

STRUCTURAL NOTES

I. GENERAL

- A. DRAWINGS AND SPECIFICATIONS REPRESENT FINISHED STRUCTURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION INCLUDING BUT NOT LIMITED TO SHORING AND TEMPORARY BRACING. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO ENSURE SAFETY OF ALL PERSONS AND STRUCTURES AT THE SITE AND ADJACENT TO THE SITE. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT, ENGINEER OR CONSTRUCTION MANAGER SHALL NOT RELIEVE THE CONTRACTOR OF SUCH RESPONSIBILITY.
- B. HOLES AND OPENINGS THROUGH WALLS AND FLOORS FOR DUCTS, PIPING AND VENTILATIONS SHALL BE COORDINATED BY THE CONTRACTOR WHO SHALL VERIFY SIZE AND LOCATION OF SUCH HOLES OR OPENINGS WITH THE MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS AND THESE SUB-CONTRACTORS.
- C. NO PIPES OR DUCTS SHALL BE EMBEDDED IN SLABS OR WALLS UNLESS SPECIFICALLY DETAILED OR APPROVED BY THE ARCHITECT.
- D. SEE DRAWINGS OTHER THAN STRUCTURAL FOR: KINDS OF FLOOR FINISH AND THEIR LOCATION, FOR DEPRESSIONS IN FLOOR SLABS, FOR OPENINGS IN WALLS AND FLOORS REQUIRED BY ARCHITECTURAL AND MECHANICAL FEATURES, FOR ROADWAY PAVING, WALKS, RAMPS, STAIRS, CURBS, ETC.
- E. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AT JOB SITE BEFORE COMMENCING WORK AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT.
- F. OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE DRAWINGS, NOTES, AND DETAILS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND RESOLVED BEFORE PROCEEDING WITH THE WORK.
- G. DO NOT USE SCALED DIMENSIONS; USE WRITTEN DIMENSIONS. WHERE NO DIMENSION IS PROVIDED, CONSULT THE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- H. WHERE MEMBER LOCATIONS ARE NOT SPECIFICALLY DIMENSIONED, MEMBERS ARE EITHER LOCATED ON COLUMN LINES OR EQUALLY SPACED BETWEEN MEMBERS ON COLUMN LINES OR BETWEEN MEMBERS OTHERWISE LOCATED.
- I. TYPICAL DETAILS ARE INTENDED TO APPLY TO APPLICABLE SITUATIONS UON. IN GENERAL, TYPICAL DETAILS ARE NOT SPECIFICALLY REFERENCED.
- J. IF CERTAIN FEATURES ARE NOT FULLY SHOWN OR CALLED FOR ON THE DRAWINGS OR SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS FOR SIMILAR CONDITIONS THAT ARE CALLED FOR OR SHOWN.
- K. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO CONSTRUCT THE HOSPITAL BUILDING IN ACCORDANCE WITH THE 2007 EDITION OF TITLE 24, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CHANGE ORDER DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY OSHPD BEFORE PROCEEDING WITH THE WORK.

II. EXISTING CONSTRUCTION

- A. WORK SHOWN IS EXISTING UNLESS NOTED AS NEW: (N).
- B. EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM EXISTING CONSTRUCTION DOCUMENTS AND SITE INVESTIGATION AND CAN BE USED FOR BIDDING PURPOSES. THE CONTRACTOR SHALL VERIFY ALL EXISTING JOB CONDITIONS, REVIEW ALL DRAWINGS AND VERIFY DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ALL DISCREPANCIES AND EXCEPTIONS BEFORE PROCEEDING WITH THE WORK. DRAWINGS FOR THE EXISTING CONSTRUCTION ARE AVAILABLE FOR REVIEW.
- C. THE REMOVAL, CUTTING, DRILLING, ETC. OF EXISTING WORK SHALL BE PERFORMED WITH GREAT CARE AND SMALL TOOLS IN ORDER NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE BUILDING. IF STRUCTURAL MEMBERS OR MECHANICAL, ELECTRICAL, OR ARCHITECTURAL FEATURES NOT INDICATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED AND PRIOR APPROVAL SHALL BE OBTAINED BEFORE REMOVAL OF MEMBERS.
- D. THE CONTRACTOR SHALL SAFELY SHORE EXISTING CONSTRUCTION WHEREVER EXISTING SUPPORTS ARE REMOVED TO ALLOW THE INSTALLATION OF THE NEW WORK. ALL SHORING METHODS AND SEQUENCES OF DEMOLITION SHALL BE SPECIFIED BY A LICENSED STRUCTURAL ENGINEER LICENSED IN THE STATE WHERE THIS PROJECT IS LOCATED, TO BE RETAINED BY THE CONTRACTOR. SEE SPECIFICATIONS FOR DETAILED REQUIREMENTS.
- E. THE CONTRACTOR SHALL PERFORM THE WORK WITH A MINIMUM OF INCONVENIENCE TO THE OWNER AND SO AS NOT TO INTERRUPT THE DAY TO DAY WORK OPERATIONS. THE CONTRACTOR SHALL ENSURE SAFE PASSAGE OF PERSONS AROUND AREAS OF CONSTRUCTION AND SHALL CONDUCT OPERATIONS TO PREVENT DAMAGE OR HARM TO THE FACILITIES AND PEOPLE. COORDINATE ALL OPERATIONS WITH THE OWNER OR HIS AGENT.
- F. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES BEFORE BEGINNING WORK. SPECIAL CARE SHALL BE TAKEN TO PROTECT UTILITIES THAT ARE TO REMAIN IN SERVICE DURING CONSTRUCTION.
- G. THE CONTRACTOR SHALL PROMPTLY REPAIR DAMAGE CAUSED DURING OPERATIONS WITH SIMILAR MATERIALS AND WORKMANSHIP.
- H. ALL REMOVED ITEMS, MATERIALS AND DEBRIS, UNLESS OTHERWISE NOTED, SHALL BECOME THE PROPERTY OF THE DEMOLITION CONTRACTOR AND SHALL BE REMOVED PROMPTLY FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER.

III. DESIGN BASIS

- A. APPLICABLE CODE: 2007 CALIFORNIA BUILDING CODE (CBC), WITH OSHPD AMENDMENTS
- B. OCCUPANCY CATEGORY = IV
- C. WIND DESIGN DATA:
- BASIC WIND SPEED, V = 85 MPH (3-SEC GUST)
- I = 1.15
- EXPOSURE = C
- P_{net}, P_s DETERMINED PER ASCE 7-05, SECTION 6.4

COMPONENTS AND CLADDING		P _{NET} , PSF	
EFFECTIVE AREA, FT ²	ENDZONE	P _{NET30} , PSF	H < 30 FT λ = 1.40 H < 45 FT λ = 1.53
< 10	YES	17.4	28
	NO	14.1	23
> 100	YES	13.5	22
	NO	12.2	20

MWFRS		P _S , PSF (HORIZONTAL)	
ZONE	ENDZONE	P _{S30} , PSF	H < 30 FT λ = 1.40 H < 45 FT λ = 1.53
WALL	YES	11.5	19
	NO	7.6	13

D. SEISMIC DESIGN DATA:

LATITUDE = 38.356351
LONGITUDE = -121.951968
S₁ = 1.5
S₂ = 1.894g
S₃ = 0.600g
SITE CLASS = D
SDC = D

E. FOUNDATION DESIGN CRITERIA:

- DESIGN CRITERIA ARE BASED ON RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT PREPARED BY KLEINFELDER INC AND DATED JUNE 24, 2008.
- THE GEOTECHNICAL ENGINEER SHALL BE RETAINED TO PROVIDE CONSTRUCTION OBSERVATION AND TESTING DURING GRADING AND FOUNDATION PHASES. INSPECTION AND TESTING REPORTS SHALL BE SUBMITTED TO OSHPD.
- AS EXCAVATION PROGRESSES, CONDITIONS MAY DEVELOP REQUIRING CHANGES IN THE FOUNDATION DEPTHS AND/OR DESIGN. SUCH CHANGES SHALL BE MADE ONLY AS DIRECTED BY THE GEOTECHNICAL ENGINEER AND SHALL BE ACCOUNTED FOR IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- SPREAD FOOTINGS:
 - FOOTINGS SHALL EXTEND A MINIMUM OF 24" BELOW ADJACENT GRADE.
 - ALLOWABLE BEARING PRESSURE:
 - DEAD + LIVE LOADS 2500 PSF
 - DEAD + LIVE + WIND/SEISMIC LOADS 3333 PSF
 - ULTIMATE COEFFICIENT OF FRICTION = 0.30
 - ULTIMATE PASSIVE PRESSURE = 300 PCF

IV. MATERIALS

- CONCRETE
 - ALL CONCRETE SHALL BE REINFORCED U.O.N.
 - ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED.
- CONCRETE STRENGTH AND WEIGHT (SEE SPECIFICATION SECTION 03 30 00 FOR ADDITIONAL CONCRETE PROPERTIES):

CLASS	LOCATION	MIN 28-DAY STRENGTH (PSI)	MAX WEIGHT (PCF)
A	WALL FOOTINGS	3000	145
B	SLAB ON GRADE	4000	145

4. REINFORCING STEEL:

- BARS: ASTM A615, GRADE 60, UON
- WELDED BARS: ASTM A706
- WELDED WRC FABRIC: ASTM A185
- WELDED BAR ANCHORS: NELSON D2L DEFORMED BAR ANCHORS (ICC-ES REPORT ER-5217)

5. MINIMUM CONCRETE COVER FOR REINFORCING STEEL:

LOCATION	COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	
NO 5 BARS OR SMALLER	1 1/2"
NO 6 BARS OR LARGER	2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	
SLABS, WALLS, JOISTS:	
NO 11 BARS OR SMALLER	3/4"
NO 14 AND LARGER	1 1/2"
BEAMS, COLUMNS:	
PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS	1 1/2"
SHELLS, FOLDED PLATE MEMBERS:	
NO 5 BARS AND SMALLER	1/2"
NO 6 BARS AND LARGER	3/4"

6. TERMINATION OF REINFORCEMENT UON

- TERMINATE ALL BARS IN LAPS, 90 DEGREE BENDS, OR WITH DOWELS INTO EXISTING CONCRETE.
- BEND TOP MAT OR FOOTING BARS DOWN TO BOTTOM BARS AT ENDS.
- BEND BOTTOM MAT OR FOOTING BARS UP WITH STANDARD 90 DEGREE BENDS.
- PROVIDE DOWELS INTO FOOTINGS AT WALLS, SAME SIZE AND SPACING AS VERTICAL REINFORCEMENT.

B. STEEL

1. STEEL MATERIALS:

SHAPE	MATERIAL
WIDE FLANGES	ASTM A992, GRADE 50
MISCELLANEOUS PLATES	ASTM A36
ANGLES & CHANNELS	ASTM A36
TUBES (SQUARE HSS)	ASTM A500, GRADE B
PIPES (ROUND HSS)	ASTM A500, GRADE B
BOLTS	ASTM A325 N, U.O.N. (SEE NOTE 4)
ANCHOR RODS	ASTM F1554, F _y =36, U.O.N.
STEEL DECK	ASTM A653, SS GRADE 33 (38 KSI MINIMUM YIELD STRENGTH)
WELDING ELECTRODES	E70, SEE SPECIFICATIONS FOR CVN REQUIREMENTS
WELDED STUDS	FLUX FILLED HEADED ANCHOR STUDS TYPE H4L OR S3L BY NELSON OR EQUAL.

C. CONCRETE MASONRY.

1. MATERIAL PROPERTIES:

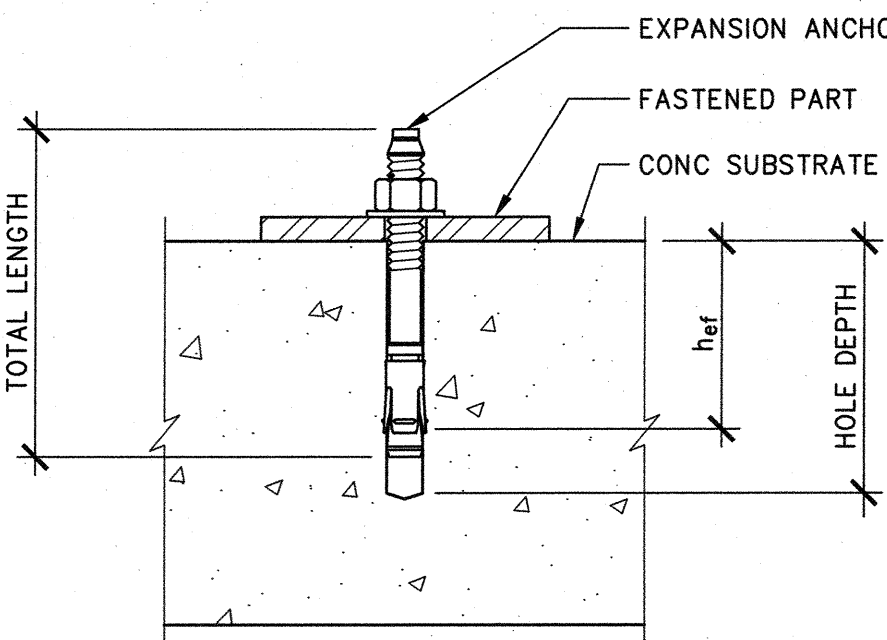
LOCATION	BLOCK WT	CMU ASSEMBLY f _m (PSI)	GROUT f _g (PSI)	MORTAR
ABOVE GRADE BLDG WALLS, FENCES	LT WT	1500, U.O.N.	2000	ASTM C270 TYPE S

- BLOCKS SHALL CONFORM TO ASTM C90, GRADE N, TYPE 1, UNIT COMPRESSIVE STRENGTH SHALL BE PER CBC TABLE 2105A.2.2.1.2.
- REINFORCING STEEL: ASTM A615, GRADE 60. ALL MASONRY TO BE REINFORCED UNLESS SPECIFICALLY MARKED "NOT REINFORCED."
- GROUT: ALL CELLS SHALL BE FULLY GROUTED.

D. POST-INSTALLED ANCHORS IN CONCRETE

- POST-INSTALLED ANCHORS INCLUDE EXPANSION ANCHORS, SCREW ANCHORS, AND EPOXY ANCHORS/DOWELS.
- INSTALL POST-INSTALLED ANCHORS IN ACCORDANCE WITH THE APPLICABLE CONSTRUCTION OBSERVATION AND TESTING DURING GRADING AND FOUNDATION PHASES. INSPECTION AND TESTING REPORTS SHALL BE SUBMITTED TO OSHPD.
- USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING EXISTING REINFORCING BARS.
- MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN REINFORCEMENT AND POST-INSTALLED ANCHORS.
- SPECIAL INSPECTION IS REQUIRED FOR ALL POST-INSTALLED ANCHOR INSTALLATIONS, UON.
- FIELD TESTING OF POST-INSTALLED ANCHORS IS REQUIRED, UON. TESTINSTALLED ANCHORS IN ACCORDANCE WITH THE FOLLOWING:
 - TEST 100% OF ANCHORS AT ALL STRUCTURAL APPLICATIONS, UON.
 - TEST 50% OF ANCHORS AT ALL NON-STRUCTURAL APPLICATIONS (SUCH AS EQUIPMENT ANCHORAGE), UON.
 - TEST 10% OF ANCHORS AT SILL PLATE BOLTING APPLICATIONS, UON.
 - IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME TYPE NOT PREVIOUSLY TESTED UNTIL 20 CONSECUTIVE ANCHORS PASS.
 - FIELD TESTS SHALL BE EITHER TENSION TESTS OR TORQUE TESTS, AS REQUIRED FOR THE SPECIFIC ANCHOR TYPE.
 - TENSION TESTS: APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE. IF NOT, REMOVE NUT AND INSTALL A THREADED COUPLER TO THE SAME TIGHTNESS AS THE ORIGINAL NUT USING A TORQUE WRENCH. REACTION LOADS FROM TEST FIXTURES MAY BE APPLIED CLOSE TO THE ANCHOR BEING TESTED, PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE FIXTURES. TO BE ACCEPTABLE, ANCHORS SHALL HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD (OBSERVABLE MOVEMENT IS DEFINED AS THE WASHER UNDER THE NUT BECOMING LOOSE).
 - TORQUE TESTS: TO BE ACCEPTABLE, THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN ONE-HALF TURN OF THE NUT.
 - TEST EQUIPMENT IS TO BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.
 - FIELD TESTING SHALL BE DONE IN THE PRESENCE OF THE PROJECT INSPECTOR.

- EXPANSION ANCHORS
 - EXPANSION ANCHORS SHALL BE ONE OF THE FOLLOWING, UON:
 - CARBON STEEL HILTI KWIK BOLT TZ (ICC-ES REPORT ESR-1917).
 - SIMPSON STRONG-BOLT (ICC-ES REPORT ESR-1771).
 - ANCHOR EMBEDMENT AND FIELD TEST VALUES ARE AS FOLLOWS, UON:



HILTI KWIK BOLT TZ IN NORMAL-WEIGHT CONCRETE			
ANCHOR DIAMETER	h _{ef}	MINIMUM HOLE DEPTH	TORQUE TEST VALUE (FT-LBS)
3/8"	2"	2 5/8"	25
1/2"	2"	2 5/8"	40
5/8"	4"	4 3/4"	60
3/4"	4 3/4"	5 3/4"	110

HILTI KWIK BOLT TZ IN LIGHTWEIGHT CONCRETE			
ANCHOR DIAMETER	h _{ef}	MINIMUM HOLE DEPTH	TORQUE TEST VALUE (FT-LBS)
3/8"	2"	2 5/8"	25
1/2"	2"	2 5/8"	40
5/8"	3 1/8"	3 7/8"	60

SIMPSON STRONG-BOLT IN NORMAL-WEIGHT CONCRETE			
ANCHOR DIAMETER	h _{ef}	MINIMUM HOLE DEPTH	TORQUE TEST VALUE (FT-LBS)
1/2"	2 1/4"	2 3/4"	50
5/8"	4 1/2"	5 1/8"	85
3/4"	5"	5 3/4"	180
1"	9"	9 3/4"	230

SIMPSON STRONG-BOLT IN LIGHTWEIGHT CONCRETE			
ANCHOR DIAMETER	h _{ef}	MINIMUM HOLE DEPTH	TORQUE TEST VALUE (FT-LBS)
1/2"	2 1/4"	2 3/4"	40
5/8"	2 3/4"	3 3/8"	40

- h_{ef} IS MEASURED FROM FACE OF CONCRETE SUBSTRATE TO THE TEETH ON THE EXPANSION ELEMENT.
 - CONTRACTOR SHALL PROVIDE ANCHORS WITH SUFFICIENT TOTAL LENGTH FOR THE SPECIFIED EMBEDMENT LENGTH, THICKNESS OF FASTENED PART, WASHER AND NUT.
- SCREW ANCHORS
 - SCREW ANCHORS SHALL BE SIMPSON TITEN HD (ICC-ES REPORT ESR-2713), UON.
 - ANCHOR EMBEDMENT SHALL BE AS SPECIFICALLY DETAILED ELSEWHERE IN THE DRAWINGS.
 - FIELD TEST VALUES ARE AS FOLLOWS, UON:

SCREW ANCHORS	
ANCHOR DIAMETER (IN)	TORQUE TEST VALUE (FT-LBS)
3/8	10
1/2	10
3/4	20

9. EPOXY ANCHORS AND DOWELS

- EPOXY SHALL BE ONE OF THE FOLLOWING, UON:
 - HILTI HIT-RE 500-SD (ICC-ES REPORT ESR-2322)
 - SIMPSON SET-XP (ICC-ES REPORT ESR-2508)
- THREADED STEEL RODS EMBEDDED IN SIMPSON SET-XP EPOXY SHALL BE ASTM A307.
- THREADED STEEL RODS EMBEDDED IN HILTI HIT-RE 500-SD EPOXY SHALL BE ASTM A 193 GRADE B.
- REINFORCING STEEL BARS EMBEDDED IN EPOXY SHALL BE ASTM A615, GRADE 60, UON.
- ANCHOR EMBEDMENT AND FIELD TEST VALUES ARE AS FOLLOWS, UON:

EPOXY ANCHORS IN NORMAL-WEIGHT CONCRETE			
THREADED ROD DIAMETER (IN)	REBAR SIZE	EMBEDMENT (IN)	TENSION TEST VALUE (LBS)
			CONCRETE STRENGTH (PSI)
			2000
3/8	#3	4	3470
1/2	#4	4 1/2	5110
5/8	#5	6	8240
3/4	#6	7	10610
7/8	#7	8	14710
1	#8	9	17770
-	#9	10 1/2	24360
1 1/4	#10	12	29040
-	#11	14	43750

- TESTING OF EPOXY DOWELS AT JOINTS BETWEEN NEW AND EXISTING SLABS-ON-GRADE IS NOT REQUIRED.
- TESTING SHALL OCCUR AFTER EPOXY HAS CURED, AS PER MANUFACTURER'S RECOMMENDATIONS.

V. QUALITY CONTROL

- THE FOLLOWING WORK REQUIRES TESTS AND/OR INSPECTIONS. FOR SPECIFIC REQUIREMENTS SEE SPECIFICATIONS. INSPECTIONS SHALL BE MADE IN ACCORDANCE WITH CBC 1704A, 1707A AND 1708A BY A OSHPD CERTIFIED SPECIAL INSPECTOR RETAINED BY THE OWNER.

- FOOTING EXCAVATION
- SOIL COMPACTION
- REINFORCING STEEL & ANCHOR RODS
- CONCRETE
- POST-INSTALLED ANCHORS
- STRUCTURAL STEEL FABRICATION
- WELDING: REINFORCING STEEL, STRUCTURAL STEEL, WELDED STUDS
- HIGH STRENGTH BOLT

- A PARTIAL LISTING OF REQUIRED STRUCTURAL SUBMITTALS FOLLOWS. CONSULT THE SPECIFICATIONS FOR A COMPLETE LISTING OF SUBMITTAL REQUIREMENTS.

- CONCRETE MIX DESIGNS
- CONSTRUCTION JOINT LAYOUT & CONTROL JOINT LAYOUT
- REINFORCING STEEL SHOP DRAWINGS
- STRUCTURAL STEEL SHOP AND ERECTION DRAWINGS
- STRUCTURAL STEEL MATERIAL TEST REPORTS
- WELDING ELECTRODE DATA AND WELDING PROCEDURE SPECIFICATIONS
- STRUCTURAL STEEL FASTENERS
- MANUFACTURER'S DATA FOR INSERTS, GROUTS & EPOXIES
- STRUCTURAL OBSERVATIONS WILL BE PROVIDED PER CBC 1709A BY THE ENGINEER OF RECORD.

VII. STRUCTURAL DRAWINGS

- S-000 GENERAL STRUCTURAL NOTES
- S-101 FLOOR PLAN
- S-102 ROOF PLAN
- S-601 CONCRETE DETAILS
- S-602 CONCRETE AND MASONRY DETAILS
- S-603 STEEL DETAILS AND EQUIPMENT ANCHORAGE DETAILS

VIII. ABBREVIATIONS

Ø	AESS	DIAMETER
ARCH	ARCHITECTURALLY EXPOSED	ARCHITECTURALLY EXPOSED
BLDG	STRUCTURAL STEEL	STRUCTURAL STEEL
BM	ANCHOR ROD	ANCHOR ROD
B.O.	BUILDING	BUILDING
BOF	BEAM	BEAM
BOTT	BOTTOM OF	BOTTOM OF
CB	BOTTOM OF FOOTING	BOTTOM OF FOOTING
CJ	CONSTRUCTION JOINT	CONSTRUCTION JOINT
CLR	CLEAR	CLEAR
CMU	CONCRETE MASONRY UNIT	CONCRETE MASONRY UNIT
COL	COLUMN	COLUMN
CONN	CONNECTION	CONNECTION
CONT	CONTINUOUS	CONTINUOUS
CJP	COMPLETE JOINT PENETRATION	COMPLETE JOINT PENETRATION
CTR	CENTER	CENTER
DCW	DEMAND CRITICAL WELD	DEMAND CRITICAL WELD
DWG	DETAIL	DETAIL
(E)	EXISTING	EXISTING
EA	EACH	EACH
EF	EACH FACE	EACH FACE
EL OR ELEV	ELEVATION	ELEVATION
ELECT	ELECTRICAL	ELECTRICAL
EN	END (OR EDGE) NAILING	END (OR EDGE) NAILING
EQ	EQUAL	EQUAL
EW	EACH WAY	EACH WAY
EXT	EXTERIOR	EXTERIOR
FIN	FOUNDATION	FOUNDATION
FIN	FINISH	FINISH
FL OR FLR	FLOOR	FLOOR
FRAMING	FRAMING	FRAMING
FS	FAR SIDE	FAR SIDE
FTG	FOOTING	FOOTING
GA	GAUGE	GAUGE
GALV	GALVANIZED	GALVANIZED
HD	HOLD DOWN	HOLD DOWN
HORIZ	HORIZONTAL	HORIZONTAL
HSB	HIGH STRENGTH BOLT	HIGH STRENGTH BOLT
HT	HEIGHT	HEIGHT
INT	INTERIOR	INTERIOR
JT	JOINT	JOINT
L _d	DEVELOPMENT LENGTH OF REBAR	DEVELOPMENT LENGTH OF REBAR
LH (LLV)	LONG LEG HORIZONTAL (VERTICAL)	LONG LEG HORIZONTAL (VERTICAL)
LT	LIGHT	LIGHT
LT WT	LIGHT WEIGHT	LIGHT WEIGHT
MB	UNFINISHED MACHINE BOLTS	UNFINISHED MACHINE BOLTS
MAX	MAXIMUM	MAXIMUM
MECH	MECHANICAL	MECHANICAL
MFR	MANUFACTURER	MANUFACTURER
MTL	METAL	METAL
MIN	MINIMUM	MINIMUM
MISC	MISCELLANEOUS	MISCELLANEOUS
NEW	NEW	NEW
NIC	NOT IN CONTRACT	NOT IN CONTRACT
NOM	NOMINAL	NOMINAL
NS	NEAR SIDE	NEAR SIDE
NTS	NOT TO SCALE	NOT TO SCALE
NW	NORMAL WEIGHT	NORMAL WEIGHT
OC	ON CENTER	ON CENTER
(OD)	OUTSIDE (INSIDE) DIAMETER	OUTSIDE (INSIDE) DIAMETER
OPG	OPENING	OPENING
OPP	OPPOSITE	OPPOSITE
PAP	POWDER ACTUATED FASTENER	POWDER ACTUATED FASTENER
PL	PLATE	PLATE
PJP	PARTIAL JOINT PENETRATION	PARTIAL JOINT PENETRATION
PT	POINT	POINT
PTN	PARTITION	PARTITION
REF	REFERENCE	REFERENCE
REINF	REINFORCEMENT	REINFORCEMENT
REQ	REQUIRED	REQUIRED
S.A.D.	SEE ARCHITECTURAL DRAWINGS	SEE ARCHITECTURAL DRAWINGS
S.E.D.	SEE ELECTRICAL DRAWINGS	SEE ELECTRICAL DRAWINGS
SCHED	SCHEDULE	SCHEDULE
SECT	SECTION	SECTION
SHT	SHEET	SHEET
SM	SIMILAR	SIMILAR
SLRS	SEISMIC LOAD RESISTING SYSTEM	SEISMIC LOAD RESISTING SYSTEM
SMD	SEE MECHANICAL DRAWINGS	SEE MECHANICAL DRAWINGS
SPA	SPACE	SPACE
SPEC	SPECIFICATION	SPECIFICATION
SQ	SQUARE	SQUARE
ST	STRAP TIE	STRAP TIE
STAG'D	STAGGERED	STAGGERED
STD	STANDARD	STANDARD
STL	STEEL	STEEL
STRUCT	STRUCTURAL	STRUCTURAL
SYMM	SYMMETRICAL	SYMMETRICAL
T&B	TOP AND BOTTOM	TOP AND BOTTOM
THRD'D	THREADED	THREADED
T.O.	TOP OF	TOP OF
T.O.C.	TOP OF CONCRETE	TOP OF CONCRETE
T.O.F.	TOP OF FOOTING	TOP OF FOOTING
T.O.P.	TOP OF PLATE	TOP OF PLATE
T.O.S.	TOP OF STEEL	TOP OF STEEL
T.O.W.	TOP OF WALL	TOP OF WALL
TYP	TYPICAL	TYPICAL
UON	UNLESS OTHERWISE NOTED	UNLESS OTHERWISE NOTED
VERT	VERTICAL	VERTICAL
W/O	WITHOUT	WITHOUT
WP	WORK POINT	WORK POINT
WT	WEIGHT	WEIGHT

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