1. GENERAL

A. THE INFORMATION ON THIS SHEET SHALL APPLY TO ALL CONSTRUCTION DOCUMENTS.
B. INFORMATION ON THIS SHEET SUPPLEMENTS THE PROJECT SPECIFICATIONS. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
C. NUMEROUS OPENINGS ARE REQUIRED THROUGH THE ROOF AND FLOORS. SEE ALL OTHER TRADES' DRAWINGS FOR SIZE AND EXACT LOCATION OF ALL PENETRATIONS. PENETRATIONS LESS THAN 12" MAY NOT ALL BE INDICATED ON STRUCTURAL DRAWINGS. PENETRATIONS LESS THAN 12" SHALL HAVE AT LEAST 1'-0" CLEAR BETWEEN OPENINGS, UNLESS APPROVED IN WRITING BY THE SER.
D. UNLESS OTHERWISE NOTED, ALL DETAILS, SECTIONS AND NOTES ON THE DRAWINGS ARE INTENDED TO INDICATE DESIGN INTENT AND ARE TO BE TYPICAL FOR SIMILAR SITUATIONS ELSEWHERE.
E. THESE DRAWINGS ARE NOT TO BE USED FOR SHOP DETAILING UNLESS SPECIFICALLY STAMPED BY THE STRUCTURAL ENGINEER ON THE DRAWINGS "FOR DETAILING". THESE DRAWINGS ARE NOT TO BE REPRODUCED FOR THE PURPOSE OF USING THEM AS SHOP DRAWINGS. ANY SHOP DRAWINGS SUBMITTED WITH COPIES OF THESE DRAWINGS WITHOUT PRIOR APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD WILL BE REJECTED AND RESUBMITTAL WILL BE REQUIRED.
F. THE INFORMATION CONTAINED ON THE STRUCTURAL DRAWINGS IS IN ITSELF INCOMPLETE AND VOID UNLESS USED IN CONJUNCTION WITH ALL OTHER DISCIPLINE DRAWINGS, THE SPECIFICATIONS, TRADE PRACTICES, OR APPLICABLE STANDARDS, CODES, ETC.
G. CONTRACTOR IS TO ASSUME FULL RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS OR PERIODIC OBSERVATION OF CONSTRUCTION, FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED ON THE JOB SITE AND BETWEEN INDIVIDUAL DRAWINGS OR SETS OF DRAWINGS FOR FABRICATION PROCESSES AND CONSTRUCTION TECHNIQUES (INCLUDING EXCAVATION, SHORING, SCAFFOLDING, BRACING, ERECTION, FORMWORK, ETC.), FOR COORDINATION OF THE VARIOUS TRADES, AND FOR SAFE CONDITIONS ON THE JOB SITE. VARIATIONS IN FIELD CONDITIONS RELATIVE TO THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ENGINEER AS SOON AS THEY ARE FOUND. WORK SHALL NOT PROGRESS UNTIL WRITTEN PERMISSION FROM THE ENGINEER IS OBTAINED.
H. ELEVATION 525.00 AS SHOWN ON THE SITE DRAWINGS IS EQUAL TO 100'-0" AS USED IN THE STRUCTURAL DRAWINGS.
I. WHERE CONFLICTS OR DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS EXIST THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR CLARIFICATION. THE CONTRACTOR SHALL NOT ASSUME ANY ITEM TAKES PRECEDENCE OVER THE OTHER. ANY ACTION THE CONTRACTOR MAKES PRIOR TO NOTIFICATION SHALL BE AT THE CONTRACTOR'S RISK.
J. THESE DRAWINGS SHALL NOT BE SCALED TO OBTAIN DIMENSIONS. IF THE DIMENSIONS CANNOT BE DETERMINED BY THE INFORMATION GIVEN, CONTRACTOR SHALL CONTACT ENGINEER FOR REQUIRED INFORMATION.
K. SITE OBSERVATION BY THE ENGINEER IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR.
L. THE DRAWINGS, SPECIFICATIONS, BIM MODEL AND OTHER DOCUMENTS PREPARED BY DLZ INDIANA, LLC (DLZ) FOR THIS PROJECT ARE INSTRUMENTS OF THE ENGINEER'S SERVICE, AND MAY BE USED SOLELY WITH RESPECT TO THE PROJECT AND, UNLESS OTHERWISE PROVIDED, THE ENGINEER SHALL BE DEEMED THE AUTHOR OF THESE PLANS AND RETAINS ALL COMMON LAW RIGHTS, TITLES AND INTEREST THEREIN. THE OWNER SHALL BE PERMITTED TO RETAIN COPIES, INCLUDING REPRODUCIBLE COPIES, OF THE ENGINEER'S DRAWINGS, SPECIFICATIONS OTHER DOCUMENTS FOR INFORMATION AND REFERENCE IN CONNECTION WITH THE OWNER'S USE AND OCCUPANCY OF THE PROJECT. DLZ SHALL NOT BE LIABLE FOR ANY HARM OR DAMAGE SUFFERED BY ANY PARTY BY REASON OF THE UNAUTHORIZED USE OF THESE PLANS. DLZ EXPRESSLY RESERVES ITS COPYRIGHTS IN THESE PLANS. THESE PLANS MAY NOT BE REPRODUCED, CHANGED, OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR MAY THEY BE ASSIGNED OR OTHERWISE MADE AVAILABLE TO ANY THIRD PARTY WITHOUT FIRST OBTAINING THE EXPRESS WRITTEN CONSENT OF DLZ.
M. DO NOT INSTALL CONDUIT IN SUPPORTED SLABS, SLABS ON GRADE OR CONCRETE WALLS UNLESS EXPLICITLY SHOWN OR NOTED ON THE STRUCTURAL DRAWINGS.
N. DO NOT SUSPEND ANY ITEMS, SUCH AS DUCTWORK, MECHANICAL OR ELECTRICAL FIXTURES, CEILINGS, ETC. FROM STEEL ROOF DECK OR WOOD ROOF SHEATHING.
O. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF ALL TEMPORARY BRACING AND CONSTRUCTION SUPPORTS, FOR NEW AND EXISTING STRUCTURES, AS NECESSARY TO COMPLETE THE PROJECT. NO PORTION OF THE PROJECT, WHILE UNDER CONSTRUCTION, IS INTENDED TO BE STABLE IN THE ABSENCE OF THE CONTRACTOR'S TEMPORARY BRACES AND SUPPORTS UNTIL ALL OF THE STRUCTURAL ELEMENTS, INCLUDING THE MASONRY/CONCRETE/PRECAST WALLS, METAL ROOF DECK, SLABS-ON-STEEL DECK, ELEVATED CONCRETE SLABS AND SLABS-ON-GRADE ARE IN PLACE AND FULLY CONNECTED AS INDICATED ON THESE DRAWINGS. CONTRACTOR SHALL RETAIN A LICENSED PROFESSIONAL ENGINEER TO DESIGN ALL TEMPORARY BRACING AND CONSTRUCTION SUPPORTS.

2. DESIGN DATA

A. DESIGN CODE:

1) ALL DESIGN IS IN CONFORMANCE WITH THE 2014 INDIANA BUILDING CODE (2012 INTERNATIONAL BUILDING CODE AS AMENDED BY THE INDIANA ADMINISTRATIVE CODE) (IBC). RISK CATEGORY IS TYPE III FOR THE SHERIFF'S OFFICE AND CORRECTIONAL FACILITY AND TYPE IV FOR THE DISPATCH.

B. DESIGN DEAD LOADS: WEIGHT OF ALL MATERIALS OF CONSTRUCTION INCORPORATED INTO THE BUILDING INCLUDING BUT NOT LIMITED TO WALLS, FLOORS, ROOFS, CEILINGS, STAIRWAYS, BUILT IN PARTITIONS, FINISHES, CLADDING, EQUIPMENT AND OTHER SIMILARLY INCORPORATED ITEMS AND EQUIPMENT.

1) ROOF TOP CHORD - 15 PSF
2) ROOF BOTTOM CHORD - 10 PSF
3) FLOOR - 15 PSF

C. DESIGN LIVE LOADS

1) LOAD TYPE	UNIFORM (PSF)	CONCENTRATED (POUNDS)
2) ROOF LIVE LOAD	20	300
3) FLOOR LIVE LOAD	100	2000
4) CORRIDORS AT FIRST FLOOR	100	
5) CORRIDORS ABOVE FIRST FLOOR	80	
6) STAIRWAYS	100	300 (ON AREA OF 4 SQUARE INCHES)
7) MECHANICAL AREAS	125	
8) CELL LIVING AREAS	40	
9) CELL MEZZANINE	100	
10) LOADING DOCK CANOPY	25	
11) LIVE LOAD REDUCTION NOT USED		

D. WIND LOADING CRITERIA

1) ULTIMATE 3-SECOND WIND SPEED V=120 MPH (RISK CATEGORY III AND IV)
2) EXPOSURE C
3) GCPI=±0.18 (ENCLOSED STRUCTURES)
4) GCPI=0.00 (OPEN STRUCTURES)
5) REFER TO S7.0 FOR COMPONENT AND CLADDING PRESSURES

E. SNOW LOADING CRITERIA

1) PG=20 PSF
2) SHERIFF'S OFFICE AND CORRECTIONAL FACILITY: PF=22 PSF
3) DISPATCH: PF=24 PSF
4) SHERIFF'S OFFICE AND CORRECTIONAL FACILITY: I=1.1
5) DISPATCH: I=1.2
6) CE=0.9
7) CT=1.0
8) LOADING DOCK CANOPY: CT=1.20

F. SEISMIC DESIGN CRITERIA: SHERIFF'S OFFICE AND CORRECTIONAL FACILITY

1) I=1.250
2) SS =0.328
3) S1 =0.131
4) SDS=0.262
5) SD1=0.146
6) SITE CLASS - C
7) SEISMIC DESIGN CATEGORY - C
8) BASIC SEISMIC FORCE RESISTING BEARING WALL SYSTEM - ORDINARY PRECAST SHEAR WALLS
9) SEISMIC RESPONSE COEFFICIENT - CS = 0.109
10) RESPONSE MODIFICATION FACTOR - R = 3
11) DESIGN BASE SHEAR - V = [INSERT CACL'D VALUE HERE] KIPS
12) ANALYSIS PROCEDURE - EQUIVALENT LATERAL FORCE

G. SEISMIC DESIGN CRITERIA: DISPATCH

1) I=1.500
2) SS =0.328
3) S1 =0.131
4) SDS=0.262
5) SD1=0.146
6) SITE CLASS - C
7) SEISMIC DESIGN CATEGORY - D
8) BASIC SEISMIC FORCE RESISTING SYSTEM - ORDINARY PRECAST SHEAR WALLS
9) SEISMIC RESPONSE COEFFICIENT - CS = 0.131
10) RESPONSE MODIFICATION FACTOR - R = 3
11) DESIGN BASE SHEAR - V = [INSERT CACL'D VALUE HERE] KIPS
12) ANALYSIS PROCEDURE - EQUIVALENT LATERAL FORCE

H. SOIL INFORMATION:

1) NET ALLOWABLE SOIL BEARING PRESSURE BELOW FOOTINGS ON NATURAL MATERIAL IS 1800 PSF. IF ALLOWABLE SOIL BEARING PRESSURE CANNOT BE ACHIEVED, OVER EXCAVATE AS SHOWN IN DETAIL 3/S3.0.

I. MATERIALS:

1) CAST-IN-PLACE CONCRETE F'C=4000 PSI
2) REINFORCING STEEL FY=60 KSI (ASTM A615 U.N.O.)
3) WELDED WIRE FABRIC - ASTM A1064
4) CMU F'M=2000 PSI (NET AREA COMPRESSIVE STRENGTH OF UNITS = 2800 PSI) ASTM C-90
5) MORTAR - ASTM C270 - TYPE S
6) GROUT - ASTM C476 - COMPRESSIVE STRENGTH 2500 PSI (MIN)
7) STRUCTURAL STEEL:

A) W-SECTIONS - ASTM A992
B) PLATES, BARS, RODS, ANGLES AND CHANNELS - A36
C) HOLLOW STRUCTURAL STEEL (HSS) - ASTM A500 GRADE C
D) ANCHOR RODS - ASTM F1554, GRADE 36
E) HIGH STRENGTH BOLTS:

AA) GROUP A AS DEFINED BY AISC 360-16 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" SECTION J3.1
AB) SNUG TIGHT CONNECTIONS SHALL BE PERMITTED FOR ALL CONNECTIONS EXCEPT FOR MEMBERS OF THE LATERAL FORCE RESISTING SYSTEM.
AC) PRETENSIONED CONNECTIONS SHALL BE USED AT ALL CONNECTIONS FOR THE LATERAL FORCE RESISTING SYSTEM.

F) STEEL DECK - ASTM A653

8) FILLER METAL FOR WELDING: SHIELDED METAL ARC WELDING - AWS A5.1 OR A5.5 OR E70XX.

J. DESIGN STANDARDS:

1) ACI 318-11 "BUILDING CODE REQUIREMENTS FOR CONCRETE"
3) TMS 402-11 "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" - ASD
4) ANSI/AISC 360-10 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" - ASD
5) AISI 2012 "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" - ASD

3. CONCRETE AND REINFORCING STEEL

A. ALL REINFORCEMENT LAP AND DEVELOPMENT LENGTHS SHALL SATISFY THE MINIMUM REQUIREMENTS INDICATED IN DETAIL 2/S3.0
B. WHERE BARS OF TWO DIFFERENT SIZES ARE SPLICED, THE SPLICE LENGTH SHALL BE THE REQUIRED LAP LENGTH FOR THE SMALLER BAR, BUT NOT LESS THAN THE DEVELOPMENT LENGTH FOR THE LARGER BAR.
C. CONTRACTOR MAY ELECT TO USE MECHANICAL BAR SPLICE, WHICH DEVELOPS 125% OF THE BAR STRENGTH, IN LIEU OF LAPPING REINFORCEMENT.
D. ALL REINFORCING BARS SHALL BE CONTINUOUS AT CORNERS. PROVIDE DOWELS OR CORNER BARS AS REQUIRED AND INSTALL PRIOR TO PLACING CONCRETE.
E. SLABS-ON-GRADE: (FINISH EXPOSED) FIBER REINFORCED WITH POLYPROPYLENE MICRO-FIBERS AT THE RATE OF 1.5 POUNDS PER CUBIC YARD OF CONCRETE. FIBER REINFORCEMENT IS IN ADDITION TO THE REQUIRED 6X6-W2.1XW2.1 WELDED WIRE FABRIC. THE FIBERS THAT PENETRATE THE SURFACE IN AREAS OF SLAB-ON-GRADE THAT ARE EXPOSED TO VIEW AND DO NOT RECEIVE ANY FLOOR COVERING SHALL BE TORCHED LIGHTLY. CONTRACTOR SHALL TAKE CARE TO NOT BURN OR SCORCH THE EXPOSED CONCRETE.
F. SLABS-ON-GRADE: (FINISH NOT EXPOSED) FIBER REINFORCED WITH POLYPROPYLENE MICRO-FIBERS AT THE RATE OF 1.5 POUNDS PER CUBIC YARD OF CONCRETE. FIBER REINFORCEMENT IS IN ADDITION TO THE REQUIRED 6X6-W2.1XW2.1 WELDED WIRE FABRIC. THE FIBERS THAT PENETRATE THE SURFACE SHALL BE TORCHED AS REQUIRED TO INSTALL THE FLOOR COVERING.
G. CONCRETE REINFORCEMENT SHOWN IS DIAGRAMMATIC AND ONLY INTENDED TO SHOW THE GENERAL CONFIGURATION, SIZE AND QUANTITY OF REINFORCEMENT. CONTRACTOR/FABRICATOR SHALL FOLLOW THE LAP AND EMBEDMENT LENGTHS PROVIDED AND ACI 315 "ACI DETAILING MANUAL" FOR PROPER DETAILING REQUIREMENTS AND THE CONCRETE REINFORCING STEEL INSTITUTE'S (CRSI) "MANUAL OF STANDARD PRACTICE"
H. ALL CONTROL OR CONSTRUCTION JOINTS IN CONCRETE SLABS-ON-GRADE TO BE PLACED AT A MAXIMUM OF 12 FEET ANY DIRECTION. IN NO CASE SHALL LENGTH-TO-WIDTH RATIO OF CONCRETE SLAB ON GRADE EXCEED 1.5. ALL CONTROL JOINTS TO BE SAW CUT WITHIN 6 HOURS AFTER PLACING CONCRETE.
I. CONTROL AND CONSTRUCTION JOINTS DEPICTED ON DRAWINGS ARE DIAGRAMMATIC AND DO NOT REPRESENT THE FINAL LAYOUT. LAYOUT TO BE PROVIDED BY THE CONTRACTOR IN A SHOP DRAWING TO SER FOR REVIEW SHOWING THEIR FINAL PLACEMENT OF CONTROL VERSUS CONSTRUCTION JOINTS TO BE FOLLOWED. SHOP DRAWING SHALL NOT BE A REPRODUCTION OF CONSTRUCTION DOCUMENTS AND SHALL SHOW ALL SLAB PENETRATIONS.
J. CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE". CONTRACTOR SHALL MAINTAIN A COPY OF THIS SPECIFICATION ON SITE DURING CONSTRUCTION.
K. CHAMFER EXPOSED CONCRETE EDGES 3/4" U.N.O.
L. ALL WELDED WIRE FABRIC INDICATED ON DRAWINGS SHALL BE FLAT SHEETS AND SHALL BE PLACED 1 1/2" FROM THE TOP OF THE SLAB AND SUPPORTED ON CONCRETE BRICKS, WIRE, OR CHAIRS. WELDED WIRE FABRIC SHALL NOT BE LIFTED INTO PLACE DURING CONCRETE PLACEMENT. WELDED WIRE FABRIC SHALL BE LAPPED SUCH THAT THE OVERLAP IS EQUAL TO THE CROSSWIRE SPACING PLUS 2 INCHES.
M. ELEVATED CONCRETE SLABS ARE DESIGNED AS UNSHORED (U.N.O.). CONTRACTOR TO ASSUME TOTAL NET DEFLECTION OF 1/2" WILL OCCUR WHEN CONCRETE IS PLACED AND SHALL MAKE PROVISIONS IN THEIR BID FOR THE ADDITIONAL CONCRETE REQUIRED TO PROVIDE A SLAB AT THE INDICATED ELEVATIONS.
N. CORING OR CUTTING CONCRETE SHALL NOT BE PERMITTED UNLESS APPROVED BY THE SER.
O. REINFORCEMENT SHALL BE SUPPORTED IN ITS SPECIFIED AND PROPER POSITION BY USE OF BRICKS, WIRES, OR CHAIRS. SUCH DEVICES SHALL BE SUFFICIENTLY STRONG AND PROPERLY PLACED AT FREQUENT INTERVALS SO AS TO MAINTAIN THE COVER BETWEEN THE REINFORCING AND THE SURFACE OF THE CONCRETE. THE REINFORCEMENT SHALL BE PLACED AS SHOWN ON THE PLANS WITHIN ±1/4". PLATFORMS FOR THE SUPPORT OF WORKERS AND EQUIPMENT DURING CONCRETE PLACEMENT SHALL BE SUPPORTED DIRECTLY ON THE GRADE AND NOT ON THE REINFORCING STEEL.
P. FIELD BENDING OF REINFORCING BARS IS NOT PERMITTED.
Q. UNLESS SPECIFICALLY NOTED ON THE DRAWINGS, CONTROL JOINTS ARE NOT REQUIRED FOR ELEVATED SLABS ON METAL DECK AND ELEVATED CONCRETE SLABS.
R. WET STICKING (MUCKING IN) OF REINFORCEMENT IS NOT ACCEPTABLE AND SHALL BE CAUSE FOR REJECTION REQUIRING REPLACEMENT OF WORK.
S. ADDITIONAL CONCRETE TYPICAL DETAILS, SECTIONS, AND REQUIREMENTS ARE LOCATED ON DRAWINGS S3.0 AND S3.1.
T. PRECAST CONCRETE UNITS

1). THE CONTRACTOR SHALL VERIFY FINAL EQUIPMENT SIZE, WEIGHT, OPENING SIZES AND LOCATIONS, AS WELL AS ALL PENETRATIONS REQUIRED BY ALL TRADES AND THEIR SUPPORT REQUIREMENTS PRIOR TO SUBMISSION OF PRECAST STRUCTURAL CONCRETE SHOP DRAWINGS. PROVIDE DOCUMENTATION WITH SHOP DRAWING SUBMITTAL INDICATING THAT ALL TRADES HAVE SIGNED OFF ON ALL AFOREMENTIONED COORDINATION. PLAN OPENINGS OF 12"x12" OR SMALLER MAY NOT ALL BE SHOWN ON THE STRUCTURAL DRAWINGS . SHOP DRAWINGS MUST BE SUBMITTED AT THE SAME TIME AS DETAILED ENGINEERING ANALYSIS PREPARED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS TO BE BUILT. SHOP DRAWINGS WILL NOT BE REVIEWED PRIOR TO RECEIPT OF DETAILED ENGINEERING ANALYSIS AND DOCUMENTATION OF TRADE COORDINATION.
2) DESIGN PRECAST STRUCTURAL CONCRETE, INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS TO BE BUILT, USING PERFORMANCE REQUIREMENTS AND DESIGN DATA INDICATED.
3) PRECAST STRUCTURAL CONCRETE SHALL BE DESIGNED BY THE FABRICATOR TO SUPPORT THE SUPERIMPOSED DEAD, FLOOR LIVE, ROOF LIVE, WIND, SNOW AND SEISMIC LOADS INDICATED IN ADDITION TO THEIR SELF-WEIGHT.
4) THE SEISMIC LOADS SPECIFIED ARE STRENGTH LEVEL LOADS FOR THE DESIGN OF PRECAST STRUCTURAL CONCRETE.
5) UNITS SHALL NOT BE ERECTED UNTIL 21 DAYS (MIN) AFTER FORM REMOVAL.
6) ALL PRECAST STRUCTURAL CONCRETE MEMBERS AND THEIR CONNECTIONS SHALL BE IN ACCORDANCE WITH PCI MANUALS.
7) THE BEAM - COLUMN FRAMES FOR THIS STRUCTURE AS SHOWN ON THE STRUCTURAL DOCUMENTS WITH ALL RELATED DETAILS ARE NON-SELF SUPPORTING AND REMAIN SO UNTIL ALL OF THE STRUCTURAL ELEMENTS, INCLUDING ANY MASONRY WALLS, CONCRETE FLOORS AND SLABS-ON-GRADE ARE IN PLACE AND FULLY CONNECTED AS INDICATED IN THESE DOCUMENTS. THE STRUCTURE IS LATERALLY UNSTABLE UNTIL ALL ELEMENTS ARE IN PLACE, HAVE ATTAINED DESIGN STRENGTH, AND ARE FULLY SECURED TO THE BUILDING, INCLUDING COMPLETION OF FLOOR AND ROOF CONSTRUCTION. ADEQUATE TEMPORARY BRACING IS THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL SEQUENCE CONSTRUCTION OPERATIONS AS REQUIRED, UNTIL THE PERMANENT SYSTEMS ARE EFFECTIVE.
8) EMBED PLATES INDICATED ARE THE MINIMUM REQUIRED AND SHALL BE DESIGNED BY THE PRECAST SSE FOR THE IMPOSED LOADS.
9) HOLLOWCORE PRECAST FLOOR:

A) NUMEROUS OPENINGS ARE REQUIRED IN THE FLOOR AND ROOF HOLLOWCORE PRECAST UNITS. COORDINATE WITH ALL TRADES FOR PENETRATIONS AND CONSTRUCTION THROUGH OR ATTACHED TO PRECAST CONCRETE CONSTRUCTION. PRECAST STRUCTURAL CONCRETE FABRICATOR SHALL PROVIDE ADEQUATE SUPPORT FRAMES FOR SUCH OPENINGS. REFER TO 8/S5.1 FOR TYPICAL DETAIL.
B) NO PRESTRESSING STRANDS OR REINFORCING BARS MAY BE CUT WITHOUT WRITTEN APPROVAL BY THE PRECAST STRUCTURAL CONCRETE FABRICATOR. FIELD HOLES REQUIRED IN THE PRECAST FOR MISCELLANEOUS ITEMS SHALL BE CAREFULLY LOCATED TO AVOID CUTTING PRESTRESSING STRANDS OR REINFORCING BARS. CUT STRANDS OR REINFORCEMENT SHALL BE CAUSE FOR REJECTION OF PRECAST UNIT.
C) PROVIDE 1/2"Ø DRAIN HOLE IN THE BOTTOM OF EACH CELL 10" FROM EACH END OF HOLLOWCORE PRECAST UNITS. ALL UNITS EXPOSED IN THEIR FINAL CONDITION SHALL BE PATCHED TO PROVIDE A UNIFORM APPEARANCE.

10) ARCHITECTURAL AND LOAD BEARING PRECAST WALL PANELS:

A) REFER TO ARCHITECTURAL DRAWINGS, ELEVATIONS, AND SPECIFICATIONS FOR PANEL LAYOUT, FINISH, AND SECURITY REQUIREMENTS OF PRECAST WALL PANELS.
B) ALL WELD PLATES, COIL INSERTS, ANCHOR BOLTS/RODS ETC. AS REQUIRED FOR THE SUPPORT OF, OR CONNECTION TO THE STRUCTURE, IDENTIFIED OF THE PRECAST SHOP DRAWINGS TO BE INSTALLED BY OTHER TRADES, SHALL BE DESIGNED AND FURNISHED BY THE PRECAST MANUFACTURER.
C) ALL CONNECTIONS EXPOSED TO THE WEATHER SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153.
D) THE PRECAST STRUCTURE MUST BE TEMPORARILY BRACED AGAINST LATERAL LOADING, UNBALANCED GRAVITY LOAD AND ECCENTRICITY DUE TO INCOMPLETE STRUCTURE UNTIL BRACING ELEMENTS (I.E. SHEAR WALLS, FRAMES, ETC.) ARE COMPLETE AND HAVE ATTAINED THEIR DESIGN STRENGTH.
E) TOP OF PRECAST PANELS SHALL NOT EXCEED BEARING ELEVATION SHOWN ON DRAWINGS.

4. MASONRY

A. MASONRY CONSTRUCTION SHALL CONFORM TO TMS 602-11 "SPECIFICATION FOR MASONRY STRUCTURES AND COMMENTARY". CONTRACTOR SHALL MAINTAIN A COPY OF THIS REFERENCED SPECIFICATION ON SITE DURING CONSTRUCTION OF ALL MASONRY WALLS.
B. ALL MASONRY JOINTS SHALL HAVE CONCAVE JOINTS.
C. TRUSS OR LADDER TYPE REINFORCEMENT SHALL BE PLACED IN HORIZONTAL MORTAR JOINTS AT 16" O.C. VERTICAL SPACING, AND AT TOP AND BOTTOM OF WALL OPENINGS (EXTEND 2 FEET PAST OPENING).
D. COORDINATE REQUIRED OPENINGS WITH ALL TRADES AND PROVIDE MASONRY LINTELS FOR ALL OPENING GREATER THAN 1'-0" IN ACCORDANCE WITH THE LINTEL SCHEDULES.
E. VERTICAL CONTROL JOINTS IN CMU WALLS SHALL BE LOCATED AT MAX. SPACING OF 20'-0" PROVIDED THAT THE LENGTH TO HEIGHT RATIO OF WALL BETWEEN ADJACENT JOINTS DOES NOT EXCEED 1.5. IN ADDITION, CONTROL JOINTS SHALL BE LOCATED AT THE FOLLOWING LOCATIONS: CHANGES IN WALL THICKNESS, ABOVE CONTROL JOINTS IN FOUNDATION OR CONCRETE WALLS, AND AT LOCATIONS AS SHOWN ON ARCHITECTURAL DRAWINGS.
F. ALL GROUTING TO BE PLACED USING LOW LIFT METHOD. MAXIMUM HEIGHT OF LIFT SHALL BE 5 FEET.
G. ALL WALLS SHALL BE REINFORCED WITH #4 BARS SPACED AT 48" U.N.O. REINFORCEMENT SHALL BE PROPERLY EMBED AND TIED OFF INTO THE SLAB OR FOUNDATION PRIOR TO CONCRETE PLACEMENT. CONTRACTOR MAY PLACE REINFORCEMENT AFTER THE CONCRETE HAS BEEN POURED BY FIELD DRILLING HOLES AND EPOXY EMBEDDING THE REINFORCEMENT. MINIMUM DEPTH OF EPOXY EMBEDMENT SHALL BE EQUAL TO THE BAR DEVELOPMENT LENGTH.
H. REINFORCEMENT SHALL BE PROPERLY POSITIONED AND TIED OFF WITHIN MASONRY PRIOR TO GROUTING AND SHALL HAVE THE DEVELOPMENT AND LAP LENGTH INDICATED ON DETAIL 1/S4.0
I. WET STICKING (MUCKING IN) OF REINFORCEMENT IS NOT ACCEPTABLE AND SHALL BE CAUSE FOR REJECTION.
J. IN LIEU OF LAP SPLICING REINFORCEMENT, CONTRACTOR MAY USE MECHANICAL SPLICES IN ACCORDANCE WITH ACI 530. MECHANICAL SPLICES MUST BE USED FOR ALL BARS #9 OR LARGER.
K. CMU BOND BEAMS SHALL BE PLACED AS INDICATED IN THE DRAWINGS. IN ADDITION THEY SHALL BE LOCATED AT THE TOP OF ALL WALLS, AT A MAXIMUM VERTICAL SPACING OF 8'-0" AND AT THE BOTTOM OF WALLS SUPPORTED BY ELEVATED SLABS.
L. MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE WITH TMS 602/ACI 530.1/ASCE 6/.
M. REINFORCEMENT SHALL BE GROUTED WITHIN MASONRY AND SHALL BE DETAILED TO HAVE THE DEVELOPMENT AND LAP LENGTH INDICATED IN THE CMU REINFORCEMENT LAP AND DEVELOPMENT LENGTH SCHEDULE.
N. ADDITIONAL CONCRETE MASONRY UNIT TYPICAL DETAILS, SECTIONS AND REQUIREMENTS ARE LOCATED ON DRAWINGS S4.0 AND S4.1.

5. STRUCTURAL AND MISCELLANEOUS STEEL

A. THE STRUCTURAL STEEL FOR THIS STRUCTURE AS SHOWN ON THE STRUCTURAL DOCUMENTS WITH ALL RELATED DETAILS ARE NON-SELF SUPPORTING AS DEFINED BY THE A.I.S.C. CODE OF STANDARD PRACTICE AND REMAIN SO UNTIL ALL OF THE STRUCTURAL ELEMENTS, INCLUDING ANY PRECAST WALLS, MASONRY WALLS, CONCRETE FLOORS AND SLABS-ON-GRADE ARE IN PLACE AND FULLY CONNECTED AS INDICATED IN THESE DOCUMENTS. THE STRUCTURE IS LATERALLY UNSTABLE UNTIL ALL ELEMENTS ARE IN PLACE, HAVE ATTAINED DESIGN STRENGTH, AND ARE FULLY SECURED TO THE BUILDING, INCLUDING COMPLETION OF FLOOR AND ROOF CONSTRUCTION. ADEQUATE TEMPORARY BRACING IS THE RESPONSIBILITY OF THE CONTRACTOR, AND CONTRACTOR SHALL SEQUENCE CONSTRUCTION OPERATIONS AS REQUIRED, UNTIL THE PERMANENT SYSTEMS ARE EFFECTIVE.
B. AT ALL STEEL BEAMS SUPPORTING MASONRY WALLS, PROVIDE STUD 1/2" DIA. X 6" LONG HEADED STUDS SPACED @ 16" O.C. WELD TO STEEL BEAM.
C. ALL EXTERIOR STEEL SHALL BE HOT-DIP GALVANIZED AND PAINTED. REPAIR ANY DAMAGE TO THESE COATINGS THAT MAY OCCUR DURING CONSTRUCTION ACTIVITIES.
D. WELD CERTIFICATES FOR REQUIRED WELD POSITIONS SHALL BE SUBMITTED AND APPROVED PRIOR TO ANY STEEL BEING ERECTED.
E. INDICATED CAMBER IS IN THE UP DIRECTION AND SHALL BE MEASURED AT THE CENTER OF THE BEAM.
F. BEAM CONNECTIONS WHICH ARE NOT DETAILED ON THE DRAWINGS SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL ENGINEER (LICENSED IN THE STATE WHERE PROJECT IS BUILT) FOR THE SERVICE LEVEL BEAM REACTIONS INDICATED ON THE DRAWINGS AND AS FOLLOWS: A1

1) CONNECTIONS NOT COMPLETELY DETAILED ON THE DRAWINGS INCLUDING MATERIAL AND SIZES, WELD SIZES AND NUMBER OF BOLTS SHALL BE DESIGNED AND DETAILED IN SHOP DRAWINGS BY THE CONTRACTOR PER THE SPECIFICATIONS.
2) REACTIONS SHOWN ARE SERVICE LEVEL LOAD REACTIONS AND SHALL BE DESIGNED IN ACCORDANCE WITH AISC MANUAL OF STEEL CONSTRUCTION ALLOWABLE STRESS DESIGN.
3) REFER TO DETAIL 16/S5.3 FOR BEAM REACTION SCHEDULE. WHERE NO BEAM END REACTION IS INDICATED, CONNECTION IS TO BE DESIGNED FOR MINIMUM OF 10 KIPS FOR THE VERTICAL SHEAR REACTION.
4) BEAM WEB SHEAR CONNECTIONS SHALL TYPICALLY BE DOUBLE ANGLES, 1/4 INCH MINIMUM THICKNESS, UNLESS DETAILED OTHERWISE, OR WHERE OTHERWISE PERMITTED BY TYPICAL STEEL DETAILS.
5) REFERENCE TYPICAL STEEL DETAILS ON SHEET S5.0.

G. STUDS FOR COMPOSITE BEAM SHALL BE PLACED AS FOLLOWS:

1) STUDS SHALL BE PLACED IN THE PORTION OF THE RIB CLOSEST TO THE BEAM END. IF THE NUMBER OF STUDS IS LESS THAN THE NUMBER OF RIBS, STUD PLACEMENT SHALL START AT BEAM ENDS AND A STUD SHALL BE PLACED IN EVERY OTHER FLUTE (OR EVERY FOURTH FLUTE IF RIBS ARE AT 6" O.C.) IF STUDS REMAIN AFTER REACHING THE CENTER OF THE BEAM, FILL IN EMPTY RIBS, STARTING FROM BEAM ENDS AND WORKING TOWARD THE CENTER. STUDS SHALL NOT BE PLACED GREATER THAN 36" APART.
2) IF THE NUMBER OF STUDS IS MORE THAN THE NUMBER OF RIBS, PLACE STUDS IN A DOUBLE OR TRIPLE ROW AS NEEDED, STARTING FROM THE BEAM ENDS AND WORKING TOWARD THE CENTER OF THE BEAM. STUDS IN MULTIPLE ROWS SHALL BE PLACED APPROXIMATELY 3" APART.

H. FOR COMPOSITE CONSTRUCTION WITH DECK RIBS PARALLEL TO THE FRAMING MEMBER, SPACE THE STUDS EVENLY ALONG THE LENGTH OF THE MEMBER. STUDS SHALL NOT BE PLACED FURTHER THAN 36" APART.
I. PROVIDE FOR 5 TONS OF STEEL FOR USE AS DIRECTED BY THE SER, TO INCLUDE BUT NOT LIMITED TO WIDE FLANGES, CHANNELS, ANGLES, PIPES, HSS, PLATES AND BARS AS WELL AS ANY AND ALL RELATED BOLTED OR WELDED CONNECTIONS. THIS TONNAGE IS TO INCLUDE ALL REQUIRED DETAILING, FABRICATION, DELIVERY, FINISHES AND ERECTION OF STEEL IN PLACE AS ASSOCIATED WITH DIVISION 05 SPECIFICATIONS. THE DIRECTED USE OF STEEL BY THE SER WILL BE BASED ON THE ERECTED WEIGHT OF THE VARIOUS COMPLETED STEEL COMPONENTS, NO OVERRUN IN SCALE WEIGHTS, EXCESS BOLTS OR SIMILAR ITEMS SUCH AS THE WEIGHT OF ANY PAINT, GALVANIZING OR WELD MATERIAL WILL BE ALLOWED TO BE ADDED TO THE ERECTED WEIGHT. DEDUCTION WILL NOT BE MADE FOR BOLT HOLES IN THE MATERIAL. ALLOWANCE WILL BE MEASURED ON A PER POUND BASIS. UNUSED PORTIONS OF THIS ALLOWANCE WILL NOT BE CREDITED BACK TO THE OWNER.
J. ALL TUBE STEEL, HOLLOW STRUCTURAL STEEL AND PIPE SECTIONS IN EXTERIOR APPLICATIONS SHALL BE DETAILED TO KEEP WATER FROM ENTERING THE CLOSED SECTION.
K. PROVIDE MISCELLANEOUS LOOSE L7X4X$\frac{3}{8}$ (LLH) LINTEL WITH A MINIMUM 8" BEARING AT EACH END ABOVE OPENINGS IN BRICK/STONE FACADE WHERE OTHER SUPPORT IS NOT SHOWN.
L. ANCHOR ROD TEMPLATES:

1) A STEEL TEMPLATE IS RECOMMENDED WHERE MORE THAN 4 ANCHOR RODS ARE REQUIRED.
2) THE BOTTOM OF THE TEMPLATE SHALL MATCH THE FINISHED ELEVATION AT THE TOP OF THE CONCRETE PIER OR FOOTING.
3) THE TEMPLATE SHALL HAVE STANDARD HOLES FOR ANCHOR RODS, AND HAVE ENOUGH OPENINGS TO ALLOW PROPER PLACEMENT AND VIBRATION OF CONCRETE.
4) THE TEMPLATE SHALL BE SECURED IN PLACE BEFORE, DURING AND AFTER THE CONCRETE PLACEMENT BY MEANS THAT WILL NOT ALLOW ANCHOR RODS MISPLACEMENT REQUIRING ANY FIELD MODIFICATIONS.
5) VERIFY EXACT LOCATION OF ANCHOR RODS FOLLOWING INSTALLATION OF FORMWORK, RODS AND REINFORCING. CORRECT ANY DISCREPANCIES PRIOR TO AND IMMEDIATELY AFTER PLACEMENT OF CONCRETE.

M. SHIM BETWEEN PARALLEL ROOF BEAMS AND JOISTS WITH DIFFERENTIAL MILL AND INDUCED CAMBERS FOR LEVEL DECK BEARING.
N. INSTALLATION HOLES SHALL BE SEALED WITH A CLOSURE PLATE 2 GAUGES THICKER THAN DECK AND MECHANICALLY FASTENED TO DECK. STEEL DECK HOLES VISIBLE FROM BELOW WILL BE REJECTED.
O. DECK UNITS THAT ARE BENT, WARPED, OR DAMAGED IN ANY WAY WHICH WOULD IMPAIR THE STRENGTH AND OR APPEARANCE OF THE DECK SHALL BE REJECTED AND REMOVED.
P. SUPPLY POUR STOPS DESIGNED TO MEET, OR EXCEED THE GAUGES LISTED IN THE SDI POUR STOP SELECTION TABLE (MIN 18 GA.) AS REQUIRED FOR SLAB DEPTH, CONCRETE WEIGHT AND CANTILEVER DISTANCE, U.N.O.
Q. COLD FORMED STEEL

1) THE MINIMUM YIELD STRENGTH OF MEMBERS SHALL BE AS FOLLOWS:

A) 54 MILS (16 GA.), AND THICKER FY = 50KSI ASTM A653
B) 43 MILS (18 GA.), AND THINNER FY = 33KSI ASTM A653

2) PROVIDE MEANS TO KEEP DISSIMILAR METALS FROM COMING INTO CONTACT WITH COLD FORM STEEL MEMBERS (I.E. BRASS, COPPER, ETC.).
3) FABRICATE COLD FORMED STEEL FRAMING AND ACCESSORIES PLUMB, SQUARE AND TRUE TO LINE WITH CONNECTIONS SECURELY FASTENED ACCORDING TO REFERENCED AISI SPECIFICATIONS, STANDARDS AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
4) PROVIDE COLD-FORMED METAL FRAMING WITH A MINIMUM MATERIAL THICKNESS AS FOLLOWS:

A) 68 MILS (14 GA.) - LINTELS, BEAMS, COLUMN STUDS, SHEAR WALL END POSTS
B) 54 MILS (16 GA.) - BEARING WALLS, TRACK RUNNERS AND FRAMING AROUND ALL OPENINGS
C) 43 MILS (18 GA.) - NON-BEARING PARTITIONS (EXTERIOR)

5) PROVIDE ALL HANGERS AND CONNECTORS AS NECESSARY TO SUPPORT AND TRANSFER INDUCED LOADS TO THE CONNECTED STRUCTURE. PROVIDE DRIFT OR DEFLECTION CLIPS AS NECESSARY TO ACCOMMODATE STRUCTURAL MOVEMENT.
6) NUMEROUS PIPES AND DUCTS ARE REQUIRED TO PASS THROUGH TRUSSES. COLD-FORMED TRUSS MANUFACTURER SHALL COORDINATE REQUIRED OPENINGS IN TRUSS WITH ALL OTHER TRADES AND PROVIDE OPENINGS AS REQUIRED.
7) WHERE MEMBER SIZES ARE GIVEN THEY SHALL BE NOMINAL UNLESS SPECIFICALLY DESIGNATED AS ACTUAL DIMENSIONS.
8) FRAMING DEFLECTION LIMITS SHALL BE AS FOLLOWS FOR TOTAL LOAD:

A) TRUSS & TRUSS GIRDERS - L/360
B) MISCELLANEOUS FRAMING - L/360

9) ALL COLD-FORMED STEEL FRAMING SIZES, GAGES AND CONNECTION DETAILS SHOWN ON THE CONSTRUCTION DOCUMENTS SHALL BE CONSIDERED THE MINIMUM ALLOWED. THE CONTRACTOR SHALL CONSTRUCT AND ASSURE THE PROPER PERFORMANCE OF THE COMPLETED COLD-FORMED STEEL FRAMING ASSEMBLY.
10) ALL COLD-FORMED METAL FRAMING LOADS SHALL BE DETERMINED BY THE COLD-FORMED METAL DESIGNER AS DETERMINED BY THE DESIGN DATA PROVIDED IN THE CONTRACT DOCUMENTS. COLD-FORMED METAL CONTRACTOR SHALL PROVIDE A COMPLETE GRAVITY AND LATERAL SYSTEM CONFORMING TO THE REQUIREMENTS OF THE IBC, SIGNED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS TO BE BUILT.

R. ADDITIONAL STEEL TYPICAL DETAILS, SECTIONS, AND REQUIREMENTS ARE LOCATED ON DRAWINGS S5.0 AND S5.1.
S. POST-INSTALLED ANCHORS

1) UNLESS NOTED OTHERWISE, POST-INSTALLED ANCHORS AND DOWELS SHALL BE INSTALLED WITH A TWO PART CHEMICAL ANCHORING SYSTEM IN ACCORDANCE WITH AN APPROVED MATERIAL TESTING AND INSTALLATION REPORT. PROVIDE BASIS OF DESIGN PRODUCT INDICATED BELOW OR SER APPROVED EQUAL.

A) ADHESIVE FOR CRACKED AND UNCRACKED CONCRETE

AA) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HIT-Z ROD
AB) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM AND HAS THREADED ROD
AC) HILTI HIT-RE 500 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM AND HAS THREADED ROD

B) STEEL ELEMENTS FOR ADHESIVE SYSTEM

AA) HILTI HAS-V 36
AB) HILTI HAS-E 55
AC) HILTI HAS-B 105
AD) HILTI HIT-Z (CAN BE USED WITH HY 200 ONLY)
AE) HILTI HAS-R 304
AF) HILTI HAS-R 316

C) ADHESIVE ANCHORAGE FOR REBAR DOWELING INTO CRACKED AND UNCRACKED CONCRETE

AA) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM SYSTEM
AB) HILTI HIT-RE 500 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM SYSTEM

D) ADHESIVE ANCHORS FOR SOLID-GROUTED MASONRY

AA) HILTI HIT-HY 270 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT AND VACUUM AND HAS-E 55 THREADED ROD OR REBAR

E) ADHESIVE ANCHORS FOR HOLLOW/MULTI-WYTHE MASONRY

AA) HILTI HIT-HY 270 SAFE SET SYSTEM WITH WITH HILTI HOLLOW DRILL BIT AND VACUUM AND HAS-E 55 THREADED ROD OR REBAR. THE APPROPRIATE SIZE SCREEN TUBE SHALL BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATIONS.

2) ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY THE ANCHOR MANUFACTURER OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR NON-BASIS OF DESIGN PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY HAVING AN ICC ESR 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.
3) USE OF DIAMOND CORE BIT WITH ROUGHENING TOOL SHALL BE APPROVED BY SER PRIOR TO USE.
4) INSTALL ANCHORS PER MANUFACTURER'S INSTRUCTIONS.
5) ARRANGE FOR AN ONSITE REPRESENTATIVE OF ANCHOR MANUFACTURER TO PROVIDE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS INDICATED. PROVIDE DOCUMENTATION THAT EACH PERSON INSTALLING THE ANCHORS ARE QUALIFIED BY THE MANUFACTURER TO PERFORM SUCH INSTALLATIONS.
6) ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE DISTANCES INDICATED ON THE DRAWINGS.
7) EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY HILTI PS1000 OR OTHER GPR, X-RAY, CHIPPING OR OTHER APPROVED METHODS.

6. SOILS AND FOUNDATIONS

A. REMOVE UNSUITABLE MATERIAL (TOPSOIL, ORGANIC MATERIAL, FILL, POSSIBLE FILL, ASPHALT, CONCRETE, DEBRIS AND ANY LOOSE MATERIAL) INDICATED IN THE GEOTECHNICAL REPORT. THE EXPOSED SUBGRADE SHALL BE PROOF ROLLED WITH A MEDIUM-WEIGHT ROLLER TO CHECK FOR SOFT MATERIAL AS DIRECTED BY THE GEOTECHNICAL ENGINEER. BACKFILL SHALL BE ENGINEERED FILL COMPACTED TO 95% OF STANDARD PROCTOR ASTM D-698 MAXIMUM DRY DENSITY.
B. SLAB-ON-GRADE: REFER TO DETAIL 4/S3.0

1) EXCAVATE AS REQUIRED TO PERFORM THE FOLLOWING OPERATIONS:

A) PLACE AND COMPACT 6" OF DRAINAGE COURSE
B) PLACE VAPOR BARRIER
C) ALL LEVELS SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR ASTM D-698 MAXIMUM DRY DENSITY.

C. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION RECOMMENDATIONS BY PATRIOT ENGINEERING AND ENVIRONMENTAL, INC. DATED OCTOBER 30, 2020.
D. CONSTRUCTION JOINTS IN STRIP FOOTINGS AND WALLS MAY BE LOCATED AT THE DISCRETION OF THE CONTRACTOR SUBJECT TO REVIEW BY THE ENGINEER. UNLESS SPECIFICALLY NOTED OTHERWISE REINFORCING SHALL BE CONTINUOUS ACROSS JOINTS. SEE TYPICAL CONCRETE WALL AND FOOTING CONSTRUCTION JOINT DETAIL 18/S3.0.
E. FOUNDATION PLANS INDICATE THE GENERAL LOCATION OF PENETRATIONS. COORDINATE WITH ALL TRADES FOR THE INSTALLATION OF ALL REQUIRED SLEEVES AND INSERTS.
F. AFTER FOUNDATION CONSTRUCTION IS COMPLETE, PROPERLY PLACE AND COMPACT BACKFILL MATERIAL. WALLS BACKFILLED ON BOTH SIDES SHALL HAVE BACKFILL PLACED AGAINST BOTH FACES SIMULTANEOUSLY. WALLS BACKFILLED ON ONE SIDE ONLY SHALL BE BRACED (TEMPORARY BY CONTRACTOR OR BY FINAL CONSTRUCTION) SO THAT BACKFILL CAN BE PROPERLY PLACED AND COMPACTED WITHOUT DISPLACEMENT OF WALLS.
G. FOR BELOW GRADE WALLS PLAN AREA OF EXCAVATION SHOULD EXTEND OUTWARD FROM THE OUTSIDE EDGE OF THE STRUCTURES FOUNDATION A DISTANCE EQUAL TO THE DEPTH OF EXCAVATION (INCLUDING OVER EXCAVATION IF APPLICABLE) PLUS 3 FEET. THE SIDE OF THE EXCAVATION SHOULD BE SLOPED OR BRACED AS REQUIRED PER LOCAL, STATE AND FEDERAL SAFETY REGULATIONS.
H. PLACE AND COMPACT SOIL ADJACENT TO BELOW GRADE WALLS AND FOUNDATIONS IN 8 INCH LOOSE LIFTS AND COMPACT TO 100% OF STANDARD PROCTOR ASTM D-698 MAXIMUM DRY DENSITY.
I. AT ALL DOORS DEPRESS FOUNDATION WALLS 8 INCHES BELOW TOP OF SLABS, U.N.O.
J. PROVIDE EITHER ROUGHENED SURFACE OR 3 1/2"X1 1/2" KEYWAY AT HORIZONTAL CONSTRUCTION JOINTS, I.E. BETWEEN FOOTING AND FOUNDATION WALL, FOOTING AND PIER OR SIMILAR LOCATIONS, AT THE CONTRACTOR'S OPTION.
K. TRAPPED/PERCHED WATER IS ANTICIPATED WITHIN THE LIMITS OF EXCAVATION. CONTRACTOR TO ACCOUNT AND MAKE PROVISIONS FOR PROPER SITE DEWATERING TO FACILITATE EXCAVATION AND FOUNDATION CONSTRUCTION.

7. SPECIALTY STRUCTURAL ENGINEERING

A. THE SPECIALTY STRUCTURAL ENGINEER (SSE) IS DEFINED AS A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS TO BE BUILT, WHO IS NOT THE STRUCTURAL ENGINEER OF RECORD (SER), WHO PERFORMS DELEGATED DESIGN FUNCTIONS NECESSARY FOR THE SPECIALTY SYSTEM COMPONENTS OF THE STRUCTURE TO BE COMPLETED, AND WHO HAS SHOWN EXPERIENCE AND/OR TRAINING IN THE SPECIFIC SPECIALTY.
B. THE SSE AND CONTRACTOR SHALL REVIEW THE CONSTRUCTION DOCUMENTS TO DETERMINE THE APPROPRIATE SCOPE OF ENGINEERING.
C. THE INTENT OF THE CONSTRUCTION DOCUMENTS IS TO PROVIDE SUFFICIENT INFORMATION FOR THE SSE TO PERFORM THE ANALYSIS, DESIGN, AND ASSEMBLY OF SHOP DRAWINGS. IN THE EVENT THE SSE DETERMINES THERE IS INSUFFICIENT INFORMATION PROVIDED IN CONTRACT DOCUMENTS, THE SSE SHALL, IN A TIMELY MANNER, CONTACT THE SER IN WRITING FOR CLARIFICATION. THE CONTRACTOR AND SSE SHALL PROVIDE A COMPLETE SYSTEM.
D. ALL DOCUMENTS PREPARED BY THE SSE SHALL BE SIGNED AND SEALED BY A REGISTERED DESIGN PROFESSIONAL.
E. EXAMPLES OF COMPONENTS REQUIRING SSE INCLUDE, BUT ARE NOT LIMITED TO:

1) TEMPORARY EXCAVATION SUPPORT;
2) SHORING AND BRACING SYSTEMS;
3) PRECAST HOLLOW CORE SLABS;
4) PRECAST CONCRETE WALL PANELS;
5) STRUCTURAL STEEL CONNECTIONS;
6) MODULAR STEEL CELLS;
7) STEEL STAIRS;
8) PIPE AND TUBE RAILINGS;
9) COLD-FORMED STEEL FRAMING;
10) COLD-FORMED STEEL TRUSSES AND BRACING SYSTEMS;
11) CURTAIN WALL SYSTEMS;
12) SKYLIGHTS.

F. WHEN MODIFICATIONS ARE PROPOSED TO COMPONENTS UNDER THE DESIGN AND CERTIFICATION OF AN SSE, WRITTEN AUTHORIZATION BY THE SSE MUST BE OBTAINED AND SUBMITTED TO THE SER FOR REVIEW, PRIOR TO PERFORMING THE PROPOSED MODIFICATION.
G. ALL SUBMITTALS GENERATED BY THE DESIGN OF THE SSE MUST BE REVIEWED AND APPROVED BY THE SSE PRIOR TO LIMITED CURSORY REVIEW BY THE SER. SUBMITTALS RECEIVED WITHOUT THE APPROVAL OF THE SSE WILL BE REJECTED WITHOUT FURTHER REVIEW. SER WILL REVIEW DESIGN CRITERIA FOR LOADS IMPOSED ON THE PRIMARY STRUCTURE AND FOR CONFORMANCE TO THE SPECIFIED PROJECT DESIGN CRITERIA.
H. THE CONTRACT DOCUMENTS ONLY DISPLAY THE DESIGN INTENT OF THE SPECIALTY SYSTEM COMPONENTS. FINAL ANALYSIS, DESIGN, AND ASSEMBLY OF SHOP DRAWINGS IS THE RESPONSIBILITY OF THE SSE. THE SSE IS FULLY RESPONSIBLE FOR CODE CONFORMANCE FOR ALL INDIVIDUAL PARTS AND INTERNAL CONNECTIONS OF THE SPECIFIED COMPONENT.
I. THE SSE SHALL SUBMIT CALCULATIONS AND SUPPORT REACTIONS FOR THEIR SYSTEM 15 DAYS (MIN.) PRIOR TO THE REVIEW OF ANY SHOP DRAWINGS FOR THE DEPENDENT SYSTEMS. THE SHOP DRAWINGS FOR THE DEPENDENT SYSTEMS WILL NOT BE REVIEWED UNTIL THE SSE APPROVED, SIGNED, AND SEALED SHOP DRAWINGS AND CALCULATIONS FOR THE SPECIALTY SYSTEM(S) HAVE BEEN SUBMITTED AND REVIEWED. COSTS FOR ANY CHANGES RELATED TO THE CALCULATIONS AND SHOP DRAWINGS SUBMITTED BY THE SSE SHALL BE BORNE BY THE CONTRACTOR.
J. SHOP DRAWINGS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON PRIMARY AND SECONDARY STRUCTURAL ELEMENTS ALONG WITH STRUCTURAL DEFLECTIONS THE COMPONENTS ARE ABLE TO ACCOMMODATE.
K. CALCULATIONS SUBMITTED SHALL CLEARLY CROSS REFERENCE THE SHOP DRAWINGS WITH SPECIFIC DETAIL REFERENCES.

8. STRUCTURAL INSPECTIONS AND TESTING

A. STRUCTURAL INSPECTIONS AND TESTING FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH CHAPTER 17 OF THE 2012 IBC AND THE SPECIFIC MATERIAL SPECIFICATIONS.
B. THE CONTRACTOR SHALL ENGAGE AN INDEPENDENT TESTING FIRM (ITF) TO CONDUCT INSPECTIONS AND TESTING AS REQUIRED BY THE IBC AND THESE DOCUMENTS. THE ITF SHALL PERFORM THEIR DUTIES INDEPENDENT FROM THE CONSTRUCTION QUALITY CONTROL STAFF EMPLOYED BY THE CONTRACTOR.
C. THE CONTRACTOR SHALL SUBMIT QUALIFICATIONS OF THE ITF AND VARIOUS AGENTS CONTRACTED ON THE ITF'S BEHALF TO THE OWNER, CONSTRUCTION MANAGER, LOCAL BUILDING OFFICIAL AND SER PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
D. ITF SHALL DOCUMENT AND KEEP RECORDS OF ALL INSPECTIONS. FOR SAMPLE FORMS AND EXAMPLES SHOWING THE MINIMUM REQUIRED INFORMATION TO BE SUBMITTED WITH THE INSPECTIONS AND TESTS REFER TO THE INDIANA STRUCTURAL ENGINEER'S ASSOCIATION DOCUMENT "STRUCTURAL TESTS AND INSPECTIONS: A GUIDELINE FOR INDIANA PROFESSIONAL ENGINEERS", WHICH CAN BE FOUND AT HTTP://SEAIN.ORG/SPECIAL_INSPECTIONS_GUIDLINES.
E. DEFINITIONS:

1) CONTINUOUS INSPECTIONS: CONTINUOUS INSPECTIONS ARE THE FULL TIME OBSERVATION OF THE WORK BY THE ITF, OR THEIR AGENT, PRESENT IN THE WORK AREA WHILE WORK IS BEING PERFORMED.
2) PERIODIC INSPECTIONS: PERIODIC INSPECTIONS ARE THE INTERMITTENT OBSERVATION OF THE WORK BY THE ITF, OR THEIR AGENT, PRESENT IN THE WORK AREA WHILE WORK IS BEING PERFORMED. THE INTERMITTENT OBSERVATION PERIODS SHALL BE AT TIMES OF SIGNIFICANT WORK, SHALL BE RECURRENT OVER THE COMPLETE WORK PERIODS, AND SHALL EQUAL AT LEAST 25 PERCENT OF THE TOTAL WORK TIME.

F. THE ITF'S REPORTS SHALL BE SUBMITTED WEEKLY TO THE OWNER, SER AND LOCAL BUILDING OFFICIAL.
G. A FINAL REPORT OF ALL STRUCTURAL INSPECTIONS DOCUMENTING COMPLETION OF ALL REQUIRED INSPECTIONS AND CORRECTION OF DISCREPANCIES NOTED IN THE INSPECTIONS (IF ANY) SHALL BE SUBMITTED BY THE CONTRACTOR TO THE OWNER AND SER PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
H. STEEL CONSTRUCTION:

1) INSPECTIONS SHALL BE IN ACCORDANCE WITH IBC SECTION 1705.2.
2) CONTINUOUS AND PERIODIC INSPECTIONS SHALL BE IN ACCORDANCE WITH IBC TABLE 1705.2.2.
3) INSPECTION OF STRUCTURAL STEEL SEISMIC FORCE RESISTING SYSTEM SHALL BE CONTINUOUS IN ACCORDANCE WITH IBC SECTION 1705.11. THE SEISMIC FORCE RESISTING SYSTEM CONSISTS OF THE ROOF DECK, FLOOR DECK, LATERAL BRACES, MOMENT FRAMES AND THE BEAMS & COLUMNS THE BRACES OR MOMENT FRAMES ARE CONNECTED TO, OR ANY OTHER STEEL LATERAL FORCE RESISTING SYSTEM ELEMENT.
4) ADDITIONAL TESTING REQUIREMENTS OF STEEL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.

I. CONCRETE CONSTRUCTION:

1) INSPECTIONS SHALL BE IN ACCORDANCE WITH IBC SECTION 1705.3.
INSPECT MATERIALS, INSTALLATION OF FORM WORK, REINFORCING STEEL AND CONCRETE OPERATIONS
2) INSPECT FOR PROPER MIX USE, PLACEMENT AND APPLICATION TECHNIQUES AND FOR SPECIFIED CURING, TEMPERATURES AND TECHNIQUES.
3) CONTINUOUS AND PERIODIC INSPECTIONS SHALL BE IN ACCORDANCE WITH IBC TABLE 1705.3.
4) ADDITIONAL TESTING REQUIREMENTS OF CONCRETE MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.

J. MASONRY CONSTRUCTION:

1) CONTINUOUS AND PERIODIC INSPECTIONS SHALL CONFORM TO LEVEL B QUALITY ASSURANCE IN ACCORDANCE WITH TMS SPECIFICATION SECTION 1.6.
2) ADDITIONAL TESTING REQUIREMENTS OF MASONRY MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.

K. SOILS:

1) INSPECTION OF SOILS SHALL BE IN ACCORDANCE WITH IBC SECTION 1705.6.
2) ADDITIONAL TESTING REQUIREMENTS OF SOILS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND REPORT OF GEOTECHNICAL EXPLORATION.

DLZ
ARCHITECTURE • ENGINEERING • PLANNING
SURVEYING • CONSTRUCTION SERVICES
DLZ INDIANA, LLC

2022/01/20
ELLIOTT G. ALLEN
REGISTERED
No. 10403265
STATE OF INDIANA
PROFESSIONAL ENGINEER

NO.	REVISION	DATE
A1	ADDENDUM 1	01/20/22

DRAWN: KJJ CHK'D: EGA
DESIGNED: KJJ
APPRV'D: EGA
DATE: DECEMBER 20, 2021
PROJECT NUMBER
2063-1048-90

SULLIVAN COUNTY SHERIFF'S OFFICE AND CORRECTIONAL FACILITY
2357 NORTH SECTION STREET SULLIVAN, INDIANA 47882

GENERAL NOTES

DRAWING NUMBER
S0.1
STRUCTURAL

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