STRUCTURAL NOTES

1—CONTRACTOR IS TO ALLOW A MINIMUM OF 5 BUSINESS DAYS FOR ENGINEER TO PROPERLY RESPOND O EACH RFI.

2— EACH RFI IS TO BE LIMITED TO ONE ISSUE OR QUESTION.

F. DOCUMENTATION, SHOP DRAWINGS, FIELD DRAWINGS OR OTHER INFORMATION AS REQUIRED

E. WRITTEN DESCRIPTION OF INFORMATION REQUESTED

D. PROJECT NAME

C. CONTRACTOR'S NAME, ADDRESS AND PHONE NUMBER

B. DATE OF RFI

A. RFI NUMBER

2. REQUEST FOR INFORMATION SHALL BE ON A STANDARD RFI FORM INCLUDING:

1. AGHA ENGINEERING, LLC. IS THE SOLE INTERPRETER OF THE DOCUMENTS PREPARED BY THIS OFFICE. SUBMIT ALL REQUESTS FOR INTERPRETATIONS OR REQUESTS FOR INFORMATION IN WRITING. ALL RESPONSES TO RFI WILL BE IN WRITING. ENGINEER WILL NOT RESPOND TO ANY RFI VERBALLY.

G. INTERPRETATION OF PLANS AND SPECIFICATIONS

F. CONTRACTOR TO VERIFY ALL CONDITIONS AT THE JOBSITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO START OF ANY CONSTRUCTION.

THE ROOF HAS NOT BEEN DESIGNED FOR PONDING BASED ON A ROOF SLOPE OF 3" PER FOOT.

E. ROOF SLOPE

THIS PROJECT IS NOT DESIGNED FOR FUTURE EXPANSION.

D. FUTURE EXPANSION

ALTERNATE STRUCTURAL SYSTEMS & DETAILS WILL ONLY BE CONSIDERED,PROVIDED THEY ARE SUBMITTED WITH CALCULATIONS CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT. THE CALCULATIONS MUST SHOW THE EQUIVALENCY OF THE ALTERNATE & ACCEPTANCE OF THE ALTERNATE BY THE ENGINEER MUST BE IN WRITING.

C. ALTERNATE DESIGNS

THE STRUCTURAL SYSTEMS OF THE FLOOR AND ROOF ARE DESIGNED TO PERFORM AS A COMPLETE UNIT. DURING DEMOLITION AND REPAIR OF THESE STRUCTURES, STRUCTURAL COMPONENTS MAY BE UNSTABLE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE TEMPORARY SHORING AND/OR BRACING AS REQUIRED FOR THE STABILITY OF THE INCOMPLETE STRUCTURE AND FOR THE SAFETY OF ALL ON-SITE PERSONNEL.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SHALL COORDINATE ALL STRUCTURAL PLANS AND DETAILS WITH THE ARCHITECT BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

** REDUCED PER I.R.C. SEC. AH105

*REDUCED PER I.B.C. SEC. 1607.9

DEAD LOAD (DESIGN) (D.L.) 10 PSF

LIVE LOAD (L.L.) 10 PSF**

2. ROOF LOAD

RISK FACTOR II

DESIGN WIND SPEED 140 MPH

1. WIND LOAD EXPOSURE B

B. DESIGN LOADS

INTERNATIONAL RESIDENTIAL CODE 2015 EDITION
A. BUILDING CODE

I. DESIGN DATA

H. LEAVE ALL FORM WORK IN PLACE FOR A TIME CONSISTENT WITH RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE. IN GENERAL, THE PERIMETER VERTICAL BEAM FORMS MAY BE REMOVED WITHIN 24-28 HOURS AFTER CONCRETE IS PLACED. SHOULD INCONSISTENCIES AND/OR IRREGULARITIES ON THE LINES, LEVELS OR PLUMB OF THE CONCRETE OCCUR, THE CONTRACTOR SHALL MAKE SUCH CORRECTIONS AS THE ENGINEER DIRECTS, WITHOUT EXTRA COST TO THE OWNER.

G. THOROUGHLY CLEAN ALL FORM SURFACES IN CONTACT WITH CONCRETE AND COAT WITH APPROVED FORM COATING. OILED FORMS SHALL NOT BE USED FOR EXPOSED CONCRETE SURFACES WHICH ARE LATER TO BE PLASTERED OR RUBBED.

F. THE CONTRACTOR SHALL CONSTRUCT FORM WORK TO ADEQUATELY SUPPORT PRESSURE FROM THE WET CONCRETE. REINFORCING SHALL BE INSTALLED TO THE ENGINEER'S SATISFACTION BEFORE PLACING CONCRETE.

E. THE CONTRACTOR SHALL OBTAIN THE ARCHITECT'S AND THE ENGINEER'S REVIEW AND OKAY BEFORE PLACING ANY STRUCTURAL CONCRETE, GIVING AT LEAST 48 HOURS NOTICE BEFORE POURS ARE SCHEDULED. OBTAIN THE ARCHITECT'S APPROVAL BEFORE POURING NON-STRUCTURAL CONCRETE.

D. THE CONTRACTOR SHALL CHECK WITH ALL OTHER TRADES AND MAKE CERTAIN THAT ALL PIPING,CONDUIT, SOCKETS, INSERTS, SLEEVES, ANCHORS, COLTS, ETC., REQUIRED BY THE VARIOUS TRADES ARE PROPERLY PLACED AND SUPPORTED TO PREVENT MOVEMENT DURING CONCRETING.

C. FORM CONSTRUCTION AND REMOVAL SHALL CONFORM TO THE RECOMMENDATIONS AND REQUIREMENTS OF THE APPROPRIATE SECTIONS OF ACI STANDARD 347 AND ACI CODE 318,LATEST VERSIONS. ALL FORM WORK SHALL BE PLACED STRAIGHT, LEVEL, PLUMB AND TRUE TO LINE, SUFFICIENTLY SUPPORTED, BRACED AND TIED TO RIGIDLY SUPPORT THE LOADS INVOLVED WITHOUT MOVEMENT, AND CONSTRUCTED TO MAXIMIZE RESISTANCE TO SHORTENING OF THE MEMBER. ALL JOINTS IN FORM WORK SHALL BE TIGHT AN NEAT TO PREVENT LEAKAGE OR IRREGULARITIES IN EXPOSED SURFACES.

B. ALL VERTICAL CONCRETE SURFACES SHALL BE FORMED WITH WOOD, INCLUDING EDGES OF WALKS,SLABS ON GRADE, STEPS ON GRADE AND EXPOSED PORTIONS OF GRADE BEAMS. IF THE EARTH WILL STAND VERTICAL AND FIRM DURING EXCAVATING AND CONCRETING, NO FORMS NEED TO BE CONSTRUCTED FOR CONCRETE BELOW GRADE.

A. THE CONTRACTOR SHALL EMPLOY AN EXPERIENCED SURVEYOR TO SUPPLY ALL NECESSARY LINES AND LEVELS TO INSURE THAT ALL FINISHED CONCRETE WORK IS PROPERLY LOCATED, STRAIGHT, TRUE AND SQUARE.

2. APPLICATION

D. FORM COATING: EQUAL TO SONNEBORN FORMSAVER.

C. ACCESSORIES: FORM TIES, CLAMPS AND OTHER ACCESSORIES SHALL BE OF SUCH TYPE, SIZE, ETC. AS WILL SAFELY SUPPORT THE LOADS TO BE ENCOUNTERED. ACCESSORIES ON EXPOSED FACES SHALL BE SUCH AS WILL NOT LEAVE EXPOSED METAL ON CONCRETE FACE.

B. PLYWOOD: FORM PLYWOOD SHALL BE SOUND AND FREE OF SURFACE IMPERFECTIONS, AND SHALL BE MANUFACTURED WITH EXTERIOR GLUE SUITABLE FOR USE IN FORMING CONCRETE.

A. LUMBER: ALL LUMBER AND PLYWOOD USED IN THE CONSTRUCTION OF FORMS FOR CONCRETE SHALL BE SOUND, CLEAN AND FREE OF SURFACE IMPERFECTIONS, AND OF SUFFICIENT SIZE AND THICKNESS TO RIGIDLY SUPPORT THE LOADS INVOLVED.

1. MATERIALS

IV. FORMS

F. WELDABLE REBAR 60 A706

E. PRE-STRESSING STRAND 270 FPU A416

D. POST-TENSIONING STRAND 270 FPU A416

C. WELDED WIRE FABRIC (SMOOTH) 65 A185

B. TIES & STIRRUPS 60 A615

A. ALL BARS UNLESS NOTED 60 A615

1. REINFORCING PROPERTIES: FY, KSI ASTM

V. REINFORCING MATERIAL PROPERTIES

1. CONTROL JOINTS ARE TO ENCOMPASS AN AREA NOT GREATER THAN 400 SQ. FT. THE MINIMUM DISTANCE BETWEEN CONTROL JOINTS IS 15'-0". CONTROL JOINTS SHALL BE PLACED AT MID SPAN BETWEEN GRADE BEAMS PARALLEL TO CONTROL JOINT. CONTRACTOR SHALL SUBMIT CONTROL JOINT LAYOUT PLAN FOR REVIEW BY ARCHITECT AND ENGINEER PRIOR TO CONSTRUCTION OF SLAB.

VI. EXPANSION AND CONTROL JOINTS

14. PLACE CONCRETE AT SUCH A RATE THAT CONCRETE WHICH IS BEING INTEGRATED WITH FRESH CONCRETE IS STILL PLASTIC.

13. WHERE A SECTION CANNOT BE PLACED CONTINUOUSLY, PROVIDE CONSTRUCTION JOINTS AS APPROVED BY THE ENGINEER.

12. DEPOSIT CONCRETE CONTINUOUSLY OR IN LAYERS OF SUCH THICKNESS THAT NO CONCRETE WILL BE PLACED ON CONCRETE WHICH HAS HARDENED SUFFICIENTLY TO FORM SEAMS OR PLANES OF WEAKNESS WITHIN THE SECTION.

11. PROVIDE 1/2" PRE-MOLDED EXPANSION JOINTS WHERE NEW CONCRETE WALKS ABUTS THE BUILDING, EXISTING CURBS AND WALKS.

B. THE COMPRESSIVE STRENGTH OF THE GROUT (50MM OR 2" CUBES) SHALL BE NOT LESS THAN 5,000 PSI AT AGE 28 DAYS. STORE, MIX AND PLACE NON-SHRINK GROUT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AS APPROVED BY THE ENGINEER.

A. BE CAPABLE OF PRODUCING A FLOWABLE GROUTING MATERIAL HAVING NO DRYING SHRINKAGE OR SETTLEMENT AT ANY AGE.

10. NON-SHRINK GROUT SHALL BE READY-TO USE METALLIC AGGREGATE PRODUCT REQUIRING ONLY ADDITIONS OF WATER AT THE SITE, AND SHALL HAVE THE FOLLOWING ATTRIBUTES:

9. WELDED WIRE FABRIC (W.W.F.) SHALL CONFORM TO ASTM A185.

8. PROVIDE CORNER BARS FOR ALL CONTINUOUS REINFORCING BARS AT ALL CORNERS WITH MINIMUM LAP OF 40 DIAMETERS OR 24", WHICHEVER IS GREATER.

7. CONTINUOUS REINFORCING BARS SHALL HAVE A MINIMUM LAP OF 40 DIAMETERS OR 24", WHICHEVER IS GREATER.

6. REINFORCING BARS SHALL BE DESIGNED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST ACI SPECIFICATIONS.

5. NO CONCRETE SHALL BE PLACED WHERE THE CONCRETE TEMPERATURE EXCEEDS 90 DEGREES FAHRENHEIT, BEFORE ANY WATER IS ADDED AT THE JOBSITE.

4. THE MAXIMUM TIME INTERVAL BETWEEN THE ADDITION OF MIXING WATER AND/OR CEMENT TO THE BATCH, AND THE PLACING OF THE LAST OF THE CONCRETE BATCH IN THE FORMS SHALL NOT EXCEED NINETY (90) MINUTES FOR AMBIENT TEMPERATURES BELOW 90 DEGREES AND SIXTY (60) MINUTES FOR AMBIENT TEMPERATURES OF 90 DEGREES AND ABOVE.

3. ALL CONCRETE SHALL BE CONSOLIDATED BY USE OF A MECHANICAL VIBRATOR.

C. BATCHING, MIXING & DELIVERY: COMPLY WITH ACI C94.

B. HOT WEATHER PLACING: COMPLY WITH ACI 305.

A. COLD WEATHER PLACING: COMPLY WITH ACI 306.

2. PLACE CONCRETE IN COMPLIANCE WITH PRACTICES AND RECOMMENDATIONS OF ACI 304.

F. ADMIXTURES:
CHEMICAL COMPOUNDS SHALL BE USED AS AN ADMIXTURE TO CONTROL PLASTIC SHRINKAGE,IMPROVED WORKABILITY AND ENTRAIN 3 TO 5% AIR. THE ADMIXTURES SHALL CONTAIN NOCHLORIDES, FLUORIDES OR NITRATES AND SHALL BE FORMULATED BY THE MANUFACTURER FOR THE JOB AREA AND WEATHER CONDITIONS TO CONTROL SETTING TIME. ADMIXTURES SHALL CONFORM TO ASTM SPECIFICATIONS C-260 AND C-494, LATEST VERSIONS. THE ADMIXTURES INTENDED FOR USE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE ANY ACTUAL MIX IS MADE.

E. EXPANSION JOINTS (IF SHOWN):
PRE-MOLDED JOINT FILLER SHALL CONSIST OF ASPHALT VEGETABLE FIBER AND MINERAL FILLER BETWEEN TWO SHEETS OF ASPHALT SATURATED PAPER AND SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATION D-994, LATEST VERSION.

D. READY MIXED CONCRETE:
READY MIXED CONCRETE SHALL CONFORM TO ASTM SPECIFICATIONS C-94, LATEST VERSION.

C. WATER:
WATER SHALL BE CLEAN, POTABLE AND FREE OF INJURIOUS AMOUNTS OF ACIDS, ALKALIS OR ORGANIC MATERIALS.

B. CONCRETE AGGREGATES:
CONCRETE AGGREGATES SHALL CONFORM TO THE SPECIFICATIONS FOR CONCRETE AGGREGATES,ASTM C-33, LATEST VERSION TYPEI OR TYPE III.

A. CEMENT:
PORTLAND CEMENT SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PORTLAND CEMENT,ASTM DESIGNATION C-150, LATEST VERSION TYPE I OR TYPE III.

1. MATERIALS
VII. CAST IN PLACE CONCRETE

27. ALL POST-INSTALLED ANCHORS SHALL BE EQUAL TO HILTI HIT PRODUCTS. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE DRILL BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.9.2.4.

26. ALL ANCHOR BOLTS AND SHEARWALL HOLD DOWN BOLTS ARE TO BE "WET SET". DO NOT DRILL ANY EPOXY SET HOLD DOWN OR ANCHOR BOLTS.

25. UNDER-SLAB VAPOR BARRIER SHALL BE STEGOWRAP 15 MIL. OR EQUAL. VAPOR RETARDER SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

24. IF ANY PONDS, TREE WELLS OR ABRUPT GRADE CHANGES OCCUR WITH IN 5'-0" OF PERIMETER GRADE BEAM, THE GRADE BEAM MUST BE EXTENDED A MINIMUM OF 12" BELOW THE LOWEST ELVATION OF THE GRADE CHANGE.

PRIMARY REINFORCEMENT, TIES & STIRRUPS 1"

BEAMS & COLUMNS:

#11 & SMALLER BARS 1"

SLABS & WALLS: #14 & #18 BARS 2"

IN CONTACT WITH GROUND: 1 1/2"

C. CONCRETE NOT EXPOSED TO WEATHER OR

#5 & SMALLER BARS

#6 THRU #18 BARS 2"

B. CONCRETE EXPOSED TO EARTH OR WEATHER: PERMANENTLY EXPOSED TO EARTH: 3"

A. CONCRETE CAST AGAINST & COVER IN MINIMUN

23. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

22. PROVIDE A 3/4" CHAMFER ON ALL EXPOSED CORNERS OF CONCRETE.

21. PROVIDE EXTRA REINFORCING ON EACH FACE AROUND ALL OPENINGS 24" OR LARGER IN ALL SLABS & WALLS EQUAL TO HALF THE INTERRUPTED REINFORCING BARS ON EACH SIDE BUT NOT LESS THAN 2 – #5 BARS WITH CLASS B LAP BUT NOT LESS THAN 2 FEET BEYOND EDGE OPENINGS.

20. ALL CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE W/ IBC CHAPTER 19 & ACI-318, LATEST EDITIONS.

19. ALL REINFORCING SHALL BE SUPPORTED ON METAL SUPPORTS AND SECURELY TIED TO PREVENT MOVEMENT DURING CONCRETING.

18. DO NOT RE-TEMPER CONCRETE AFTER INITIALLY OBTAINING THE PROPER SLUMP ON ANY LOAD OF CONCRETE.

17. DO NOT USE CONCRETE THAT HAS BECOME NON-PLASTIC AND UNWORKABLE, OR DOES NOT MEET THE REQUIRED QUALITY CONTROL LIMITS OR WHICH HAS BEEN CONTAMINATED BY FOREIGN MATERIALS.

16 SCREED CONCRETE WHICH IS TO RECEIVE OTHER CONSTRUCTION TO THE PROPER LEVEL TO AVOID EXCESSIVE SHIMMING AND GROUTING.

15. DEPOSIT CONCRETE AS NEARLY AS PRACTICABLE IN ITS FINAL LOCATION TO AVOID SEGREGATION DUE TO RE-HANDLING AND FLOWING. DO NOT SUBJECT CONCRETE TO ANY PROCEDURE WHICH MIGHT CAUSE SEGREGATION. DO NOT USE MECHANICAL VIBRATORS TO MOVE CONCRETE.

4. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 5" FOR SLABS AND 4" FOR ALL OTHER CONCRETE.

3. CAST-IN-PLACE CONCRETE SHALL BE REGULAR WEIGHT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. THE CONCRETE MIX DESIGN SHALL HAVE A MINIMUM OF 5 SACKS OF CEMENT FOR 3000 PSI AND 5-1/2 SACKS FOR 3500 PSI PER CUBIC YARD OF CONCRETE. THE MIX DESIGN SHALL BE PREPARED BY A TESTING AGENCY AND REVIEWED BY THE ENGINEER PRIOR TO PLACING ANY CONCRETE. ALL CONCRETE SHALL BE BY ONE SUPPLIER UNLESS APPROVED BY THE ENGINEER. THE USE OF FLY ASH IS NOT PERMITTED.

2. ALL EXTERIOR CONCRETE SHALL BE AIR ENTRAINED TO GIVE THE CONCRETE ON AIR CONTENT OF 6 ± 1% BY VOLUME.

D. TOPPING & CONCRETE OVER METAL DECK 3500 5 ± 1

C. EXTERIOR SLAB ON GRADE 3000 5 ± 1

B. INTERIOR SLAB ON GRADE 3000 5 ± 1

A. FOOTINGS, PIERS, GRADE BEAMS & FOUNDATION WALLS.

3000 4 ± 1

28 DAYS INCHES

1. CONCRETE PROPERTIES: F'C PSI SLUMP

VIII. CONCRETE MATERIAL PROPERTIES

13. THE CONTRACTOR SHALL SUBMIT FOR THE REVIEW A MIX DESIGN FOR THE PROPOSED CONCRETE. MIX DESIGNS SHALL SHOW WEIGHT PROPORTIONS FOR ALL COMPONENTS OF THE MIX. THE CONTRACTOR SHALL NOT VARY FROM THE MIX DESIGN WITHOUT THE APPROVAL OF THE ENGINEER.

12. PROVIDE CURING OF DECK IMMEDIATELY AFTER FINISHING. REFER TO THE SPECIFICATIONS FOR REQUIREMENTS. PROTECT THE CONCRETE SURFACE BETWEEN FINISHING OPERATIONS ON HOT, DRY, OR WINDY DAYS OR ANY TIME PLASTIC SHRINKAGE CRACKS COULD DEVELOP BY USING WET BURLAP, PLASTIC MEMBRANES, OR FOGGING. PROTECT CONCRETE DECK AT ALL TIMES FROM RAIN, HAIL, OR OTHER INJURIOUS EFFECTS.

11. PLACE CONCRETE IN A MANNER SO AS TO PREVENT SEGREGATION OF THE MIX. DELAY FLOATING AND TROWELING OPERATIONS UNTIL THE CONCRETE HAS LOST SURFACE WATER SHEEN OR ALL FREE WATER. DO NOT SPRINKLE FREE CEMENT ON THE SLAB SURFACE. FINISHING OF SLAB SURFACES SHALL COMPLY WITH THE RECOMMENDATIONS OF ACI 302.1 AND 304.

10. WATER SHALL NOT BE ADDED TO THE CONCRETE AT THE JOBSITE UNLESS THE TOTAL WATER QUANTITY INCLUDING THE WATER ADDED AT THE JOBSITE DOES NOT EXCEED THE TOTAL WATER QUANTITY OF THE REVIEWED MIX DESIGN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE REQUIREMENTS OF THE CONCRETE SUPPLIER AND PUMPER TO MEET THIS REQUIREMENT AND TO ENSURE A PUMPABLE AND WORKABLE MIX. THE USE OF PLASTICIZERS, RETARDANTS, AND OTHER ADDITIVES SHALL BE AT THE OPTION OF THE CONTRACTOR SUBJECT TO THE APPROVAL OF HAYNES WHALEY ASSOCIATES. FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER FOR THE PROPER USE OF ADDITIVES. THE USE OF CALCIUM CHLORIDE OR OTHER CHLORIDE BEARING SALTS IS NOT PERMITTED.

9. SLUMP TESTS SHALL BE MADE PRIOR TO THE ADDITION OF PLASTICIZERS. CONCRETE FOR THE PREPARATION OF TEST CYLINDERS SHALL BE TAKEN FROM THE HOSE END FOR CONCRETE PLACED BY PUMP.

8. PROVIDE SUFFICIENT CHAIRS, BOLSTER BARS, ETC. TO MAINTAIN THE WELDED WIRE FABRIC AND REINFORCEMENT BARS AT THE DEPTH SPECIFIED.

7. STEEL DECK SHALL BE FREE FROM OIL, DIRT, AND ANY OTHER DELETERIOUS MATERIALS THAT WOULD TEND TO REDUCE THE BOND BETWEEN THE CONCRETE AND THE STEEL DECK.

MAXIMUM AGGREGATE SIZE 1 INCH

MAXIMUM SLUMP PRIOR TO PLASTICIZERS 4 – 1/2INCHES

MAXIMUM WATER CEMENT RATIO BY WEIGHT 0.45

6. IN ADDITION TO THE SPECIFICATIONS NOTED ELSEWHERE, THE FLOOR DECK CONCRETE SHALL CONFORM TO THE FOLLOWING:

5. FOR DECK UNITS THINNER THAN 22 GAGE, USE WELDING WASHERS FOR ALL WELDS.

4. IF NO OTHER SIDELAP FASTENER CRITERIA IS PROVIDED, STEEL DECK UNITS WITH SPANS GREATER THAN 5 FEET SHALL HAVE SIDE LAPS FASTENED AT MIDSPAN OR 36 INCH INTERVALS MINIMUM WHICHEVER DISTANCE IS
SMALLER AND SIDELAP FASTENERS SHALL BE WELDS, SCREWS, OR CRIMPS (BUTTON PUNCHING).

3. WELD DECK TO SUPPORTING STEEL AND ADJOINING DECK SHEETS USING MINIMUM OF 5/8 INCH PUDDLE WELDS IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STANDARD D1.3. THE DECK SHALL BE WELDED AT ENDS AND ALONG SIDES AT A MAXIMUM SPACING OF 12 INCHES ON CENTER. OTHER DECK WELDS SHALL BE LOCATED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE DECK MANUFACTURER UNLESS NOTED OTHERWISE. IF WELDING IS NOT SPECIFIED BY THE DECK MANUFACTURER, WELD FORMS TO SUPPORTING MEMBERS (BEAMS, GIRDERS, AND EDGE ANGLES) WITH WELDS SPACED AT NOT MORE THAN 12 INCHES ON CENTER AT SUPPORTS AND ALONG EDGES. DECK FLUTES SHALL BE ALIGNED, AND DECK ENDS MAY BE BUTTED OR LAPPED OVER SUPPORTS.

2. PROPERTIES AND ALLOWABLE STRESSES OF STEEL FLOOR DECKS SHALL BE BASED ON THE AISI"SPECIFICATIONFOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS". STEEL FLOOR DECK SHALL BE PLACED TO HAVE A THREE SPAN CONFIGUARATION WHERE POSSIBLE AND AT LEAST A TWO SPAN CONFIGURATION UNLESS NOTED OTHERWISE. GENERAL CONTRACTOR SHALL COORDINATE WITH DECK SUPPLIER TO DETERMINE DECK GAGE REQUIRED FOR SINGLE SPAN CONDITIONS.

1. FLOOR SLAB SYSTEM SHALL BE NORMAL WEIGHT CONCRETE 3 INCHES THICK, ON CORRUGATED PERMANENT STEEL FORMS. STEEL FORMS SHALL BE 28 GAGE COLD-FORMED STEEL CONFORMING TO ASTM A1008, GRADE 33 (MIN.). STEEL FORMS SHALL BE 9/16INCHES DEEP AND SHALL HAVE A MINIMUM SECTION MODULUS OF 0.035 INCHES CUBED PER FOOT OF WIDTH. REINFORCE SLAB WITH 6X6-W2.1 X W2.1 WELDED WIRE FABRIC.

IX. CONCRETE DECK ON STEEL FORMS

4. ALL TYPICAL BEAM SIMPLE CONNECTIONS SHALL BE STANDARD DOUBLE ANGLE OR SINGLE ANGLE FRAMED BEAM CONNECTIONS. SHEAR TAB CONNECTIONS MAY BE USED AT LOCATIONS WHERE DOUBLE ANGLE CONNECTIONS ARE NOT POSSIBLE. SEATED BEAM CONNECTIONS SHALL NOT BE USED UNLESS INDICATED ON THE DRAWINGS. PROVIDE FULL DEPTH SHEAR TAB IF BEAM FRAMES ON ONLY ONE SIDE OF A GIRDER.

3. IT IS THE INTENTION OF THE PLANS AND SPECIFICATIONS THAT SHOP CONNECTIONS BE WELDED OR BOLTED AND THAT FIELD CONNECTIONS BE BOLTED, UNLESS DETAILED OTHERWISE IN THE DRAWINGS.

2. THE DESIGN OF ALL STEEL CONNECTIONS SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED, EMPLOYED BY THE FABRICATOR. CALCULATIONS SEALED BY THE FABRICATOR'S PROFESSIONAL ENGINEER MUST BE SUBMITTED ...

1. TYPICAL CONNECTION DETAILS ARE INDICATED ON THE DRAWINGS.

XIII. CONNECTIONS

11. NO HOLE LARGER THAN 1" IN DIAMETER WILL BE ALLOWED IN ANY LOAD BEARING OR ANY EXTERIOR WALL STUD. 1" DIAMETER AND SMALLER HOLES SHALL BE LOCATED ON THE CENTERLINE OF THE WIDE AXIS AND SPACED NO LESS THAN 6"O.C. NO OTHER HOLES WILL BE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

10. NO HOLES, NOTCHES OR OTHER CUTS SHALL BE MADE IN ANY BEAM, JOIST, RAFTER OR OTHER FRAMING MEMBER WITHOUT WRITTEN APPROVAL BY THE ENGINEER.

9. ALL ROOF JOISTS AND CEILING JOISTS SHALL BE #2 SOUTHERN YELLOW PINE OR BETTER.

8. ALL WALL FRAMING SHALL BE #2 SOUTHERN YELLOW PINE OR BETTER.

7. ALL ROOFS SHALL BE DECKED WITH 5/8"-48/24 C-D EXTERIOR PLYWOOD NAILED WITH 6D NAILS AT 6"O.C. AT ALL SUPPORTS.

6. ALL EXTERIOR WALLS AND INTERIOR SHEAR WALLS SHALL BE ANCHORED TO THE FOUNDATION WITH 1/2"X12" ANCHOR BOLTS AT 48"O.C.

5. ALL EXTERIOR WALLS AND INTERIOR SHEAR WALLS SHALL BE SHEATHED WITH A MINIMUM OF 7/16-24/48 C-D EXTERIOR PLYWOOD OR OSB. ATTACH TO FRAMING WITH 10D NAILS @6"O.C.

4. ALL CONNECTORS OR HANGERS FOR PRESSURE TREATED MATERIAL SHALL BE STAINLESS STEEL.

3. ALL WOOD CONNECTOR AND HANGERS SHALL BE AS MANUFACTURED BY SIMPSON STRONG-TIE CO. OR EQUAL.

2. ALL BEAM HEADER, RAFTER AND CEILING JOIST FRAMING LUMBER SHALL BE NO. 1 GRADE SOUTHERN PINE KILN DRIED OR BETTER. ALL COLUMN LUMBER SHALL BE NO. 1 DOUGLAS FIR KILN-DRIED OR BETTER.

1. ALL BOLTS SHALL BE ASTM A-307.

XV. FRAMING

THE ELECTRONIC FILES FOR THE STRUCTURAL ENGINEERING DOCUMENTS WILL NOT BE RELEASED FOR USE DURING CONSTRUCTION OR FOR THE PREPARATION OF SHOP DRAWINGS OR SUBMITTALS. EACH SUPPLIER OR FABRICATOR IS RESPONSIBLE FOR REPRODUCING THE INFORMATION REQUIRED FOR THEIR SUBMITTAL. THE DUPLICATING OF ANY PART OF THESE DOCUMENTS FOR INCLUSION IN SHOP DRAWINGS OR SUBMITTALS IS ALSO PROHIBITED.XX.

USE AND/OR RELEASE OF STRUCTURAL ENGINEERING ELECTRONIC FILE

1. DETAILS NOTED AS TYPICAL SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE.

XXI. DETAIL NOTES

4. CONCRETE TEST RESULTS

3. MORTAR MIX DESIGN, GROUT MIX DESIGN AND TEST RESULTS

2. CONCRETE MIX DESIGN

1. REINFORCEMENT & CONCRETE ACCESSORIES INCLUDING VAPOR BARRIER

THE FOLLOWING ARE SUBMITTALS REQUIRED BY ENGINEER. USE PLANS AND SPEC. BOOK FOR PRODUCT LIST. ONLY COMPLETE SUBMITTALS WILL BE REVIEWED. CONTRACTOR SHALL REVIEW SUBMITTALS PRIOR TO SUBMITTING TO ENGINEER INDICATED BY INCLUDING REVIEW STAMP & SIGNATURE ON ALL SUBMITTALS. CONTRACTOR IS TO COORDINATE AND SCHEDULE ALL SUBMITTALS TO ALLOW AGHA ENGINEERING,LLC. A MINIMUM OF 10 BUSINESS DAYS FOR ALL SUBMITTALS AND LONGER FOR COMPLEX SUBMITTALS.

XXII. STRUCTURAL REQUIREMENTS FOR SUBMITTALS

CONTRACTOR SHALL ISSUE TO THE ENGINEER A COMPLETE PROJECT SCHEDULE WITH THE ABOVE SITE VISITS NOTED AND NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS OR 2 BUSINESS DAYS, WHICHEVER IS LONGER, PRIOR TO THE SCHEDULED VISIT TO CONFIRM TIME AND DATE OF REQUIRED VISIT. FAILURE OF THE CONTRACTOR TO ACCOMPLISH THIS NOTIFICATION WILL NOT REQUIRE THE ENGINEER TO RESPOND ON SHORTER NOTICE, NOR WILL THE CONTRACTOR PROCEED WITHOUT THE ENGINEER PERFORMING THE APPROPRIATE SITE VISIT. ADDITIONALLY, IF THE CONTRACTOR REQUESTS OR SCHEDULES A SITE VISIT AND CONSTRUCTION IS NOT AT THE APPROPRIATE STAGE FOR THE ENGINEER TO PERFORM THE PROPER OBSERVATIONS, ANOTHER SITE VISIT WILL BE REQUIRED AND SCHEDULED AT THE CONTRACTOR'S EXPENSE FOR ALL TIME AND TRAVEL EXPENSES OF THE ENGINEER OR HIS REPRESENTATIVE. ENGINEER WILL NOT ISSUE ANY TYPE OR FORM OF COMPLIANCE OR CONCURRENCE STATEMENT FOR CONSTRUCTION WITHOUT PERFORMING THE ABOVE NOTED SITE OBSERVATIONS.

PLEASE REFER TO SPECIFICATIONS OR GENERAL NOTES FOR PROJECT SPECIFIC INSTRUCTIONS.

I. PRE-ENGINEERED METAL BUILDING ANCHOR BOLTS (AFTER BLDG. ERECTION COMPLETE)

H. AFTER DECKING IS IN PLACE AND ATTACHED TO THE STRUCTURE, BUT PRIOR TO COVERING WITH FLOOR AND ROOF MATERIALS

G. FRAMING

F. AFTER STEEL IS ERECTED BUT PRIOR TO COVERING WITH OTHER MATERIALS

E. DURING PLACEMENT OF THE HOLLOW CORE SLAB AT AN APPROPRIATE TIME TO OBSERVE THE GROUTING OF JOINTS AND PANEL ENDS, WALL COURSES, POURING CELLS AND CONSTRUCTING BOND BEAMS

D. DURING CONSTRUCTION OF MASONRY WALL WHILE ALL PHASES OF THE OPERATION ARE IN PROGRESS,INCLUDING LAYING UP OF WALL COURSES, POURING CELLS AND CONSTRUCTING BOND BEAMS

C. ALL ANCHOR BOLTS AND EMBEDS ARE TO BE SET AND ADEQUATELY TIED & HELD IN POSITION PRIOR TO THE START OF PLACING CONCRETE

B. AFTER FORMS, REBAR, EMBEDS AND OTHER ACCESSORIES ARE IN PLACE AND 48 HOURS PRIOR TO PLACEMENT OF CONCRETE

A. DURING PIER DRILLING AND PLACEMENT OF REINFORCING AND CONCRETE PIERS

A REPRESENTATIVE OF AGHA ENGINEERING, LLC. WILL VISIT THE SITE AT THE FOLLOWING STAGES OF CONSTRUCTION:

SITE VISITS FOR CONSTRUCTION OBSERVATION WILL NOT BE MADE BY ENGINEER UNTIL ALL SUBMITTALS AND/OR TESTING RESULTS HAVE BEEN REVIEWED AND ACCEPTED BY THE ENGINEER. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING SUBMITTALS TO ALLOW THE ENGINEER ADEQUATE TIME TO REVIEW AND COMMENT BEFORE PROCEEDING WITH CONSTRUCTION.

XXIII. STRUCTURAL REQUIREMENTS FOR SITE VISITS

AGHA ENGINEERING LLC
F-20817
4600 HIGHWAY 6 N SUITE 350
Houston, TX 77084

11906
STEPPINGSTONE
LN, HOUSTON, TX

REVISION

DESIGNED BY: YB

DATE: 10/18/2023

DRAWN BY: YB

SEAL:

STATE OF TEXAS
YAZAN BADRI
144635
LICENSED
PROFESSIONAL ENGINEER

10/25/2023

STRUCTURAL NOTES

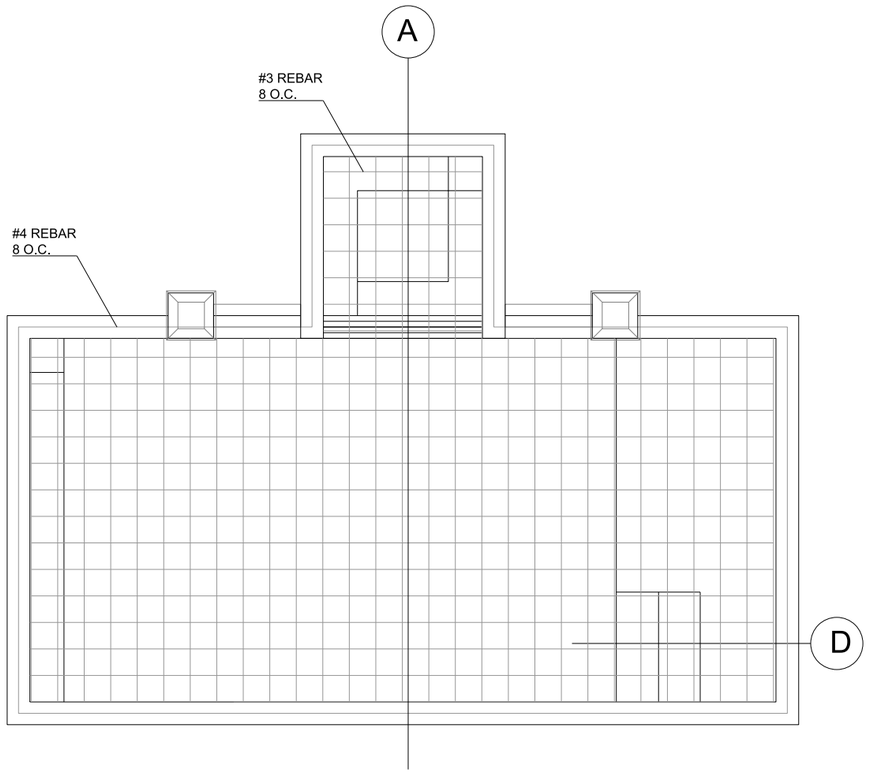
DRAWING NUMBER

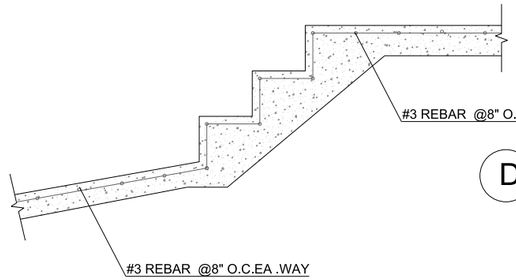
S00

CONCRETE NOTES:

1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT ACI 318 SPECIFICATIONS.
2. REINFORCING STEEL SHALL CONFORM WITH ASTM A-615, A-616, OR A-617. STEEL SHALL BE GRADE 60.
3. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI WITHIN 28 DAYS AFTER PLACING. AGGREGATE - 3/4" MAX. SIZE. SLUMP 3" MIN . 5" MAX.
4. CONCRETE SHALL BE KEPT IN A MOIST CONDITION AT LEAST 7 DAYS AFTER PLACING.
5. PROVIDE COVERAGE FOR REINFORCING STEEL AS FOLLOWS:

GRADE BEAMS: 1 ½" TOP, 3" BOTTOM, 11⁄2" SIDES SLAB ON GRADE: 1 ½" TOP





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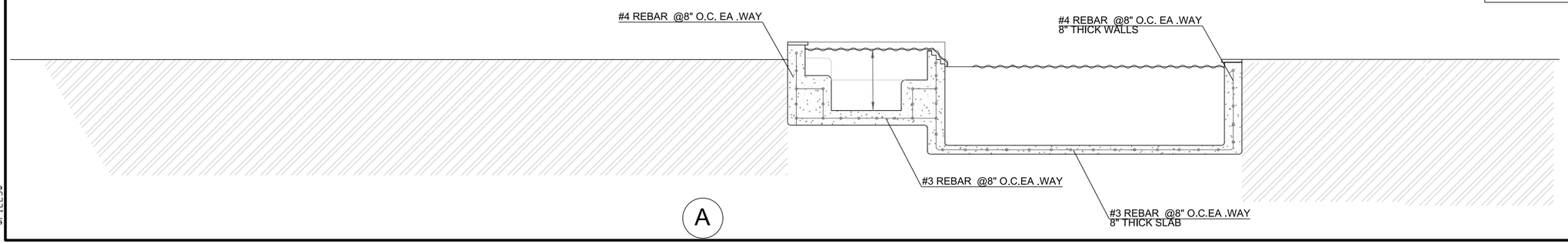
16,585 GAL POOL/SPA.
TURN OVER RATE (JANDY E-PUMP) = 6 HR
GPM = 46
RPM = 1500(MIN RPM = 600) (MAX RPM = 3,450)

POOL SPECS

DESIGN STYLE: GEOMETRIC
PERIMETER: 98 FT
POOL AREA: 528 SQ.FT
POOL LENGTH: 33 FT
POOL WIDTH: 16' FT
POOL DEPTH: 3'-6" TO 6'
POOL LIGHTS: (1) POOL + (1) SPA + (1) LED 24W
SUN SHELF : YES
WATER FEATURE:
EXCAVATION: BOBCAT DUG
POOL BEAM: #4 REBAR
POOL WALL/FLOOR: W/#3 REBAR IN WALLS/FLOORS
POOL BEAM: 12" W/#4 REBAR
POOL WALL : THICKNESS MINIMUM 8"
POOL FLOOR: THICKNESS MINIMUM 6"
STEPS & BENCHES: THICKNESS MINIMUM 6"
BUBBLERS: 2
BOWLS: N/A

SPA SPECS

PERIMETER: 28'
SPA DIMENSIONS: 9' X 9'
SPILLOVER WIDTH: 8'
SPA AREA: 50'
SPA HEIGHT: 1' RAISED
SPA JETS: 8 REGAL JETS



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