GENERAL NOTES

GENERAL

1. All work shall comply with California Building Code (CBC) 2007 edition, Title 24 Part 2 and all other local or state agencies having jurisdiction over this project.
2. All drawings and specifications are considered to be a part of the Contract Documents. The Contractor shall be responsible for the review and coordination of all drawings and specifications prior to the start of construction. Any discrepancies that occur shall be brought to the attention of the Architect prior to start of construction so that a clarification can be issued. Any work performed in conflict with the Contract Documents or any code requirements shall be corrected by the Contractor at his own expense and at no expense to the Owner or Architect.
3. All dimensions and the site conditions shall be verified by the Contractor at the job site prior to bid submittal, start of shop drawings, start of construction, and/or fabrication of materials. If discrepancies are encountered, or conditions develop not covered by the contract documents, the Architect shall be notified for clarification.
4. Contractor shall provide and be responsible for the protection and repair of adjacent existing and/or surfaces and areas which may be damaged as a result of new work.
5. Do not scale drawings. Printed dimensions have precedence over scaled drawings and large scale over small.
6. The Contract Documents and Specifications represent the finished structure. They do not indicate the method of construction. The Contractor shall provide all measures necessary to protect the structure and safety of workmen during construction. Such measures shall include but not be limited to, bracing, shoring for loads due to construction equipment, etc. Observation visits to the site by the Architect or Structural Engineer shall not include inspection of the above items and does not in any way relieve the Contractor of his responsibilities for the above.
7. No holes, notches, blockouts, etc. are allowed in structural elements unless detailed on the structural drawings or approved by the Structural Engineer.

DEMOLITION

1. All demolition shall be carried on in such a way as not to damage existing elements which are to be in the finished building.
2. All elements of the structure which are to remain and which are damaged during demolition work shall be replaced at no added cost. Exisitng elements to be protected to the fullest extent possible to reduce such damage to a minimum.

DESIGN LOADS

1. Structure has been designed in compliance with the California Building Code 2007 edition Title 24 Part 2.
2. Seismic Design Category = D
   Site Class D
   Occupancy Category = III
   Seismic Reponse Coefficient, C_S: 0.294
   $I = 1.25$
   $R = 5.0$
   $\rho = 1.0$
   $V = 0.294W$ (ASD)

   Basic Seismic-Force Resistance: Special Reinforced Masonry Shear Wall
   Analysis Procedure = Static

3. Dead Loads: Typical Roof 18 psf
   Live Loads: Typical Roof 20 psf

EARTHWORK:

1. The Allowable soil bearing pressure for footings and slabs shall be 1500 PSF (Code minimum). The allowable soil lateral bearing pressure for footing shall be 100 PSF/FT (code minimum)
2. Any existing fill or unsuitable soils, as determined by the Soils Engineer, shall be excavated and replace as properly compacted fill.
3. Extreme care shall be exercised when excavating or grading adjacent to existing structures or improvements so as not to damage or undermine foundations, walls, slabs, utilities, etc.
4. Any import fill soil that may be required shall have a low potential for expansion and shall be approved by the Soils Engineer prior to importing.
5. All required backfill shall be mechanically compacted to 95% relative compaction obtainable by the ASTM D1557-78 method.

WOOD

1. All lumber shall be graded per grading Rules #16 of West Coast Lumberman's Association.
2. Wood shall be grade marked Douglas Fir or Larch and as follow's:
   Horizontal Framing No.1
   Sill & Blocking No.1
   Lintels & Beams No.1
3. Plywood sheathing shall be Douglas Fir Plywood, 5 ply, Structural 1, conforming to PS 1-95. All plywood shall be grade marked "DFPA Structural 1, Interior with Exterior Glue."
4. Roof plywood nailing shall be approved by the job inspector and Engineer or Architect, prior to covering up.
5. Framing hardware shall be as manufactured by the Simpson Strong Tie or approved equal. Fasteners to be furnished by the manufacturer and all fastener holes to be filled.
6. All nailing shall conform to talbes set forth in the Title 24 of the California Code of Regulations except specifically detailed connections. Use only common nails. Typical nailing shall be per 2007 CBC Table 2304.9.1.

CONCRETE

1. All cement shall conform to ASTM C-150, Type I or II.
2. Fine and coarse aggregate shall conform to ASTM C-33.
3. Concrete shall have the following minimum 28 day strength:
   All concrete U.N.O. - 3000 psi reg. wt. (145 pcf)
   Exterior Concrete Walks, Curbs, etc. and Misc. Concrete - 2500 psi regular weight.
4. Concrete design mixes shall be approved by the Structural Engineer.
5. Placing of all concrete shall be inspected by a special inspector approved by the architect & city to verify that reinforcing steel is securely supported in place during the pour.
6. Location of construction joints or pour joints shall be as shown on plans or as approved by the Engineer or Architect prior to pouring concrete and conform to CBC, section 1906.4.
7. Anchor bolts, dowels, reinforcing steel, inserts, etc., shall be securely tied in place prior to pouring concrete. Concrete blocks only shall be used to support reinforcing off grade.
8. Concrete slabs shall be cured by keeping continuously wet for 14 days. No curing compounds shall be used unless approved by the Structural Engineer.
9. Provide 3/4" chamfer on all exposed concrete corners.
10. All concrete shall be vibrated in place during placing of concrete.
11. No stakes, steel or wood, shall be permitted in any concrete pour. Suspend forms from above grade.
12. Drypack shall be 1:3 1/2 Portland cement to sand with a minimum 28 day strength of 3000 psi.

REINFORCING

1. All reinforcing shall conform to ASTM A-615 specifications, Grade 60. Welded bars shall be ASTM A-706. #3 bars may be Grade 40.
2. Reinforcing bars shall be spliced and bent in strict accordance with the drawings and details and C.R.S.I. publications. No kinks allowed. All bars shall be clean prior to concrete placement.
3. Provide dowels of same size and number from adjacent pour, both vertically and horizontally to match typical reinforcing shown. Laps to be in accordance with the drawings and details. Dowels shall be cleaned after pour.
4. Use low hydrogen electrodes, E-90 (for grade 60), welding all of reinforcing bars.
5. Shop drawings for reinforcing steel shall be submitted to the structural engineer for approval prior to fabrication.
6. Field welding or bending of reinforcing is not permitted except as indicated on the drawings or as approved by the Structural Engineer.
7. The contractor shall furnish (as installed) 2 tons of reinforcing (rebar & tendons) in addition to that required by the drawings to be used at the discretion of the Structural Engineer. (At no additional cost to the owner.)

STRUCTURAL STEEL

1. Structural steel shall conform to ASTM Specifications as noted below and to the AISC Specifications for fabrication and erection:
   -Channel Sections: A36
2. All welding shall conform to the specifications of the American Welding Society and shall be performed by certified welders using E70XX electrodes (U.N.O.) and the electric arc process.
3. Weld lengths called for on the plans are the net effective length required. Where fillet weld symbol is given without indication of size, use minimum size welds as specified in AISC Manual of Steel Construction, 13th Edition.
4. All steel exposed to weather shall be hot-dipped galvanized after fabrication. Abraded areas to be touched up with galvaloy. All tubes and/or pipes shall have welded cap plates to seal exposed ends.
5. Bolts shall conform to ASTM A-307 specifications typically unless noted otherwise as H.S.B. High strength bolts to conform to ASTM A-325SC (std.).
6. All structural steel shall be fabricated in the shop of a fabricator licensed by the local building department and shop drawings shall be submitted to the Architect for approval prior to fabrication.
7. All field welding except tack welding, shall be continuously inspected by an approved welding inspector.
8. Provide one shop coat of paint on all structural steel not covered with concrete, fireproofing, masonry or at contact surfaces at high strength bolts.
9. All complete penetration groove welds contained in joints and splices shall be tested 100%.
10. High strength bolting shall be continuously inspected by an approved inspector.
11. Anchor bolt shall confirm to ASTM A-307. F155 4-GR36 optional.

HARDY FRAME MOMENT FRAMES

GENERAL REQUIREMENTS

1. Referenced Documents: the Design, Fabrication and Quality Assurance of the Hardy Frame® Moment Frame Special Moment Frame System complies with the following:
   a) International Building Code - 2006
   b) International Code Council - Evaluation Service Engineering Report 1275
   c) Los Angeles Building Code - 2008
   d) LABS Information Bulletin/Public-Building Code P/BC 2002-098 Rev 2/05
   e) City of Los Angeles Research Report 25393
   f) American Institute of Steel Construction Specification for Structural Steel Buildings (AISC 360-05)
   g) American Institute of Steel Construction Seismic Provisions for Structural Steel Buildings Part I and Part III, Supplement No. 1 Dated Nov. 16, 2005 (aisc 341s1-05)
   h) American Welding Society D1.1 2006 Structural Welding Code-Steel (aws d1.1)
2. Alpha and Numeric Designators ⟨#⟩ & [#] Used Herein to Simplify the Identification of Plates and Welds, Respectively, are Defined Below:
   ⟨A⟩ Side Plates, Parallel to Web of Column, Connecting Beam to Column.
   ⟨D⟩ Horizontal Shear Plate
   [1] Fillet Weld Connecting Side Plate ⟨A⟩ to Horizontal Shear Plate ⟨D⟩
   [2] Fillet Weld Connecting Inside Face of Side Plate ⟨A⟩ to Flange Tips of W-Column
   [3] Fillet Weld Connecting Interior Edges of Horizontal Shear Plate ⟨D⟩ to Faces of Flanges and Web of W-Column
   [6] Fillet Weld Connecting Side Wall of HSS Beam to Side Plate ⟨A⟩
   [7] Horizontal Flare-Bevel Weld Connecting HSS Beam Radius to Side Plate ⟨A⟩

MATERIAL

1. Material:
   a) Moment Connection Plate and Built-Up Column Plate material meets the requirements of ASTM A572, grade 50
   b) Base plate material meets the requirements of ASTM A36.
   c) All other fasteners and components meet the requirements of ASTM A36
   d) Anchor bolts shall comply with the requirements of ASTM A307 (ASTM F1554-36 in Los Angeles or as required by local jurisdictions)
   e) Nelson studs (Fy=70ksi)
   f) Column & beam wood nailers meet the requirements of no. 2 douglas fir larch or better.
2. ROLLED SHAPES:
   a) Rolled shapes used for columns meet the requirements of ASTM A992
   b) HSS sections used for beams meet the requirements of ASTM A500 Grade B
3. WELD FILLER METAL:
   a) The weld filler metal and associated welding process for all Fillet and Flare-Bevel welds may be any of the following, provided compliance with Notes 3.B and 3.C below is demonstrated:
      E70T-6, E71T-1, E71T-8 OR E70TG-K2 for FCAW
      E7XT-9 for flux cored arc welding (FCAW) with gas shielding
      F7A2-EXXX for submerged arc welding (SAW)
      E7018 stick electrode for shielded metal arc welding (SMAW)
   b) The weld filler metal used demonstrates an energy equivalent to a minimum CVN toughness of 20 FT-LBS. impact strength at a temperature of -20°F and 40 FT-LBS impact strength at 70°f as determined by AWS classification test methods or manufacturer certification.
   c) All weld filler metal satisfies a maximum diffusible Hydrogen content requirement of 16 Milliliters of Hydrogen per 100 Grams of weld metal or less (H16).

SHOP WELDING

1. Welder qualification: the performances of all welders, welding operators and tack welders are qualified in conformance with AWS d1.1, Section 4, Part C to demonstrate ability to produce sound welds.
2. Welding Procedure Specifications (WPS):
   a) The fabrication contractor has prepared a specific written WPS for each different welding application. Different welding applications include, but are not limited to, the joint details and tolerances, preheat and interpass temperature, single or multiple stringer passes, welding current, polarity, allowable amperage ranges, allowable voltage ranges, allowable travel speed ranges, electrode extension, root treatment, welding position, welding process, electrode manufacturer, filler metal trade name for the electrode type selected, and other essential variables as defined in AWS D1.1 required to complete the fabrication of the Moment Frame(s). Amperage, voltage, travel speed and electrode extension are maintained within the filler metal manufacture's recommendations.
   b) Each WPS prepared is based on and referenced to a documented and approved procedure qualification record (PQR).
   c) The approved WPS for each applicable production weld is clearly displayed to provide ready access by the assigned welders, welding supervisors and inspectors.
   d) All WPSs are prepared by qualified individuals. WPSs are prepared by the same individual responsible for the suitability of the WPS.
3. Welding Procedure Qualification (PQR):
   a) Documented procedure qualification records are maintained by hardy frames, Inc. procedure qualification conforms to the requirements of AWS D1.1, Table 4.1 and employs the following testing methods and acceptance criteria:
      * Visual inspection in accordance with AWS D1.1, section 4.8.1.
      * Radiographic testing (RT) or ultrasonic testing (UT) before preparing Mechanical test specimens, in accordance with AWS D1.1, Section 4.8.2.
      * Mechanical testing in accordance with AWS D1.1, Section 4.8.3. the type and number of test specimens, for each qualified production welding position, shall be per AWS D1.1, Table 4.2 (1), using a groove weld test plate per Figure 4.10(2).
      * Charpy v-notch impact testing of the weld metal in accordance with AWS D1.1, Section 4.1.1.3. The required test temperature and energy value is that specified in material Section 3.B. the type and number of notch toughness specimens, for each qualified production welding position, is per AWS D1.1, annex III, Table III-1. one specimen may be less than the minimum average of 20 FT-LBS., but not less than 15 FT-LBS.
   b) All procedure qualification testing is performed by an independent certified and approved testing laboratory.
   c) In lieu of the requirements of 3.A and 3.B, a current certificate of conformance provided by the wire manufacturer may be used as the supporting PQR provided full compliance with every single condition of prequalification found in AWS D1.1 Section 3 for prequalified Fillet welds. The selection of this option by the Contractor's fabrication/erection Subcontractor is predicated on its acknowledgement that its certified welders are experienced and confident in the use and settings specified in the certificate of with the allowable tolerances for essential variables found in table 4.5 of AWSD1.1.
4. Tack welds:
   a) Tack welds are subject to the same quality requirements as the final welds, including preheat and undercut, in accordance with aws d1.1, section 5.18.2. these quality requirements apply equally to tack welding of backing strips, filler plate, weld run-off tabs, and any other construction aids.
   b) Vertical tack welds between side plate ⟨A⟩ and Flange edges of column are not placed within 2 inches of each end of weld [2].
   c) Tack welds between side plates ⟨A⟩ and HSS beam are not placed within 2 inches of each end of weld [7]
   d) Alignment control methods may include, but are not limited to, tack welding of temporary angle struts ('dogs') to top and bottom free edges of side plate A , not closer than 2 inches from the vertical free edge of side plate A , in order to maintain the necessary separation distance required to install the HSS beam.
5. Weld run-off tabs are not used for Fillet welds.
6. Preheat and interpass temperature requirements:
   a) The minimum preheat and interpass temperatures for a given thickness of base metal to be welded is determined by AWS D1.1 Table 3.2.
   b) Preheat temperatures are measured at a distance from the weld equal to the thickness of the part being welded, but not less than three inches in any direction including the through thickness of the piece. Where plates are of different thickness, the preheat requirement for the thicker plate governs. Maintenance of preheat temperature through the execution of the weld (i.e. the interpass temperature) is essential. Maximum interpass temperature is limited to 550 degrees fahrenheit, measured at a distance not exceeding one inch from the start of the weld pass. Welding operators and inspectors are in possession of and utilizing temperature sticks.
   c) In no case, regardless of the welding process, shall the preheat temperature be less than that required to drive off any surface moisture or condensation which may be present on the steel elements to be welded.
7. All slag is removed after each weld pass before welding over previously deposited weld metal, and the weld and the adjacent base metal shall be brushed clean. This requirement shall apply not only to successive layers but also to successive beads and to the crater area when welding is resumed after any interruption, in accordance with AWS D1.1 section 5.30.1.
8. Arc strikes on connection plates, beams and columns are avoided.
9. Weld tie-ins are not permitted
10. Peening is not allowed.

STRUCTURAL DRAWING LIST	
S0.1	GENERAL NOTES
S1.1	GENERAL NOTES
S1.2	TYPICAL DETAILS
S1.3	TYPICAL DETAILS
SA2.1	FOUNDATION PLAN 'A' WING-WEST
SA2.3	FOUNDATION PLAN 'A' WING-EAST
SA2.4	ROOF FRAMING PLAN 'A' WING-EAST
SB2.1	FOUNDATION PLAN 'B' WING
SC2.1	FOUNDATION PLAN 'C' WING
-	-
-	-
TOTAL: 10 SHEETS	

GENERAL NOTES NONE 1

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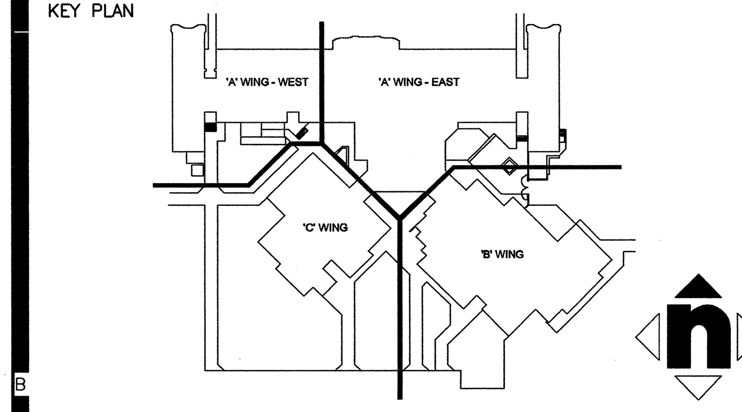
KEY PLAN



AGENCY APPROVAL

IDENTIFCATION STAMP
DIV. OF THE STATE ARCHITECT
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DATE____

PROJECT TITLE
RAMONA-ALESSANDRO ELEMENTARY SCHOOL
MODERNIZATION
670 RAMONA AVENUE
SAN BERNARDINO, CA 92411

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NO.	REVISIONS	DATE	NO.	REVISIONS	DATE
1	DSA ADDENDUM # 1				2/10/10

DRAWING TITLE

ARCHITECT SEAL
LICENSED ARCHITECT CHRISTOPHER RICHARD TAYLOR NO. C-19759 REN. 02-24-11 STATE OF CALIFORNIA

DESIGNED	JC	PROJECT NO.	3137117
DRAWN	AM	SCALE	AS NOTED
CHECKED	TT	DRAWING NO.	S0.1
DATE	19 MAR 2004		

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