



Kelley Elementary Shelter Addition

Moore Public Schools

Omni Construction LLC. – Moore, Oklahoma

ADDENDUM NO. 1

November 9, 2022

This addendum applicable to work designated herein, shall be understood to be an Addendum, and as such shall included in the Contract Agreement.

Receipt of this addendum shall be acknowledged by any applicable subcontractor to the CM.

This addendum consists of 1 page with attachments of three (3) 24"x 36" sheets.

There are no changes to the plans.

- 1.) Remove section 02466 (Drilled Piers) from Site Work

- 2.) Include section 02466 (Drilled Piers) to Bid Package 2: Concrete (Building, exterior sidewalks, stairs, & ramps) as Complete.

END OF ADDENDUM NO. 1

1. GENERAL INFORMATION

- A. GOVERNING BUILDING CODE: 2015 INTERNATIONAL BUILDING CODE (IBC-2015).
B. BUILDING RISK CATEGORY: THE BUILDING RISK CATEGORY ACCORDING TO IBC-2015 TABLE 1604.5 AND ASCE 7-10 TABLE 1.5-1 IS CATEGORY II.
C. ELEVATIONS: REFERENCE FINISHED FLOOR ELEVATIONS OF 100'-0" EQUALS ACTUAL EXISTING FINISH FLOOR ELEVATION OF 1269.125'.
D. CONTRACT DOCUMENTS:

- 1) THE CONTRACT DOCUMENTS CONSIST OF THE AGREEMENT BETWEEN THE OWNER AND CONTRACTOR, CONDITIONS OF THE CONTRACT, DRAWINGS, SPECIFICATIONS, ADDENDA ISSUED PRIOR TO EXECUTION OF THE CONTRACT, OTHER DOCUMENTS LISTED IN THE AGREEMENT AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT.
2) THE GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND DISSEMINATING ALL CONTRACT DOCUMENTS AND LATEST ADDENDA TO ALL SUB-CONTRACTORS PRIOR TO DETAILING, FABRICATION OR INSTALLATION OF WORK.
3) CORRELATION OF THE CONTRACT DOCUMENTS: THE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. IF CONFLICTING REQUIREMENTS ARE FOUND BETWEEN THE DRAWINGS, SPECIFICATIONS AND/OR THESE GENERAL NOTES, THE MORE STRINGENT AND HIGHEST COST REQUIREMENT SHALL CONTROL UNLESS DIRECTED OTHERWISE IN WRITING BY THE OWNER'S REPRESENTATIVE.
4) THE GENERAL CONTRACTOR SHALL COMPARE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DISCREPANCIES BETWEEN EACH SET, AND WITHIN EACH SET OF DRAWINGS, AND REPORT DISCREPANCIES, IF ANY, TO THE OWNER'S REPRESENTATIVE PRIOR TO THE DETAILING, FABRICATION AND INSTALLATION OF AFFECTED WORK.
5) GENERAL CONTRACTOR SHALL COORDINATE SIZES AND LOCATIONS OF OPENINGS THROUGH FLOORS, ROOF, AND WALLS SHOWN ON ELECTRICAL, PLUMBING, AND FIRE SUPPRESSION SYSTEM DESIGN DOCUMENTS WITH ASSOCIATED SUBCONTRACTORS.
6) ALTHOUGH NOT NECESSARILY SPECIFICALLY REFERENCED IN THE CONTRACT DOCUMENTS, TYPICAL DETAILS AND GENERAL NOTES APPLY TO THE ENTIRE PROJECT WHEREVER CONDITIONS SIMILAR TO THOSE DETAILED OR NOTED EXIST.
7) THE USE OF ELECTRONIC FILES OR REPRODUCTION OF CONTRACT DOCUMENTS BY ANY TRADE OR MATERIAL SUPPLIER IN LIEU OF COMPLETELY INDEPENDENT PREPARATION OF SHOP DRAWINGS SIGNIFIES THE SUPPLIER'S CERTIFICATION THAT ALL INFORMATION SHOWN IN THE SHOP DRAWINGS IS CORRECT, AND ASSIGNS THEMSELVES TO RESPONSIBILITY FOR ANY JOB EXPENSE ARISING DUE TO ANY ERRORS OCCURRING THEREIN.

2. SHELTER DESIGN LOADS

A. DEAD LOAD: SELF WEIGHT OF MATERIALS, UNLESS NOTED OTHERWISE

- B. ROOF DEAD LOAD:
1) BUILT UP ROOFING SYSTEM.....6 PSF
2) RIGID INSULATION.....2 PSF
3) CONCRETE DECK (4" NW CONC ON 2" COMP. DECK - 6" TOTAL)......63 PSF
4) STEEL BEAMS......7 PSF
5) MISC (MEP, CEILING, ETC.)......7 PSF
6) TOTAL......85 PSF

- C. UNIFORM LIVE LOADS:
1) ROOF LIVE LOAD (UNREDUCIBLE).....100 PSF

- D. CONCENTRATED LIVE LOADS:
1) ROOFS (ON AN AREA 2.5 FT. X 2.5 FT.).....300 LBS

- E. WIND LOADS:
1) GOVERNING CODE:.....ICC 500-2014
2) EXPOSURE CATEGORY.....C
3) INTERNAL PRESSURE COEFFICIENT, GCPI:..... +/- 0.55
4) TOPOGRAPHIC FACTOR, KZ1:.....1.0
5) DIRECTIONALITY FACTOR, Kd:.....1.0
6) ULTIMATE DESIGN WIND SPEED, Vult:.....250 MPH

- F. SNOW LOADS:
1) GOVERNING CODE:.....ASCE 7-10
2) SNOW IMPORTANCE FACTOR, Is:.....1.1
3) GROUND SNOW LOAD, Pg:.....10 PSF
4) EXPOSURE OF ROOF:.....PARTIALLY EXPOSED
5) EXPOSURE FACTOR, Ce:.....1.0
6) THERMAL FACTOR, Ct:.....1.0
7) ROOF SLOPE FACTOR, Cs:.....1.0
8) CALCULATED FLAT ROOF SNOW LOAD, Pfs:.....7.7 PSF
9) MINIMUM FLAT ROOF SNOW LOAD, Pmin:.....11 PSF
10) RAIN ON SNOW SURCHARGE LOAD:......5 PSF

- G. RAIN LOADS:
1) GOVERNING CODE:.....ASCE 7-10
2) DEPTH OF WATER ON THE UNDEFLECTED ROOF UP TO THE INLET OF THE SECONDARY DRAINAGE SYSTEM WHEN THE PRIMARY DRAINAGE SYSTEM IS BLOCKED (I.E., THE STAG HEAD), ds:.....4.0 INCHES
3) ADDITIONAL DEPTH OF WATER ON THE UNDEFLECTED ROOF ABOVE THE INLET OF THE SECONDARY DRAINAGE SYSTEM AT ITS DESIGN FLOW (I.E., THE HYDRAULIC HEAD), dh:.....2.0 INCHES

- H. SEISMIC DESIGN CRITERIA: (INFORMATION TBD FROM SITE SPECIFIC GEOTECHNICAL REPORT)
1) GOVERNING CODE:.....ASCE 7-10
2) SEISMIC IMPORTANCE FACTOR, Ie:.....1.25
3) SOIL SITE CLASSIFICATION:.....TBD
4) 0.2 SEC. MAPPED SPECTRAL ACCELERATION, Ss:.....0.272
5) 1.0 SEC. MAPPED SPECTRAL ACCELERATION, S1:.....0.079
6) SITE COEFFICIENT, 0.2 SEC. PERIOD, Fa:.....TBD
7) SITE COEFFICIENT, 1.0 SEC. PERIOD, Fv:.....TBD
8) 0.2 SEC. DESIGN SPECTRAL ACCELERATION, Sds:.....TBD
9) 1.0 SEC. DESIGN SPECTRAL ACCELERATION, Sd1:.....TBD
10) SEISMIC DESIGN CATEGORY:.....TBD
11) SEISMIC PARAMETERS FOR BUILDING:
A) SEISMIC FORCE RESISTING SYSTEM: ORDINARY REINFORCED CONCRETE SHEAR WALLS.
B) RESPONSE MODIFICATION COEFFICIENT, R:.....4.00
C) SYSTEM OVERSTRENGTH FACTOR, O:.....2.50
D) DEFLECTION AMPLIFICATION FACTOR, Cd:.....4.00
E) ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE METHOD.
F) SEISMIC RESPONSE COEFFICIENT, Cs:.....TBD
G) TOTAL LATERAL BASE SHEAR, V:.....TBD

3. MATERIAL DESIGN VALUES

- A. CONCRETE (MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS, NORMAL WEIGHT U.N.O.):
1) FOUNDATIONS:.....3,500 PSI
2) SLABS:.....4,000 PSI
3) WALLS:.....4,000 PSI
4) ALL OTHER STRUCTURAL CONCRETE, U.N.O.:.....4,000 PSI

- B. REINFORCED CONCRETE MASONRY
1) DETERMINATION OF COMPRESSIVE STRENGTH:.....UNIT STRENGTH METHOD
2) DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY, f'm:.....2,000 PSI
3) NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS (ASTM C90).....2,000 PSI
4) MORTAR (ASTM C270, PROPORTION SPECIFICATION, TYPE S).....1,800 PSI
5) GROUT (ASTM C476, PROPORTION SPECIFICATION).....2,000 PSI

- C. CONCRETE AND MASONRY REINFORCEMENT (MINIMUM YIELD STRENGTH)
1) ALL PLAIN AND DEFORMED BARS (ASTM A615, GRADE 60).....FY = 60 KSI
2) WELDABLE REINFORCING BARS (ASTM A706).....FY = 60 KSI
D. STRUCTURAL STEEL (MINIMUM YIELD STRENGTH)
1) ALL WIDE FLANGE SHAPES (ASTM A992).....FY = 50 KSI
2) SQUARE AND RECTANGULAR HSS (ASTM A500, GRADE C).....FY = 50 KSI
3) ANCHOR RODS (ASTM F1554, GRADE 105).....FY = 105 KSI
4) DEFORMED BAR ANCHORS (AWS D1.1 TYPE C, ASTM A496).....FY = 70 KSI
5) HEADED STUD ANCHORS (AWS D1.1 TYPE B, ASTM A29, GRADES 1010 THROUGH 1020).....FY = 51 KSI
6) ALL OTHER SHAPES AND PLATES UNLESS NOTED (ASTM A36).....FY = 36 KSI

- E. COLD FORMED STEEL (MINIMUM YIELD STRENGTH)
1) ROOF DECK (ASTM A653, SS GRADE 33, G-60 GALVANIZED).....FY = 33 KSI
2) COMPOSITE DECK (ASTM A653, SS GRADE 40, G-60 GALV.).....FY = 40 KSI
3) COLD FORMED METAL STUDS, 43 MIL AND LIGHTER (ASTM A1003/A, GRADE ST3H, G-60 GALVANIZED).....FY = 33 KSI
4) COLD FORMED METAL STUDS, 54 MIL AND HEAVIER (ASTM A1003/A, GRADE ST50H, G-60 GALVANIZED).....FY = 50 KSI
5) COLD FORMED METAL CLIPS (ASTM A653, SS GRADE 50,G-90 GALVANIZED).....FY = 50 KSI

4. CONSTRUCTION LOADS AND STABILITY

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL TEMPORARY CONSTRUCTION LOADS CAN BE SAFELY SUPPORTED BY THE STRUCTURE DURING CONSTRUCTION.
B. THE STRUCTURAL FRAMING SYSTEM AND FOUNDATIONS HAVE BEEN DESIGNED AS A COMPLETE STRUCTURAL SYSTEM FOR SUPPORT OF THE LOADS INCURRED IN THE CONSTRUCTION DOCUMENTS. THE STRUCTURE HAS NOT BEEN DESIGNED OR CHECKED FOR TEMPORARY CONSTRUCTION LOADS NOR HAS IT BEEN DESIGNED OR CHECKED FOR ADEQUACY OR STABILITY AS A PARTIALLY ERRECTED STRUCTURE.
C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THE ABILITY OF THE PARTIALLY COMPLETED OR FULLY COMPLETED STRUCTURE TO RESIST ALL CONSTRUCTION LOADS INCLUDING BUT ARE NOT NECESSARILY LIMITED TO MATERIAL STAGING, PERSONNEL, AND EQUIPMENT.
D. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORES, GUYS, BRACES, AND OTHER SUPPORTS DURING CONSTRUCTION TO KEEP STRUCTURAL FRAMING COMPONENTS SECURE, PLUMB, AND IN ALIGNMENT AGAINST TEMPORARY CONSTRUCTION LOADS AND LOADS EQUAL IN INTENSITY TO DESIGN LOADS. THE TEMPORARY SUPPORTS SHALL BE SUFFICIENT TO SECURE THE PARTIALLY ERRECTED STRUCTURE OR ANY PORTION THEREOF AGAINST LOADS THAT ARE LIKELY TO BE ENCOUNTERED DURING CONSTRUCTION, INCLUDING THOSE DUE TO WIND AND THOSE THAT RESULT FROM CONSTRUCTION OPERATIONS.
E. THE CONTRACTOR SHALL NOT REMOVE TEMPORARY SUPPORTS UNTIL THE INSTALLATION OF ALL STRUCTURAL ELEMENTS IS COMPLETE. FOR THE PURPOSES OF THIS PARAGRAPH, "ALL STRUCTURAL ELEMENTS" INCLUDES, BUT IS NOT NECESSARILY LIMITED TO, THE FOLLOWING STRUCTURAL ELEMENTS:
1) FOUNDATIONS
2) STRUCTURAL STEEL FRAMING WITH COMPLETED STEEL CONNECTIONS, INCLUDING PERMANENT VERTICAL AND/OR HORIZONTAL BRACING
3) STEEL JOISTS INCLUDING JOIST BRIDGING
4) ROOF DECK

NOTE: FOUNDATION NOTES ARE PRELIMINARY UNTIL A SITE SPECIFIC GEOTECHNICAL REPORT IS RECEIVED.

5. FOUNDATION NOTES

- A. GEOTECHNICAL REPORT: A SITE SPECIFIC GEOTECHNICAL ENGINEERING SERVICES REPORT FOR THE NEW SHELTER ADDITION AT KELLEY ELEMENTARY SCHOOL, IN MOORE, OKLAHOMA WAS YET TO BE PERFORMED/RECEIVED. THE FOLLOWING NOTES ARE PRELIMINARY AND UPON RECEIPT OF SITE SPECIFIC GEOTECHNICAL REPORT THESE NOTES SHALL BE REVISED.

B. SITE SUB-GRADE PREPARATION:

- 1) STRIPPING: VEGETATION, CONCRETE, DELETERIOUS MATERIALS, AND SOFT AND LOOSE SOIL IN THE CONSTRUCTION AREAS, SHALL BE STRIPPED FROM THE SITE. THE DEPTH OF REMOVAL SHALL BE DETERMINED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER AT THE TIME OF CONSTRUCTION. UTILITIES SHALL BE LOCATED AND REROUTED AS NECESSARY.
2) UNDERCUTTING: AFTER STRIPPING AND UNDERCUTTING, BUT BEFORE PLACING PAD SHALL BE UNDERCUT TO A MINIMUM OF 2'-0" AND REPLACED WITH LOW VOLUME CHANGE STRUCTURAL FILL AS OUTLINED BELOW.
3) PROOF-ROLLING: AFTER STRIPPING AND UNDERCUTTING, BUT BEFORE PLACING FILL, THE CONSTRUCTION AREA SHALL BE PROOF-ROLLED WITH A TANDEM AXLE DUMP TRUCK WEIGHING ATLEAST 25 TONS. THE PROOF-ROLLING SHOULD INVOLVE OVERLAPPING PASSES IN MUTUALLY PERPENDICULAR DIRECTIONS AND SOILS WHICH ARE OBSERVED TO RUT OR DEFLECT EXCESSIVELY UNDER THE MOVING LOAD SHALL BE UNDERCUT AND RECOMPACTED IN PLACE OR REPLACED WITH PROPERLY COMPACTED ENGINEERED FILL. THE RECOMPACTED SOIL OR STRUCTURAL FILL SHALL BE MOISTURE CONDITIONED DURING PLACEMENT. THE PROOF-ROLLING AND UNDERCUTTING ACTIVITIES SHALL BE WITNESSED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER AND SHALL BE PERFORMED DURING A PERIOD OF DRY WEATHER.
4) SCARIFICATION: AFTER STRIPPING, UNDERCUTTING AND PROOF ROLLING, BUT BEFORE FILL PLACEMENT, THE EXPOSED SOILS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 8 INCHES AND THEN PROCESSED AT MOISTURE CONTENT AT OR ABOVE ITS OPTIMUM VALUE AS DETERMINED BY THE STANDARD PROCTOR TEST. THE SUBGRADE SOILS SHALL BE RECOMPACTED TO AT LEAST 95 PERCENT OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST METHOD (ASTM D-698).
5) ACCEPTABLE FILL: STRUCTURAL FILL MATERIALS SHALL BE FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, HAVE A MAXIMUM PARTICLE SIZE OF 3 INCHES, HAVE A LIQUID LIMIT NOT MORE THAN 35, A PLASTICITY INDEX IN THE RANGE OF 5 AND 18 AND FINE MATERIAL PASSING THE NO. 200 SEIVE NOT LESS THAN 60%.
6) FILL PLACEMENT: FILL SHALL BE PLACED IN MAXIMUM LIFTS OF 8 INCHES OF LOOSE MATERIAL AND SHALL BE COMPACTED WITHIN THE RANGE OF 2 PERCENTAGE POINTS BELOW AND 3 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE CONTENT. EACH LIFT OF COMPACTED ENGINEERED FILL SHALL BE TESTED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF SUBSEQUENT LIFTS. THE EDGE OF COMPACTED FILL SHALL EXTEND 1 FOOT LATERALLY BEYOND THE BUILDING FOOTPRINT FOR EACH FOOT OF FILL REQUIRED. STRUCTURAL FILL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698.
7) DEPTH OF FILL: FOOTINGS SHALL BE SUPPORTED ON NATIVE SOILS OR STRUCTURAL FILL. GROUND FLOOR SLABS SHALL BE GRADE SUPPORTED ON 2'-0" OF COMPACTED STRUCTURAL FILL PLACED AS DESCRIBED ABOVE.
8) FILL PLACEMENT TESTING: EACH LIFT OF COMPACTED FILL SHALL BE TESTED BY A GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF SUBSEQUENT LIFTS. FIELD DENSITY TESTS SHALL BE TAKEN AT A MINIMUM OF ONE PER EVERY 2500 SF, BUT AT LEAST THREE SETS OF DENSITY TESTS SHALL BE TAKEN FOR EACH LIFT.
9) SITE DRAINAGE: GRADING OF THE SITE AROUND THE STRUCTURE'S PADS SHALL BE ACCOMPLISHED TO ENABLE POSITIVE DRAINAGE AWAY FROM THE PADS BY PROVIDING AN ADEQUATE GRADIENT. THE SURFACE GRADIENT PROVIDED WILL BE DEPENDENT ON THE LANDSCAPING TYPE AND VEGETATION. WATER INFILTRATION AND SEEPAGE INTO THE FOUNDATION SHALL BE REDUCED AS MUCH AS POSSIBLE. IF IT IS POSSIBLE FOR WATER TO COLLECT BENEATH THE FOUNDATION AND FOUNDATION AREAS, IT WILL BE NECESSARY TO USE INTERCEPTOR DRAINS TO REMOVE THE COLLECTED WATER.
10) MAINTENANCE OF SOIL MOISTURE: SOIL MOISTURE SHALL BE MAINTAINED UP UNTIL CONCRETE PLACEMENT TO PREVENT SHRINKAGE AND SUBSEQUENT POST-CONSTRUCTION SWELL OF SUBGRADE SOILS.

C. DRILLED PIER FOUNDATIONS:

- 1) PIER DESIGN PARAMETERS: THE PROPOSED SHELTER SHALL BE SUPPORTED ON DRILLED PIER FOUNDATIONS BASED ON THE FOLLOWING DESIGN PARAMETERS:
A) BEARING STRATUM: BEDROCK
B) ALLOWABLE END BEARING PRESSURE: 15,000 PSF
C) ALLOWABLE SKIN FRICTION (DOWNWARD LOADS): 1,000 PSF
2) MINIMUM EMBEDMENT: DRILLED SHAFTS SHALL BEAR A MINIMUM OF 3 FEET OR ONE PIER DIAMETERS INTO THE BEARING STRATUM INDICATED ABOVE. SKIN FRICTION IS BASED UPON THE ACTUAL PORTION OF DRILLED PIER EMBEDDED MORE THAN 3 FEET INTO THE BEARING STRATUM.
3) EXPECTED SETTLEMENT: PROPERLY CONSTRUCTED PIERS BEARING IN THE UNDERLYING WEATHERED SHALE BEDROCK ARE EXPECTED TO EXPERIENCE TOTAL MAXIMUM SETTLEMENTS ON THE ORDER OF 1/2 INCH.
4) CASING REQUIREMENTS: TEMPORARY CASING MAY BE REQUIRED IN ORDER TO SEAL OUT GROUNDWATER OR SLOUGHING SOILS, HOWEVER THE FINAL DETERMINATION SHALL BE MADE AT THE TIME OF CONSTRUCTION.
A) THE CONTRACTOR SHALL PROVIDE UNIT PRICING TO ADD THE COST OF EACH LINEAL FOOT OF CASING FOR EACH PIER DIAMETER IN THE EVENT CASINGS ARE REQUIRED. UNIT LENGTHS OF CASING SHALL BE FROM DETAILED TOP OF PIER ELEVATION TO TOP OF BEARING STRATUM ELEVATION.
B) THE CONTRACTOR SHALL PROVIDE UNIT PRICING FOR THE COST OF ABANDONED CASINGS THAT CANNOT BE REMOVED FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR.
5) PIER LENGTHS AND BIDDING CONSIDERATIONS: TOP OF PIER ELEVATIONS SHOWN IN THE DRAWINGS ARE RELATIVE TO A REFERENCE FINISHED FLOOR ELEVATION OF 100'-0". THE OVERALL PIER LENGTHS INDICATED IN THE PLAN ARE APPROXIMATE AND ARE BASED ON ESTIMATED CONTOURS DEVELOPED FROM THE BEARING STRATA DETERMINED FROM THE GEOTECHNICAL REPORT BORING LOGS. ACTUAL PIER LENGTHS MAY VARY AS UNDULATIONS IN THE BEARING STRATA ELEVATION ARE ENCOUNTERED. LENGTH OF PIERS SHALL BE DETERMINED ONCE THE MINIMUM EMBEDMENT INTO THE SPECIFIED BEARING STRATA IS ACHIEVED. THE CONTRACTOR SHALL PROVIDE ADD/DEDUCT UNIT PRICING FOR ALL PIER SIZES SHOWN.
6) PIER CONSTRUCTION:
A) THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES, BOTH CHARTED AND UNCHARTED, PRIOR TO COMMENCING WITH EXCAVATION OR PIER DRILLING OPERATIONS AND SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY POTENTIAL CONFLICTS BETWEEN EXISTING CONDITIONS AND PLANNED CONSTRUCTION.
B) SOFT OR LOOSE SOIL ZONES ENCOUNTERED AT THE BEARING LEVEL SHALL BE REMOVED FROM THE DRILLED SHAFTS. IF THE EXPOSED BEARING MATERIALS BECOME SIGNIFICANTLY WET OR DRY, THEY SHALL BE DEEPEENED UNTIL MORE UNIFORM MOISTURE CONDITIONS ARE ACHIEVED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
C) CONCRETE FOR PIERS SHALL BE CAST AS SOON AS PRACTICAL AFTER DRILLING. IN GENERAL, NO PIER HOLE SHALL BE LEFT OPEN OVERNIGHT. IF THE PIERS ARE LEFT OPEN OVERNIGHT OR LONGER, THE PIER DRILLING CONTRACTOR SHALL DEEPEN PIERS A MINIMUM OF ONE PIER DIAMETER AT THE CONTRACTOR'S EXPENSE.
D) CONCRETE PLACEMENT FOR PIERS:
(i) PIERS WITH A DIAMETER LESS THAN 30-INCHES SHALL BE DEPOSITED USING A TREMIE OR PUMPED THROUGH A HOSE. CONCRETE SHALL NOT BE ALLOWED TO FALL MORE THAN 10 FEET TO THE BOTTOM OF THE EXCAVATION.
(ii) PIERS WITH A DIAMETER EQUAL TO OR GREATER THAN 30-INCHES AND A DEPTH OF UP TO 60 FEET MAY BE PLACED AS FREE-FALL.
(iii) PIERS WITH A DIAMETER EQUAL TO OR GREATER THAN 30-INCHES AND A DEPTH EXCEEDING 60 FEET SHALL BE DEPOSITED USING A TREMIE OR PUMPED THROUGH A HOSE. CONCRETE SHALL NOT BE ALLOWED TO FALL MORE THAN 10 FEET TO THE BOTTOM OF THE EXCAVATION.
E) THE TOP FIVE FEET OF ALL PIERS SHALL BE VIBRATED AFTER TEMPORARY CASING HAS BEEN WITHDRAWN OR WHEN CASING IS PERMANENT AND CONCRETE SLUMP IS LESS THAN 6 INCHES.
F) ANY CONCRETE OVERPOUR AT TOP OF PIERS (MUSHROOMS) SHALL BE REMOVED TO PRODUCE THE SPECIFIED PIER DIAMETER.

D. GRADE BEAMS AND PIER CAPS (SHELTER AREA):

- 1) CONSTRUCTION: GRADE BEAMS AND PIER CAPS SHALL BE STRUCTURALLY CONNECTED TO THE TOP OF SUPPORTING PIERS. GRADE BEAMS SHALL EXTEND AT LEAST TWENTY FOUR (24) INCHES BELOW THE FINAL EXTERIOR ADJACENT GRADE. A MINIMUM VOID SPACE OF FOUR (4) INCHES BENEATH GRADE BEAMS AND PIER CAPS SHALL BE MAINTAINED USING VOID FORMS. EXCAVATIONS FOR GRADE BEAMS AND PIER CAPS SHALL BE FREE OF LOOSE MATERIAL.
2) VOID FORMS: VOID FORMS SHALL BE CONSTRUCTED OF BIODEGRADABLE PAPER SURFACE, TREATED FOR MOISTURE RESISTANCE, AND STRUCTURALLY SUFFICIENT TO SUPPORT WEIGHT OF PLASTIC CONCRETE AND OTHER SUPERIMPOSED LOADS. TRAPEZOIDAL VOID FORMS ARE PROHIBITED. BACKFILL RETAINERS ARE REQUIRED ON BOTH SIDES OF GRADE BEAMS AND PIER CAPS.
3) EARTH FORMING:
A) EARTH-FORMED GRADE BEAMS AND PIER CAPS ARE NOT PERMITTED WHERE BRICK LEDGES OR EXPOSED SURFACES REQUIRE FORMING AND/OR WHERE SOIL SIDE WALLS SLOUGH INTO THE TRENCH.
B) IF GRADE BEAMS AND PIER CAPS ARE SPECIFIED TO HAVE VOID FORMS, EARTH FORMING IS NOT ALLOWED.
4) PIPE PENETRATIONS: ALL HORIZONTAL PIPE OR SIMILAR PENETRATIONS OR SLEEVES THROUGH GRADE BEAMS SHALL PREFERABLY OCCUR WITHIN THE MIDDLE THIRD OF THE GRADE BEAM DEPTH AND SHALL HAVE A MAXIMUM OPENING DIAMETER OF ONE-FOURTH THE GRADE BEAM DEPTH. AT PENETRATIONS, PROVIDE FOUR (4) #5 DIAGONAL BARS AT EACH FOOTING FACE THREE (3) INCHES CLEAR BETWEEN BAR AND PENETRATION AND THREE (3) INCHES CLEAR FROM FOOTING BEARING). IF PENETRATION MUST OCCUR NEAR THE BOTTOM OF THE GRADE BEAM, REFER TYPICAL DETAILS FOR STANDARD DETAIL TO TRANSITION & THICKEN GRADE BEAM TO ACCOMMODATE PENETRATION.

E. SLAB-ON-GRADE CONSTRUCTION:

- 1) SLAB THICKNESS AND REINFORCING: SLABS-ON-GRADE SHALL BE 4" THICK CONCRETE REINFORCED WITH #3 BARS AT 15" ON CENTER EACH WAY. REINFORCING BARS SHALL BE PLACED 1 1/2" CLEAR FROM TOP OF SLAB USING CHAIRS OR SLAB BOLSTERS COMPLYING WITH CRSI'S "MANUAL OF STANDARD PRACTICE".
2) SLAB SUBGRADE: THE FLOOR SLAB SHALL BE GRADE-SUPPORTED ON 2'-0" OF STRUCTURAL FILL AS OUTLINED IN THE SITE SUB-GRADE PREPARATION NOTES SHOWN ABOVE.
3) CONSTRUCTION MONITORING: CONSTRUCTION ACTIVITY MAY CAUSE DAMAGE AND DETERIORATION TO THE PREPARED SUBGRADE. A FIELD REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHALL OBSERVE THE FINAL SUBGRADE PRIOR TO PLACEMENT OF THE SLAB ON GRADE, PERFORM FURTHER TESTING AS NECESSARY, AND DETERMINE IF ANY REMEDIAL MEASURES ARE NECESSARY PRIOR TO SLAB PLACEMENT.
4) AGGREGATE BASE COURSE: A 4-INCH THICK, FREE-DRAINING AGGREGATE BASE COURSE SHALL BE PLACED BENEATH THE FLOOR SLAB TO ENHANCE DRAINAGE AND PROVIDE INCREASED SUBGRADE STRENGTH. AT THE TIME OF THE SLAB PLACEMENT, THE GRANULAR BASE SHALL BE MOIST, BUT FREE OF ANY STANDING OR SELF-DRAINING WATER. THE AGGREGATE BASE COURSE MATERIAL SHALL MEET THE FOLLOWING CRITERIA:
A) 100 PERCENT SHALL PASS THE 1 1/2" SIEVE
B) LESS THAN 5 PERCENT SHALL PASS THE #8 SIEVE
C) PLASTICITY INDEX, PI, SHALL BE LESS THAN OR EQUAL TO 6
D) COMPACTED TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY.
5) VAPOR RETARDER: A 15 MIL VAPOR RETARDER SHALL BE PLACED IMMEDIATELY BELOW THE CONCRETE SLAB. VAPOR RETARDER SHALL BE SEALED AT ALL LAPS AND SEALED TO PREVIOUSLY PLACED CONCRETE AS RECOMMENDED BY VAPOR RETARDER MANUFACTURER. BEFORE PLACING CONCRETE, PATCH AND SEAL ANY RIPS, TEARS OR HOLES IN VAPOR RETARDER INCURRED DURING CONSTRUCTION.
6) MOIST CURING OF SLAB: SLABS-ON-GRADE SHALL BE WATER CURED FOR A MINIMUM OF 7 DAYS BY PONDING, SPRAYING, SPRINKLING OR BY USE OF SATURATED COVERINGS. CURING COMPOUNDS ARE EXPRESSLY PROHIBITED.

- 7) ISOLATION JOINTS: PROVIDE SLAB ISOLATION AROUND COLUMNS PENETRATING THE SLAB-ON-GRADE. PROVIDE 1/2 INCH PREMOULDED EXPANSION JOINT MATERIAL AROUND PERIMETER OF ISOLATION JOINTS. REFER TO TYPICAL DETAILS AND ADDITIONAL INFORMATION.

- 8) SLAB JOINTS: SLAB JOINTS SHALL BE PROVIDED AS SHOWN ON THE PLANS AND TYPICAL DETAILS. THE FOLLOWING JOINT TYPES ARE SHOWN ON THE DRAWINGS:
A) CJ = CONSTRUCTION JOINT
B) SJ = SAWED CONTRACTION JOINT

F. FOUNDATION MISCELLANEOUS

- 1) GROUNDWATER CONDITIONS: GROUNDWATER WAS ENCOUNTERED IN SOME OF THE BORINGS AT THE TIME OF DRILLING. HOWEVER, IT IS POSSIBLE THAT TRANSIENT OVER-SATURATED GROUND CONDITIONS COULD DEVELOP AT SHALLOWER DEPTHS AT A LATER TIME DUE TO PERIODS OF HEAVY PRECIPITATION, LANDSCAPE WATERING, LEAKING WATER LINES, OR OTHER UNFORESEEN CAUSES. THE CONTRACTOR SHALL DETERMINE THE ACTUAL GROUNDWATER LEVELS AT TIME OF CONSTRUCTION. IF GROUNDWATER ISSUES ARE ENCOUNTERED DURING CONSTRUCTION, THE GEOTECHNICAL ENGINEER SHALL BE CONTACTED.
2) DRAINAGE CONSIDERATIONS DURING CONSTRUCTION: DUE TO ADVERSE EFFECT ON STRUCTURES, WATER SHALL NOT BE ALLOWED TO COLLECT IN THE FOUNDATION EXCAVATION OR ON PREPARED SUBGRADE OF THE CONSTRUCTION AREA EITHER DURING OR AFTER CONSTRUCTION. UNDERCUT OR EXCAVATED AREAS SHALL BE SLOPED TOWARD ONE CORNER TO FACILITATE REMOVAL OF ANY COLLECTED RAINWATER, OR POSITIVE RUNOFF SHALL BE PROVIDED. THE CONTRACTOR SHALL EXERCISE CARE IN CREATING DRAINAGE PATHS FOR WATER DURING THE CONSTRUCTION PHASE OF THE PROJECT. TO REDUCE INFILTRATION OF SURFACE WATER AROUND THE PERIMETER OF THE BUILDING AND BENEATH THE FLOOR SLABS, POSITIVE DRAINAGE SHALL BE PROVIDED DURING ALL PHASES OF CONSTRUCTION.
3) FINAL SITE GRADING: PER SECTION 1804.4 OF IBC-2015, THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN ONE UNIT VERTICAL IN 20 UNITS HORIZONTAL (5-PERCENT SLOPE) FOR A MINIMUM DISTANCE OF 10 FEET PERPENDICULAR TO THE FACE OF THE WALL. IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10 FEET OF HORIZONTAL DISTANCE, A 5-PERCENT SLOPE SHALL BE PROVIDED TO AN APPROVED ALTERNATIVE METHOD OF DIVERTING WATER AWAY FROM THE FOUNDATION. SHALES USED FOR THIS PURPOSE SHALL BE SLOPED A MINIMUM OF 2-PERCENT WHERE LOCATED WITHIN 10 FEET OF THE BUILDING FOUNDATION. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING SHALL BE SLOPED A MINIMUM OF 2-PERCENT AWAY FROM THE BUILDING.
4) EXCAVATION AND TEMPORARY SLOPES: THE CONTRACTOR, DESIGNATED AS "RESPONSIBLE PERSON" IN OSHA CONSTRUCTION STANDARDS FOR EXCAVATIONS, 29 CFR PART 1926, IS SOLELY RESPONSIBLE FOR PLANNING AND IMPLEMENTING ALL SAFETY PROCEDURES. ALL EXCAVATION HEIGHT, SLOPE, AND DEPTH MUST ADHERE TO ALL SPECIFICATIONS OUTLINED IN LOCAL, STATE, AND FEDERAL SAFETY REGULATIONS. THE STRUCTURAL ENGINEER DOES NOT ASSUME ANY RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY OR ANY PARTY'S, INCLUDING THE CONTRACTOR'S, COMPLIANCE WITH THE APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY REGULATIONS OR ANY OTHER APPLICABLE REGULATIONS.
5) TRENCH BACKFILL: ALL REQUIRED TRENCH BACKFILL SHALL BE ACCEPTABLE FILL MATERIAL AS DEFINED ABOVE AND SHALL BE MECHANICALLY COMPACTED IN LAYERS TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698. SOME SETTLEMENT OF THE BACKFILL MAY BE EXPECTED AND ANY UTILITIES WITHIN THE TRENCHES SHALL BE CONSTRUCTED TO ALLOW THESE DIFFERENTIAL MOVEMENTS. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
6) CONSTRUCTION MONITORING: A GEOTECHNICAL ENGINEER SHALL BE RETAINED TO PROVIDE OBSERVATIONS AND TESTING OF SOILS EXPOSED DURING PROJECT CONSTRUCTION IN ORDER TO VERIFY THAT SOIL CONDITIONS ARE AS ANTICIPATED. CONSTRUCTION ACTIVITIES PERTAINING TO EARTHWORK AND OTHER RELATED ACTIVITIES SHALL ALSO BE OBSERVED BY THE GEOTECHNICAL ENGINEER AS OUTLINED ABOVE.

G. CONCRETE CONSTRUCTION NOTES

- A. DESIGN CRITERIA: THE DESIGN OF CONCRETE IS GOVERNED BY "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-14) AND COMMENTARY (ACI 318R-14). "
B. CONCRETE CONSTRUCTION CRITERIA: ALL CONCRETE CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF "SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301-16). "
C. TOLERANCES: TOLERANCES FOR CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH "SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS (ACI 117-10) AND COMMENTARY (ACI 117R-10). "
D. CONCRETE MIXTURES:
1) CEMENTITIOUS MATERIALS
A) PORTLAND CEMENT: ASTM C150 TYPE I OR II UNLESS SPECIFICALLY NOTED OTHERWISE.
B) FLY ASH: ASTM C618 CLASS F OR C. THE MAXIMUM PERCENTAGE OF FLY ASH SHALL NOT EXCEED 25 PERCENT OF THE TOTAL CEMENTITIOUS MATERIAL FOR FOOTINGS AND 5 PERCENT OF THE TOTAL CEMENTITIOUS MATERIAL FOR SLABS.
2) ALL CONCRETE MIXES SHALL BE COMPRISED OF NORMAL WEIGHT AGGREGATES CONFORMING TO ASTM C33, EXCEPT WHERE SPECIFICALLY INDICATED AS LIGHTWEIGHT, IN WHICH CASE AGGREGATES SHALL CONFORM TO ASTM C330.
3) MIXING WATER SHALL CONFORM TO ASTM C1062. MIXING WATER, INCLUDING THAT PORTION OF MIXING WATER CONTRIBUTED IN THE FORM OF FREE MOISTURE ON AGGREGATES, SHALL NOT CONTAIN DELETERIOUS AMOUNTS OF CHLORIDE IONS.
4) ADMIXTURES, IF USED, SHALL CONFORM TO THE FOLLOWING:
A) WATER REDUCTION AND SETTING TIME MODIFICATION: ASTM C494.
B) PRODUCING FLOWING CONCRETE: ASTM C1017.
C) AIR ENTRAINMENT: ASTM C260.
D) INHIBITING CHLORIDE INDUCED CORROSION: ASTM C1582.
E) MOISTURE VAPOR REDUCING ADMIXTURE, MVRA: ASTM C494 & ASTM D5084
5) MIX DESIGNS SHALL BE PROPORTIONED BASED ON THE FOLLOWING MIX CHARACTERISTICS;
A) DRILLED CONCRETE PIERS AND SHAFTS
1) FREEZING AND THAWING EXPOSURE CATEGORY (F): CLASS FO
2) SULFATE EXPOSURE CATEGORY (S): CLASS SO
3) WATER EXPOSURE CATEGORY (W): CLASS W1
4) CORROSION PROTECTION CATEGORY (C): CLASS CO
5) 28-DAY COMPRESSIVE STRENGTH: 3,500 PSI
6) MAXIMUM WATER/CEMENT RATIO: 0.55
7) MAXIMUM AGGREGATE SIZE: 1 1/2 INCHES
8) TARGET AIR CONTENT: NO AIR ENTRAINMENT REQUIRED.
9) SLUMP: 5 TO 7 INCHES
10) MAXIMUM WATER-SOLUBLE CHLORIDE ION CONTENT IN CONCRETE, PERCENT BY WEIGHT OF CEMENT: 0.30
11) WATER REDUCING AND RETARDING ADMIXTURE: AS REQUIRED TO ENSURE MINIMUM SLUMP REQUIREMENT IS MAINTAINED DURING REMOVAL OF TEMPORARY CASINGS.
B) BELOW GRADE FOUNDATIONS
1) FREEZING AND THAWING EXPOSURE CATEGORY (F): CLASS F1
2) SULFATE EXPOSURE CATEGORY (S): CLASS SO
3) WATER EXPOSURE CATEGORY (W): CLASS W0
4) CORROSION PROTECTION CATEGORY (C): CLASS C1
5) 28-DAY COMPRESSIVE STRENGTH: 3,500 PSI
6) MAXIMUM WATER/CEMENT RATIO: 0.55
7) MAXIMUM AGGREGATE SIZE: 1 1/2 INCHES
8) TARGET AIR CONTENT: 4.5 PERCENT PLUS OR MINUS 1.5 PERCENT
9) MAXIMUM WATER-SOLUBLE CHLORIDE ION CONTENT IN CONCRETE, PERCENT BY WEIGHT OF CEMENT: 0.30



201 N. BROADWAY SUITE 210 MOORE, OK. 73160 405.735.3477 AGP@theAGP.net www.theAGP.net

CEDAR CREEK INC.

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KFC ENGINEERING

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MECHANICAL/ELECTRICAL



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OCTOBER 2022

date

revisions

MOORE PUBLIC SCHOOLS BOARD OF EDUCATION MOORE, OKLAHOMA



MOORE Public Schools LEARNING FOR LIFE

NEW ADDITION KELLEY ELEMENTARY SCHOOL

sheet no:

S100

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NEW ADDITION
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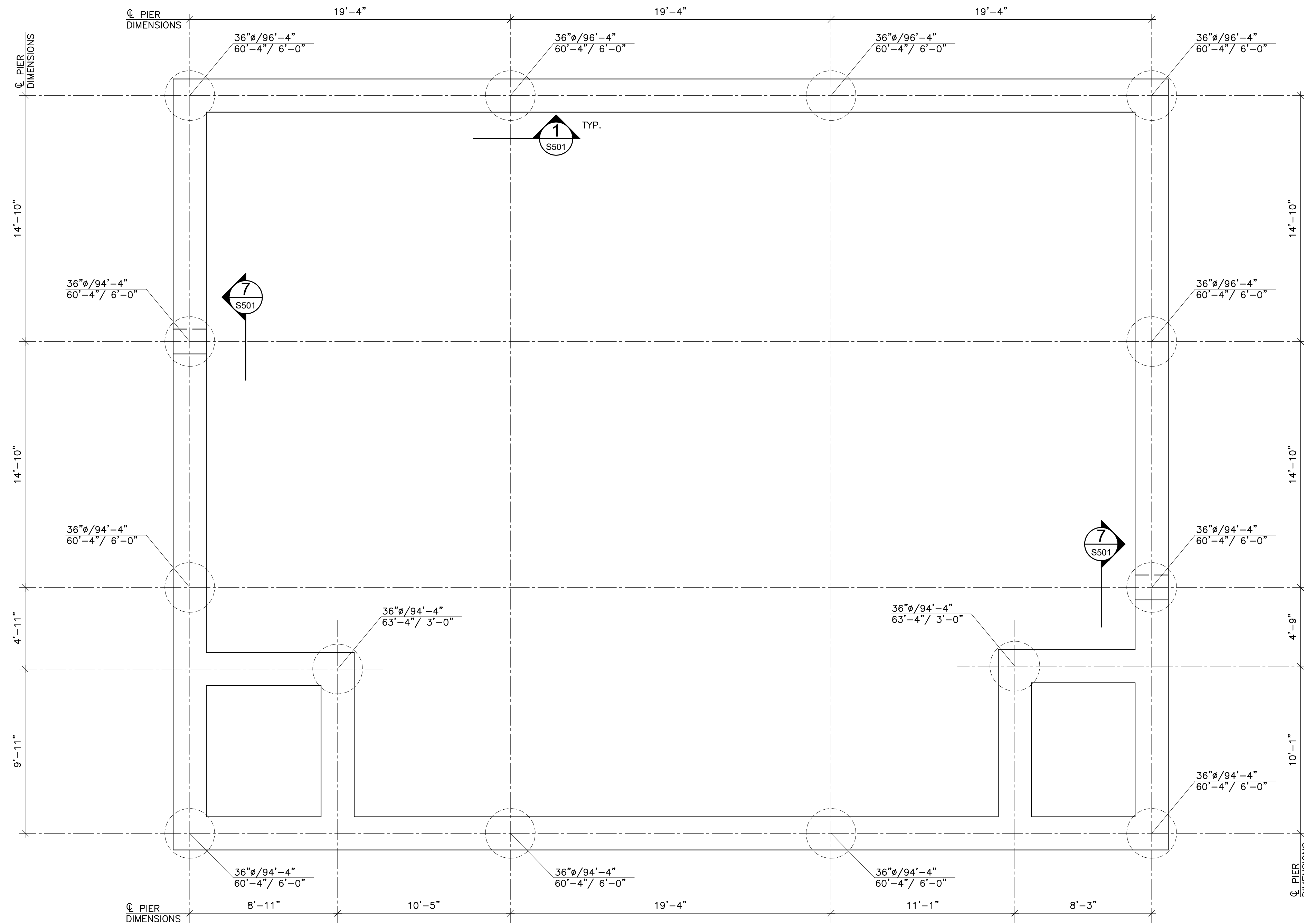
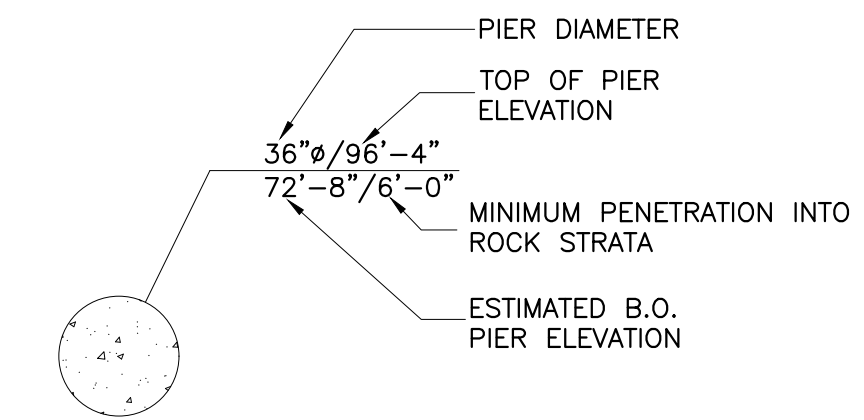
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NOTE:
FOUNDATION DESIGNS ARE PRELIMINARY UNTIL A
SITE SPECIFIC GEOTECHNICAL REPORT IS RECEIVED.

PIER PLAN LEGEND:



1 SHELTER PIER PLAN
SCALE: 1/4"=1'-0"

