In cold weather conditions, mixing, placing, finishing, curing and protection of concrete shall be performed in accordance with the latest edition of ACI 306R, Cold Weather Concreting.

In hot weather conditions, mixing, placing, finishing, curing and protection of concrete shall be performed in accordance with the latest edition of ACI 305R, Hot Weather Concreting.

Use of construction joints at locations other than those indicated on the drawings shall be submitted to the Structural Engineer for approval.

Normal weight concrete shall be used in the following areas and shall have the properties as shown below:

Max.Water/ Maximum Percent Design Cement Allowable Entrained Comproval.

Ratio Streng Unless shown or noted slabs-on-grade at a rail column loc and to create square c side ratio of 1.5 to 1. Unless shown or nated otherwise, all new concrete slabs on grade shall be 4" thick, on 6 mil vapor barrier over 4" (minimum) compacted granular fill, reinforced with 6x6 - W1.4 x W1.4 welded wire fabric. Normal weight aggregates shall conform to ASIM CO...

Normal weight aggregates shall conform to ASIM C494.

Water-reducing admixtures shall conform to ASIM C260 and shall Air-entraining admixtures shall conform to ASIM C260 and shall by the manufacturer to be compatible with other admixtures. Slabs on grade shall receive a smooth trowel finish, and be placed to achieve the following minimum tolerances: Provide curing of concrete slabs immediately after finishing using a sprayed on dissipating-resin liquid curing compound conforming to ASTM C309. All scuffs or abrasions to the curing membrane shall be recoated daily. Other curing methods may be used with approval by the Structural Engineer. CONCRETE SLABS ON GRADE 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. Slabs on grade shall be constructed in accordance with the latest edition the <u>Guide for Concrete Floor and Slab Construction</u> (ACI 302.1R). HOP DRAWING SUBMITTALS ement shall conform to ASTM C150, Type I.

y ash shall conform to ASTM C618, Class C or F. The ratio of the amount y weight) of fly ash to the amount of portland cement in the mix shall it exceed 25 percent.

signal weight aggregates shall conform to ASTM C33.

ater-reducing admixtures shall conform to ASTM C494. ixing, transporting, and placing of concrete shall conform to the latest lition of the <u>Specifications for Structural Concrete for Buildings</u> (Cl. 301). Ready-mixed concrete shall conform to the requirements ASTM C94. In case of a discrepancy, the plans and specifications shall \* Minimum cement content = 6 sacks (564 lbs) per cubic yard.
\*\* Minimum cement content = 5 sacks (470 lbs) per cubic yard.
\*\*\* Maximum slump = 4 inches if plasticizers are not used,
= 3 inches prior to addition of plasticizers.
Note: Slump for pumped concrete shall be measured at point of undation conditions noted during construction, which differ from those scribed in the geotechnical report shall be reported to the Structural gineer before further construction is attempted. inforced concrete has been designed in accordance with the <u>Building</u> de Requirements for Structural Concrete (ACI 318) and Commentary (ACI 3R). rance Platforms, bs on grade shop drawings shall be reviewed by the contractor prior to submittal to Structural Engineer. Drawings submitted without Contractor's review be returned unchecked. CRETE MIX DESIGN SUBMITTAL

contractor shall submit for the review of the Structural Engineer a mign for each proposed class of concrete. Each mix design shall be itified by a mix number or other unique identification. The contractor II not vary from the mix designs nor use any concrete other than the roved mix designs without the approval of the Structural Engineer. design submittals shall include the following information: re new work is to be fitted to old work, the Contractor shall check insions and conditions in the field, and report any errors or repancies to the Structural Engineer prior to the fabrication and tion of any new members. dations have been designed for a net allowable bearing pressure 2000 psf. Actual allowable bearing pressure shall be verified prior to 2000 psf. Actual allowable bearing pressure shall be verified prior to 2000 psf. Actual allowable bearing pressure shall be verified prior to 2000 psf. Actual soils related work shall be inspected by a licensed echnical Engineer. Written field reports shall be forwarded to the ctural Engineer as soon as they become available. nit one reproducible copy and one blue line copy of shop drawings to the ctural Engineer for approval, for each of the following items: Ig water proportion and source.
Is reinforcement dosage(when used), product name and manufary
In 18-day compressive strength (fc).
In 18-day compressive strength (fc).
In 18-day compressive strength test data in accordance that analysis of laboratory strength test data in accordance and Deviation determination outlined in ACI 318. FF = 25, FL = 15 FF = 15, FL = 10 0.45 0.45 0.50 e detailed shop drawings to enable him struct all parts of the work in accordance with ons. These shop drawings will be reviewed for design intent only. The Contractor is response and fit of work. wable bearing pressure shall be verified prior to 6(+/-1) n/a d on the Concrete masonry shall consist of hollow units conforming to the requiremer of ASTM C90, with a minimum net area compressive strength of 1900 psi. Concrete masonry assemblages shall have a minimum compressive strength (fm) of 1,500 psi at 28 days.

Mortar shall be type type S proportioned in accordance with ASTM C270. When the ambient temperature is expected to fall below 40 degrees during the course of a concrete pour or subsequent curing process, an additional set of concrete test cylinders shall be made and tested. These cylinders shall be stored immediately adjacent to, and cured under the same conditi as the building concrete. Special curing boxes are not permitted for these test cylinders. Make one set of test cylinders in accord pour and for each 100 cubic yards. Eactested at 7 days, 2 specimens tested at in reserve to be tested at the direction of Spare cylinder may be discarded 56 day otherwise by the Structural Engineer. In protected against freezing. CONCRETE TESTING ייייי ייני masonry has been designed in accord the Indiana Building Code <u>Building Code Requirs tructures</u> (ACI 530). Velded wire fabrīc s labs on Grade: inless otherwise shown or noted, provide inframed openings in concrete walls and he sides of the opening and extend 24" l onsion anchors shall not be installed in concrete until it has specified minimum 28 day compressive strength. NOTES:

1. EMBED ADHESIVE ANCHOR BOLTS A MINIMUM C
2. SEE 2/SO.1 FOR HOOKED ANCHOR BOLTS.
3. PROVIDE 1/2" CAP PLATES W/ 4 - 3/4" A325 BOOF COLUMNS, UNLESS NOTED OTHERWISE. 9-gauge galvanized steel wire joint reinforcement in all masonry iction. Reinforcement shall be continuous and be lapped eight incles. Cut reinforcement at all control and expansion joints. Space sement at 8" on center for parapets and below ground floor elevatives space reinforcement at 16 inches on center. a non-metallic, shrinkage resistant (when tested in the latest edition of ASTM C827 or CRD-C621), premixed, non-staining product containing Portland Cement, silica sands, spensating agents and fluidity improving compounds. Grout shall im compressive strength (fc) of 5,000 psi in 28 days. COLUMN SCHEDULE 2-#5 bars (one each face) around grade beams. Place bars parallel to beyond corners. d, welded, heated or cut unless approved by the Structural Eng tioned in accordance with all conform to ASTM C404. I-lift, where fine grout shall approved with the n Class "B" lap. 4 - ¾ ø ADHESIVE
4 - ¾ ø HOOKED
4 - ¾ ø HOOKED
4 - ¾ ø HOOKED
4 - ¾ ø ADHESIVE
4 - ¾ ø ADHESIVE
4 - ¾ ø ADHESIVE
2 - ¾ ø ADHESIVE ANCHOR BOLTS NOTES tructural steel noted to be galvanized shall onformance with ASTM A123. elding procedures shall conform to the latest edition of the American elding Society's Structural Welding Code for Steel ANSI/AWS D1.1. ructural steel shall be shop-painted with a rust inh ited otherwise on the drawings. Coordinate primer r steel to remain exposed or to receive finish paint 3s noted otherwise, provide  $\sqrt[3]8$ x7"x7" bearing plates w/ 2 -  $\sqrt[1/2]9$  x 4" headed is for all joists and beams bearing on masonry walls (masonry contractor stall). abrasions to the shop finish shall be touched-up after erection is splete. For painted steel, use a primer equivalent to the shop paint. galvanized steel, use a zinc-rich cold-galvanizing paint. ign connections not shown in accordance with the latest AISC cification and Manual of Steel Construction. Design beam connections not wn, to support one-half the total uniform load-carrying capacity of the m. Provide no less than 2 bolts in any single line of bolts, ess specifically indicated on the drawings. re columns are not framed in at least two directions with steel beams joist at or nearest each column line shall be bolted to supporting nbers during erection.

I joists shall be supplied with a shop coat of rust-inhibitive primer to Coordinate primer paint with the Architect for joists to remain used or to receive finish paint. ctural pipe shall conform to ASTM A53, Grade B. de L3x3x1/4 framed openings for all roof penetrations larger tha ches along any side, unless larger framing is indicated. Refer to anical drawings for penetrations. Coordinate framed opening sizions with the Mechanical Contractor. <u>JOISTS</u>

joists shall be designed, fabricated, erected and braced in dance with the latest Steel Joist Institute (SJI) specifications. uilding structure ha a Building Code. Seismic Zone - 1
 Seismic zone factor (Z) - 0.075
 Seismic importance factor (I) - 1.0 Basic wind speed - 75 mph
 Wind load importance factor (I)
 Wind exposure - B ign Data (UBC) 30 psf (or Varies es shall conform to ASTM A572, Grade 50. I shapes other than wide-flange shapes iss noted otherwise. MARK WALL / LINTEL CMU / PRECAST LINTELS BRICK/ STEEL LINTELS CMU / BOND BEAM LINTELS (8" AND WIDER CMU WALLS ONLY) NOTES:

1. PROVIDE LINTELS AS INDICATED ABOVE, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

2. BEAR LINTELS A MINIMUM OF 8" ONTO WALL AT EACH END.

3. STEEL LINTELS IN EXTERIOR WALLS SHALL BE HOT-DIP GALVANIZED.

4. CONCRETE fc = 4000 PSI FOR PRECAST LINTELS.

5. FOR PRECAST LINTELS, USE 2 - 4"x8" UNITS AT 8" WALLS, 1 - 4"x8" UNIT AND 1 - 6"x8" UNIT FOR 10" WALLS, 3 - 4"x8" UNITS FOR 12" WALLS.

6. LINTELS FOR 8" AND LARGER CMU WALLS MAY BE EITHER PRECAST OR BOND BEAM AT CONTRACTOR'S OPTION, UNLESS NOTED OTHERWISE. 1½" CLR. TYP. 2'-0"x 3'-0"x 1'-0" 3'-0"x 3'-0"x 1'-0" 3'-0"x 6'-0"x 2'-0" FTG. SIZE x 5'-9" x 1'-3" ibiting primer, unless paint with the Archite FOOTING section of the chord excess of 200 pounds lied without prior LINTEL UP TO 5'-4" UP TO 4'-0" CLEAR OPENING 4'-0" TO 8'-0" 5'-4" TO 8'-0" 3 -#5 LONG WAY
4 -#5 SHORT WAY
4 -#5 EA. WAY
7 -#6 LONG WAY
7 -#6 SHORT WAY
7 -#5 LONG WAY
6 -#5 SHORT WAY SCHEDULE REINFORCE JOIST IF HANGING LOAD IS MORE THEN 4" FROM PANEL POINT. ¾x16" SMOOTH BAR @ 24" O.C. SCHEDUL REINF. SECTION 16" HIGH WITH 2 - #5 8" HIGH WITH 2 - #5 CONT. 4" x 8" OR 6" x 8" PRECAST LINTELS W/ 1 - #6 TOP & BOTTOM TYPICAL CONSTRUCTION JOINT COLUMN CONT. PROVIDE REINFORCING ANGLES AS SHOWN AT ALL CONCENTRATED LOADS GREATER THAN 400 LBS. WHICH ARE MORE THAN 4" FROM A JOIST PANEL POINT. HANGING LOAD  $\sum_{i}$ REINFORCING **10SI** 2 MARK SEE PLAN ATION GRADE ROOFTOP LOAD WALL SIZE (W × D) JOIN SINIOF FOOTING SCHEDULE (FO CONTROL CE JOIST IF ROOFTOP MORE THEN 4" FROM OINT. OOF JOIST TSION R OPENINGS 12" AND LARGER ) JOIST OR BEAM SPACING PER PLAN OPENING JOIST OR BEAM PER PLA 3 S0.1 DETAIL - ROOF OPENING S0.1 S0.1 SEE PLAN **YPICAL** FOR ADDITIONAL JOIST REINF. SEE
"TYPICAL JOIST REINFORCEMENT AT
ROOF TOP MECHANICAL UNIT CURB
DETAIL" REMARKS WELDING PATTERN DETAIL TYPICAL 7 S0.1 - CONT. CONC. FTG. SEE PLAN FOR SIZE & REINF. COLUMN SCALE: NONE STEPPED NOTES:

1. WELD THROUGH MULTIPLE SHEETS AT ALL END AND SIDE LAPS.

2. END LAPS SHALL OCCUR ONLY AT SUPPORT POINTS.

3. MINIMUM 3-SPAN CONDITION AT ALL POSSIBLE LOCATIONS. MARK ROOF PIER SIZE BASE **FOOTING** PIER 1'-0 MIN. 2'-0" LAP MINIMUM THICKENED SLAB A Z SCHEDULE PASHIO TEX SIDELAN SO, SECTION × 4 8" TYP. STEP DETAIL -2-#5 CONT. (LAP 24") - ANCHOR BOLTS PER COLUMN
SCHEDULE.
(9" EMBEDMENT FOR HOOKED BOLTS)
(6" EMBEDMENT FOR ADHESIVE
ANCHORS, U.N.O.) S0.1 T/FTG. EL.
PER PLAN 2000 S0.1 S0.1 5.01 S0.1 State of Sta AMERICAN CONSULTING, INC.

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Architects

Consultants

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