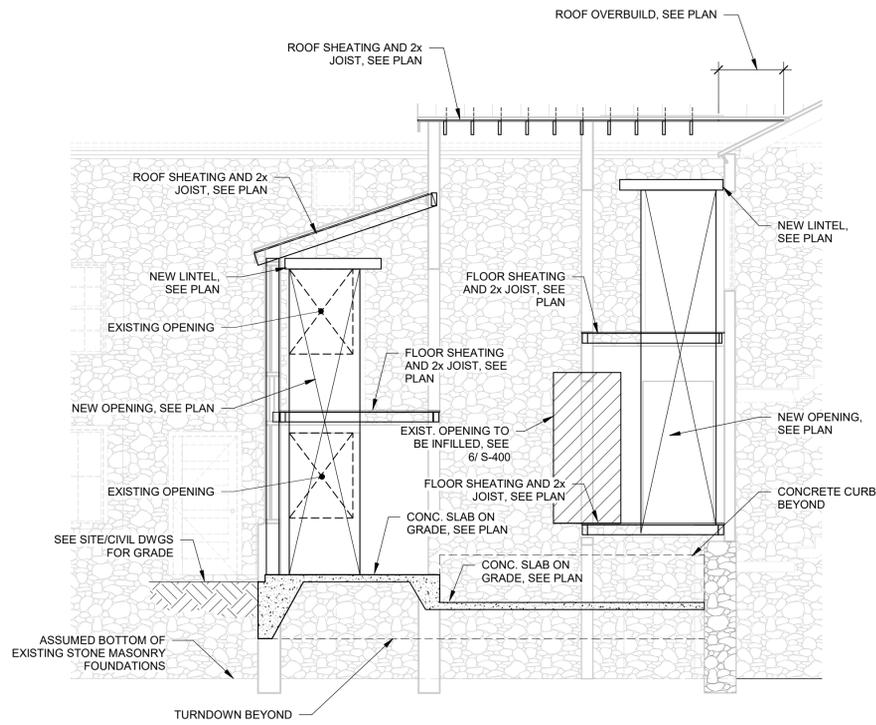
PROJECT	BUCPD20007
DATE	12/1/2020
DRAWING SCALE	AS NOTED
DRAWN BY	Author
APPROVED BY	Approver

**S-102**  
 SHEET 44 OF 102

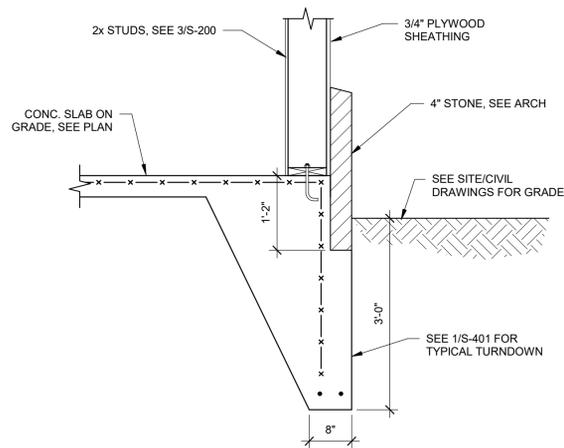
**ISSUED FOR BID/ PERMIT**  
 DATE: 12/01/2020



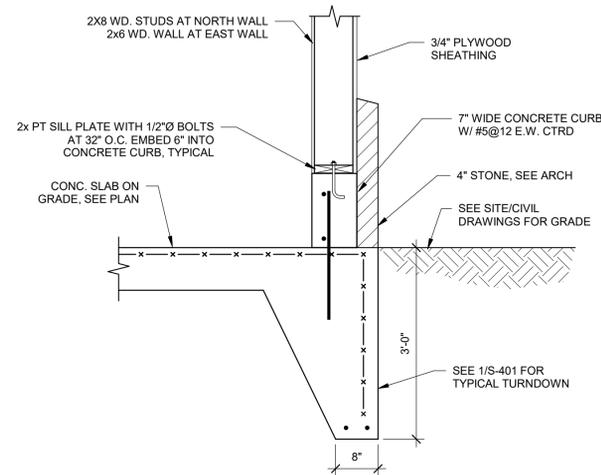




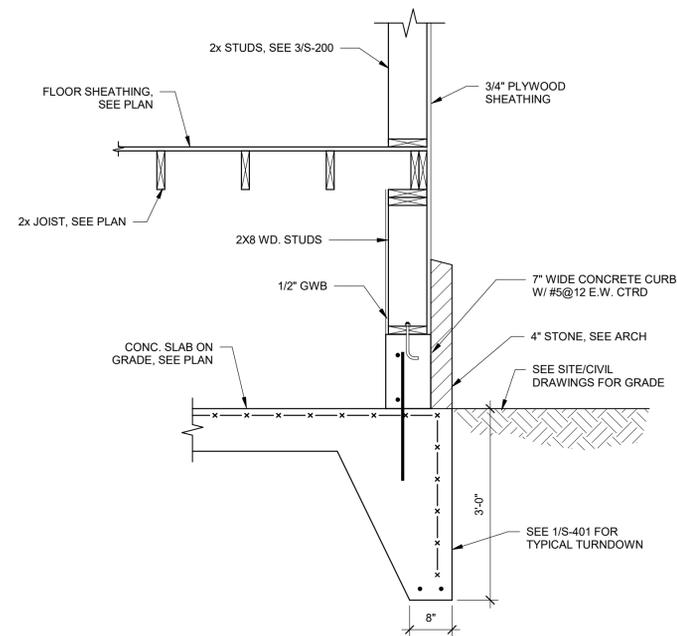
1 SECTION  
1/4" = 1'-0"



2 SECTION A AT ELEVATOR FOYER  
3/4" = 1'-0"



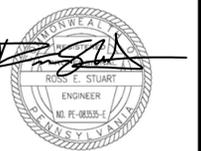
3 SECTION- AT ELEVATOR SHAFT  
3/4" = 1'-0"



4 SECTION B AT ELEVATOR FOYER  
3/4" = 1'-0"



**PENNONI ASSOCIATES INC.**  
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ROSS E. STUART, P.E.  
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AAMBC AT CORE CREEK PARK

867 NEWTOWN LANGLEHORNE  
ROAD  
LANGHORNE, PA  
**SECTIONS**  
BUCKS COUNTY,  
PA

NO.	DATE	REVISIONS	BY

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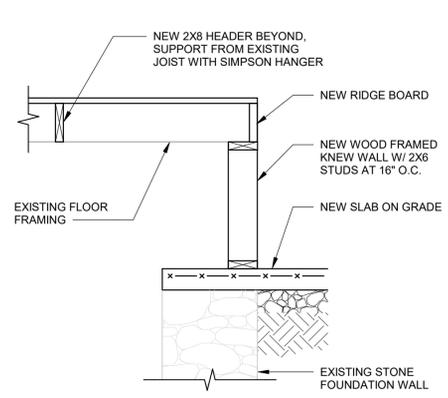
PROJECT	BUCPD20007
DATE	12/1/2020
DRAWING SCALE	AS NOTED
DRAWN BY	Author
APPROVED BY	Approver

**S-200**

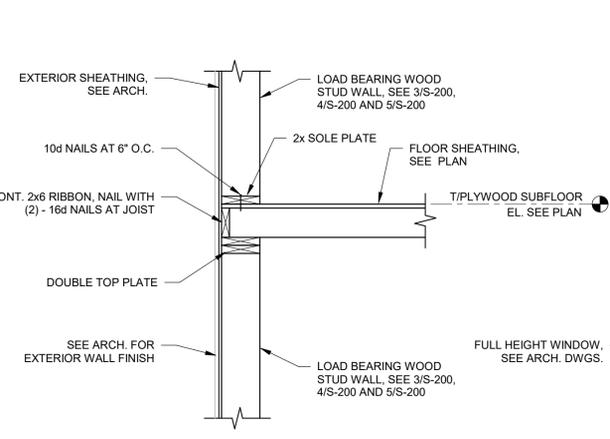
SHEET 47 OF 102

**ISSUED FOR BID/ PERMIT**  
DATE: 12/01/2020

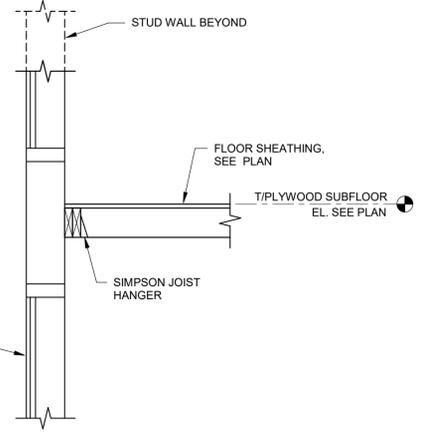
12/1/2020 11:53:31 AM BM 190/BUCPD20007 - Aambc At Core Creek Park - STRUCT - Central\_V02.rvt



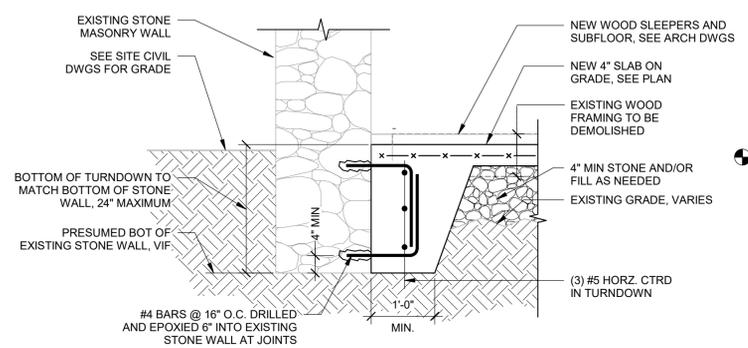
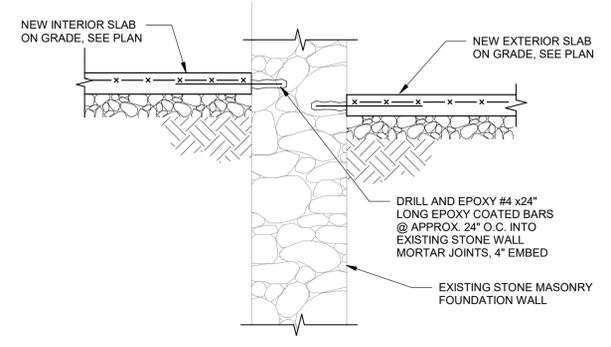
1 SECTION  
3/4" = 1'-0"



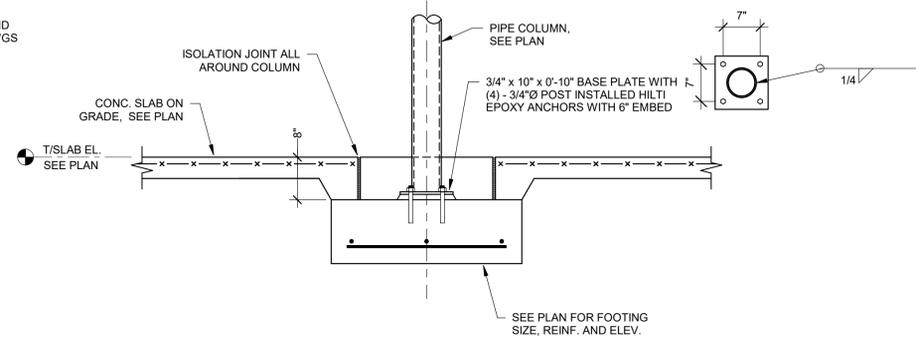
2 SECTION  
3/4" = 1'-0"



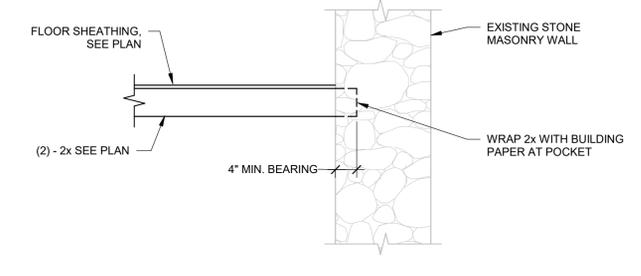
3 SECTION  
3/4" = 1'-0"



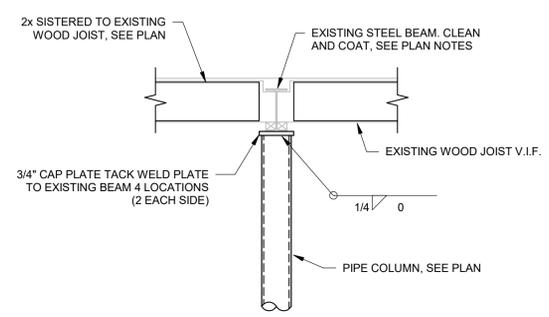
4 SECTION  
3/4" = 1'-0"



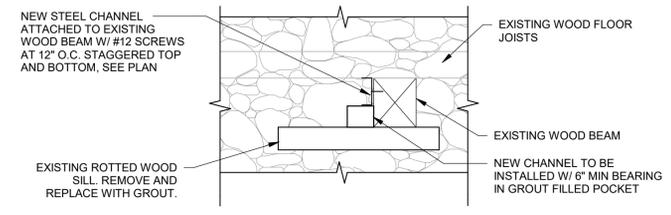
5 SECTION  
3/4" = 1'-0"



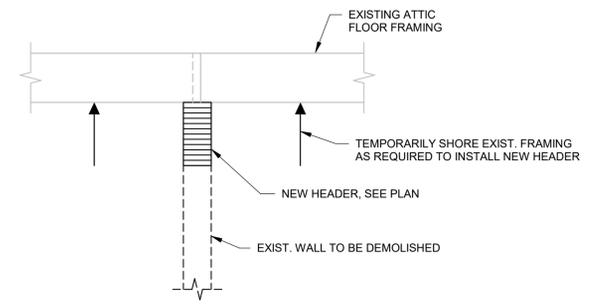
6 SECTION  
3/4" = 1'-0"



7 SECTION  
3/4" = 1'-0"



8 SECTION  
3/4" = 1'-0"



9 SECTION  
3/4" = 1'-0"

NO.	DATE	BY	REVISIONS

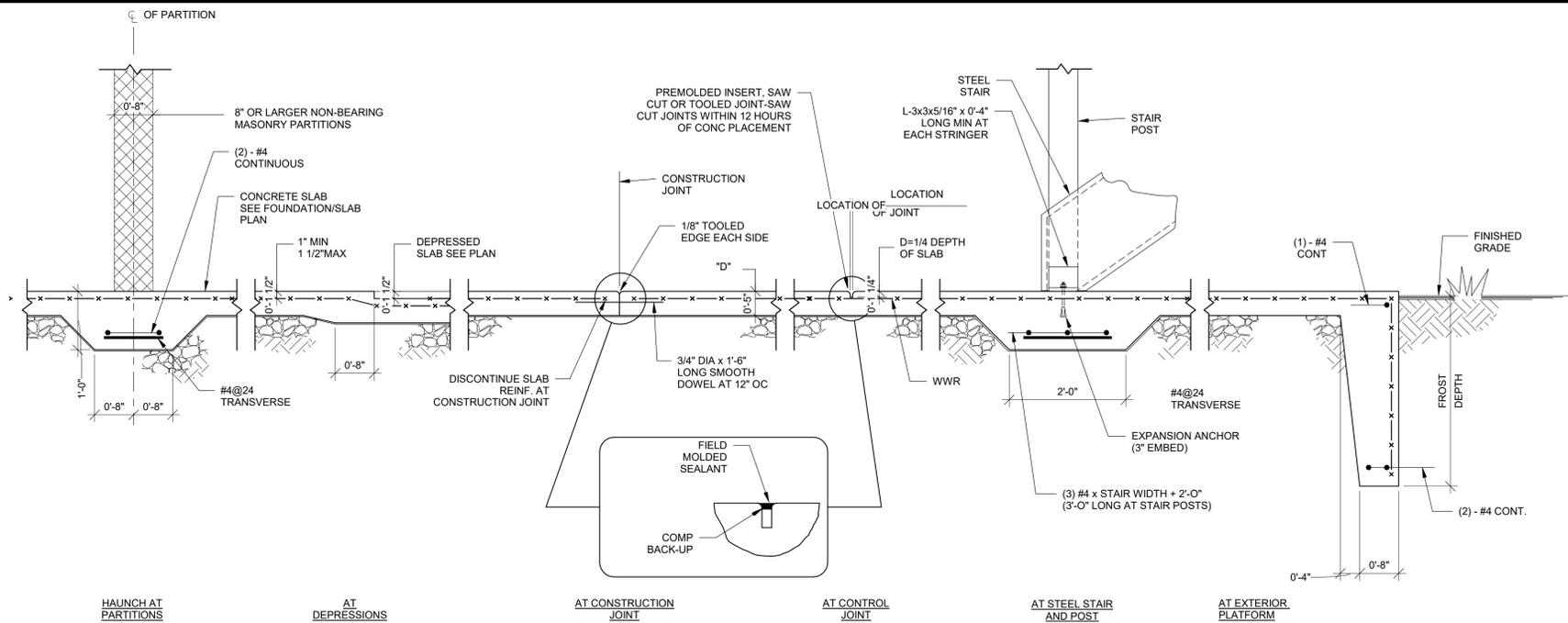
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PROJECT	BUCPD20007
DATE	12/1/2020
DRAWING SCALE	AS NOTED
DRAWN BY	Author
APPROVED BY	Approver

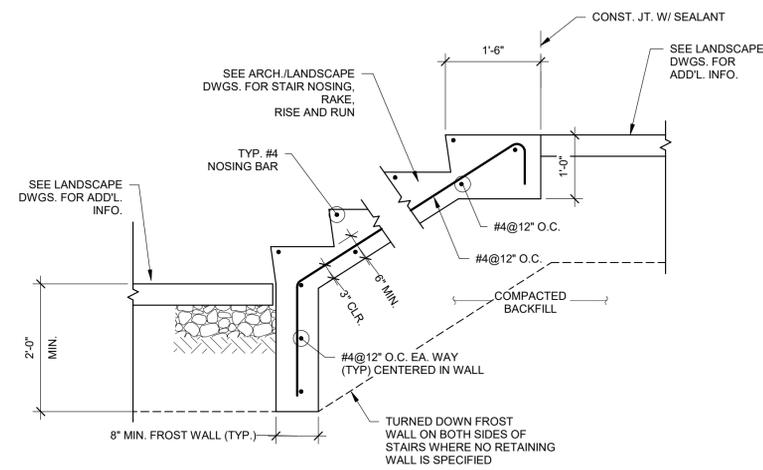
12/1/2020 11:53:32 AM BM 190/BUCPD20007 - Aambc Museum at Core Creek Park, BUCKS COUNTY, PA, STRUCT - General, V01.rvt



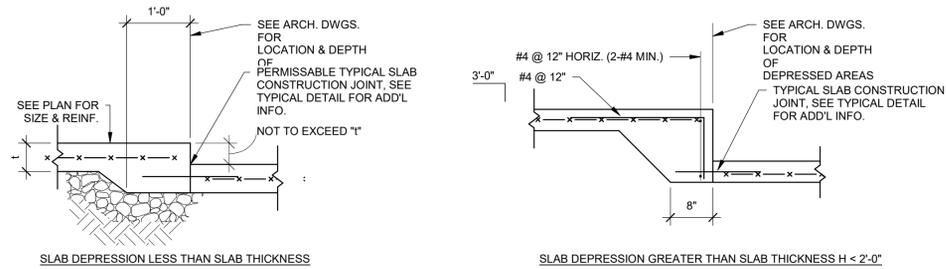




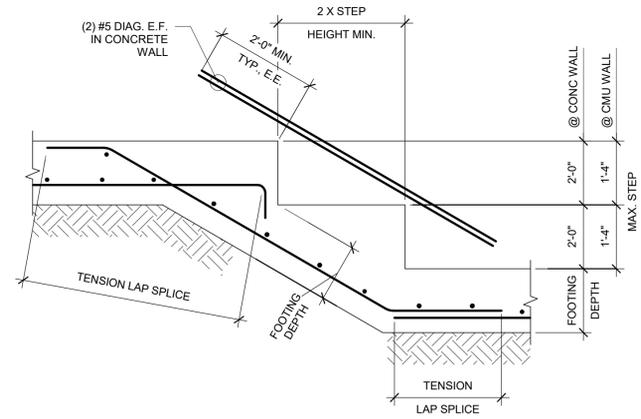
1 TYPICAL EMBEDDED PLATE AT BEAM CONNECTION TO WALL  
3/4\" = 1'-0"



2 TYPICAL STAIR ON GRADE  
3/4\" = 1'-0"

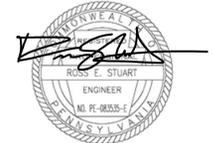


3 SLAB DEPRESSIONS/STEPS  
3/4\" = 1'-0"



4 TYPICAL STEPPED FOOTING DETAIL  
3/4\" = 1'-0"

**Pennoni**  
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AAMBC AT CORE CREEK PARK  
 867 NEWTOWN LANGLEHORNE  
 LANGHORNE, PA.  
**TYPICAL DETAILS**  
 BUCKS COUNTY, PA.

NO.	DATE	REVISIONS	BY

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DRAWN BY	Author
APPROVED BY	Approver

**ISSUED FOR BID/ PERMIT**  
 DATE: 12/01/2020

**S-401**  
 SHEET 51 OF 102

12/1/2020 11:53:34 AM BM 190/BUCPD20007-Aambc At Core Creek Park STRUCZ\_Correl\_V02.rvt