

STRUCTURAL ABBREVIATIONS

GENERAL NOTES FOR REINFORCED CONCRETE AND FOUNDATIONS

GENERAL NOTES FOR STRUCTURAL STEEL

AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	N.F.	NEAR FACE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	N.I.C.	NOT IN CONTRACT
ARCH.	ARCHITECTURAL	NO.	NUMBER
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	N.T.S.	NOT TO SCALE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	N.W.	NORMAL WEIGHT
AWS	AMERICAN WELDING SOCIETY		
BM.	BEAM	O.C.	ON CENTER
B., BOT.	BOTTOM	OPH.	OPPOSITE HAND
		OPNG.	OPENING
		PL., P	PLATE
		PSF	POUNDS PER SQUARE FOOT
		PSI	POUNDS PER SQUARE INCH
C.C.	CENTER	R	RADIUS
CL	CENTERLINE	REINF.	REINFORCEMENT
C.I.P.	CAST IN PLACE	REQ.	REQUIREMENT
CLR	CLEARANCE	R.O.	ROUGH OPENING
COL.	COLUMN		
CONC	CONCRETE		
CONN	CONNECTION	SCHED.	SCHEDULE
CONSTR. J.	CONSTRUCTION JOINT	SECT.	SECTION
CONT.	CONTINUOUS	SH.	SHEET
		SIM.	SIMILAR
		S.O.G.	SLAB ON GRADE
		SPEC.	SPECIFICATIONS
DET.	DETAIL	SQ.	SQUARE
DIA., Ø	DIAMETER	SQ. FT.	SQUARE FOOT
DL	DEAD LOAD	STA.	STATION
DN	DOWN	STD.	STANDARD
DO	DITTO	STIFF.	STIFFENER
DWG	DRAWING	STIRRUP	STIRRUP
DWL	DOWEL		
		T & B	TOP AND BOTTOM
EA.	EACH	T.O.C.	TOP OF CONCRETE
E.F.	EACH FACE	T.S.D.	TOP OF STEEL DECK
E.W.	EACH WAY	T.O.F.	TOP OF FOOTING
EL., ELEV.	ELEVATION	T.O.SLAB.	TOP OF SLAB
EQ.	EQUAL	T.O.S.	TOP OF STEEL
EX., EXIST. (E)	EXISTING	T.O.W.	TOP OF WALL
EXP JT	EXPANSION JOINT	TYP.	TYPICAL
		U.N.O.	UNLESS NOTED OTHERWISE
FCO	FLOOR CLEANOUT		
F.D.	FLOOR DRAIN	V., VER.	VERTICAL
F.F.	FAR FACE	VAR.	VARIABLE, VARIES
FIN.	FINISH	VIF	VERIFY IN FIELD
FL.	FLOOR		
FDN.	FOUNDATION		
FT.	FOOT, FEET	W/	WITH
FTG.	FOOTING	W.P.	WORKING POINT
GR.	GRADE		
H., HOR.	HORIZONTAL		
H.S.B.	HIGH STRENGTH BOLT		
IN., "	INCHES		
JT.	JOINT		
KSF	KIPS PER SQUARE FOOT		
LL	LIVE LOAD		
L.L.H.	LONG LEG HORIZONTAL		
L.L.V.	LONG LEG VERTICAL		
LONGIT.	LONGITUDINAL		
MANUF.	MANUFACTURER		
MAX.	MAXIMUM		
MECH.	MECHANICAL		
MIN.	MINIMUM		
MISC.	MISCELLANEOUS		

1. STANDARD DETAILS  
THE DETAILS SHOWN ON THE STANDARD DRAWINGS SHALL BE USED WHERE APPLICABLE, UNLESS OTHERWISE NOTED OR DETAILED ON THE DESIGN DRAWINGS.

2. CODES AND SPECIFICATIONS  
A. CONCRETE DESIGN, MATERIALS AND CONSTRUCTION SHALL CONFORM TO ACI STANDARD, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318-99.  
B. STRUCTURAL DESIGN AND DESIGN LOADS SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE 2000 AND THE UNIFIED FACILITIES CRITERIA (UFC-1-200-01)  
C. DESIGN LOADS  
1. LIVE LOADS  
2. SEISMIC DATA  
SEISMIC ZONE 4  
SEISMIC ZONE FACTOR 0.40  
N<sub>a</sub>=1.0  
N<sub>v</sub>=1.2  
3. ROCK ANCHORS  
A. DESIGN LOAD: SEE SPECIFICATIONS FOR ADDITIONAL DESIGN REQUIREMENTS  
TELESCOPE PIER FOOTING: 40 KIPS  
RING FOOTING: 20 KIPS.  
B. USE GEOTECHNICAL REPORT FOR REFERENCE ONLY. DESIGN CRITERIA PROVIDED IN SPECIFICATIONS.

3. MATERIALS  
UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS, MATERIALS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:  
A. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A-615, GRADE 60.  
B. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.  
C. UNLESS OTHERWISE NOTED ON THE DRAWINGS, CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL NOT BE LESS THAN THE FOLLOWING:  
SLABS, FOOTINGS AND OTHER STRUCTURE CONCRETE \_\_\_\_\_ 4000 PSI  
SLABS ON GRADE \_\_\_\_\_ 4000 PSI  
LEAN CONCRETE OR BACKFILL \_\_\_\_\_ 2000 PSI  
D. ROCK ANCHORS \_\_\_\_\_ ASTM A722  
E. ANCHOR BOLTS \_\_\_\_\_ ASTM A307 GRADE C  
NUTS \_\_\_\_\_ ASTM A563 GRADE A  
WASHERS (PLAIN) \_\_\_\_\_ ANSI B18.22.1  
F. MISCELLANEOUS EMBEDDED STEEL \_\_\_\_\_ ASTM A36

4. CONSTRUCTION  
A. MINIMUM CONCRETE PROTECTION FOR REINFORCING STEEL IN CAST-IN-PLACE CONCRETE SHALL BE AT LEAST EQUAL TO THE BAR DIAMETER (EXCEPT FOR SLABS AND JOISTS), BUT NOT LESS THAN THE FOLLOWING:  
CONCRETE DEPOSITED AGAINST THE GROUND \_\_\_\_\_ 3 IN.  
SURFACES EXPOSED TO WEATHER OR IN CONTACT WITH GROUND AFTER REMOVAL OF FORMS:  
FOR BARS LARGER THAN #5 \_\_\_\_\_ 2 IN.  
FOR #5 BARS OR SMALLER \_\_\_\_\_ 1 1/2 IN.  
SURFACES IN CONTACT WITH FRESH WATER \_\_\_\_\_ 2 IN.  
SURFACES NOT EXPOSED TO WEATHER OR GROUND:  
SLABS AND WALLS \_\_\_\_\_ 3/4 IN.  
SUPPORT PEDESTALS \_\_\_\_\_ 1 1/2 IN.  
B. LAP SPLICES OF REINFORCING BARS SHALL BE AS SHOWN IN THE TABLE ON DRAWING  
C. LOCATION OF CONSTRUCTION AND OTHER JOINTS SHALL BE AS SHOWN ON THE DRAWINGS. ADDITIONAL JOINTS AND/OR CHANGES IN JOINT LOCATIONS SHALL BE AS APPROVED BY UNIVERSITY REPRESENTATIVE.  
D. CONSTRUCTION JOINTS SHALL BE PROVIDED WITH KEYS AS PER DRAWING.  
E. OUTSIDE CONCRETE WALKWAYS AND SLABS SHALL HAVE NON-SLIP COARSE BROOM FINISH. TOP OF PEDESTALS AND EQUIPMENT PADS TO BE GROUTED SHALL BE BRUSHED TO ROUGHEN THE SURFACE.  
F. CORNERS OF ALL NEW CONCRETE SURFACES SHALL BE CHAMFERED, SIZE 1/2 "x 1/2 " MIN. (U.N.O.)  
G. ANCHOR BOLT PROJECTIONS SHOWN ON THE DRAWINGS SHALL BE MEASURED FROM THE FACE OF ROUGH CONCRETE. ALL EQUIPMENT ANCHOR BOLT DIMENSIONS AND LOCATIONS SHALL BE VERIFIED BY CONTRACTOR FROM CERTIFIED VENDOR DRAWINGS PRIOR TO INSTALLATION.

5. FOUNDATIONS  
A. ALLOWABLE SOIL BEARING PRESSURES EXCAVATION & BACKFILL FOR FOUNDATIONS & STRUCTURES SHALL BE AS PER GEOTECHNICAL REPORT, PREPARED BY GEOMATRIX CONSULTANTS.  
B. ALL EXCAVATIONS SHALL BE CARRIED OUT UNDER DRY CONDITIONS, AND PROVISIONS SHALL BE MADE TO PREVENT THE BOTTOM OF ALL EXCAVATIONS FROM FLOODING AT ALL TIMES.  
C. BACKFILL MATERIAL, PLACING AND COMPACTION OF BACKFILL SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.  
D. SEE THE GEOTECHNICAL REPORT AND THE CONTRACT SPECIFICATIONS FOR SPECIAL REQUIREMENTS FOR EXCAVATION/BACKFILL AROUND EXISTING CONCRETE FOOTINGS.

1. STANDARD DETAILS  
THE DETAILS SHOWN ON THE STANDARD DRAWINGS SHALL BE USED WHERE APPLICABLE, UNLESS NOTED OTHERWISE OR DETAILED ON THE DESIGN DRAWINGS.

2. CODES AND SPECIFICATIONS  
A. A.I.S.C. SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.  
B. A.I.S.C. CODE OF STANDARD PRACTICE.  
C. STRUCTURAL WELDING CODE (AWS), D1.1

3. MATERIALS  
UNLESS OTHERWISE NOTED ON THE DESIGN DRAWINGS, MATERIALS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:  
A. STRUCTURAL STEEL W SHAPES \_\_\_\_\_ ASTM A992 FY (MIN)=50 ksi  
B. OTHER STRUCTURAL STEEL SHAPES, PLATES AND BARS \_\_\_\_\_ ASTM A36  
C. STRUCTURAL STEEL TUBING \_\_\_\_\_ ASTM A500 GR. B; FY=46 ksi  
D. HIGH STRENGTH BOLTS, NUTS AND WASHERS \_\_\_\_\_ ASTM A325  
E. UNFINISHED BOLTS AND SHOULDER BOLTS \_\_\_\_\_ ASTM A307 GR. A  
F. WELDING ELECTRODES \_\_\_\_\_ AWS A5.1 SERIES E70  
G. PIPE \_\_\_\_\_ ASTM A53 GR. B OR A500 GR. B

4. THE FABRICATION AND ERECTION OF ALL STEELWORK SHALL CONFORM TO THE CONTRACT SPECIFICATIONS AND DRAWINGS.

5. PAINTING AND GALVANIZING  
A. FOR DESCRIPTION OF PAINT SYSTEM(S) TO BE USED, SEE CONTRACT SPECIFICATIONS.  
B. CONTACT SURFACES OF STEEL TO BE EMBEDDED IN CONCRETE, GROUTED, OR FIELD WELDED SHALL NOT BE PAINTED OR GALVANIZED.  
C. SURFACES WITHIN TWO INCHES OF FIELD WELDS SHALL BE FREE OF PAINT AND OTHER MATERIALS THAT WOULD PREVENT PROPER WELDING OR PRODUCE OBJECTIONABLE FUMES DURING WELDING.  
D. SEE SPECIFICATIONS FOR TOUCH-UP PAINT.  
E. GUARDRAILS AND GRATING SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO ASTM 123.



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CHECKED					