

GENERAL STRUCTURAL NOTES

1. GENERAL

A. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS ARE PROTECTED BY U.S.A. COPYRIGHT LAWS. THESE STRUCTURAL DRAWINGS SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THE CONSTRUCTION OF THE STRUCTURE FOR THE BUILDING DESCRIBED IN THE ARCHITECTURAL DRAWINGS AT THE LOCATION SHOWN. THE DESIGN OF THE STRUCTURE REPRESENTED BY THESE DOCUMENTS IS NOT VALID FOR ANY OTHER LOCATION, PURPOSE OR USE.

B. UNLESS NOTED OTHERWISE, THE GENERAL NOTES AND THE DETAILS IN THE DRAWINGS DESIGNATED AS TYPICAL DETAILS, ARE APPLICABLE TO THE CONSTRUCTION IN ALL LOCATIONS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE GENERAL NOTES AND THE TYPICAL DETAILS.

C. IT IS NOT THE INTENT THAT THE STRUCTURAL DRAWINGS BE VIEWED AS STAND ALONE DRAWINGS WITH RESPECT TO PROJECT DIMENSIONS OR ANY OTHER COMPONENT OF THE CONSTRUCTION THAT CAN AND MAY BE IDENTIFIED IN OTHER PARTS OF THE CONTRACT DOCUMENTS. REDUNDANT DIMENSIONS AND OTHER INFORMATION SHOWN ELSEWHERE IN THE CONTRACT DOCUMENTS MAY OR MAY NOT BE PROVIDED IN THE STRUCTURAL DRAWINGS. IT REQUIRES THE ENTIRE SET OF CONTRACT DOCUMENTS TO PROPERLY CONSTRUCT THE STRUCTURE AS WELL AS OTHER COMPONENTS OF THE BUILDING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSEMBLE AND COORDINATE THE REQUIREMENTS OF ALL COMPONENTS OF THE CONTRACT DOCUMENTS IN ORDER TO PROPERLY IMPLEMENT THE REQUIREMENTS OF THE CONTRACT. IF THERE IS SPECIFIC DIMENSIONAL OR OTHER INFORMATION THAT THE CONTRACTOR FEELS CAN NOT BE DETERMINED FROM THE CONTRACT DOCUMENTS AS A WHOLE, THEN THE CONTRACTOR SHALL BRING IT TO THE ATTENTION OF THE ARCHITECT OR THE ENGINEER. THE ADDITIONAL INFORMATION WILL BE PROVIDED OR THE CONTRACTOR WILL BE INFORMED WHERE THE INFORMATION CAN BE FOUND, OR HOW IT CAN BE CALCULATED FROM INFORMATION THAT IS PROVIDED IN THE CONTRACT DOCUMENTS.

D. IT IS NOT THE INTENT THAT THE STRUCTURAL DRAWINGS BE VIEWED AS DETAILED SHOP OR ERECTION DRAWINGS. VARIOUS ANCILLARY DIMENSIONS REQUIRED FOR PROPER FIT-UP OF THE VARIOUS COMPONENTS OF THE STRUCTURE MUST BE DETERMINED FROM THE INFORMATION THAT IS PROVIDED IN THE CONTRACT DOCUMENTS. IT IS THE CONTRACTORS, AND HIS DETAILERS, RESPONSIBILITY TO ESTABLISH WHERE SUCH ANCILLARY DIMENSIONS ARE NECESSARY AND TO CALCULATE AND VERIFY THESE DIMENSIONS AS REQUIRED TO ACHIEVE PROPER FIT-UP OF MATERIALS AND TO ACHIEVE COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

E. THE LOCATION AND DIMENSIONS OF ALL OPENINGS, DEPRESSIONS, RECESSES, SLOPES, BLOCKOUTS, CURBS, AND EMBEDMENTS SHOWN IN THE STRUCTURE WHICH ARE RELATED TO PURPOSES DEPICTED IN CONTRACT DOCUMENTS OTHER THAN THE STRUCTURAL DRAWINGS OR BY MANUFACTURERS AND INSTALLERS OF VARIOUS EQUIPMENT AND FINISHES SHALL BE VERIFIED BY THE CONTRACTOR TO BE SUITABLE FOR THE PURPOSES DEPICTED BY THE CONTRACT DOCUMENTS REQUIRING SUCH ITEMS OR TO BE SUITABLE FOR THE INSTALLATION OF VARIOUS EQUIPMENT AND FINISHES. ANY REQUIREMENT FOR RELOCATION OR CHANGE IN DIMENSIONS OF ANY OPENING, DEPRESSION, RECESS, SLOPE, BLOCKOUT, OR EMBEDMENT SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER IN DRAWING FORM PRIOR TO THE FABRICATION OF MATERIALS OR CONSTRUCTION.

F. VARIOUS OPENINGS, DEPRESSIONS, RECESSES, SLOPES, BLOCKOUTS, CURBS, AND EMBEDMENTS NOT SHOWN IN THE STRUCTURAL DRAWINGS MAY BE REQUIRED IN THE STRUCTURE FOR PURPOSES DEPICTED IN CONTRACT DOCUMENTS OTHER THAN THE STRUCTURAL DRAWINGS OR BY THE MANUFACTURERS AND INSTALLERS OF VARIOUS EQUIPMENT AND FINISHES. THE CONTRACTOR SHALL INCORPORATE AND COORDINATE THE LOCATION AND DIMENSIONS OF ANY OPENING, DEPRESSION, RECESS, SLOPE, BLOCKOUT, OR EMBEDMENT INTO THE STRUCTURE AS REQUIRED TO BE SUITABLE FOR THE PURPOSES DEPICTED BY THE CONTRACT DOCUMENTS REQUIRING SUCH ITEMS OR TO BE SUITABLE FOR THE INSTALLATION OF VARIOUS EQUIPMENT AND FINISHES. THE SUITABLE LOCATION AND DIMENSIONS OF ALL OPENINGS, DEPRESSIONS, RECESSES, SLOPES, BLOCKOUTS, AND EMBEDMENTS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER IN DRAWING FORM PRIOR TO THE FABRICATION OF MATERIALS OR CONSTRUCTION.

G. ELEVATIONS PROVIDED IN THE STRUCTURAL DRAWINGS ARE RELATIVE ELEVATIONS AND ARE NOT INTENDED TO ESTABLISH THE ACTUAL SEA LEVEL ELEVATION OF ANY PORTION OF THE STRUCTURE. REFER TO THE CIVIL DRAWINGS FOR ACTUAL SEA LEVEL ELEVATIONS OF VARIOUS ELEMENTS OF THE BUILDING.

H. THE DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS SO STATED OR NOTED, THEY DO NOT INDICATE COMPONENTS THAT ARE NECESSARY FOR SUPPORTING AND STABILIZING THE WORK DURING CONSTRUCTION OR THE MEANS AND METHODS OF CONSTRUCTION, ALL OF WHICH ARE THE RESPONSIBILITY OF THE CONTRACTOR.

I. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SAFETY ON THE JOBSITE DURING CONSTRUCTION.

J. THE DRAWINGS IN THE STRUCTURAL DOCUMENTS ARE NOT TO BE SCALED FOR ANY PURPOSE, INCLUDING THE DETERMINATION OF QUANTITIES AND THE FIT UP OF MATERIALS.

2. SUBSTITUTIONS & DEVIATIONS

A. PROPOSED SUBSTITUTIONS OF MATERIALS, PRODUCTS OR DETAILS DEPICTED IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED DURING THE BIDDING PERIOD. AFTER BIDS ARE ACCEPTED, NOTICE IN WRITING OF ANY PROPOSED SUBSTITUTIONS OR ANY PROPOSED DEVIATIONS TO THE STRUCTURE AS REQUIRED BY THESE DOCUMENTS SHALL BE SUBMITTED WITH BACKUP DATA IDENTIFYING THE CONTRACTOR'S PERCEIVED INTEREST TO THE OWNER FOR ACCEPTING THE PROPOSED SUBSTITUTION OR DEVIATION. FOR PROPOSED SUBSTITUTIONS OF PRODUCTS, THE BACKUP DATA SHALL INCLUDE INDEPENDENT VERIFICATION OF THE PRODUCTS PERFORMANCE. SHOP DRAWINGS THAT ARE SUBMITTED FOR REVIEW DO NOT CONSTITUTE "NOTICE IN WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES OR DEVIATIONS ARE BEING PROPOSED AND THEY ARE ACCOMPANIED WITH THE REQUIRED BACKUP DATA. PROPOSED SUBSTITUTIONS OR DEVIATIONS WILL NOT BE REVIEWED OR RESPONDED TO WITHOUT THE REQUIRED BACKUP DATA.

- 1. THE CONTRACTOR SHALL REMAIN LIABLE FOR ANY SUBSTITUTION OR DEVIATION UNLESS ACKNOWLEDGMENT AND ACCEPTANCE IS PROVIDED BY THE ENGINEER IN WRITING.

3. SUBMITTALS

A. THE CONTRACTOR SHALL REVIEW SUBMITTALS FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS AND SHALL CERTIFY THAT HE HAS DONE SO BY A STAMP NOTING THAT THE SUBMITTAL HAS BEEN "APPROVED" AND WHICH BEARS THE SIGNATURE OF AN AUTHORIZED REPRESENTATIVE OF THE CONTRACTOR AND THE DATE. SUBMITTALS WHICH DO NOT REFLECT THE CONTRACTOR'S APPROVAL, SIGNATURE AND DATE; OR DO NOT APPEAR TO HAVE BEEN REVIEWED BY THE CONTRACTOR WILL BE RETURNED WITHOUT REVIEW.

B. THE REVIEW OF THE SUBMITTALS BY THE ENGINEER IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND THE INFORMATION GIVEN IN THE CONSTRUCTION DOCUMENTS. CORRECTIONS OR COMMENTS MADE ON THE SUBMITTALS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE PLANS, GENERAL NOTES OR SPECIFICATIONS. APPROVAL OF A SPECIFIC ITEM SHALL NOT INCLUDE APPROVAL OF AN ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT THE JOBSITE; INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESSES OR TO THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION; COORDINATION OF THE WORK WITH THAT OF ALL OTHER TRADES AND PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER.

C. THE USE OF REPRODUCTIONS OR ELECTRONIC FILES OF THE STRUCTURAL DRAWINGS FOR THE PREPARATION OF SHOP DRAWINGS IS NOT ACCEPTABLE WITHOUT PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER OF RECORD. ALTERATION OF A SEALED DOCUMENTS WITHOUT PROPER NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN OFFENSE OF THE ENGINEERING PRACTICE ACT.

- 1. IF SUCH AUTHORIZATION IS OBTAINED, DO NOT SUBMIT SHOP DRAWINGS WITH THE CONTRACT DOCUMENT TITLE BLOCK AND/OR THE SEAL OF THE REGISTERED ENGINEER OF RECORD AFFIXED. COSTS FOR PREPARATION OF STRUCTURAL SHOP DRAWINGS SHALL BE INCLUDED IN THE BID PRICE ASSUMING THAT REPRODUCTIONS OR ELECTRONIC FILES OF THE STRUCTURAL DRAWINGS WILL NOT BE AVAILABLE.

GENERAL STRUCTURAL NOTES

D. OMISSION FROM THE SUBMITTALS OF ANY REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF COMPLYING WITH THE OMITTED REQUIREMENTS, EVEN IF THE SUBMITTALS HAVE BEEN REVIEWED AND RETURNED.

E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DELAYS CAUSED BY REJECTION OF INADEQUATE OR INCORRECT SUBMITTALS.

F. SUBMITTALS THAT ARE NOT SPECIFICALLY REQUIRED BY THE GENERAL NOTES OR SPECIFICATIONS WILL NOT BE REVIEWED OR RETURNED.

G. COMPLY WITH THE SUBMITTAL PROCEDURES ESTABLISHED IN OTHER PARTS OF THE CONTRACT DOCUMENTS. AS A MINIMUM, PREPARE AND SUBMIT A STRUCTURAL SUBMITTAL SCHEDULE IN CHRONOLOGICAL ORDER OF SUBMITTALS PRIOR TO THE BEGINNING OF THE STRUCTURAL SUBMITTAL PROCESS.

4. EXISTING CONDITIONS

A. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO PREPARING THE SHOP DRAWINGS AND STARTING CONSTRUCTION.

B. THE CONTRACTOR SHALL SUBMIT PLANS, SECTIONS AND DETAILS TO THE ARCHITECT SHOWING THE FIELD VERIFIED EXISTING DIMENSIONS AND CONDITIONS.

C. INFORM THE ARCHITECT IMMEDIATELY IF MODIFICATIONS TO THE DESIGN ARE REQUIRED DUE TO FIELD VERIFIED DIMENSIONS AND CONDITIONS.

5. CODES & DESIGN SPECIFICATIONS

A. BUILDING CODE: IBC 2012.

B. STRUCTURAL STEEL: THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, AISC 360-05.

C. STRUCTURAL CONCRETE: THE AMERICAN CONCRETE INSTITUTE, ACI 318-11, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE".

D. ACI BUILDING CODE REQUIREMENTS FOR MASONTY STRUCTURES, ACI 530-05, ACI SPECIFICATION FOR MASONRY STRUCTURES, ACI 530.1-05

E. AISI STANDARD NORTH AMERICAN SPECIFICATION FOR DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, 2001 EDITION WITH 2004 SUPPLEMENT

6. DESIGN LOADS

A. DEAD LOADS: DEAD LOADS INCLUDED IN THE DESIGN CONSIST OF THE WEIGHT OF ALL MATERIALS SUCH AS STRUCTURAL MEMBERS, CEILINGS, WALLS, PARTITIONS, ETC. AS WELL AS FIXED EQUIPMENT INCORPORATED INTO THE BUILDING OR STRUCTURE.

- B. LIVE LOADS: 1. ROOF 20 PSF 2. GROUND FLOOR SLAB-ON-GRADE 150 PSF

C. NOTIFY THE ARCHITECT AND ENGINEER OF ANY CHANGES IN THE NUMBERS, LOCATIONS OR SIZES OF MECHANICAL UNITS FROM WHAT IS SHOWN IN THE MECHANICAL DRAWINGS, INCLUDING CONCRETE PADS, IF ANY. THE CAPACITY OF THE STRUCTURE MUST BE CHECKED FOR CHANGES IN MECHANICAL LOADINGS.

D. WIND LOAD: 1. WIND LOADS SHALL BE DETERMINED IN ACCORDANCE WITH THE LATEST EDITION OF ASCE 7.

- A. WIND SPEED 140 MPH B. EXPOSURE FACTOR C C. IMPORTANCE FACTOR 1.15

7. SUBSURFACE PREPARATION

A. GENERAL:

- 1. A SUBSURFACE SOIL INVESTIGATION HAS BEEN MADE BY EUSTIS ENGINEERING SERVICES, L.L.C., PROJECT NO. 22750. A REPORT OF THAT INVESTIGATION DATED FEBRUARY 11, 2015 IS AVAILABLE FOR VIEWING AT THE OFFICE OF THE ARCHITECT. ADDITIONAL INFORMATION CONCERNING SPECIFIC SOIL CONDITIONS TO BE ENCOUNTERED IS AVAILABLE IN THE SOILS REPORTS AND SHOULD BE REVIEWED.

B. SITE PREPARATION:

- 1. SITE DRAINAGE DURING CONSTRUCTION:

- A. CONTRACTOR TO ESTABLISH ADEQUATE TEMPORARY DRAINAGE TO PREVENT PONDING OF WATER AND ENSURE IMMEDIATE RUNOFF OF RAINFALL. B. CONTRACTOR TO MAINTAIN ADEQUATE SURFACE DRAINAGE AWAY FROM ALL FOUNDATION AREAS.

- 2. DEMOLITION (IF REQUIRED):

- A. CONTRACTOR TO DEMOLISH AND REMOVE FROM SITE ALL EXISTING PAVEMENTS AND STRUCTURES LOCATED WITHIN THE PROPOSED CONSTRUCTION AREA. REMNANT FOUNDATIONS OR ABANDONED PIPES SHOULD BE EXCAVATED AND REMOVED FROM THE SITE.

- 3. CLEARING AND STRIPPING:

- A. THE EXISTING GROUND SURFACE BENEATH THE PROPOSED BUILDING SLAB SHOULD BE STRIPPED OF VEGETATION, DEBRIS, ORGANIC MATTER, AND ANY OTHER DELETERIOUS MATERIALS. B. STRIPPING SHOULD BE TO A DEPTH NECESSARY TO REMOVE WEAK SURFICIAL SOILS AND REACH FIRM UNDISTURBED SOIL. THE EXACT DEPTH OF STRIPPING SHOULD BE DETERMINED DURING CONSTRUCTION BY IMPLEMENTING QUALITY CONTROL MEASURES DURING PROOFROLLING, COMPACTION AND EXCAVATION. C. SIMILAR EXCAVATIONS WOULD BE REQUIRED AT STUMPS. D. CLEARING AND GRUBBING SHOULD ALSO COMPLY WITH SECTION 201 OF THE MSSRBC. E. EXCAVATED SOILS MAY BE STOCKPILED FOR LATER USE IN LANDSCAPING, BUT THESE SOILS SHALL NOT BE USED BENEATH THE FOOTPRINT OF THE PROPOSED BUILDING OR ANY GRADE SUPPORTED STRUCTURE.

- 4. SUBGRADE PREPARATION:

- A. AFTER DEMOLITION, STRIPPING, CLEARING, AND EXCAVATION OPERATIONS, THE EXPOSED SURFACE SHOULD BE SCARIFIED TO A DEPTH OF 6 INCHES AND RECOMPACTED. B. THE SCARIFIED SURFACE SHOULD BE RECOMPACTED TO A MINIMUM DENSITY CORRESPONDING TO 95% OF ITS MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 1557. C. ANY LOCALIZED DEPRESSIONS, STUMP HOLES, AREAS DISTURBED BY EXISTING FOUNDATIONS, OR OTHER WEAK AREAS IDENTIFIED BY PROOFROLLING SHOULD BE THOROUGHLY CLEANED OUT TO THE SURFACE OF FIRM UNDISTURBED SOIL AND BACKFILLED WITH A SELECT STRUCTURAL FILL MATERIAL AND PLACED AND COMPACTED UNDER CONTROLLED CONDITIONS. D. ALL CLEARING AND COMPACTION OPERATIONS SHOULD BE PERFORMED ONLY DURING PERIODS OF DRY WEATHER.

GENERAL STRUCTURAL NOTES

C. STRUCTURAL FILL:

- 1. SAND FILL: A-3 (AASHTO SOIL CLASSIFICATION SYSTEM)

Table with 2 columns: SIEVE SIZE and PERCENT PASSING BY WEIGHT. Rows include NO. 10, NO. 40, NO. 200, PLASTICITY INDEX, USUAL TYPES OF SIGNIFICANT CONSTITUENT MATERIALS.

- 2. COMPACTION REQUIREMENTS:

SUBGRADE SOILS AND STRUCTURAL FILL MATERIAS SHALL BE COMPACTED TO THE FOLLOWING PERCENTAGES OF THE ASTM D1557 MAXIMUM DRY DENSITY AT +/- 2% OPTIMUM MOISTURE CONTENT:

Table with 2 columns: MATERIAL and MINIMUM PERCENT COMPACTION. Rows include STRUCTURAL FILL, SUBBASE FOR SLAB SUPPORT, SUBGRADE BELOW STRUCTURAL FILL, MISCELLANEOUS BACKFILL.

STRUCTURAL FILL TO BE PLACED IN LIFTS OF 6 TO 8 INCHES LOOSE MEASURE.

D. CHEMICAL STORAGE TANK BEDDING

- 1. EXCAVATION FOR TANK TO BE SUFFICIENT DEPTH TO ALLOW FOR BEDDING AND COVER. EXCAVATION BOTTOM MUST BE CLEAR OF ALL DEBRIS, WATER, MUCK AND LOOSE SOIL.

- 2. MINIMUM 18 INCH THICKNESS OF CRUSHED STONE BEDDING LAYER TO BE PLACED OVER GEOTEXTILE FABRIC FOR CONSTRUCTION BENEATH HE TANK. THE COMPACTED BEDDING MATERIAL TO EXTEND UPWARDS FROM THE EXCAVATION BOTTOM ALONG THE HAUNCHES AND SIDES OF THE TANK UP TO THE MIDDPOINT OF THE TANK WALLS. THE IN SITU SAND OR SELECTED SAND FILL MAY BE USED FOR BACKFILL BETWEEN THE SIDEWALLS OF THE EXCAVATION AND THE OUTER EDGES OF THE TANK.

- 3. CRUSHED STONE BEDDING TO CONFORM TO REQUIREMENTS OF SECTION 603.03.2 OF MSSRB. THE CRUSHED STONE TO BE PLACED IN LIFTS OF 6 TO 8 INCHES LOOSE MEASURE AND COMPACTED TO 95% OF ITS MAXIMUM DR DENSITY DETERMINED IN ACCORDANCE WITH ASTM D 698.

8. TIMBER PILES

A. TIMBER PILES TO MEET CURRENT AMERICAN WOOD PRESERVERS ASSOCIATION STANDARDS AS OUTLINED IN SECTION 719 OF THE MSSRB FOR BOTH PRESERVATIVE AND QUALIT ASSURANCE. TREATMENT SHALL FOLLOW SECTION 812.06 WHERE APPLICABLE.

B. TIMBER PILES TO MEET QUALITY (CLEAN PEEL, STRAIGHTNESS, ETC.) REQUIREMENTS OUTLINED IN ASTM D25 AND SIZE REQUIREMENTS OUTLINED IN TABLE X1.5 OF ASTM D 25 FOR MINIMUM PILE TIPS.

C.

Table with 2 columns: PILE DIAMETER and PILE TIP EMBEDMENT BELOW EXISTING GROUND SURFACE. Rows include 7 INCH TIP, 12 INCH BUTT.

D. ACCURATE RECORDS ARE TO BE KEPT DURING ALL PILE DRIVING OPERATIONS. THE DRIVING RECORD SHOULD INCLUDE THE DATE, PILE TYPE, OVERALL LENGTH, PILE SIZE (TIP AND BUTT DIAMETER), FINAL EMBEDMENT BELOW FINISH GRADE, NUMBER OF BLOWS PER FOOT OF PENETRATION, HAMMER MODEL, DRIVING ENERGY, AND DEPTH AND DIAMETER OF PREDRILL.

E. IF A DROP HAMMER OR SINGLE ACTING AIR HAMMER IS USED, THE RAM WEIGHT SHALL NOT EXCEED 3,000 POUNDS AND THE DROP HEIGHT SHALL NOT EXCEED 3 FEET. TIMBER PILES SHOULD BE DRIVEN NO HARDER THAN 25 BLOWS PER FOOT.

F. PREDRILL ALL PILES WITH A DIAMETER NO LARGER THAN THE TIP DIAMETER OF THE PILES. PREDRILL TO A DEPTH OF 20 FEET BELOW EXISTING GRADE

G. LOCATIONS OF PILE CENTERLINES NOT SHOWN ON PLANS OR IN THE SECTIONS AND DETAILS AND SHALL BE LOCATED AS FOLLOWS:

- 1. COLUMN SPREAD FOOTING - INTERSECTION OF GRIDLINES BELOW AT CENTER OF COLUMN 2. GRADE BEAMS - CENTERLINE OF THE GRADE BEAM

9. CAST-IN-PLACE CONCRETE

A. CONSTRUCTION JOINTS:

1. EXCEPT AS OTHERWISE SPECIFICALLY INDICATED ON THE DRAWINGS, EACH CONCRETE ELEMENT SHALL BE CONSIDERED AS A INDIVIDUAL UNIT, AND ALL CONCRETE SHALL BE PLACED CONTINUOUSLY IN ORDER THAT SUCH UNIT WILL BE MONOLITHIC IN CONSTRUCTION. THEREFORE:

- A. CAST ALL INTERSECTIONS OF THE VARIOUS CONCRETE ELEMENTS, SUCH AS SLABS AND GRADE BEAMS, MONOLITHICALLY UNLESS POCKETS, BLOCKOUTS, OR KEYWAYS ARE SPECIFICALLY DETAILED IN THE DRAWINGS.

- 2. NOT USED

- 3. WATERSTOPS:

A. PROVIDE WATERSTOPS AT ALL SUBGRADE CONSTRUCTION JOINTS IN CONCRETE ELEMENTS WHERE THE EARTH SUBGRADE AT THE JOINT IS ON ONE SIDE OF THE CONCRETE MEMBER ONLY. PROVIDE WATERSTOPS AT OTHER LOCATIONS AS INDICATED IN THE DOCUMENTS.

4. PROVIDE SHEAR KEYS IN ALL CONSTRUCTION JOINTS IN BEAMS AND SLABS IN ACCORDANCE WITH THE TYPICAL DETAILS.

B. CONDUITS, PIPES AND SLEEVES

1. VARIOUS CONDUITS, PIPES AND SLEEVES WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS MAY BE REQUIRED BY EQUIPMENT SUPPLIERS OR THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. THE CONTRACTOR SHALL COORDINATE AND IMPLEMENT THESE ITEMS INTO THE CONCRETE WORK OBSERVING THE FOLLOWING GUIDELINES.

2. ALL CONDUITS, PIPES AND SLEEVES EMBEDDED IN CONCRETE SHALL COMPLY WITH ACI 318, SECTION 6.3, AND THESE SPECIFIC NOTES. THESE NOTES SHALL GOVERN WHERE THEY ARE IN CONFLICT WITH ACI.

- 3. HORIZONTAL CONDUITS AND PIPES EMBEDDED IN SLABS.

A. NO HORIZONTAL CONDUIT OR PIPE IS PERMITTED TO BE EMBEDDED IN THE SLAB WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT.

- 4. HORIZONTAL SLEEVES, CONDUITS OR PIPES EMBEDDED IN THE CONCRETE BEAMS.

- A. HORIZONTAL SLEEVES, CONDUITS OR PIPES SHALL PASS THROUGH AT RIGHT ANGLES TO THE SIDES OF BEAMS AND SHALL NOT BE PLACED LONGITUDINALLY WITHIN BEAMS. B. THE OUTSIDE DIAMETER OF HORIZONTAL SLEEVES, CONDUITS AND PIPES PASSING THROUGH BEAMS SHALL NOT BE GREATER THAN 8" OR 1/3 THE BEAM DEPTH, WHICHEVER IS SMALLEST.

GENERAL STRUCTURAL NOTES

C. PLACE SLEEVES, CONDUITS OR PIPES WITHIN THE MIDDLE THIRD OF THE BEAM DEPTH, 6 INCHES AWAY FROM ANY INTERSECTING MEMBERS.

D. THE CLEAR DISTANCE BETWEEN SLEEVE, CONDUITS AND PIPES SHALL NOT BE LESS THAN 3 OUTSIDE DIAMETERS OR 6 INCHES, WHICHEVER IS GREATER.

E. SLEEVES, CONDUITS OR PIPES MUST BE LOCATED WITH IN THE MIDDLE THIRD OF THE BEAM SPAN.

F. UNLESS NOTED OTHERWISE, PROVIDE THREE ADDITIONAL STIRRUPS AT 3" ON CENTER EACH SIDE OF EACH SLEEVE, CONDUIT OR PIPE. PLACE 2#5 BARS T&B, 2" CLEAR OF EACH SLEEVE, CONDUIT OR PIPE RUNNING HORIZONTALLY WITHIN THE BEAM. EXTEND THE 2#5 BARS 2'-6" EACH SIDE OF THE SLEEVE, CONDUIT OR PIPE.

G. VERTICAL SLEEVES, CONDUITS OR PIPES EMBEDDED IN THE CONCRETE BEAMS.

A. NO VERTICAL CONDUIT OR PIPE IS PERMITTED TO BE EMBEDDED IN THE CONCRETE BEAMS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT OR UNLESS SPECIFICALLY DETAILED OTHERWISE.

6. SLEEVES, CONDUITS OR PIPES, UNLESS SPECIFICALLY DETAILED IN THE STRUCTURAL DRAWINGS, ARE NOT ALLOWED IN PILASTERS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT.

D. UNLESS SPECIFICALLY NOTED OTHERWISE, THE TOP OF ALL CONCRETE SURFACES THAT SUPPORT PRECAST, MASONRY, ETC., SHALL HAVE A TROWELED FINISH AND BE FLAT AND LEVEL.

10. CONCRETE MIX CHARACTERISTICS

A. CONCRETE MIX CHARACTERISTICS SCHEDULE:

Table with 8 columns: 28 DAY STR. MIX (PSI), SLUMP (IN), MAX. WATER CEMENT RATIO, AGGR. TYPE, MAX. CURED DENSITY (PCF), MAX. AGGR. SIZE (IN), % AIR, LOCATION. Row 1: 4000, 3-5, .50, HDRK, 150, 1, 6, TYPICAL

B. SLUMP SPECIFIED IS THE PLACEMENT SLUMP. WORKABILITY ADMIXTURES MAY BE REQUIRED TO ACHIEVE THE REQUIRED PLACEMENT SLUMP.

C. AIR ENTRAINMENT

- 1. THE SPECIFIED AIR ENTRAINMENT FOR HARDROCK CONCRETE IS ONLY REQUIRED WHERE THE CONCRETE IS PERMANENTLY EXPOSED TO WEATHER LOCATIONS WHERE FREEZE THAW CYCLES CAN OCCUR IN CONJUNCTION WITH OCCASIONAL EXPOSURE TO MOISTURE. AT THESE LOCATIONS, OTHER SPECIFIED MIX CHARACTERISTICS IN ADDITION TO THE AIR REQUIREMENTS SHALL BE MODIFIED AS FOLLOWS: A. MAXIMUM WATER CEMENT RATIO SHALL BE AS SPECIFIED BUT SHALL NOT EXCEED .45 PERCENT. B. MINIMUM STRENGTH SHALL BE AS SPECIFIED BUT SHALL NOT BE LESS THAN 4,500 PSI. 2. INCLUDE THE SPECIFIED AIR ENTRAINMENT IN THE MIX DESIGN. 3. TOLERANCE ON AIR CONTENT AS DELIVERED SHALL BE PLUS OR MINUS 1.5 PERCENT. 4. AIR ENTRAINMENT CAN BE USED IN OTHER MIX DESIGNS AT THE CONTRACTORS OPTION.

D. ADMIXTURES USED IN THE CONCRETE MIX MUST BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL BE INCLUDED IN THE SUBMITTED CONCRETE MIX DESIGN FOR APPROVAL.

E. CEMENT SHALL BE TYPE I OR TYPE III (ASTM C 150).

F. FINE AND COARSE AGGREGATE SHALL COMPLY WITH ASTM C 33.

G. DO NOT USE FLY ASH IN ARCHITECTURALLY EXPOSED CONCRETE. FLY ASH IS ALLOWED IN ALL OTHER NON ARCHITECTURALLY EXPOSED CONCRETE. THE WEIGHT OF THE FLY ASH SHALL BE ADDED TO THE WEIGHT OF THE CEMENT IN THE CALCULATION OF THE WATER CEMENT RATIO. THE CONTRACTOR SHALL CONFIRM IN WRITING THAT THE USE OF FLY ASH WILL NOT INTERFERE WITH THE PERFORMANCE OF OTHER PRODUCTS AND MATERIALS THAT WILL BE IN CONTACT WITH THE CONCRETE.

H. DO NOT PLACE CONCRETE WITH SLUMP AND TEMPERATURE OUTSIDE THE LIMITS PROVIDED ON THE APPROVED MIX DESIGNS.

I. CHANGING MATERIAL PROPORTIONS, PROPERTIES, SOURCES, COMBINATIONS, ADDITIONS OR ANYTHING WHICH IS A CHANGE IN THE APPROVED MIX DESIGN REQUIRES A NEW MIX DESIGN SUBMITTAL.

11. CONCRETE SLAB ON GRADE

A. BUILDING SLAB SHALL BE 5 INCHES THICK AND REINFORCED WITH #3 BARS @ 12" ON CENTER EACH WAY. REINFORCING SHALL BE PLACED AT 1 1/2" CLEAR FROM THE TOP OF THE SLAB.

B. PORCH SLAB SHALL BE 5 INCHES THICK AND REINFORCED WITH 6X6 W4.0/4.0 WELDED WIRE MESH. REINFORCING SHALL BE PLACED AT 1 1/2" CLEAR FROM THE TOP OF THE SLAB.

C. PLACE VAPOR BARRIER/RETARDER AS SPECIFIED IMMEDIATELY BENEATH THE BUILDING SLAB AND GRADE BEAMS OVER COMPACTED FILL.

C. SLAB-ON-GRADE CONSTRUCTION AND CONTROL JOINTS: 1. SEE DRAWINGS FOR LOCATIONS AND TYPE. THE CONTRACTOR SHALL SUBMIT A DRAWING SHOWING THE LOCATION OF ALL PROPOSED CONSTRUCTION JOINTS TO THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO PLACING THE CONCRETE.

12. CONCRETE REINFORCEMENT

A. ALL REINFORCING STEEL SHALL BE FABRICATED AND PLACED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-08), AND DETAILS AND DETAILING OF CONCRETE REINFORCEMENT (ACI 315-99)

B. REINFORCING BARS SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL, CONFORMING TO ASTM A 615, GRADE 60. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60; EXCEPT STIRRUPS, TIES, AND INDICATED FIELD BENT BARS, WHICH SHALL CONFORM TO ASTM A615 GRADE 40.

C. TENSION AND COMPRESSION LAPS IN REINFORCING SHALL BE IN ACCORDANCE WITH ACI 318, CHAPTER 12. THE MINIMUM LAP SHALL BE MADE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS:

- 1. CONTINUOUS CONCRETE GRADE BEAMS: ALL BARS 30 BAR DIAMETERS (18" MINIMUM) 2. SLABS-ON-GRADE: ALL BARS 30 BAR DIAMETERS (18" MINIMUM)

D. ALL HORIZONTAL REINFORCING IN FOOTINGS, WALLS AND BEAMS SHALL BE CONTINUOUS AROUND CORNERS OR HAVE BENT (CORNER) BARS OF THE SAME SIZE AND SPACING AS THE HORIZONTAL BARS AND LAP 30 BAR DIAMETERS (24" MINIMUM)

E. CONCRETE COVER FOR REINFORCING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED: 1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3" 2. CONCRETE CAST AGAINST FORMS BUT EXPOSED TO EARTH OR WEATHER: A. BARS LARGER THAN NO. 5: 2" B. BARS NO. 5 OR SMALLER: 1 1/2" 3. SLABS-ON-GRADE: 1 1/2" FROM TOP OF SLAB

F. FORM TIES SHALL BE EITHER OF THE THREADED OR STAP-OFF TYPE SO THAT NO METAL WILL BE LEFT WITHIN 1 INCH OF THE SURFACE OF THE WALL. FOLLOWING REMOVAL OF FORM TIES, RECESSES ARE TO BE CAREFULL FILLED AND POINTED WITH MORTAR.

G. REINFORCING SHALL NOT BE TACK WELDED OR WELDED IN ANY MANNER UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL PLANS.

H. BAR SUPPORTS AND SPACERS FOR REINFORCING SHALL BE PROVIDED IN ACCORDANCE WITH ACI 315-99. REINFORCING SHALL BE SECURELY TIED TO SUPPORTS.

I. CHAIRS WITH 22 GAGE SAND PLATES OR PRECAST BLOCKS SHALL BE PROVIDED FOR ALL REINFORCING OF CONCRETE IN CONTACT WITH GRADE.

J. DECK CHAIRS SHALL BE PROVIDED FOR ALL WELDED WIRE FABRIC IN SLABS.

FOR CONSTRUCTION

Table with 2 columns: Revisions, Date. Includes a grid for tracking changes.

Table for Consultants with columns for Name, Title, and Date.



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Table for Approved signatures: PROGRAM MANAGER, PROJECTS; SAFETY/INDUSTRIAL HYGIENE; HEALTH SYSTEM SPECIALIST; MAINTENANCE SUPERVISOR; MAINTENANCE FOREMAN.

Table for Drawing Title: STRUCTURAL NOTES, and approved signatures for Service Engineer and Service Director.

Table with project information: Project Title (VA Gulf Coast Decontamination Unit), Date (6/30/2015 4:24:37 PM), Project No. (520-13-136), Building Number (XX), Checked (MP), Drawn (IP), Location (VAMC BILOXI, MS), Drawing No. (S001), Dwg. Of.

