STRUCTURAL TESTS AND INSPECTION

1. PER CALIFORNIA BUILDING CODE, LATEST EDITION, THE FOLLOWING ITEMS SHALL BE INSPECTED AND TESTED BY A DEPUTY INSPECTOR.
2. ALL TESTS AND INSPECTIONS SHALL BE PERFORMED BY A SPECIAL INSPECTOR PER UBC SECTION 106.3.5. THE SPECIAL INSPECTOR SHALL BE EMPLOYED BY THE OWNER, BUT NOT BY THE CONTRACTOR OR ANY OTHER PERSON RESPONSIBLE FOR THE WORK.
3. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED (LICENSED) PERSON WHO SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
4. SPECIAL INSPECTION FOR SPRAYED FIRE-RESISTANT MATERIALS APPLIED TO STRUCTURAL ELEMENTS SHALL BE IN ACCORDANCE WITH CBC 1704A.10.1 THRU 1704A.10.5. SPECIAL INSPECTIONS SHALL BE BASED ON THE RESISTANCE DESIGN IN THESE DOCUMENTS.

LIST OF SPECIAL INSPECTION:		YES	NO	N/A
FOUNDATION:				
A.	GRADING AND FILLING AND CUT OPERATION	X		
B.	FILL MATERIAL, ACCEPTANCE TEST, COMPACTION CONTROL BEARING CAPACITY OF COMPACTED FILL	X		
CONCRETE:				
A.	DURING THE TAKING OF TEST SPECIMENS PLACING OF REINFORCED CONCRETE	X		
B.	SHOTCRETE			X
C.	BOLT INSTALLED IN CONCRETE	X		
REINFORCING STEEL:				
A.	DURING PLACING OF REINFORCING	X		
B.	SAMPLE AND TEST BAR STEEL	X		
STRUCTURAL MASONRY:				
A.	DURING PREPARATION AND TAKING OF PRISM OR TEST SPECIMENS	X		
B.	PLACING OF ALL MASONRY UNITS, REINFORCEMENT, GROUTING AND MASONRY PRISM TEST	X		
STRUCTURAL STEEL:				
A.	MILL REPORTS AND IDENTIFICATION OF STEEL (AFFIDAVIT OF COMPLIANCE)	X		
B.	SAMPLING AND TESTING OF SPECIMENS	X		
WELDING:				
A.	ALL STRUCTURAL WELDING (INCLUDES DECKING AND WELDED STUDS),	X		
B.	ULTRASONIC TESTING OF FULL PENETRATION WELD CONNECTIONS AT MOMENT FRAMES, BRACED FRAMES, BEAM SPLICES, AND FIELD WELD	X		
C.	STRUCTURAL LIGHT GAGE METAL FRAME WELDING	X		
D.	REINFORCING STEEL WELDING PER UBC 1701.5.3	X		
BOLT:				
A.	HIGH STRENGTH BOLT A325SC & A490SC (TENSION VERIFICATION)	X		
B.	HIGH STRENGTH BOLT A325N & A490N (SNUG CONTACT OF PLYS)	X		
C.	EXPANSION/ADHESIVE ANCHORS IN CONCRETE OR MASONRY	X		
D.	ANCHOR BOLTS AT CONCRETE WALLS AND BRACED FRAMES. (BOLT INSTALLATION AND CONCRETE PLACEMENT)	X		
INSULATING CONCRETE FILL:				
	TEST CYLINDERS AND INSPECTIONS	X		
HIGH STRESS PLYWOOD DIAPHRAGM				
	INSPECTION OF SHEATHING, NAIL DIAMETER & LENGTH, NAILING LINES, NAIL SPACING, AND FRAMING WIDTH AT ADJOINING PANEL EDGES. VERIFY APA STAMP.			X

TEST VALUES

HARDROCK OR LIGHTWEIGHT CONCRETE

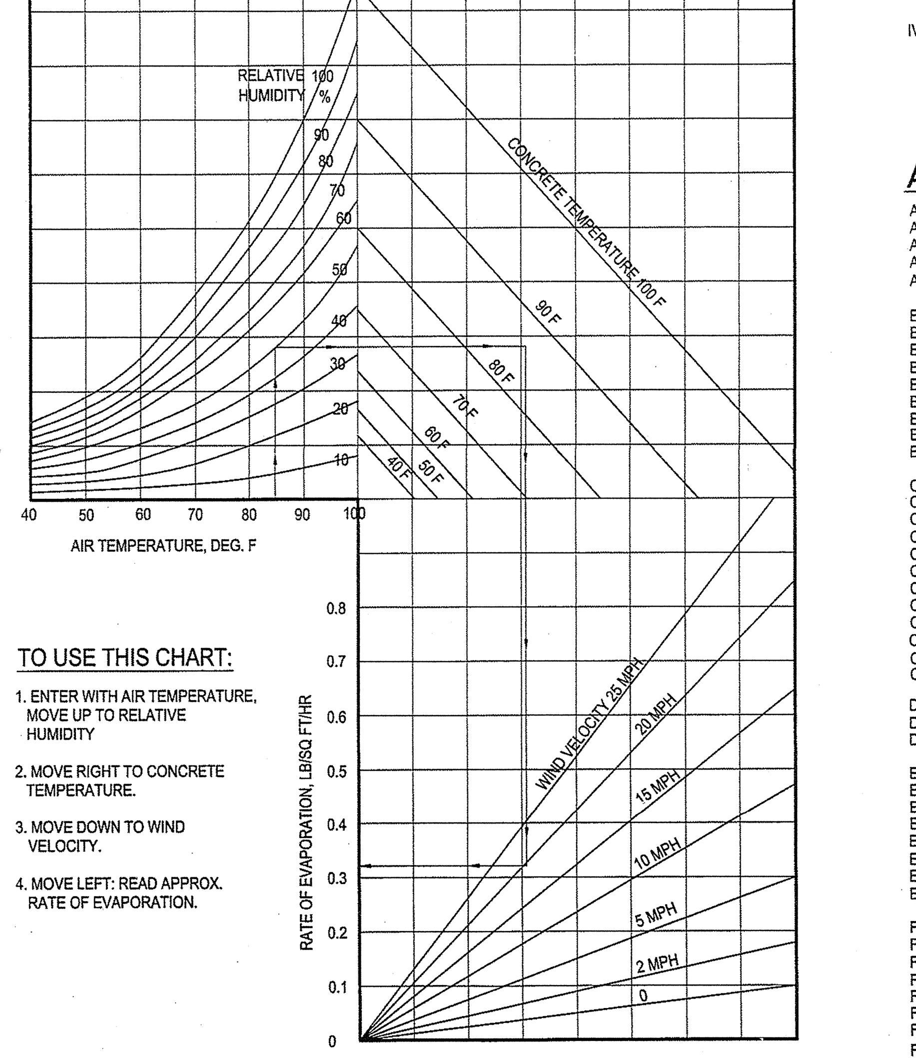
ANCHOR	WEDGE		SLEEVE		SHELL		SCREW
DIAMETER (in.)	LOAD (lbs.)	TORQUE (Ft. lbs.)	LOAD (lbs.)	TORQUE (Ft. lbs.)	LOAD (lbs.)	TORQUE (Ft. lbs.)	TORQUE (Ft. lbs.)
1/4	800	10	400	4	1000	-	-
5/16	-	-	400	5	1400	-	-
3/8	1100	25	700	10	1800	-	10
1/2	2000	50	900	20	2700	-	10
5/8	2300	80	1100	45	3700	-	10
3/4	3700	150	1400	90	5400	-	20
1	5800	250	-	-	-	-	-

NOTES

1. ANCHOR DIAMETER REFERS TO THE THREAD SIZE FOR THE WEDGE & SHELL CATEGORIES AND TO THE ANCHOR OUTSIDE DIAMETER FOR THE SLEEVE CATEGORY.
2. APPLY PROOF TEST LOADS TO WEDGE & SLEEVE 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 TO APPLY THE TEST LOAD.
3. FOR SLEEVE/SHELL INTERNALLY THREADED CATEGORIES, VERIFY THAT THE ANCHOR IS NOT PREVENTED FROM WITHDRAWING BY A BASEPLATE OR OTHER FIXTURES. IF RESTRAINT IS FOUND, LOOSEN AND SHIM OR REMOVE FIXTURE(S) PRIOR TO TESTING.
4. REACTION LOADS FROM TEXT FIXTURES MAY BE APPLIED CLOSE TO THE ANCHOR BEING TESTED, PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE FIXTURE(S).
5. SHELL TYP ANCHORS SHOULD BE TESTED AS FOLLOWS:
   A. VISUALLY INSPECT 25% FOR FULL EXPANSION AS EVIDENCED BY THE LOCATION OF THE EXPANSION PLUG IN THE ANCHOR BODY. PLUG LOCATION OF A FULLY EXPANDED ANCHOR SHOULD BE AS RECOMMENDED BY THE MANUFACTURER, OR, IN THE ABSENCE OF SUCH RECOMMENDATION, AS DETERMINED ON THE JOB SITE FOLLOWING THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. AT LEAST 5% OF THE ANCHORS SHALL BE PROOF LOADED AS INDICATED IN THE TABLE ABOVE, BUT NOT LESS THAN THREE ANCHORS PER DAY FOR EACH DIFFERENT PERSON OR CREW INSTALLING ANCHORS, OR:
   B. TEST INSTALLED ANCHORS PER SECTION 1923A3.5
6. TEST EQUIPMENT (INCLUDING TORQUE WRENCHES) IS TO BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.
7. ALTERNATE TORQUE TEST PROCEDURES AND TEST VALUES FOR SHELL TYPE ANCHORS MAY BE SUBMITTED TO THE ENFORCEMENT AGENCY FOR REVIEW AND APPROVAL ON A CASE-BY-CASE BASIS WHEN TEST PROCEDURES ARE SUBMITTED AND APPROVED BY THE ENFORCEMENT AGENCY.
8. THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
   A. HYDRAULIC RAM METHOD: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD. FOR WEDGE AND SLEEVE TYPE ANCHORS, A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE.
   B. TORQUE WRENCH METHOD: THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS.
      I. WEDGE OR SLEEVE TYPE: ONE HALF(1/2) TURN OF THE NUT.
      II. ONE-QUARTER(1/4) TURN OF THE NUT FOR THE 3/8 IN. SLEEVE ANCHOR ONLY
9. IF THE MANUFACTURER'S RECOMMENDED INSTALLATION TORQUE IS LESS THAN THE TEST TORQUE NOTED IN THE TABLE, THE MANUFACTURERS RECOMMENDED INSTALLATION TORQUE SHOULD BE USED IN LIEU OF THE TABULATED VALUES.

BUILDING SLAB ON GRADE:

1. ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO UNIFORM BUILDING CODE, LATEST EDITION, AND ACI 318.
2. SEE GENERAL NOTE UNDER CONCRETE FOR OTHER REQUIREMENTS.
3. FINISH: FLOOR SLAB ON GRADE SHALL BE FINISHED WITH A SMOOTH, DENSE AND BURNISHED FINISH.
   SLAB THICKNESS SHALL BE WITHIN THE FOLLOWING TOLERANCE:
   PLUS 3/8" AND MINUS 1/4".
4. SEE FOUNDATION PLAN FOR CONTROL JOINT LOCATIONS. SEE TYPICAL DETAIL SHEET FOR SLAB ON GRADE CONTROL JOINT REQUIREMENTS.
5. CURING: THE ENTIRE SURFACE OF THE NEWLY PLACED CONCRETE SHOULD BE TREATED IN ACCORDANCE WITH ONE OF THE WATER CURING OR SEALING MEATHOD, BEGINNING AFTER FINSHING OPERATIONS HAVE BEEN COMPLETED AND AS SOON AS MARRING OF THE CONCRETE WILL NOT OCCUR. UNDER USUAL PLACING CONDITIONS EITHER SEALING MATERIALS OR CONTINUOUS CURING UNDER WET BURLAP, COTTON MATS, RUGS OR OTHER SIMILAR MATERIAL MAY BE USED. THE MINIMUM PERIOD OF MAINTENANCE OF MOISTURE AND TEMPERATURE IS 7 DAYS OR THE TIME NECESSARY TO ATTAIN 70 PERCENT OF THE SPECIFIED COMPRESSIVE STRENGTH, WHICH EVER PERIOD IS LESS.
6. HOT WEATHER CONCRETING: COMPLY WITH THE RECOMMENDATIONS OF ACI 301 REGARDING PLACING OF CONCRETE DURING HOT WEATHER.
   A. WHEN AIR TEMPERATURE IS ABOVE 80° F, THE GUIDELINES FOR PROTECTING THE CONCRETE FROM PLASTIC SHRINKAGE CRACKING AND CRAZE CRACKING, BY PROVIDING A TEMPERATURE CONTROLLED MIX AND PROTECTING THE IN ACI 305R SHALL APPLY.
   B. WHEN EVAPORATION RATE EXCEEDS 0.2 POUNDS PER SQUARE FOOT PER HOUR, PRECAUSION SHOULD BE TAKEN. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO MINIMIZE PLASTIC SHRINKAGE CRACKING. REFER TO ACI 305R AND CHART BELOW TO ESTIMATE SURFACE WATER EVAPORATION RATE.



TO USE THIS CHART:

1. ENTER WITH AIR TEMPERATURE, MOVE UP TO RELATIVE HUMIDITY
2. MOVE RIGHT TO CONCRETE TEMPERATURE.
3. MOVE DOWN TO WIND VELOCITY.
4. MOVE LEFT: READ APPROX. RATE OF EVAPORATION.

EFFECT OF CONCRETE AND AIR TEMPERATURES, RELATIVE HUMIDITY, AND WIND VELOCITY ON THE RATE OF EVAPORATION OF SURFACE MOISTURE FROM CONCRETE. THIS CHART PROVIDES A GRAPHIC METHOD OF ESTIMATING THE LOSS OF SURFACE MOISTURE FOR VARIOUS WEATHER CONDITIONS. TO USE THIS CHART, FOLLOW THE FOUR STEPS OUTLINED ABOVE. WHEN THE RATE OF EVAPORATION APPROACHES 0.2 LB/FT /HR, PRECAUTIONS AGAINST PLASTIC SHRINKAGE CRACKING ARE NECESSARY.

POWDER DRIVEN SHOT PINS (LOW VELOCITY)

SHOT PINS MAY BE USED FOR SHEAR LOADS AND THEY MAY BE USED IN TENSION TO SUPPORT LOADS LESS THAN 100 POUNDS FOR MINOR LOADS LIKE ACCOUSTICAL CEILINGS, DUCT WORK, CONDUIT, ETC. ANY SHOT ANCHORS MUST HAVE ICBO APPROVAL FOR THE TYPE OF CONCRETE USED ON THE JOB. SHOT PINS MAY NOT BE USED IN CONCRETE CURBS.

THE ALLOWABLE LOADS SHALL BE 100 POUNDS OR 80% OF ICBO APPROVED VALUES, WHICHEVER IS LESS. QUALIFICATION FOR USE OF ALL POWER ACTUATED TOOLS MUST MEET ANSI A10.3 STANDARD AS REQUIRED BY THE MANUFACTURER AND ALL OSHA REQUIREMENTS.

TESTING - THE OPERATOR, TOOL AND FASTENER SHALL BE PRE-QUALIFIED BY THE PROJECT INSPECTOR. HE SHALL OBSERVE THE TESTING OF THE FIRST 10 FASTENER INSTALLATIONS. A TEST "PULL-OUT" LOAD OF NOT LESS THAN TWICE THE DESIGN LOAD SHALL BE APPLIED TO THE PIN IN SUCH A MANNER AS NOT TO RESIST THE SPALLING TENDENCY OF THE CONCRETE SURROUNDING THE PIN. THEREAFTER, RANDOM TESTS UNDER THE PROJECT INSPECTOR'S SUPERVISION SHALL BE MADE OF APPROXIMATELY 1 IN 10 PINS. IF ANY PIN FAILS TESTING, TEST ALL PINS OF THE SAME CATEGORY NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE PASS, THEN RESUME THE INITIAL TESTING FRENQUENCY.

QUALITY CONTROL

1. UNLESS NOTED OTHERWISE, MATERIALS TEST AND INSPECTIONS SHALL BE PERFORMED BY THE APPROVED AND CERTIFIED TESTING AGENCY AND/OR THE JOB INSPECTOR WHO IS APPROVED BY DSA, THE ARCHITECT AND THE STRUCTURAL ENGINEER AND CONFORM TO TITLE 24, AS NOTED HEREIN

I. MASONRY - CBC CHAPTER 21A
- A. MATERAILS 2102A
  - MASONRY UNITS 2102A.2
  - PORTLAND CEMENT AND AGGREGATE 2102A.2, 2103A.2
  - MORTAR AND GROUT 2102A.2, 2103A.3, A.4
  - REINFORCING BARS 2102A.2
- B. QUALITY 2105A
  - PORTLAND CEMENT TESTS 1903A.2, 1929A.1
  - MORTAR AND GROUT TESTS 2105A.3.4
  - CORE TESTS 2105A.3.1
  - REINFORCING BAR TESTS 1929A.2
- C. INSPECTION 2105A.7
  - REINFORCED MASONRY AND REINFORCING BAR WELDING .. 1929A.12

II. CONCRETE - CBC CHAPTER 19
- A. MATERIALS 1903A
  - PORTLAND CEMENT AND AGGREGATE 1903A.2, 1929A.1, 1903A.3
  - REINFORCING BARS 1903A.5, 1929A.2
  - BATCH PLANT TEST OR WAIVER OF INSPECITON AND TEST ... 1929A.4
- B. QUALITY 1905A
  - PROPORTION OF CONCRETE 1904A, 1905A.1, A.2, A.3, A.4
  - STRENGTH TESTS OF CONCRETE 1905A.6
- C. INSPECTION 1929A
  - JOB SITE, BATCH PLANT AND REINFORCINB BAR WELDING 1905A.7 1929A.4 1929A.12

III. STEEL - CBC CHAPTER 22A
- A. MATERAILS 2203A
  - STRUCTURAL STEEL, COLD FORMED STEEL 2202A.1, 2231A.1
  - MATERIAL IDENTIFICATION 2203A
  - STEEL DECK
- B. INSPECTION AND TESTS 2231A
  - STRUCTURAL AND COLD FORMED STEEL TEST 2231A.1
  - HIGH STRENGTH BOLTS, NUTS AND WASHERS 2231A.1
  - TEST OF END WELDED STUDS, NELSON WELD STUDS ... 2231A.3
  - SHOP AND FIELD FABRICATION 2231A.4
  - NON-DESTRUCTIVE WELD TESTING 1703A

IV. EXCAVATION, FOUNDATION AND RETAINING WALL - CBC CHAPTER 18
- A. EARTH FILL COMPACTION PER SOILS REPORT RECOMMENDATION

ABBREVIATION

AB	ANCHOR BOLT	INFO	INFORMATION
ABV	ABOVE	INT	INTERIOR
ADDL	ADDITIONAL		
ALT	ALTERNATE	KP	KING POST
ARCH	ARCHITECT, ARCHITECTURAL	KSI	KIPS PER SQ INCH
BTWN	BETWEEN	LBS	POUNDS
BLW	BELOW	LG	LONG
BLDG	BUILDING	LONGIT	LONGITUDINAL
BLKG	BLOCKING	LT WT	LIGHT WEIGHT
BM	BEAM		
BN	BOUNDARY NAILING	MAX	MAXIMUM
BOT	BOTTOM	MB	MACHINE BOLT
BS	BOTH SIDES	MD	METAL DECK
BSMT	BASEMENT	MECH	MECHANICAL
		MFR	MANUFACTURER
CLR	CLEAR	MIN	MINIMUM
CLG	CEILING	MISC	MISCELLANEOUS
CMU	CONCRETE MASONRY UNITS		
COL	COLUMN	NS	NEAR SIDE
CONC	CONCRETE	NW	NORMAL WEIGHT
CONN	CONNECTION		
CONST	CONSTRUCTION	OC	ON CENTER
CONT	CONTINUOUS	OPP	OPPOSITE
CONTR	CONTRACTOR		
CF	CUBIC FOOT	PSF	POUNDS PER SQ FOOT
CJ	CONST. JOINT	PSI	POUNDS PER SQ INCH
CVR	COVER		
		REINF	REINFORCEMENT
DIA	DIAMETER	REQ	REQUIRED
DIR	DIRECTION	SA	STUD ANCHOR
DWG	DRAWING		
		SCHED	SCHEDULE
EA	EACH	SF	SQUARE FOOT
EF	EACH FACE	SHT	SHEET
ELEC	ELECTRICAL	SIM	SIMILAR
EL	ELEVATION	SPEC	SPECIFICATION
ENGR	ENGINEER	SQ	SQUARE
EXP JT	EXPANSION JOINT	STD	STANDARD
EQ	EQUAL	STL	STEEL
EXT	EXTERIOR	STRUCT	STRUCTURAL
		SYM	SYMMETRICAL
FF	FINISHED FLOOR	THK	THICK
FG	FINISHED GRADE	T&B	TOP & BOTTOM
FL	FLOOR	TOF	TOP OF FOOTING
FS	FAR SIDE	TL	TOP OF LEDGER
FDN	FOUNDATION	TOS	TOP OF STEEL
FOC	FACE OF CONCRETE	TRANSV	TRANSVERSE
FOS	FACE OF STUD	TS	TUBE STEEL, TOP OF SHEATHING
FT	FOOT, FEET	TYP	TYPICAL
FTG	FOOTING		
		UNO	UNLESS NOTED OTHERWISE
GA	GAGE		
GALV	GALVANIZED	VERT	VERTICAL
GND	GROUND		
GR	GRADE	WF	WIDE FLANGE BEAM
		W/	WITH
HB	HEADED BOLT	W/O	WITHOUT
HT	HEIGHT	WP	WATERPROOFING
HORIZ	HORIZONTAL	WWF	WELDED WIRE FABRIC
HS	HIGH STRENGTH	WT	WEIGHT
		WP	WORKING POINT
		WS	WELDED STUD

MASONRY

1. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 GRADE N-1. f'm=1500PSI, WEIGHT=135PCF MAX). MASONRY UNITS SHALL BE LAID IN RUNNING BOND.
2. ALL CELLS SHALL BE FILLED SOLID WITH GROUT. USE LOW LIFT GROUT.
3. GROUT SHALL BE FRESHLY PREPARED AND UNIFORMLY MIXED IN PROPORTION OF 1 PART CEMENT, 3 PARTS SAND, AND 2 PARTS PEA GRAVEL. GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS.
4. MORTAR SHALL BE FRESHLY PREPARED AND UNIFORMLY MIXED IN ACCORDANCE WITH TITLE 24 SECTION 2103A.3. MORTAR SHALL BE USED WITHIN TWO HOURS AFTER MIXING. MORTAR STRENGTH SHALL BE 1800 PSI @ 28 DAYS.
5. CEMENT SHALL CONFORM TO U.B.C. STD 19-1. THE USE OF PLASTIC OR MASONRY CEMENT IS NOT PERMITTED.
6. ALL MEASUREMENTS SHALL BE MADE WITH A SUITABLE CALIBRATED DEVICE. SHOVEL MEASUREMENTS WILL NOT BE PERMITTED. THE SPACING OF MASONRY UNITS AND REINFORCING SHALL BE A MINIMUM OF ONE BAR DIAMETER OR 1/2", HORIZONTAL REINFORCING SHALL BE PLACED IN BOND BEAM UNITS.
7. PROVIDE MIN. 1" GROUT AROUND ALL ANCHOR BOLTS SET IN MASONRY.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A6 AND SHALL BE FABRICATED ACCORDING TO AISC PRACTICE AND SPECIFICATIONS FOR BUILDING.
2. STRUCTURAL PLATES, BARS, ETC. SHALL CONFORM TO ASTM 36. STRUCTURAL WIDE FLANGE BEAMS & COLUMNS SHALL CONFORM TO ASTM A992 GRADE 50.
3. PIPE COLUMNS SHALL CONFORM TO ASTM A53 GRADE B.
4. TUBE MEMBERS SHALL CONFORM TO ASTM A500 GRADE B.
5. ALL WELDING SHALL BE DONE USING THE SHIELDED ELECTRIC ARC PROCESS BY AWS CERTIFIED WELDERS USING AWS D 5.1, E70XX ELECTRODES.
6. ALL WELDS USED IN PRIMARY MEMBERS AND CONNECTIONS IN THE LATERAL FORCE SYSTEMS SHALL BE MADE WITH A FILLER METAL THAT HAS A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBS AT MINUS 20 DEGREES F. AS DETERMINED BY AWS CLASSIFICATION.
7. CONTINUOUS INSPECTION IS REQUIRED FOR ALL FIELD AND SHOP WELDING BY AN INSPECTOR APPROVED BY D.S.A.
8. BOLTS SHALL CONFORM TO ASTM A325 UNLESS NOTED OTHERWISE.
9. STRUCTURAL STEEL SHOP DRAWINGS SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION.
10. ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED.
11. STRUCTURAL STEEL SHALL HAVE SPRAY APPLIED FIREPROOFING PER ARCH AND SPECIFICATIONS SECTION 07810.

METAL STUDS

1. ONE HOUR FIRE RESISTIVE CONSTRUCTION FOR INTERIOR PARTITIONS, AS NOTED ON PLANS, SEE WALL TYPE LEGEND, AND
2. ALL GYPSUM WALL BOARD TO BE 5/8" THICK; AND TYPE "X" WHERE REQUIRED FOR FIRE RESISTANT RATED ASSEMBLIES.
3. ALL INTERIOR PARTITIONS TO RECEIVE SOUND BATT INSULATION.
4. ALL STUDS SHALL CONFORM TO A.S.T.M. A446, A568, A570 AND A611 WITH THE FOLLOWING MINIMUM YIELD POINT
   - ALL METAL STUDS 16GA AND HEAVIER (50 ksi)
   - OTHER GAGE STUDS (33 ksi)
5. PROVIDE 16 GA. (MIN) METAL STUDS WHERE LIGHT WEIGHT EQUIPMENT OR FIXTURES INCLUDING CABINETS ARE ATTACHED TO STUD WALL. SEE DETAIL 5/S1.4
6. ALL STUDS TO BE PLACED AT 16" O.C. (U.N.O.)
7. ALL METAL STUDS SHALL BE MANUFACTURED BY THE CURRENT MEMBERS OF THE STEEL STUD MANUFACTURERS ASSOCIATION. ICBO #ER-4943P.
8. USE SCREWABLE METAL STUDS U.N.O.

SPECIAL PROVISIONS

1. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATING MATERIAL.
2. CONTRACTOR SHALL LOCATE EXISTING STEEL REINFORCING IN CONCRETE WITH PACHOMETER AND LOCATE DRILLED ANCHORS TO AVOID DAMAGING REBAR. ANY REQUIRED CHANGE IN DRILLED ANCHOR LOCATIONS SHALL BE DETERMINED PRIOR TO FABRICATING MATERIAL.
3. IT IS REQUIRED THAT THE NEW STEEL BE INSTALLED PRIOR TO CUTTING NEW OPENINGS IN THE CONCRETE STRUCTURE.

EXPANSION OR EPOXY ANCHORS

1. INSTALLATION SHALL BE IN ACCORDANCE WITH ICC APPROVAL AND DSA IR 19-1
2. EPOXY ANCHORS SHALL BE "HILTI HY150 MAX" PER ICC REPORT ESR-1967 U.N.O. REF DETAILS FOR ANCHOR SZE, SPACING, AND EMBEDMENT.
3. EXPANSION ANCHORS SHALL BE "HILIT KWIK BOLT 3" PER ICC REPORT ESR-1385 U.N.O. REF DETAILS FOR ANCHOR SIZE, SPACING AND EMBEDMENT.

CURTAIN WALL

1. CURTAIN WALL MANUFACTURERS SHALL PROVIDE ALL BRACING AND CONNECTIONS TO THE STRUCTURE CALCULATIONS SIGNED AND SEALED BY A REGISTERED ENGINEER, IN THE STATE OF CALIFORNIA SHALL BE SUBMITTED FOR REVIEW.

WELDED STUDS

1. ALL WELDED STUDS SHALL BE NELSON SHEAR CONNECTOR STUDS (ICBO ER-2614) OR EQUAL.
2. SEE PLAN FOR WELDED STUD LOCATIONS.

RECOMMENDED SPECIFICATIONS FOR AUTOMATIC END WELDED STUDS

A. MATERIAL

AUTOMATIC END WELDED STUDS SHALL BE NELSON GRANULAR FLUXFILLED SHEAR CONNECTOR OR ANCHOR STUDS (OR APPROVED EQUAL)

STUDS SHALL BE MANUFACTURED OF C-1015 COLD ROLLED STEEL WHICH CONFORMS TO A.S.T.M. SPECIFICATION A-108-58-T.

B. INSTALLATION

THE STUDS SHALL BE AUTOMATICALLY END WELDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE END OF THE STUD AND THE PLATE. THERE SHOULD BE NO POROSITY OR EVIDENCE OF LACK OF FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE. THE STUD SHALL DECREASE IN LENGTH DURING THE WELDING APPROXIMATELY 1/8" FOR 5/8" AND UNDER, AND 3/16" FOR OVER 5/8" DIAMETER. WELDING SHALL BE DONE ONLY BY QUALIFIED WELDERS APPROVED BY THE WELDING INSPECTOR.

C. INSPECTION AND TESTS

INSPECTION, IN ACCORDANCE WITH TITLE 24, SECTION 2231A.5, OF ALL THE SHOP AND FIELD WELDING OPERATIONS FOR THE AUTOMATIC END WELDED STUDS SHALL BE MADE BY A QUALIFIED WELDING INSPECTOR (APPROVED BY THE DIVISION OF THE STATE ARCHITECT). THE TYPE AND CAPACITY OF THE WELDING EQUIPMENT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL BE CHECKED AND APPROVED BY A WELDING INSPECTOR.

AT THE BEGINNING OF EACH DAY'S WORK, A MINIMUM OF TWO TEST STUD WELDS SHALL BE MADE WITH THE EQUIPMENT TO BE USED TO METAL WHICH IS THE SAME AS THE ACTUAL WORK PIECE. THE TEST STUDS SHALL BE SUBJECTED TO A 90% BEND TEST BY STRIKING THEM WITH A HEAVY HAMMER. AFTER THE ABOVE TEST, THE WELD SECTION SHALL NOT EXHIBIT ANY TEARING OUT OR CRACKING.

TESTING OF END-WELDED STUDS SHALL BE IN ACCORDANCE WITH SECTION 2231A.3, PART 2, TITLE 24.

GENERAL

1. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRACING AND SHORING ALL EXCAVATIONS, TEMPORARY STRUCTURES, AND PARTIALLY COMPLETED PORTIONS OF THE WORK.
2. ALL CONDITIONS NOT SPECIFICALLY SHOWN OR DETAILED SHALL BE OF THE SAME TYPE AND CHARACTER AS THOSE SHOWN FOR SIMILAR CONDITIONS.
3. ALL WORK AND MATERIAL SHALL CONFORM TO THE CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 1 & 2 (LATEST ADOPTED EDITION) AND ALL LOCAL CODES.
4. THE STRUCTURAL DRAWINGS SHALL BE COORDINATED WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
5. NOTIFY THE STRUCTURAL ENGINEER 24 HOURS PRIOR TO PLACING CONCRETE.
6. SEISMIC DESIGN CRITERIA (ASSUMED OR PER SOILS REPORT)
   - ZONE 4 — Ca= 0.40 Na
   - SOIL TYPE Sc — Cv= 0.56 Nv
   - SEISMIC SOURCE B — Na= 1.0
   - DISTANCE > 5 KM — Nv= 1.0
7. WIND DESIGN CRITERIA
   - SPEED 70 MPH — EXPOSURE C
8. THE ROOF DESIGN LIVE LOAD IS 20 PSF (REDUCIBLE). THE FLOOR DESIGN LIVE LOAD IS:
   - CLASSROOM = 50 PSF
   - CORRIDOR = 100 PSF (UNREDUCIBLE)
   - STACKROOM = 125 PSF (UNREDUCIBLE)
9. SEE ARCH'L & MECH'L DWGS FOR MORE INFORMATION.
10. CONTRACTOR SHALL REPLACE ALL TEMPORARILY REMOVED EXISTING PIPE, CONDUIT, ETC. TO ORIGINAL CONDITION.

FOUNDATIONS

1. FOOTINGS SHALL REST ON FIRM, UNDISTURBED OR COMPACTED SOIL AT A MINIMUM DEPTH BELOW FINISH GRADE OR NATURAL GRADE. SEE DETAILS FOR MINIMUM EMBEDMENT.
   SEE SOILS REPORT FOR PAD AND FOOTING OVEREXCAVATION AND COMPACTION REQUIREMENT.
2. SOILS REPORT IS PREPARED BY: AMERICAN GEOTECHNICAL, FILE NO. 32180.01 DATED NOVEMBER 27, 2006
3. ALLOWABLE DESIGN VALUE
   - BEARING PRESSURE: 3000 PSF (SUSTAINED) AND 4000 PSF (TOTAL LOAD)
   - PASSIVE PRESSURE: 300 PCF
   - FRICTION: 0.4 FOR EXTERIOR RETAINING WALLS (BEARING ON COMPACTED FILL)
   - ACTIVE SOIL PRESSURE = 60 PCF
   - BEARING PRESSURE = 2000 PSF
   - PASSIVE PRESSURE = 200 PCF
4. CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UNDERGROUND PIPE, CONDUIT, FOUNDATION, AND ETC. PRIOR TO EXCAVATION AND NOTIFY STRUCTURAL ENGINEER FOR ANY CONFLICT.
5. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY SLOPES AND TRENCHES EXCAVATED AT THE SITE AND THE DESIGN OF ANY REQUIRED TEMPORARY SHORING. SHORING, BRACING AND BENCHING SHOULD BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH THE 2003 EDITION OF THE CALIFORNIA CONSTRUCTION SAFETY ORDERS, ARTICLE 6 OR MORE CURRENT.

CONCRETE

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS AS FOLLOWS:
   - SLAB ON GRADE — 4500 PSI
   - FOOTING — 4500 PSI
   - CONCRETE FILL ON METAL DECK (LIGHT WT. CONCRETE) — 4000 PSI
   - ALL OTHER CONCRETE (U.N.O.) — 4500 PSI
2. ALL CONCRETE SHALL HAVE A MAXIMUM SLUMP NO GREATER THAN 4", EXCEPT FOR FOUNDATIONS WHICH MAY HAVE 5" MAXIMUM SLUMP.
3. CEMENT SHALL CONFORM TO ASTM C150 AND AGGREGATE SHALL CONFORM TO ASTM C33 & TITLE 24 CCR. TYPE OF CEMENT = V WATER CEMENT RATIO = 0.45
4. MIX DESIGNS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO USE, AND SHALL BE PREPARED IN ACCORDANCE WITH METHOD B OF TITLE 24 SECTION 1905A.2.3
   - USE 1" MAX. AGGREGATE U.N.O.
   - USE 3/4" MAX. AGGREGATE FOR CONC FILL ON METAL DECK
5. CONSTRUCTION JOINTS FOR SLABS ON GRADE SHALL BE AS SHOWN ON DRAWINGS OR AS APPROVED BY THE STRUCTURAL ENGINEER, PREPARE JOINTS PER 1906A.4.
6. ALL CONCRETE SHALL BE PLACED UNDER THE CONTINUOUS INSPECTION OF AN APPROVED DSA INSPECTOR.
7. REFER TO THE ARCHITECTURAL PLANS FOR MOULDS, GROOVES, ORNAMENTS, CLIPS, OR TEXTURES REQUIRED TO BE CAST INTO THE CONCRETE AND FOR THE LOCATION OF DEPRESSIONS, CURBS AND RAMPS.
8. CORNERS OF SLABS, BEAMS WALLS, COLUMNS, ETC. SHALL BE FORMED WITH A 1" CHAMFER UNLESS NOTED OTHERWISE.
9. PROVIDE 3" MIN. CONCRETE COVER ALL AROUND ALL STEEL MEMBERS BELOW GRADE.
10. ROUGH ALL CONCRETE FACE W/ 1/4" AMPLITUDE WHERE NEW CONCRETE POUR OCCURS.

REINFORCING STEEL

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60. ALL REINFORCING SHALL BE FROM IDENTIFIED STOCK WITH MILL ANALYSIS SUPPLIED.
2. ALL REINFORCING STEEL, DOWELS, ANCHOR BOLTS, ETC., SHALL BE WELL SECURED IN PLACE PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL USE TEMPLATES TO INSURE ACCURATE PLACEMENT OF ANCHOR BOLTS, DOWELS, ETC.
3. DOWELS SHALL BE PROVIDED AT POUR AND CONSTRUCTION JOINTS AND SHALL BE THE SAME SIZE AND SPACING AS THE REINFORCING SHOWN FOR THE SUBSEQUENT CONSTRUCTION.
4. ALL CONTINUOUS BARS OR DOWELS SHALL PER DETAIL 20/S1-2 UNLESS SHOWN OTHERWISE
5. REINFORCING SHALL HAVE THE FOLLOWING MINIMUM COVERS:
   - CONCRETE AGAINST EARTH NOT FORMED — 3"
   - CONCRETE AGAINST EARTH FORMED OR TROWELED — 2"
   - WALLS AND CURBS — 1 1/2"
   - SLAB ON GRADE — AT CENTER
6. WELDING OF REINFORCING STEEL SHALL CONFORM TO AWS D1.4. USING PROPER LOW HYDROGEN ELECTRODES. ALL BARS TO BE WELDED SHALL CONFORM TO ASTM A706. PREQUALIFICATION TESTS MUST BE PERFORMED PRIOR TO JOD WELDING

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Agency Approval

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
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DATE MAY 0 7 2008

No.	Date	Revision/Issue

Project Name

JAMES B. UTT MEMORIAL LEARNING RESOURCE CENTER RENOVATION

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Checked By	Drawn By
DT	MG

Sheet Title

GENERAL NOTES

Sheet Number

S1.1

Project Number	Scale
GG7524.00	N/A

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