GENERAL STRUCTURAL NOTES

A. GENERAL REQUIREMENTS

1. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE STRUCTURAL ENGINEERS IN THIS OR SIMILAR LOCALITIES. THEY ASSUME THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKMEN WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
2. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, LAGGING, SHORING, BRACING, FORM-WORK, ETC. AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. CONSTRUCTION MATERIALS SHALL BE UNIFORMLY SPREAD OUT SUCH THAT DESIGN LIVE LOAD PER SQUARE FOOT AS NOTED HEREIN IS NOT EXCEEDED.
3. DESIGN OF NON-PRIMARY STRUCTURAL ITEMS, SUCH AS STAIRS, RAILINGS, NON-STRUCTURAL WALLS AND PREFABRICATED STRUCTURAL ITEMS, SUCH AS FLOOR AND ROOF TRUSSES, IS TO BE PROVIDED BY OTHERS AND SUBMITTED FOR APPROVAL AS A DEFERRED SUBMITTAL UNLESS SPECIFICALLY NOTED ON THESE DRAWINGS.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS WITH ARCH'L. DRAWINGS AND RESOLVE ANY DISCREPANCIES WITH THE ARCHITECT PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCH'L, MECH, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.
5. TYPICAL DETAILS AND NOTES SHALL APPLY, THOUGH NOT NECESSARILY INDICATED AT A SPECIFIC LOCATION ON PLANS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT. DETAILS MAY SHOW ONLY ONE SIDE OF CONNECTION OR MAY OMIT INFORMATION FOR CLARITY.
6. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.
7. ALL INSPECTIONS REQUIRED BY THE BUILDING CODES, LOCAL BUILDING DEPARTMENTS, OR BY THESE PLANS SHALL BE PROVIDED BY AN INDEPENDENT INSPECTION COMPANY OR THE BUILDING DEPARTMENT. SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE AN INSPECTION.

B. BASIS FOR DESIGN

1. BUILDING CODE: INTERNATIONAL BUILDING CODE 2003
2. ROOF LOADS: LIVE LOAD:
   20 PSF
   DEAD LOAD:
   12 PSF
3. WIND LOAD: 90 MPH BASIC WIND SPEED
   EXPOSURE B
   IMPORTANCE FACTOR = 1.0
   GCpi = ±0.18
   COMPONENTS & CLADDING PRESSURE = 12.34 PSF
4. SEISMIC LOAD: SITE CLASS D
   SEISMIC DESIGN CATEGORY D
   IMPORTANCE FACTOR = 1.0
   R = 6.0
   SEISMIC USE GROUP I
   SDS = 0.65
   SD1 = 0.28
   SYSTEM: SPECIAL REINFORCED MASONRY SHEAR WALLS
   ANALYSIS: EQUIVALENT LATERAL FORCE PROCEDURE
   BASE SHEAR: 0.093 Wp
5. SNOW LOAD: NONE

C. FOUNDATION

1. FOUNDATIONS DESIGNED PER RECOMMENDATIONS BY NINYO & MOORE, REPORT NO. 301600001, DATED SEPTEMBER 13, 2004. SITE PREPARATION, GRADING, TESTS, INSPECTIONS, FIELD OBSERVATIONS, OR APPROVAL FROM THE GEOTECHNICAL ENGINEER RECOMMENDED BY THE GEOTECHNICAL REPORT AND ANY ADDENDA SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF FOUNDATIONS.
2. ALLOWABLE DEAD PLUS LIVE LOAD SOIL PRESSURE = 2200 PSF.
3. TRENCHES AND EXCAVATIONS UNDER OR ADJACENT TO FOUNDATIONS SHALL BE PROPERLY BACKFILLED AND COMPACTED.

D. CONCRETE

1. DUE TO SEVERE SULFATE CONTENT OF THE ON-SITE SOILS, MIN. 28 DAY COMPRESSIVE STRENGTH, f'c, SHALL BE 4000 PSI FOR ALL CONCRETE IN CONTACT WITH SOIL. MAX. WATER/CEMENT RATIO FOR CONCRETE IN CONTACT WITH SOIL SHALL BE 0.5. (FOUNDATION DESIGN BASED ON 2500 PSI.)
2. CONCRETE MIXES SHALL BE DESIGNED BY A CERTIFIED LABORATORY AND APPROVED BY THE ENGINEER. MIX DESIGNS FOR CONCRETE SLABS SHALL BE PROPORTIONED SO AS TO MINIMIZE SHRINKAGE USING 1 1/2" DIA. MAX. SIZE AGGREGATE.
3. ALL CONCRETE SHALL BE NORMAL WEIGHT OF 145 POUNDS PER CUBIC FOOT USING HARDROCK AGGREGATES.
4. MAX. SLUMP SHALL BE 5 INCHES. WATER SHALL BE CLEAN AND POTABLE.
5. PORTLAND CEMENT SHALL CONFORM TO ASTM C150. TYPE V CEMENT SHALL BE USED FOR CONCRETE IN CONTACT WITH EARTH. TYPE II CEMENT MAY BE USED ELSEWHERE. CEMENT SHALL BE TYPE V WITH POZZOLAN WHERE CONCRETE IS IN CONTACT WITH SOIL CONTAINING VERY SEVERE SULFATE EXPOSURE.
6. FLY ASH MAY BE USED IN CONCRETE, SUBJECT TO APPROVAL BY THE ARCHITECT, PROVIDED THE FOLLOWING CONDITIONS ARE MET:
   6.1. FLY ASH SHALL COMPLY WITH ASTM C 618.
   6.2. CEMENT CONTENT SHALL BE REDUCED A MINIMUM OF 15 PERCENT UP TO A MAXIMUM OF 25 PERCENT WHEN COMPARED TO AN EQUIVALENT CONCRETE MIX DESIGN WITHOUT FLY ASH. FLY ASH CONTENT SHALL NOT COMPRISE MORE THAN 35 PERCENT OF THE TOTAL CEMENTITIOUS CONTENT. THE WATER-CEMENT RATIO SHALL BE CALCULATED BASED ON THE TOTAL CEMENTITIOUS MATERIAL IN THE MIX.
   6.3. CLASS F FLY ASH SHALL BE USED IN SULFATE RESISTANT CONCRETE WITH F'C EQUAL TO OR GREATER THAN 4000 PSI. CLASS C FLY ASH MAY BE USED ELSEWHERE.
   6.4. SHOULD THE CONTRACTOR ELECT TO USE EARLY STRENGTH CONCRETE TO ACHIEVE THE SPECIFIED COMPRESSIVE STRENGTH, f'c, AT LESS THAN 28 DAYS, THE CONCRETE MIX DESIGN SHALL BE PROPORTIONED TO DEVELOP THE 28 DAY COMPRESSIVE STRENGTH AT THE REQUIRED AGE. THE CONTRACTOR SHALL SUBMIT TEST DATA FOR REVIEW BY THE STRUCTURAL ENGINEER TO SUBSTANTIATE THE CONCRETE STRENGTH AT THE REQUIRED AGE.
7. NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT, UNLESS APPROVED BY THE ENGINEER.
8. CONCRETE MIXING, PLACEMENT AND QUALITY SHALL BE PER IBC SECTION 1905. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED. SLABS ON GRADE NEED BE VIBRATED ONLY AROUND AND UNDER FLOOR DUCTS OR SIMILAR ELEMENTS. REMOVE ALL DEBRIS FROM FORMS BEFORE PLACING CONCRETE. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL SO AS TO CAUSE SEGREGATION OF AGGREGATES. UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED 5 FEET.

D. CONCRETE (CONT'D.)

9. ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING, DOWELS, BOLTS, ANCHORS, SLEEVES, ETC., SHALL BE SECURELY POSITIONED IN THE FORMS.
10. CONCRETE SLAB ON GRADE CONTROL JOINTS SHALL BE AS NOTED ON THE FOUNDATION PLAN. KEYED OR DOWELED CONTROL JOINTS NEED ONLY OCCUR AT EXPOSED EDGES DURING POURING. ALL OTHER JOINTS MAY BE SAW CUT. POST-TENSIONED CONCRETE SLABS ON GRADE SHALL NOT HAVE CONTROL JOINTS UNLESS SPECIFICALLY NOTED.
11. PROTECT CONCRETE FROM DAMAGE OR REDUCED STRENGTH DUE TO COLD OR HOT WEATHER IN ACCORDANCE WITH ACI 305 AND 306. CONTRACTOR SHALL TAKE SPECIAL CURING PRECAUTIONS TO MINIMIZE SHRINKAGE CRACKING OF CONCRETE SLABS.
12. PIPES AND ELECTRICAL CONDUITS SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY THE ENGINEER. EMBEDDED ITEMS SHALL NOT IMPAIR THE STRENGTH OF THE MEMBER.

E. MASONRY

1. SPECIFIED COMPRESSIVE STRENGTH OF MASONRY, f'm, SHALL BE 1500 PSI. CONTRACTOR SHALL SUBMIT EVIDENCE THAT ALL CONCRETE BLOCK, GROUT AND MORTAR CONFORM TO THE REQUIREMENTS OF EITHER IBC 2105.2.2.1 OR IBC 2105.2.2.2 TO ACHIEVE THE DESIGN COMPRESSIVE STRENGTH SPECIFIED ABOVE.
2. STRUCTURAL MASONRY SHALL BE HOLLOW, MEDIUM WEIGHT (115 PCF.) LOAD-BEARING CONCRETE MASONRY UNITS CONFORMING TO IBC 2103.1. ALL BLOCKS SHALL BE PLACED IN A STACKED OR RUNNING BOND CONSTRUCTION U.N.O. WITH ALL VERTICAL CELLS IN ALIGNMENT.
3. MORTAR MIX SHALL CONFORM TO REQUIREMENTS OF IBC 2103.7, TYPE M OR S.
4. GROUT SHALL CONFORM TO REQUIREMENTS OF IBC 2103.10. USE SUFFICIENT WATER FOR GROUT TO FLOW INTO ALL JOINTS OF THE MASONRY WITHOUT SEGREGATION. ONLY SOLID GROUT CELLS WITH REINFORCING UNLESS REQUIREMENT TO SOLID GROUT ENTIRE WALL IS SPECIFICALLY NOTED ON PLANS OR SCHEDULE. HOLD GROUT DOWN 1-1/2" BEL OW TOP OF BLOCK AT GROUT LIFT JOINTS.
5. LAP REINFORCING BARS SHALL BE PER IBC 2107.2.3 OR REBAR LAP SCHEDULE, WHERE PRESENT, U.N.O.
6. REINFORCING SHALL BE SECURED w/ REBAR POSITIONERS IN ITS PROPER POSITION WITHIN THE CELL TO PREVENT LATERAL DISPLACEMENT PRIOR TO GROUTING PER IBC REQUIREMENTS.
7. MIN. WALL VERT. REINFORCING, U.N.O. ON PLANS OR DETAILS, SHALL BE #5 BAR VERT. FULL HEIGHT IN CENTER OF GROUTED CELL AT ALL WALL INTERSECTIONS, CORNERS, WALL ENDS, JAMBS AT WALL OPENINGS, AND AT EACH SIDE OF CONTROL JOINTS. REFER TO PLAN FOR TYPICAL VERT. WALL REINF. SIZE AND SPACING. DOWEL ALL VERT. REINFORCING TO FOUNDATION WITH DOWELS TO MATCH AND LAP VERT. REINFORCING.
8. MIN. WALL HORIZ. REINFORCING, U.N.O. ON PLANS OR DETAILS, SHALL BE (2) #5 BARS IN CENTER OF 32 INCH DEEP (MIN.) CONTINUOUS GROUTED BOND BEAM AT ELEVATED FLOOR AND ROOF LINES AND SINGLE #5 BAR IN CENTER OF 16 INCH DEEP CONTINUOUS GROUTED BOND BEAM AT TOP OF PARAPET OR FREE STANDING WALL AND AT INTERVALS NOT TO EXCEED 48" o.c. PLACE BARS AT ELEVATED FLOOR AND ROOF LINES CONTINUOUS THROUGH CONTROL JOINTS. PROVIDE BENT BARS PER TYPICAL DETAILS TO MATCH AND LAP HORIZ. BOND BEAM REINFORCING AT CORNERS AND WALL INTERSECTIONS TO MAINTAIN BOND BEAM CONTINUITY. USE BOND BEAM UNITS AT HORIZ. REINFORCING.
9. MIN. LINTEL, WHERE NOT NOTED ON PLANS, SHALL HAVE A MIN. OF (2) #5 CONTINUOUS HORIZ. BARS IN BOTTOM OF BOND BEAM OR LINTEL BLOCK AND SHALL BE GROUTED SOLID TO A MIN. DEPTH OF 24 INCHES. SILLS SHALL BE REINFORCED WITH SINGLE #5 BAR IN BOND BEAM BLOCK GROUTED SOLID TO MINIMUM DEPTH OF 8". ALL LINTEL OR SILL REINFORCING AND GROUT SHALL EXTEND 2 FEET MIN. PAST JAMBS U.N.O. ON PLANS OR DETAILS.

F. REINFORCING STEEL

1. REINFORCING STEEL SHALL CONFORM TO REQUIREMENTS OF ASTM A615 OR ASTM A706. REINFORCING SHALL BE GRADE 60 (FY = 60 KSI) DEFORMED BARS FOR ALL BARS #5 AND LARGER AND ALL BARS USED FOR CONCRETE WALLS, BEAMS, ELEVATED SLABS AND COLUMN PRIMARY REINFORCING. REINFORCING MAY BE GRADE 40 (FY = 40 KSI) DEFORMED BARS FOR ALL BARS #4 AND SMALLER U.N.O. ON PLANS OR DETAILS. ALL REINFORCING TO BE WELDED SHALL BE ASTM A706, GRADE 60 LOW ALLOY WELDABLE STEEL.
2. WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A185. LAPS IN WELDED WIRE FABRIC SHALL BE MADE SUCH THAT THE OVERLAP, MEASURED BETWEEN OUTERMOST CROSS WIRE OF EACH FABRIC SHEET, IS NOT LESS THAN THE SPACING OF CROSS WIRES PLUS 2 INCHES.
3. ALL DIMENSIONS SHOWING THE LOCATION OF REINFORCING STEEL NOT NOTED AS "CLEAR" OR "CLR" ARE TO CENTER OF STEEL. MIN. COVER FOR NON-PRESTRESSED CONCRETE REINFORCING SHALL BE AS FOLLOWS, U.N.O. ON PLANS OR DETAILS:

EXPOSURE CONDITION:	MINIMUM COVER:	TOLERANCES (+ / -):
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"	3/8"
EXPOSED TO EARTH OR WEATHER:		
NO. 5 AND SMALLER:	1 1/2"	3/8"
NO. 6 AND LARGER:	2"	3/8"
SLABS ON GRADE	1 1/2"	1/4"
NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND:		
ROOF SLAB:	1"	1/8"
STRUCTURAL SLABS AND WALLS	3/4"	1/8"
BEAMS AND COLUMNS (PRIMARY REINFORCEMENT, TIES, STIRRUPS AND SPIRALS)	1 1/2"	3/8"

4. LAP SPLICES OF REINFORCING STEEL IN CONCRETE BEAMS, SLABS AND FOOTINGS SHALL BE ACCORDING TO ACI 318, SECTION 12, OR LAP SCHEDULE, WHERE PRESENT, U.N.O. STAGGER SPLICES A MIN. OF ONE LAP LENGTH. NO TACK WELDING OF REINFORCING BARS ALLOWED. LATEST ACI CODE AND DETAILING MANUAL APPLY. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZ. BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS. VERT. WALL BARS SHALL BE SPLICED AT OR NEAR FLOOR LINES. SPLICE TOP BARS AT CENTER LINE OF SPAN AND BOTTOM BARS AT THE SUPPORT IN SPANDRELS, BEAMS, GRADE BEAMS, ETC. U.N.O.
5. MECHANICAL SPLICE COUPLERS SHALL HAVE CURRENT ICBO APPROVAL AND SHALL BE CAPABLE OF DEVELOPING 125% OF THE STRENGTH OF THE BAR.
6. ALL REINFORCING SHALL BE BENT COLD. BARS SHALL NOT BE UN-BENT AND RE-BENT. FIELD BENDING OF REBAR SHALL NOT BE ALLOWED UNLESS SPECIFICALLY NOTED.
7. WELDING OF REINFORCING BARS, METAL INSERTS, AND CONNECTIONS SHALL CONFORM WITH AWS D14, AND SHALL BE MADE ONLY AT LOCATIONS SHOWN ON PLANS OR DETAILS.
8. REINFORCING BAR SPACING SHOWN ON PLANS ARE MAX. ON CENTERS. ALL BARS SHALL BE DETAILED AND PLACED PER CRSI SPEC'S AND HANDBOOK. DOWEL ALL VERT. REINFORCING TO FOUNDATION. SECURELY TIE ALL BARS IN LOCATION w/ REBAR POSITIONERS BEFORE PLACING CONCRETE. MIN. CLEAR SPACING BETWEEN PARALLEL REINFORCEMENT SHALL BE THE LARGER OF 1-1/2 TIMES NOMINAL BAR DIA. OR 1-1/3 TIMES MAX. AGGREGATE SIZE OR 1-1/2".

G. STRUCTURAL STEEL

1. STRUCTURAL STEEL MEMBERS SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES U.N.O:

SHAPE	STANDARD	Fy
ROLLED WIDE FLANGE SECTIONS	ASTM A992	50 KSI
OTHER STANDARD STEEL SHAPES AND ROLLED SECTIONS	ASTM A36	36 KSI
BARS AND PLATES	ASTM A36	36 KSI
PIPES	ASTM A501	36 KSI
	OR ASTM A53 TYPE E OR S, GRADE B	35 KSI
TUBES	ASTM A500, GRADE B	46 KSI
BOLTS	ASTM A325	---
NUTS	ASTM A563	---
WASHERS	ASTM F436	---
ANCHOR BOLTS/RODS	ASTM A307	---
	OR ASTM F1554, GRADE 55 (F1554 RODS SHALL COMPLY WITH WELDABILITY SUPPLEMENT S1)	55

2. ALL STRUCTURAL AND MISC. STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" LATEST EDITION.
3. WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS. ALL WELDING SHALL USE E70 SERIES LOW HYDROGEN ELECTRODES OR E71T-8 WIRE ELECTRODES PER AWS 5.20 U.N.O. ALL WELDS INVOLVING REINFORCING BARS SHALL USE E90 SERIES ELECTRODES. ALL WELDING SHALL CONFORM WITH THE LATEST AMERICAN WELDING SOCIETY STANDARDS. WELDS ON DRAWINGS ARE SHOWN AS SHOP WELDS. CONTRACTOR MAY SHOP WELD OR FIELD WELD AT HIS DISCRETION. ALL FULL PENETRATION WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY. ALL MISC. WELDS SHALL BE PER LATEST AMERICAN WELDING SOCIETY STANDARDS.
4. ALL MISC. FILLET WELDS NOT NOTED, INCLUDING THOSE FOR STIFFENERS, MISC. PLATES, ETC., SHALL BE PER LATEST EDITION OF AISC SPECIFICATIONS TABLE J2.4.
5. WELD LENGTHS CALLED OUT ON PLANS OR DETAILS ARE MINIMUM NET EFFECTIVE LENGTHS U.N.O.
6. WELDING OF ANY JOINT WITHIN THE SEISMIC-FORCE-RESISTING SYSTEM (i.e., MOMENT AND BRACED FRAMES, DRAG BEAMS, LEDGERS, AND ALL ASSOCIATED CONNECTIONS) SHALL BE PERFORMED IN ACCORDANCE WITH A WELDING PROCEDURE SPECIFICATION (WPS) AS REQUIRED IN THE LATEST EDITION OF AWS D1.1 AND APPROVED BY THE ENGINEER OF RECORD. THE WPS VARIABLES SHALL BE WITHIN THE PARAMETERS ESTABLISHED BY THE FILLER METAL MANUFACTURER. WELDS SHALL BE SEQUENCED TO MINIMIZE ANY RESIDUAL STRESS DUE TO WELD SHRINKAGE.
7. ALL WELDS USED IN MEMBERS AND CONNECTIONS IN THE SEISMIC-FORCE-RESISTING SYSTEM (U.N.O. BELOW FOR COMPLETE JOINT PENETRATION WELDS AT MOMENT FRAME CONNECTIONS) SHALL BE MADE WITH A FILLER METAL THAT CAN PRODUCE WELDS THAT HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBS AT -20° F, AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION.
8. ALL BOLTS SHALL BE INSTALLED AS BEARING-TYPE CONNECTIONS WITH THREADS EXCLUDED FROM SHEAR PLANE (TYPE "X" CONNECTION), U.N.O. HIGH-STRENGTH BOLT ASSEMBLIES SHALL BE IN ACCORDANCE WITH THE RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" AND SHALL BE SNUG TIGHTENED USING ANY AISC APPROVED METHOD U.N.O. ALL BOLTS IN SLOTTED OR OVERSIZED HOLES AND ALL HIGH-STRENGTH BOLTS SHALL BE INSTALLED WITH HARDENED WASHERS.
9. ALL BOLTED CONNECTIONS IN MOMENT AND BRACED FRAMES, DRAG BEAMS, LEDGERS, AND OTHER MEMBERS OR CONNECTIONS IN THE SEISMIC-FORCE-RESISTING SYSTEM SHALL HAVE THEIR FAYING SURFACES PREPARED AS REQUIRED FOR CLASS A OR BETTER SLIP-CRITICAL JOINTS (EXCEPTION: FAYING SURFACES OF WELDED JOINTS WHOSE PARTS ARE JOINED INITIALLY BY ERECTION BOLTS NEED ONLY BE PREPARED SUCH THAT THEY ARE FREE FROM DIRT, BURRS, AND OTHER DEFECTS THAT WOULD PREVENT SOLID FIT-UP OF THE PARTS TO BE JOINED). REFER TO THE RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" FOR SPECIFIC SURFACE PREPARATION REQUIREMENTS FOR CLASS A JOINTS.
10. ANCHOR BOLTS/RODS SHALL NOT BE REPAIRED, REPLACED OR FIELD MODIFIED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
11. HEADED STUDS AND AUTOMATIC WELDED DOWELS SHOWN ON PLANS OR DETAILS SHALL BE TRU NELSON STUDS AND DEFORMED BAR ANCHORS PER ICBO ER-2614 AND ICBO ER-5211, RESPECTIVELY. STUDS SHALL HAVE FLUXED ENDS AND BE AUTOMATICALLY END-WELDED WITH SUITABLE EQUIPMENT AT SPACINGS INDICATED ON THE PLANS OR DETAILS. WELDING OF STUDS SHALL CONFORM TO ALL REQUIREMENTS OF THE LATEST EDITION OF THE "RECOMMENDED PRACTICES FOR STUD WELDING" AND THE "STRUCTURAL WELDING CODE" PUBLISHED BY THE AMERICAN WELDING SOCIETY. HEADED STUDS AND AUTOMATIC WELDED DOWELS BY OTHER MANUFACTURERS MAY BE SUBSTITUTED PROVIDED THEY ARE OF EQUIVALENT CAPACITY FOR THE INTENDED APPLICATION AND HAVE CURRENT ICBO APPROVAL.
12. SHEAR CONNECTORS (SUCH AS HEADED STEEL STUDS, STEEL BARS, OR STEEL LUGS), REINFORCING BARS, DEFORMED ANCHORS, OR THREADED STUDS SHALL NOT BE ATTACHED TO THE TOP FLANGES OF BEAMS, JOISTS, OR BEAM ATTACHMENTS SO THAT THEY PROJECT VERTICALLY FROM OR HORIZONTALLY ACROSS THE TOP FLANGE OF THE MEMBER UNTIL AFTER THE METAL DECKING, OR OTHER WALKING/WORKING SURFACE, HAS BEEN INSTALLED.
13. ALL EXPANSION ANCHORS SHALL BE EITHER TRUBOLT WEDGE ANCHORS MANUFACTURED BY ITW/RAMSET/REDHEAD PER ICBO NO. ER-1372, HILTI KWIK-BOLT II PER ICBO ER-4627 OR WEDGE-ALL EXPANSION ANCHORS MANUFACTURED BY SIMPSON STRONG-TIE PER ICBO NO. ER-3631. ALL EXPANSION ANCHOR BOLTS SHALL BE INSTALLED WITH SPECIAL INSPECTION. SUBSTITUTIONS SHALL ONLY BE PERMITTED WITH PRIOR WRITTEN APPROVAL OF THE ENGINEER THROUGH THE ARCHITECT.
14. ALL EPOXY ANCHORS SHALL USE EITHER SIMPSON SET EPOXY PER ICBO ER-5279, ITW RAMSET/RED HEAD EPCON CERAMIC 6 PER ICBO ER-4285, OR HILTI HY-150 INJECTION ADHESIVE PER ICBO ER-5193. INSTALL PER MANUFACTURER'S SPECIFICATIONS. SPECIAL INSPECTION PER IBC SECTION 1704 IS REQUIRED FOR ALL EPOXY ANCHOR INSTALLATIONS. FOR EPOXY PRODUCTS, THE BASE MATERIAL TEMPERATURE SHALL BE NO LESS THAN 40° F AT THE TIME OF APPLICATION.

H. STEEL DECK

1. STEEL DECK SHALL BE MANUFACTURED BY EITHER VERCO MANUFACTURING, CO. PER ICBO REPORT ER-2078P RE-ISSUED DEC. 1, 2002 OR VULCRAFT PER ICBO REPORT ER-3415 RE-ISSUED DEC. 1, 2001. STEEL DECK BY OTHER MANUFACTURERS MAY BE USED ONLY WITH PRIOR WRITTEN APPROVAL OF THE ENGINEER THROUGH THE ARCHITECT.
2. ALL DECK WELDING SHALL USE E60 OR E70 SERIES ELECTRODES (MIN. ROD DIA. = 1/8"). ALL ARC SPOT (PUDDLE) WELDS SHALL HAVE AN EFFECTIVE FUSION AREA NOT LESS THAN 1/2" IN DIA. OR 3/8" x .1". ANY ARC SEAM WELDS SHALL HAVE A FUSION AREA NOT LESS THAN 3/8" x 1 1/2". OTHER DECK WELD REQUIREMENTS SHALL COMPLY WITH THE LATEST EDITION OF AWS D1. 3.
3. ROOF DECK TYPE, THICKNESS, AND GAGE SHALL BE AS NOTED ON PLAN. DECK SHALL BE ERECTED IN ACCORDANCE WITH FPRCS RECOMMENDATIONS AS 3 SPAN MIN. WELD DECK TO SUPPORTING MEMBERS WITH (5) PUDDLE WELDS PER SHEET AT ENDS, END LAPS AND INTERMEDIATE SUPPORTS, AND AT 12" o.c. AT PERIMETER BEAMS, EDGES OF OPENINGS RUNNING PARALLEL TO THE DECK, AND AT DRAG OR COLLECTOR ELEMENTS NOTED ON PLANS. END LAPS AT SUPPORTS SHALL BE 2" MIN. SIDE SEAM ATTACHMENT SHALL USE THE VERCO PUNCHLOK SYSTEM WITH VERCO SIDELAP CONNECTIONS (VSC) AT 24" o.c. MAX. DECK STEEL MAY BE EITHER GALVANIZED OR PRIME PAINTED.
4. STEEL DECK SUPPLIER SHALL PROVIDE ALL NECESSARY ACCESSORIES SUCH AS RIDGE AND VALLEY PLATES, SADDLES, COVER PLATES, MUD STOPS NOT SPECIFICALLY NOTED ON PLANS, ETC., TO MAKE THE JOB COMPLETE.

I. SPECIAL INSPECTION

1. IN ADDITION TO STANDARD INSPECTIONS BY THE BUILDING OFFICIAL REQUIRED PER IBC SECTION 109, THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS WHO SHALL PROVIDE INSPECTIONS DURING CONSTRUCTION FOR THE TYPES OF WORK LISTED IN THIS SECTION.
2. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED 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.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE SPECIAL INSPECTOR AT LEAST 24 HOURS NOTICE PRIOR TO PERFORMING ANY WORK REQUIRING SPECIAL INSPECTION.
4. THE SPECIAL INSPECTOR SHALL INSPECT THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED CONTRACT DRAWINGS AND SPEC'S. SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE ENGINEER AND THE BUILDING OFFICIAL. SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPEC'S AND THE APPLICABLE CODE PROVISIONS.
5. INSPECTORS SHALL INSPECT FROM AN APPROVED SET OF CONTRACT DRAWINGS. SHOP DRAWINGS SHALL NOT BE USED IN LIEU OF THE APPROVED CONTRACT DRAWINGS FOR INSPECTION PURPOSES.
6. TYPES OF WORK TO BE INSPECTED BY THE SPECIAL INSPECTOR ARE AS FOLLOWS:
   6.1. STEEL CONSTRUCTION AND WELDING PER IBC SECTION 1704.3 AND TABLE 1704.3, EXCEPT AS MODIFIED BELOW BY ADDITIONAL INSPECTION REQUIREMENTS FOR QUALITY ASSURANCE.
   6.2. MASONRY CONSTRUCTION PER IBC 1704.5.2 AND TABLE 1708.1.2
   6.3. DURING ALL EPOXY ANCHORING OPERATIONS FOR BOLTS, REBAR, THREADED ROD, ETC. INCLUDING VERIFICATION OF BOLT OR BAR MATERIALS, HOLE DEPTH AND DIA., HOLE CLEANOUT, EPOXY MIXING AND PLACEMENT PROCEDURES, AND EMBEDMENT DEPTH IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND MFR'S SPEC'S AND RECOMMENDATIONS.
   6.4. THE FOLLOWING COMPONENTS AS DESIGNATED IN THE QUALITY ASSURANCE FOR SEISMIC RESISTANCE SECTION OF THE G.S.N.:
   6.4.1. STRUCTURAL STEEL. CONTINUOUS SPECIAL INSPECTION FOR STRUCTURAL WELDING IN ACCORDANCE WITH QUALITY ASSURANCE SECTION OF LATEST EDITION OF AISC SEISMIC. EXCEPTIONS:
   1. SINGLE-PASS FILLET WELDS NOT EXCEEDING 5/16 INCH IN SIZE
   2. FLOOR AND ROOF DECK WELDING.

   STRUCTURAL TESTING REQUIRED FOR QUALITY ASSURANCE SHALL BE IN ACCORDANCE WITH AISC SEISMIC LATEST EDITION (QUALITY ASSURANCE SECTION), AWS D1.1 LATEST EDITION AND IBC SECTION 1708.4.
7. CERTIFICATE OF APPROVAL REGARDING MATERIALS AND INSPECTION OF PREFABRICATED ITEMS SHALL BE PROVIDED IN ACCORDANCE WITH IBC SECTION 1704.
J. QUALITY ASSURANCE FOR SEISMIC RESISTANCE

1. THE FOLLOWING ARE COMPONENTS OF THE SEISMIC-FORCE-RESISTING SYSTEM AND ARE SUBJECT TO QUALITY ASSURANCE:
   1.1. STEEL DECK AT ROOF AND FLOOR INCLUDING CONCRETE TOPPING SLAB AS OCCURS AND ATTACHMENT OF STEEL DECK TO STRUCTURAL FRAMING
   1.2. LEDGERS AND ATTACHMENT TO WALL FRAMING
   1.3. BEAMS, JOISTS OR OTHER FRAMING MEMBERS DESIGNATED ON PLANS AS DRAG MEMBERS ALONG WITH ALL CONNECTIONS TO ADJACENT FRAMING
   1.4. CONCRETE AND/OR MASONRY WALLS INCLUDING REBAR, TIE PLATES AND EMBEDDED HARDWARE FOR ATTACHMENT OF FLOOR AND ROOF FRAMING TO WALLS ALONG WITH FOOTINGS AND ATTACHMENT TO SLAB ON GRADE AS OCCURS
2. SPECIAL INSPECTIONS AND TESTING SHALL BE PROVIDED AS REQUIRED IN THE SPECIAL INSPECTION SECTION OF THE GENERAL STRUCTURAL NOTES. FREQUENCY AND TYPE OF INSPECTION SHALL BE AS REQUIRED BY THE BUILDING CODE AND ALL REFERENCED STANDARDS. COPIES OF SPECIAL INSPECTION REPORTS SHALL BE PROVIDED TO THE ARCHITECT, ENGINEER AND BUILDING OFFICIAL ON NOT LESS THAN A MONTHLY BASIS.
3. EACH CONTRACTOR RESPONSIBLE FOR CONSTRUCTION OF THE COMPONENTS SUBJECT TO QUALITY ASSURANCE NOTED ABOVE SHALL SUBMIT A STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND TO THE OWNER PRIOR TO COMMENCEMENT OF WORK ON THE SYSTEM OR ANY COMPONENT IN ACCORDANCE WITH IBC SECTION 1705.3.

AS-BUILT for *Gilmore Cliff Shadows