GENERAL NOTES

A. GENERAL

1. All work shall comply with 2011 City of Los Angeles Building Code, based on the California Building Code, 2010 Edition, 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 the 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 symbols and abbreviations used on the drawings are considered to be construction standards. If clarification is required, the Contractor shall notify the Architect prior to proceeding with the work.
4. 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.
5. Contractor shall provide and be responsible for the protection and repair of adjacent existing surfaces and areas which may be damaged as a result of new work.
6. Do not scale drawings. Printed dimensions have precedence over scaled drawings and large scale over small.
7. Typical details shall apply in general construction unless specifically detailed. Where no details are given, construction shall be as shown for similar work.
8. 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.
9. For trenches or excavations (5) five feet or more in depth into which a person is required to descend, the Contractor is to obtain the necessary permit from the State of California, Division of Industrial Safety, prior to the issuance of a building permit.
10. Refer to the architectural, electrical and mechanical drawings for details, conditions, pits, trenches, depressions, roof openings, sleeves, items to be embedded or attached to structural elements, etc., not shown on the structural drawings.
11. No holes, notches, blockouts, etc. are allowed in structural elements unless detailed on the structural drawings or approved by the Structural Engineer.
12. All information shown on the drawings relative to existing conditions is given as the best present knowledge from plans supplied by the Owner, but without guarantee of accuracy. Where actual conditions conflict with the drawings, they shall be reported to the Architect or Engineer so that proper clarification may be made. Modification of details of construction shall not be made without written approval of the Architect or Structural Engineer.

B. EARTHWORK

1. See Report of Foundation Exploration by Geotechnologies Inc., No. 20276, dated July 13, 2012.
2. Any existing fill or unsuitable soils, as determined by the Soils Engineer, shall be excavated and replaced 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. If ground water should occur during construction, special procedures shall be implemented by the Geotechnical report.
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 in 8" maximum thick layers. Flooding is not permitted. Backfill shall be compacted to 90% of the maximum dry density obtainable by the ASTM D1557-78 method of compaction.
6. Site yard walls, curbs, paving, etc. shall be placed on compacted or dense natural soils. Site wall footings shall bear 2'-0" below lowest adjacent grade.
7. All site preparations, foundation excavations and operations shall be continuously inspected by the geotechnical engineer employed by the owner.
8. Where deep excavation is required, and the necessary space is available, temporary unsurcharged excavations may be sloped back in lieu of shoring. Excavations shall be done as recommended by, and under the observations of, the Soils Engineer. The top of excavations shall be protected by barricades, etc., to prevent surcharging and bermed to prevent water run-off from entering and eroding the excavation. Adjacent to existing buildings or improvements, the excavation shall be restricted to 1-1/2:1 (horizontal to vertical) downward from the toe of the existing footing, etc. unless special procedures are implemented as recommended by the Soils Engineer. All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act of 1970, and the Construction Safety Act shall be met. If ample space is not available for the required excavation slope, or as a construction option, shoring may be a possible alternate. The Contractor shall provide shoring design and details produced by a licensed Structural Engineer and secure permits prior to construction.
9. Do not backfill against walls which are supported top and bottom by slabs until the slabs, top and bottom, have been placed and cured significantly (7 days min.) or provide sufficient temporary bracing.
10. All aspects of Geotechnical Report shall be complied with

Allowable soil bearing pressure	= 7,000 psf with 1/3 increase for wind and seismic (continuous foundations)
	= 8,500 psf with 1/3 increase for wind and seismic (for column footing)
	= 10,000 psf with 1/3 increase for wind and seismic (for continuous and column foundation based on width and depth of footing)
Active earth pressure (Ret. Walls)	= 30 psf/ ft. of depth
Passive earth pressure	= 350 psf (3,500 psf max.)
Coefficient of friction	= 0.35
Surcharge	= 100 psf at driveways for the upper 10 ft. of the ret. wall

11. As per Geotechnical Report, conventional foundations bearing in bedrock are recommended for southern half of the structure, see the Geotechnical Report for recommendation. The limit of conventional foundations shall be at a line drawn along 334 ft. bedrock elevation contour. Cast-in-place friction piles are recommended for the northern half of the structure. See Geotechnical Report for additional information regarding cast-in-place friction piles.

C. CONCRETE

1. All cement shall conform at ASTM C-150, Type I or II. U.N.O.
2. Fine and coarse aggregate shall conform to ASTM C-33.
3. Lightweight aggregate to be expanded clay or shale conforming to ASTM C-330. Air-dry unit weight of light weight conc.weight shall not exceed 110 pcf ± 5 pcf .
4. Concrete shall have the following minimum 28 day strength:
   - All concrete U.N.O. - 4000 psi Stone with slump of 4" and maximum water to cement ration of 0.50 .
   - Floor slabs on metal deck and equipment pads on Steel Deck Form - 4000 psi Lt.Wt. with slump of 4" and maximum water to cement ratio of 0.50 (U.N.O. on the framing plans)
   - Exterior Concrete Walks, Curbs, etc. and Misc. Concrete - 3500 psi (Designed for 2500 psi) with slump of 6" and maximum water to cement ratio of 0.60 .
5. Concrete design mixes shall be approved by the Structural Engineer.
6. Placing of all concrete shall be inspected by the job inspector. Inspector to verify that reinforcing steel is securely supported in place during the pour.
7. 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 Title 24, 1906A.4
8. 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.
9. Concrete slabs shall be cured by keeping continuously wet for 7 days. Forms for concrete walls shall be left in place for 7 days or they may be stripped after 3 days and then covered with burlap which shall be kept wet for an additional 7 days. No curing compounds shall be used unless approved by the Structural Engineer.
10. Notify the Structural Engineer 48 hours minimum prior to all pours.
11. Provide 3/4" chamfer on all exposed concrete corners.
12. All concrete shall be vibrated in place during placing of concrete.
13. The structural steel and steel form will deflect while concrete is being placed on it. This will result in the need to adjust the screeds after the concrete has been placed to produce a level concrete surface. Also, there will be additional concrete required, which is to be anticipated, and no request for extra cost will be considered.
14. No stakes, steel or wood, shall be permitted in any concrete pour. Suspend forms from above grade.
15. Drypack shall be 1:3-1/2 Portland cement to sand with a minimum 28 day strength of 4000 psi.
16. Grout shall be 1:3:2 Portland cement to sand to pea gravel with a minimum 28 day strength of 4000 psi.
17. General Contractor to provide shop drawings for size, location and height of mechanical equipment pads on elevated slabs on metal deck and on slab on grade.

D. MASONRY

1. Concrete blocks shall be of sizes shown on the drawings, type and color as selected by the Architect and conform to ASTM C-90, Grade N-1. Block shall be medium weight units, f'm 1500 psi.
2. Grout mix shall be 1:3:2 Portland cement to sand to pea gravel with 1/10 part lime putty or hydrated lime, 2000 psi.
3. Mortar mix shall be 1:3 Portland cement to sand with not more than one-half nor less than one-quarter part lime putty with Suconem Red Label added, Type S, 1800 psi. Mortar shall conform to UBC Standard 21-15.
4. All reinforcing shall have a minimum coverage of one bar diameter (1" min.) of grout and vertical bars shall be placed in the center of the wall unless shown otherwise.
5. Grout cells solid in all walls U.N.O. Reinforcing shall be securely held in place. Grout in 2'-0" maximum lifts. For high lift grout see notes below.
6. No pipes or ducts shall be placed in masonry unless noted or detailed specifically.
7. Continuous inspection of block laying & grouting is required.
8. Bolts shall be grouted solid with 1" min. grout between bolt and masonry at block face.
9. All concrete to receive masonry shall be sandblasted or bushed.

F. REINFORCING

1. All reinforcing shall conform to ASTM A-706 specifications, Grade 60. Reinforcing to be welded shall conform to ASTM A-706 specs.
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, Grade E-8018-X, for welding 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. All reinforcing in concrete used for the containment of water shall be hot-dipped galvanized or epoxy coated after fabrication.
8. The Contractor shall furnish (as installed) 200 lbs. each of #4 and #5 bars in addition to that required by the drawings to be used at the discretion of the Structural Engineer.

G. STRUCTURAL STEEL

1. Structural steel shall conform to ASTM Specifications as noted below and to the AISC Specifications for fabrication and erection:
   A. All Wide Flange columns, Wide Flange shapes W12 and larger (U.N.O.): A-992, Grade 50.
      Note:
      (a) Grade 50 steel shall have a minimum yield stress (F y) of 50 ksi.
      (b) The yield stress (F y) for grade 50 that is reported from tests shall be based upon the yield strength definition in ASTM A370, using the offset method at 0.002 strain.
   B. Connection plates and base plates: A572 - GR. 50 U.N.O. .
   C. All Wide Flange beams W10 and smaller, angles, channels and miscellaneous: A-36 U.N.O..
   D. Pipe Sections: A-53, Grade B.
   E. Tube Sections: A-500, Grade B.
2. The fabricator shall submit copies of material test reports, commonly called mill test reports, for all structural steel used for the project. Material test reports shall comply with the requirements of ASTM A6. Material test reports shall be accompanied by a Certificate of Compliance from the fabricator.
3. Fastening Materials
   A. High strength bolts to confirm to ASTM-A325SC (STD) .
   B. The Contractor supplying fastener products shall submit copies of all Manufacturer's Certifications for all fastener components, including bolts, nuts, washers, and direct tension indicators, if used. Fastener Manufacturer's Certifications shall be accompanied by a Certificate of Compliance from the Contractor. Manufacturer certifications for bolts shall contain at least the following information:
      a. Heat analysis, heat number, and a statement certifying that heats having prohibited elements intentionally added were not used to produce the bolts,
      b. Results of hardness, tensile, and proof load tests, as required and performed,
      c. If galvanized, the results of rotational capacity tests, including the test method used (solid plate or tension measuring device) and the lubricant present.
      d. If galvanized, measured zinc coating weight or thickness,
      e. Results of visual inspection for bursts.
      f. Statement of compliance with dimensional and thread fit requirements,
      g. Lot number and purchase order number,
      h. Complete mailing address of responsible party, and
      i. Title and signature of the individual assigned certification responsibility by the company officers.
      For A490 bolts, only the Production Lot Method of testing and certification is acceptable. The Shipping Lot Method is unacceptable.
   C. Fastener Installation Procedures:
      The Contractor shall submit written procedures for the pre-installation testing, installation, snugging, pretensioning and post-installation inspection of fasteners. The procedure(s) shall meet all requirements of the RCSC Specification and the project documents. Procedures need be submitted only for the method(s) of installation to be used by the Contractor, which may include the turn-of-nut, calibrated wrench, twist-off type tension control bolt, and direct tension indicator methods.
   D. High strength bolted connections shown as HSBSC (slip critical) on the plans and details shall have 25% of the bolts in each connection tested to AISC minimum tension by use of calibrated torque wrenches by the owner's inspector. The wrenches are to be daily calibrated at the jobsite. Contractor to provide access to the joints for the inspectors.
4. 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.
5. 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, 9th Edition, Section J.2.4, Chapter 22 of the U.B.C.
6. Steel exposed to weather shall be hot-dipped galvanized after fabrication-where noted. Abraded areas to be touched up with galvaloy. All tubes and/or pipes shall have welded cap plates to seal exposed ends.
7. Provide one shop coat of paint on all structural steel not covered with concrete, fireproofing, masonry or at contact surfaces at high strength bolts.
8. At moment connections: High strength bolts shall be fully tightened after welding is done and welded connections shall be inspected by non-destructive methods such as x-ray, ultrasonic or otherwise. Check for lamellar tearing.
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.

H. METAL DECKING

1. All roof and floor metal deck and accessories shall be formed from steel sheets conforming to ASTM A653/65M Grade 33 [230] or higher specifications.
2. Deck shall be galvanized in accordance with ASTM A924/A924M commercial coating Class G-60 or G-90.
3. Cutting and framing of openings for other trades shall be the responsibility of the trades involved. Holes that are located and dimensioned on the drawings shall be the responsibility of the deck erector.
4. All deck shall be Verco (ICC-ES ER-2078P and L.A. RR# 23789), and the types and gauges shall be as indicated on the drawings, and as follows:

SECTION PROPERTIES

Type	Gauge	Depth	I (min.)	S (min.)
B or HSB (Roof)	20	1-1/2	0.216	0.235
	18	1-1/2	0.302	0.322
	16	1-1/2	0.377	0.411
W3 Formlok	20	3"	0.896	0.534
	18	3"	1.203	0.767
	16	3"	1.509	0.960

5. Decks shall have minimum 2" bearing at supports.
6. Welding of roof decking shall be continuously inspected by an approved inspector.
7. Roof deck with insulating concrete shall be vented.
8. All floor deck shall be vented.
9. No conduits allowed in concrete slab on metal deck.
10. Welds on decking shall be painted with galvaloy or equal.

J. AUTOMATIC END WELDED STUDS

1. Automatic end welded studs shall be Nelson Granular Flux-filled Shear Connector (ICC ESR-2856, L.A. RR# 2725) or Anchor Studs (or approved equal). Studs shall be manufactured of C-1015 cold rolled steel which conforms to ASTM Specifications A-108-58-T.
2. 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 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 who shall provide continuous inspection.

K. CONTINUOUS SLOT METAL FRAMING SYSTEM

1. Metal framing system shall be B-Line, Unistrut or approved equal as specified on plans and details. The metal framing system shall consist of channels, fittings and hardware as defined in the Metal Framing Manufacturers Association Standard Publication MFMA-1. All fittings and accessories shall be from the same manufacturer, with no exceptions.
2. All channels shall be cold formed from 12 ga. steel, conforming to ASTM A570, Grade 33, have a nominal overall width of 1 5/8" and have a 7/8" slot face opening.
3. All fittings shall be made from hot rolled, pickled and oiled plate or strip steel conforming to ASTM A635.
4. All bolts shall be A307 with channel nuts conforming to ASTM A675 or ASTM A36. Torque all bolts per table below:

Bolt Size (Dia.)	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
Torque (Ft. Lbs.)	6	11	19	50	100	125

5. Channel material and fittings shall have standard finish of Perma Green or Dura Green epoxy paint. Fasteners shall have standard electro-plated zinc finish. Framing, fittings and fasteners exposed to weather shall be hot-dipped galvanized after fabrication.
6. Channels shall have the following minimum section properties:

UNISTRUT SYSTEM:

		Axis 1-1			Axis 2-2		
	Area (sq.in)	I(in.4)	S(in.3)	r(in.)	I(in.4)	S(in.3)	r(in.)
P1000	.556	.185	.202	.577	.236	.290	.651
P5500	.726	.523	.391	.848	.335	.412	.679
P1001	1.112	.930	.572	.915	.472	.580	.651
P5501	1.453	2.811	1.153	1.391	.669	.824	.679
P5001	1.794	5.578	1.716	1.864	.719	.884	.695

B-LINE SYSTEM:

		Axis X-X			Axis Y-Y		
	Area (sq.in)	I(in.4)	S(in.3)	r(in.)	I(in.4)	S(in.3)	r(in.)
B22	.559	.1850	.2042	.580	.2340	.2880	.653
B12	.727	.5302	.3927	.852	.3306	.4068	.679
B22A	1.118	.9379	.5772	.924	.4681	.5761	.653
B12A	1.453	2.8132	1.1541	1.402	.6611	.8137	.679
B11A	1.794	6.2139	1.9120	1.876	.8542	1.0513	.696

7. Telespar drop tubing shall be rolled from 12 ga. hot rolled steel, conforming to ASTM 570, Grade C, pickled and oiled. Finish shall be per note 5 above. Inner tube shall be 1-1/2" sq. and outer tube 1-3/4" sq.
8. Where framing system is used for support of equipment, verify all aspects of installation with equipment manufacturer and architectural layout.

L. SEISMIC BRACING OF MECHANICAL SYSTEMS & FIRE SPRINKLERS

1. Bracing of all ducts, pipes, conduits, fire sprinklers, and any other systems shall meet current CBC requirements.
2. Independently engineered systems may also be utilized if designed and stamped by a licensed California structural engineer.
3. Fire sprinklers shall be seismically braced in accordance with the current version of NFPA13 and shall have rod stiffeners on all rods adjacent to bracing.
4. Shop drawings showing all bracing locations and details of connections are required for all systems including pre-approved systems. △3

M. METAL EXTERIOR STUDS △3

1. Studs shall conform to standards of the Steel Stud Manufacturers Association (SSMA) ICC ER 3064-P. Studs shall conform to ASTM A653 Grade 33 for 18 gage and lighter and Grade 50 for 16 gage and heavier. Tract studs shall be of the same gage and grade as the stud supported.
2. Studs shall be painted U.N.O.
3. Stud framing shall be in accordance with AISI, "Specifications for Design of Cold Formed Steel Structural Members".
4. Studs shall have the following minimum properties:

Stud Size	Flange Width	SSMA Designation	I (in4)	S (in3)
4" x 16 Ga.	1 3/8"	400S137-54	0.953	0.477
4" x 14 Ga.	1 3/8"	400S137-68	1.165	0.582
6" x 16 Ga.	1 3/8"	600S137-54	2.518	0.839
Track Size (Unpunched)	Flange Width	SSMA Designation	I (in4)	S (in3)
4" x 16 Ga.	1 1/2"	400T150-54	1.025	0.489
6" x 16 Ga.	1 1/2"	600T150-54	2.611	0.843
Deep Leg Track (Unpunched)				
Track Size	Flange Width	SSMA Designation	I (in4)	S (in3)
4" x 16 Ga.	2"	400T200-68	1.237	0.513
6" x 16 Ga.	2"	600T200-68	3.540	0.973

5. Confirmation shall be made that the cold-formed steel members being installed match the project's specified size, type, mechanical properties and spacing.
6. SCREW CONNECTIONS:
   a. Screws larger than specified may be used, provided the minimum spacing and edge distance requirements are met.
   b. Screws shall be fully driven and have a minimum penetration of three threads through the last material joined.
   c. Screws shall have protective coating to comply with recognized design standard for the project environmental conditions.
7. WELDING: All welding shall comply with recognized standard and Structural Welding Code AWS D1.1 and Structural Welding Code sheet steel, AWS D1.3 for sheet steel.
8. BOLTED CONNECTIONS: Bolts shall meet or exceed the requirements of ASTM A307 and shall be installed with nuts and washers at spacing per recognized design standard.
9. BEARING SURFACES: Uniform bearing surface shall be provide with a maximum 1/4" gap between bottom track and the foundation or slab. It shall be accomplished by the use of load bearing shims and / or grout provided between the underside of the wall bottom track and the top of the foundation or slab at each stud.
10. Typical details shown shall be incorporated into the project at all approved locations whether specifically called out or not.
11. Contractor needs to provide shopdrawing for all exterior metal studs to review and approve before construction.

N. EXPANSION ANCHOR BOLTS △3

1. Expansion anchor systems:
   A. Concrete: Use only expansion anchor systems that have been issued an ICC-ES report in accordance with the provisions of ICC-ES AC193. Anchor systems should be approved for use in cracked concrete and Seismic Design Categories A-F per ICC Evaluations Services Report. Anchor systems shall be installed per the requirements of the LARR (ICC-ES) Report for the specific anchor, and as required by the manufacturer. All expansion anchors shall be HILTI KB-TZ (LARR #25701 and ICC ESR-1917), as specified on detail. Any substitution must be approved by SEOR.
2. Where the manufacturer's installation instructions or applicable LARR (ICC-ES) Evaluation Services Report call for the application of an installation torque, the specified torque shall be applied with a calibrated torque wrench. The specified installation torque shall not be exceeded.
3. Anchors are typically available in electro-galvanized carbon steel, hot-dipped galvanized carbon steel, and stainless steel. Use of electro-galvanized carbon steel anchors is typically limited to dry, interior locations, unless otherwise noted. Stainless steel or hot-dipped galvanized anchors shall be used applications exposed to exterior weather conditions. Final authority on the type of anchor coating utilized rests with the Structural Engineer of Record and must be approved by such.
4. Expansion anchors for non-vibration isolated mechanical equipment rated over 10hp are not permitted by ASCE 7-05 Section 13.6.5.5. Anchors installed in overhead conditions for non-vibration isolated equipment with reciprocating or rotating mechanisms shall be undercut anchors.
5. The special inspector shall be on the jobsite continuously during anchor installations, unless otherwise noted in LARR (ICC-ES ESR), to verify anchor type, anchor dimensions, concrete type, concrete compressive strength, hole dimensions, anchor spacings, edge distances, slab thickness, anchor embedment, and tightening torque.
6. The testing of the expansion anchors shall be done in the presence of the special inspector and a report of the test results shall be submitted to the enforcement agency. If any anchors fail the testing requirements, the additional testing requirements shall be performed according to CBC 1916.7.
7. Test quantity of anchors as noted below:

Application	Quantity
Structural	100% of bolts
Non-structural	50% of bolts
Sill plate bolting	10% of bolts

8. Anchors to be tested shall be selected at random by the special inspector.
9. Undercut anchors that allow visual confirmation of full set need not be tested, unless otherwise noted by enforcement agency or engineer or record.

(CONT.)N. EXPANSION ANCHOR BOLTS

10. The test load may be applied by using of a calibrated torque wrench for torque-controlled expansion anchors.
11. The following criteria apply for the acceptance of installed anchors:
    A. Torque wrench method: the applicable test torque must be reached within one-half (1/2) turn of the nut.
12. If any anchor fails testing, test all anchors of the same type, installed by the same trade, not previously tested until twenty (20) consecutive anchors pass, then resume the initial test frequency.
13. When installing drilled-in anchors in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. When drilling them into existing prestressed concrete (pre- or post-tensioned), locate the prestressed tendons by using a non-destructive method prior to installation. Exercise extreme care and caution to avoid cutting or damaging the tendons during installation. Maintain a minimum clearance of one inch between the reinforcement and the drilled-in anchor.
14. If rebar is encountered during the drilling, the contractor shall immediately terminate drilling and contact the engineer of record.
15. Locate reinforcement and confirm final anchor locations prior to fabricating plates, members, or other steel assemblies attached with mechanical anchors.
16. If the concrete cracks during the installation of the anchor, the anchor shall be removed or abandoned.
17. Unless otherwise noted, provide minimum embedment of anchors as follows:

AnchorDiameter	WedgeAnchor " Embedment
3/8" (10 mm)	2"
1/2" (12 mm)	2"
5/8" (16 mm)	3 1/8"
3/4" (20 mm)	3 1/4"

* Min. embedments based on LARR #25701 and ICC-ES ESR 1917.

18. For required test torque values refer to LARR #25701 and ICC-ESR 1917 evaluation service report and torque values as fallows:

Anchor Diameter (in)	Torque (ft.lbs)
3/8	25
1/2	40
5/8	60
3/4	110

19. Testing shall occur a minimum of 24 hours after installation of the subject anchors.

O. POWDER ACTUATED FASTENERS

1. Powder actuated fastening systems shall be installed in normal weight and lightweight concrete, masonry and steel per the requirements of the CBC 2010 Section 1916.7 and ICC-ES Evaluation Services Report (ICC ESR-2269, LARR #25675) and as required by the manufacturer.
2. When installing powder actuated fasteners in existing non-prestressed reinforced concrete, use care and caution to avoid hitting the existing reinforcing bars. Maintain a minimum clearance of one inch between the reinforcement and the fastener.
3. PAF shall not be used to resist seismic shear forces except at interior non-load bearing, non-shear wall partition walls (as permitted by 2010 CBC section 1911.1.1) and components exempt from construction document review by 2010 CBC section 1615.1.12 (not permitted to take seismic shear by ICC-ES AC70 for any other conditions). PAF shall not be used to carry seismic tension loads (except for vertical seismic load produced by self weight of the components) or in cracked concrete unless approved for such loading by SEOR.
4. For minimum edge distance and spacing refer to LARR #25675 and ICC-2269.
5. Tension testing of powder actuated fasteners installed in concrete shall comply with CBC 2010 Section 1916.7
6. Testing of powder actuated fasteners used to attach tracks of interior non-shear wall partitions for shear only, where there are at least three fasteners, is not required.
7. If any fasteners fails testing, test all fasteners of the same type, installed by the same trade, not previously tested until twenty (20) consecutive fasteners pass, then resume the initial test frequency.
8. PAF shall be installed per current LARR #25675 and ICC-ES-2269 evaluation reports.
9. PAF shall not be used in pre-stressed concrete unless non-destructive testing methods are used to locate strand and reinforcement prior to fastener installation.
10. Concrete fill depth above the top of metal deck must be a minimum of 3-1/4" at light weight concrete composite metal deck.
11. Power actuated fastener installed through low flutes of the metal deck shall meet the requirements of the installation criteria as specified in LARR #25675 and ICC-2269.
12. Test values for 0.157 DIA. X-U hilti shot pin:

Fastener Description	Fastener	Shank Diameter	Minimum Embedment	Installed into Concrete	Installed Through Metal Deck Panel into Concrete		
					3-inch deep composite floor deck panel		
					Tension Last Load		
				Tension Test Load	Upper Flute	Lower Flute	
Universal Knurled Shank	X-U	0.157 DIA.	3/4" EMBED.	250	260	190	
			1" EMBED.	410	430	310	
			1 1/4" EMBED.	630	590	400	
			1 1/2" EMBED.	630	590	400	

P. STRUCTURAL TESTS AND INSPECTION:

1. Structural tests and special inspection requirements of chapter 17 of CBC and requirements of LABC section 91.1703, 91.1704, 91.1705, 91.1707, 91.1708, 91.1709, 91.1710, 91.1712 and 91.1716 apply to the following:
   A. Cast-in-place concrete
   B. Bolts installed in concrete
   C. Drilled dowels and anchors installed in concrete
   D. Reinforcing Steel
   E. Structural steel welding high-strength bolting including quality assurance per table section Q5.1 of AISC 341-05
   F. Special moment resisting steel frames, welding of steel reinforcement bars
   G. Welded studs
   H. Metal deck
   I. Masonry
   J. Special grading, excavation and filing
   K. Shear walls and floor systems used as shear diaphragms
   L. Tiedown anchor bolts
   M. Spray applied fireproofing
2. Approval by Inspector of Record (IOR) does not mean approval or failure to comply with the plans or specifications. Any detail which fails to be clear or is ambiguous must be referred to the engineer of record for interpretation or clarification.
3. Continuous and periodic special inspection shall be performed as per section 1704 of CBC and section 91.1704 of LABC and as per tables 1704.3 (steel), 1704.4 (concrete), 1704.5.1 and 1704.5.3 (masonry). 1704.7 (soils) and 1704.9 (cast-in- place deep foundations) provide below.
4. Contractors responsible for the construction of a wind or seismic force resisting system/component listed in the "Statement of Special Inspection" shall submit a written statement of responsibility to the LADBS inspectors and the owner prior to the commencement of work on such system or component per section 1709.1.
5. Continuous Special Inspection by a registered deputy inspector is required for field welding, concrete strength fc > 2500 psi, high strength bolting, sprayed-on fireproofing, engineered masonry, high-lift grouting and high load diaphragms.
6. Field welding to be done by welders certified by the LADBS for structural steel. Continuous inspection by a deputy inspector is required.
7. Shop welds must be performed in a LADBS licensed fabricator's shop.
8. LADBS licensed fabricator is required for structural steel.
9. A copy of the Los Angeles Research Report and/or conditions of listing shall be made available at the job site.

Q. STRUCTURAL OBSERVATION:

1. Structural observation shall be provided in accordance with CBC section 1710 and LABC section 91.1710. Notify engineer in advance of the critical stages of construction so that engineer may schedule visits for structural observations.
2. The structural observer shall perform site visits at those at those steps in the progress of the work that allow for correction of deficiencies without substantial effort or uncovering of the work involved. At a minimum, the following significant construction stages require a site visit and an observation report from the structural observer:

   Construction Stages:
   A. After excavation and placement of reinforcing steel in the first pour of the spread footing, piles and pile caps prior to concrete placement and closing of forms.
   B. Erection of first steel moment frame before installation of finish material on wall that would cover any structural connections, and/or the anchorage system.
   C. Casting of first concrete basement wall prior to concrete placement and closing of forms.
   D. Prior to 1st deck pour at Lower Level, Level 02, Level 04 and Lower Roof.
   E At completion of the structural system.

R. DEFERRED APPROVAL ITEMS:

1. Curtain Wall System.
2. Prefabricated stairs including handrails.
3. Strong Motion Accelerograph as per LABC 1613.10 (Information Bulletin: P/BC 2011-048). Tentative locations of the accelerographs are shown on S-200LL, S-203 and S-206.

S. SCREW INSTALLATION INTO ELECTRICAL, MECHANICAL, MEDICAL OR ANY EQUIPMENT

1. Contractor shall provide maximum care and coordination, when installation of the screws into electrical & mechanical equipments is required.
2. Contractor must verify each location of screw to be installed, prior to any penetration, regardless of length of protrusion.
3. Penetration of screws through joined material should not be less than 3 exposed threads. Contractor shall verify at each case, so as not to damage the content and or function of the equipment.
4. Contractor shall provide epoxy, rezin cover, or any other required item as part of their means & methods to protect the sharp edges of the screw during the usage future and/or maintenance of the equipment.
5. The minimum spacing between centers of fasteners shall not be less than 3X fastener diameter. The minimum edge distance from the center of a fastener to the edge of any part shall not be less than 1.5X fastener diameter.
6. Use only screws that has been issued on ICC-ES report in accordance with provisions of ICC-ES-AC-118.
7. Screws shall have valid ICC report such as LARR #25678 (ICC-2196) or LARR #25904 (ICC-1408). Any substitution must be approved by SEOR.
8. 1/4" thru bolt may be used in lieu of screw for electrical equipment anchorage as shown on detail. △3

STRUCTURAL DRAWING LIST

LA DBS DEPARTMENT OF BUILDING AND SAFETY

Los Angeles Regional Uniform Code Program
Committee I-3: Structural Observation

LARUCP

STRUCTURAL OBSERVATION PROGRAM AND DESIGNATION OF THE STRUCTURAL OBSERVER

PROJECT ADDRESS: 2204 E Alcazar Street, Los Angeles, CA-90033 PERMIT APPL. NO.: _____

Description of Work: USC Norris Healthcare Center

Owner: USC Architect: HKS Inc. Engineer: TTG Engineers

STRUCTURAL OBSERVATION
(only checked items are required)

Firm or Individual to be responsible for the Structural Observation:
Name: Edwin (Gevorg) Najarian Phone: (626) 463-2800 Calif. Registration: 5145

FOUNDATION	WALL	FRAME	DIAPHRAGM
☑ Footing, Stem Walls, Piers	☑ Concrete	☑ Steel Moment Frame	☑ Concrete
☐ Mat Foundation	☑ Masonry

TABLE 1704.3
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD[a]	IBC REFERENCE
1. Material verification of high-strength bolts, nuts and washers:				
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	—	X	AISC 360, Section A3.3 and applicable ASTM material standards	
b. Manufacturer's certificate of compliance required.	—	X	—	—
2. Inspection of high-strength bolting:				
a. Snug-tight joints.	—	X	AISC 360, Section M2.5	1704.3.3
b. Pretensioned and slip-critical joints using turn-of-nut with matchmarking, twist-off bolt or direct tension indicator methods of installation.	—	X		
c. Pretensioned and slip-critical joints using turn-of-nut without matchmarking or calibrated wrench methods of installation.	X	—		
3. Material verification of structural steel and cold-formed steel deck:				
a. For structural steel, identification markings to conform to AISC 360.	—	X	AISC 360, Section M5.5	
b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents.	—	X	Applicable ASTM material standards	
c. Manufacturer's certified test reports.	—	X		
4. Material verification of weld filler materials:				
a. Identification markings to conform to AWS specification in the approved construction documents.	—	X	AISC 360, Section A3.5 and applicable AWS A5 documents	—
b. Manufacturer's certificate of compliance required.	—	X	—	—
5. Inspection of welding:				
a. Structural steel and cold-formed steel deck:				
1) Complete and partial joint penetration groove welds.	X	—	AWS D1.1	1704.3.1
2) Multipass fillet welds.	X	—		
3) Single-pass fillet welds > $^5/_{16}$"	X	—		
4) Plug and slot welds.	X	—		
5) Single-pass fillet welds ≤ $^5/_{16}$"	—	X		
6) Floor and roof deck welds.	—	X	AWS D1.3	

TABLE 1704.3—continued
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD[a]	IBC REFERENCE
b. Reinforcing steel:				
1) Verification of weldability of reinforcing steel other than ASTM A 706.	—	X	AWS D1.4 ACI 318: Section 3.5.2	—
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	X	—		
3) Shear reinforcement.	X	—		
4) Other reinforcing steel.	—	X		
6. Inspection of steel frame joint details for compliance:				
a. Details such as bracing and stiffening.	—	X	—	1704.3.2
b. Member locations.	—	X		
c. Application of joint details at each connection.	—	X		

For SI: 1 inch = 25.4 mm.
a. Where applicable, see also Section 1707.1, Special inspection for seismic resistance.

TABLE 1704.4
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD[a]	IBC REFERENCE
1. Inspection of reinforcing steel, including prestressing tendons, and placement.	—	X	ACI 318: 3.5, 7.1-7.7	1913.4
2. Inspection of reinforcing steel welding in accordance with Table 1704.3, Item 5b.	—	—	AWS D1.4 ACI 318: 3.5.2	—
3. Inspection of bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased or where strength design is used.	X	—	ACI 318: 8.1.3, 21.2.8	1911.5, 1912.1
4. Inspection of anchors installed in hardened concrete.	—	X	ACI 318: 3.8.6, 8.1.3, 21.2.8	1912.1
5. Verifying use of required design mix.	—	X	ACI 318: Ch. 4, 5.2-5.4	1904.2.2, 1913.2, 1913.3
6. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X	—	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1913.10
7. Inspection of concrete and shotcrete placement for proper application techniques.	X	—	ACI 318: 5.9, 5.10	1913.6, 1913.7, 1913.8
8. Inspection for maintenance of specified curing temperature and techniques.	—	X	ACI 318: 5.11-5.13	1913.9
9. Inspection of prestressed concrete: a. Application of prestressing forces. b. Grouting of bonded prestressing tendons in the seismic-force-resisting system.	X X	—	ACI 318: 18.20 ACI 318: 18.18.4	—
10. Erection of precast concrete members.	—	X	ACI 318: Ch. 16	—
11. Verification of in-situ concrete strength, prior to stressing of tendons in posttensioned concrete and prior to removal of shores and forms from beams and structural slabs.	—	X	ACI 318: 6.2	—
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.	—	X	ACI 318: 6.1.1	—

For SI: 1 inch = 25.4 mm.
a. Where applicable, see also Section 1707.1, Special inspection for seismic resistance.

TABLE 1704.5.1
LEVEL 1 REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION

VERIFICATION AND INSPECTION	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA		
	CONTINUOUS	PERIODIC	IBC SECTION	TMS 402/ACI 530/ASCE 5[a]	TMS 602/ACI 530.1/ASCE 6[a]
1. Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified.	—	X	—	—	Art. 1.5
2. Verification of f'_m and f'_{AAC} prior to construction except where specifically exempted by this code.	—	X	—	—	Art. 1.4B
3. Verification of slump flow and VSI as delivered to the site for self-consolidating grout.	X	—	—	—	Art. 1.5B.1.b.3
4. As masonry construction begins, the following shall be verified to ensure compliance:					
a. Proportions of site-prepared mortar.	—	X	—	—	Art. 2.6A
b. Construction of mortar joints.	—	X	—	—	Art. 3.3B
c. Location of reinforcement, connectors, prestressing tendons and anchorages.	—	X	—	—	Art. 3.4, 3.6A
d. Prestressing technique.	—	X	—	—	Art. 3.6B
e. Grade and size of prestressing tendons and anchorages.	—	X	—	—	Art. 2.4B, 2.4H
5. During construction the inspection program shall verify:					
a. Size and location of structural elements.	—	X	—	—	Art. 3.3F
b. Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction.	—	X	—	Sec. 1.2.2(e), 1.16.1	—
c. Specified size, grade and type of reinforcement, anchor bolts, prestressing tendons and anchorages.	—	X	—	Sec. 1.15	Art. 2.4, 3.4
d. Welding of reinforcing bars.	X	—	—	Sec. 2.1.9.7.2, 3.3.3.4(b)	—
e. Preparation, construction and protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F).	—	X	Sec. 2104.3, 2104.4	—	Art. 1.8C, 1.8D
f. Application and measurement of prestressing force.	X	—	—	—	Art. 3.6B

TABLE 1704.5.1—continued
LEVEL 1 REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION

VERIFICATION AND INSPECTION	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA		
	CONTINUOUS	PERIODIC	IBC SECTION	TMS 402/ACI 530/ASCE 5[a]	TMS 602/ACI 530.1/ASCE 6[a]
6. Prior to grouting, the following shall be verified to ensure compliance:					
a. Grout space is clean.	—	X	—	—	Art. 3.2D
b. Placement of reinforcement and connectors, and prestressing tendons and anchorages.	—	X	—	Sec. 1.13	Art. 3.4
c. Proportions of site-prepared grout and prestressing grout for bonded tendons.	—	X	—	—	Art. 2.6B
d. Construction of mortar joints.	—	X	—	—	Art. 3.3B
7. Grout placement shall be verified to ensure compliance:	X	—	—	—	Art. 3.5
a. Grouting of prestressing bonded tendons.	X	—	—	—	Art. 3.6C
8. Preparation of any required grout specimens, mortar specimens and/or prisms shall be observed.	—	X	Sec. 2105.2.2, 2105.3	—	Art. 1.4

For SI: °C = [(°F) - 32]/1.8.
a. The specific standards referenced are those listed in Chapter 35.

TABLE 1704.5.3
LEVEL 2 REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCE FOR CRITERIA		
			IBC SECTION	TMS 402/ACI 530/ASCE 5[a]	TMS 602/ACI 530.1/ASCE 6[a]
1. Compliance with required inspection provisions of the construction documents and the approved submittals.	—	X	—	—	Art. 1.5
2. Verification of f'_m and f'_{AAC} prior to construction and for every 5,000 square feet during construction.	—	X	—	—	Art. 1.4B
3. Verification of proportions of materials in premixed or preblended mortar and grout as delivered to the site.	—	X	—	—	Art. 1.5B
4. Verification of slump flow and VSI as delivered to the site for self-consolidating grout.	X	—	—	—	Art. 1.5B.1.b.3
5. The following shall be verified to ensure compliance:					
a. Proportions of site-prepared mortar, grout and prestressing grout for bonded tendons.	—	X	—	—	Art. 2.6A
b. Placement of masonry units and construction of mortar joints.	—	X	—	—	Art. 3.3B
c. Placement of reinforcement, connectors and prestressing tendons and anchorages.	—	X	—	Sec. 1.15	Art. 3.4, 3.6A
d. Grout space prior to grout.	X	—	—	—	Art. 3.2D
e. Placement of grout.	X	—	—	—	Art. 3.5
f. Placement of prestressing grout.	X	—	—	—	Art. 3.6C
g. Size and location of structural elements.	—	X	—	—	Art. 3.3F
h. Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction.	X	—	—	Sec.1.2.2(e), 1.16.1	—
i. Specified size, grade and type of reinforcement, anchor bolts, prestressing tendons and anchorages.	—	X	—	Sec. 1.15	Art. 2.4, 3.4
j. Welding of reinforcing bars.	X	—	—	Sec. 2.1.9.7.2, 3.3.3.4 (b)	—
k. Preparation, construction and protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F).	—	X	Sec. 2104.3, 2104.4	—	Art. 1.8C, 1.8D
l. Application and measurement of prestressing force.	X	—	—	—	Art. 3.6B
6. Preparation of any required grout specimens and/or prisms shall be observed.	X	—	Sec. 2105.2.2, 2105.3	—	Art. 1.4

For SI: °C = [(°F) - 32]/1.8, 1 square foot = 0.0929 m².
a. The specific standards referenced are those listed in Chapter 35.

TABLE 1704.7
REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	—	X
2. Verify excavations are extended to proper depth and have reached proper material.	—	X
3. Perform classification and testing of compacted fill materials.	—	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X[a]	X[a]
5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	—	X

a. Frequency of special inspections to be determined by the registered design professional responsible for the project.

TABLE 1704.9
REQUIRED VERIFICATION AND INSPECTION OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. Observe drilling operations and maintain complete and accurate records for each element.	X	—
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.	X	—
3. For concrete elements, perform additional inspections in accordance with Section 1704.4.	—	—

A. DESIGN BASIS

The design is in accordance with 2011 City of Los Angeles Building Code, based on The California Building Code, 2010 edition and provides for the following loads:

1. Occupancy Category: III

2. Live Loads:

Roofs	20	PSF
Floors	50	PSF (Reducible)with 20 PSF allowance for partition
Corridor	100	PSF
Mechanical	50	PSF (Unreducible)
Driveway at Lower Level	250	PSF (Unreducible) -At areas between GL F/H6 and 1/2)
Plaza at Lower Level	100	PSF (Unreducible) -At areas between GL A/D and 4/6)
Stairs and exit facilities	100	PSF (Unreducible)

3. Wind Loads

Basic Wind Speed = 85 MPH (3 second gust)
Exposure = B
Iw = 1.15

4. Seismic Loads (Mapped response spectrum as per 2010 CBC)

Site Class = D
Seismic Design Category = E

Ss	=	2.19 g
S1	=	0.773 g
Sms	=	2.19 g
Sm1	=	1.16 g
Sds	=	1.46 g
Sd1	=	0.773 g

Seismic Importance Factor, I = 1.25
Response Modification Factor, R = 8 (Special steel moment resisting frame)
Design Base Shear = 870 kips
Total Weight of Building = 12,743 kips
Seismic Response Coefficient, C_S = 0.08 (Both directions)
Redundancy Factor, P = 1.0 (both directions)
Ω_O = 3.0, C_D = 5.5

B. QUALITY CONTROL

Owner shall engage an independent Testing and Inspection agency.
Continuous special inspection is required for the following work.

ITEM	REMARKS
1. Soil Excavations	Special Inspector shall provide a daily report and final conformance report to the City.
2. Concrete with f 'c~S> 2,500 psi	
3. High Strength Bolts	
4. Field Welding	
5. CMU Wall Construction	
6. Expansion/Epoxy Anchors	
7. Sprayed-on fireproofing	

C. ABBREVIATIONS

⌀	Diameter	Horiz.	Horizontal
#	Number or pounds	Intr.	Interior
@	At	Jt.	Joint
C	Camber	Lt. Wt.	Lightweight
CL	Center line	M.B.	Machine Bolt
-3"	Slab depression	Max.	Maximum
A.B.	Anchor Bolt	Mechl.	Mechanical
ABV.	Above	Mfr.	Manufacturer
Add'l.	Additional	Min.	Minimum
Anch.	Anchor	Mtl.	Metal
B.O.F.	Bottom of Footing	N.I.C.	Not in Contract
Bm.	Beam	N.T.S.	Not to Scale
Bott.	Bottom	No.	Number
Btwn.	Between	o.c.	On Center
Clr.	Clear	O.H.	Opposite Hand
Col.	Column	Pc.	Piece
Conc.	Concrete	P.H.	Penthouse
Cont.	Continuous	Pl.	Plate
Det.	Detail	Plcs.	Places
Dim.	Dimension	RBS	Reduced Beam Section
Dwg.	Drawing	Reinf.	Reinforcing
Dwl.	Dowel	S.	Footing Step
E.F.	Each Face	Sched.	Schedule
E.W.	Each Way	Sect.	Section
Ea.	Each	Sep'n.	Separation
EL	Elevation	Sim.	Similar
Electl.	Electrical	Spec.	Specification
Elev.	Elevator or Elevation	Sq.	Square
E.O.S.	Edge of Slab	Std.	Standard
Exist.	Existing	Stiff.	Stiffener
Exp.	Expansion	Stl.	Steel
Extr.	Exterior	Suppt.	Support
F.O.C.	Face of Concrete	Sym.	Symmetrical
F.O.S.	Face of Stud	T.O.	Top of
F.O.W.	Face of Wall	T.O.S.	Top of Steel
Fdn.	Foundation	TOW	Top of Wall
Fin.	Finish	TSW	Top Seam Weld
F.F.	Finish Floor	Thk.	Thick
Flr.	Floor	Typ.	Typical
Frmg.	Framing	U.N.O.	Unless Noted Otherwise
Ftg.	Footing	V.O.J.	Verify on Job
Ga.	Gauge	V.O.S.	Verify on Site
Galv.	Galvanized	Vert.	Vertical
Gr. Bm.	Grade Beam	W.P.	Work Point
H.S.B.	High Strength Bolt	Wt.	Weight
		w/	With

D. LEGEND

MATERIALS

Earth
Concrete - Poured in Place
Slab Depression -2"
Metal Stud
Steel
Gravel
Grout or Drypack
Masonry

SYMBOLS

Detail
Section
Elevation
Bld'g. Section
Wall Section

HKS

ARCHITECT
HKS ARCHITECTS, INC.
10880 WILSHIRE BLVD. SUITE 1850
LOS ANGELES, CA 90024

STRUCTURAL ENGINEER
TMAD TAYLOR & GAINES
300 N. LAKE AVENUE, 14TH FLOOR
PASADENA, CA 91101

MEP ENGINEER
TMAD TAYLOR & GAINES
300 N. LAKE AVENUE, 14TH FLOOR
PASADENA, CA 91101

CIVIL ENGINEER
KPFF CONSULTING ENGINEERS
6080 CENTER DRIVE, STE. 700
LOS ANGELES, CA 90045

LANDSCAPE ARCHITECT
FONG HART SCHNEIDER - PARTNERS
31742 COAST HIGHWAY
LAGUNA BEACH, CA 92651

USC University of Southern California

HEALTH SCIENCES CAMPUS - Norris Healthcare Center

CORE AND SHELL

2204 E Alcazar Street, Los Angeles, CA 90033

OWNER
UNIVERSITY OF SOUTHERN CALIFORNIA
2001 N. SOTO STREET, SBA #329
LOS ANGELES, CA 90032

REGISTERED PROFESSIONAL ENGINEER — EDWIN IGEVORGIAN — No.5145 — Exp. 09/30/16 — STRUCTURAL — STATE OF CALIFORNIA

REVISION

No.	DESCRIPTION	DATE
1	BACK CHECK	09/30/2014
3	LADBS BACKCHECK	01/16/2015
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

HKS PROJECT NUMBER
15002.200

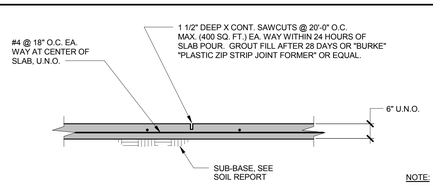
DATE
3/24/2015

ISSUE
LADBS BUILDING PERMIT

SHEET TITLE
GENERAL NOTES

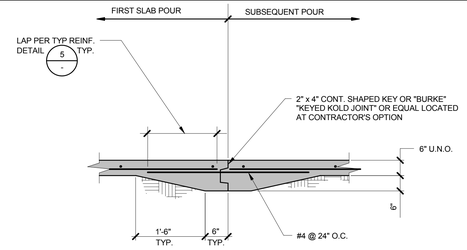
SHEET NO.
S-002

PLOT DATE: 3/23/2015 6:06:14 PM TEMPLATE VERSION

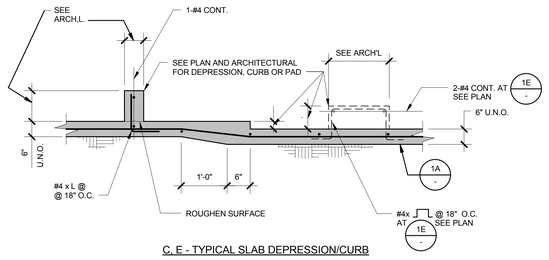


A - TYPICAL CONTROL JOINT

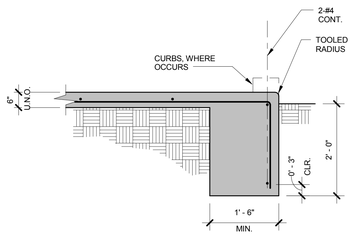
NOTE:
SEE CONCRETE NOTE NO. 8 ON SHEET S- CONCERNING LOCATION OF JOINTS.



B - TYPICAL CONSTRUCTION JOINT

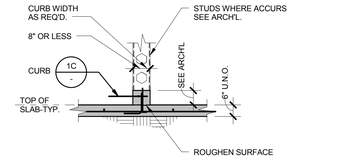


C, E - TYPICAL SLAB DEPRESSION/CURB

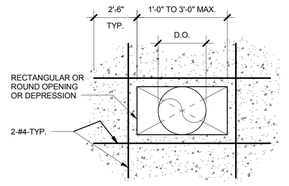


D - TYPICAL EDGE OF SLAB

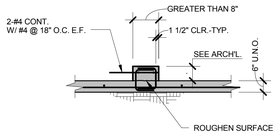
TYP. SLAB ON GRADE DETAILS | NONE | 1



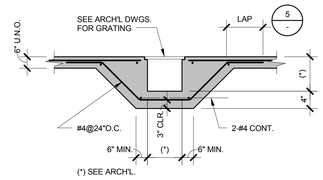
A- CONCRETE CURB



B- PLAN AT OPENING OR DEPRESSION

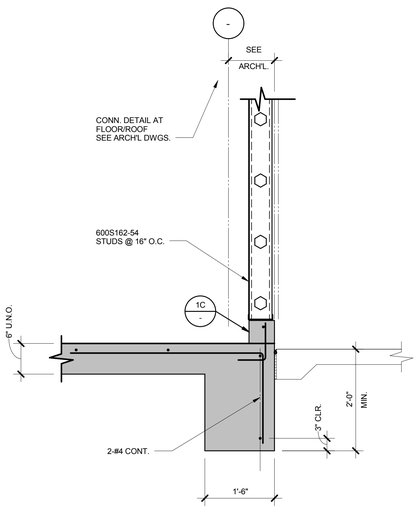


C- CONCRETE CURB

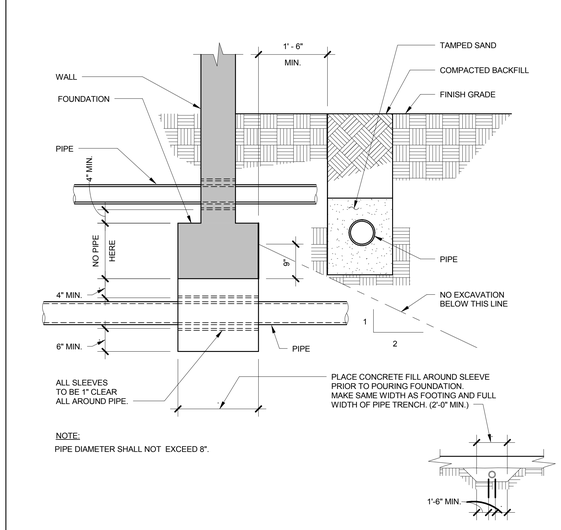


D-SECTION AT TROUGH DRAIN

TYP. CONCRETE SLAB CURBS AND OPENING ON GRADE | NONE | 2

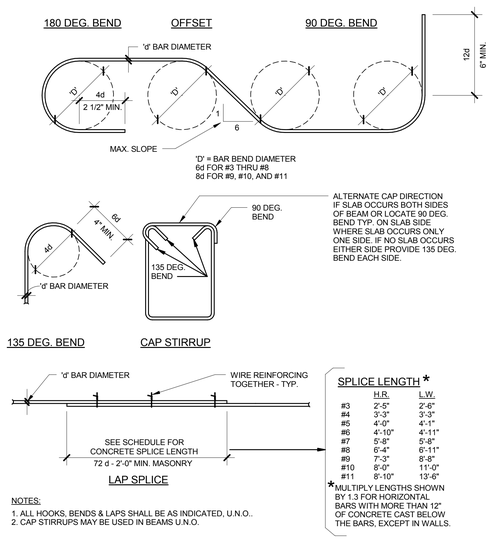


TYP. STUD WALL SECTION | NONE | 3



NOTE:
PIPE DIAMETER SHALL NOT EXCEED 8".

TYP. PIPE TRENCH DETAIL | NONE | 4



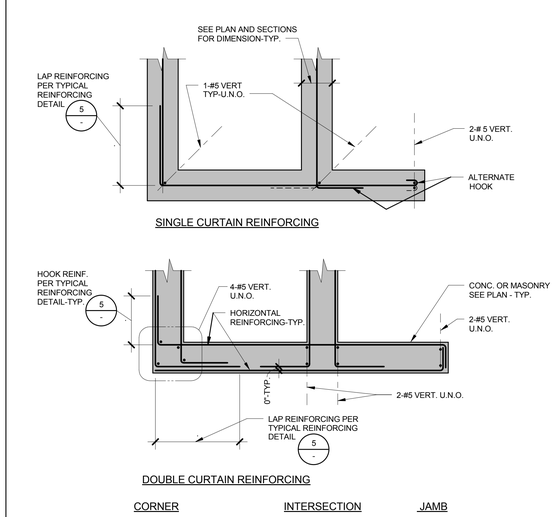
SPLICE LENGTH *

	H.R.	L.W.
#3	2'-5"	2'-6"
#4	3'-3"	3'-3"
#5	4'-0"	4'-1"
#6	4'-10"	4'-11"
#7	5'-8"	5'-8"
#8	6'-4"	6'-11"
#9	7'-3"	8'-8"
#10	8'-0"	11'-0"
#11	8'-10"	13'-6"

*MULTIPLY LENGTHS SHOWN BY 1.3 FOR HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS, EXCEPT IN WALLS.

NOTES:
1. ALL HOOKS, BENDS & LAPS SHALL BE AS INDICATED, U.N.O..
2. CAP STIRRUPS MAY BE USED IN BEAMS U.N.O.

TYP. REINFORCING DETAIL | NONE | 5

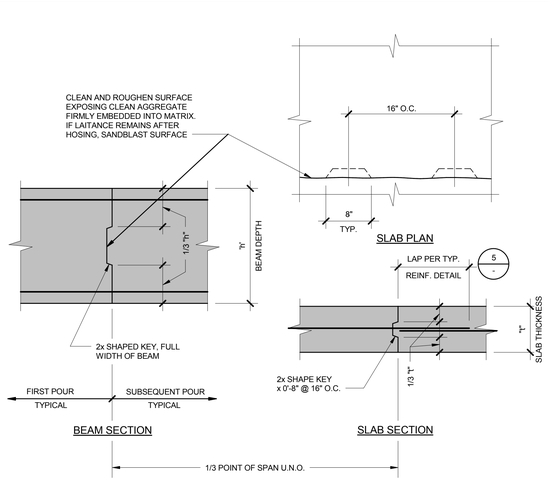


SINGLE CURTAIN REINFORCING

DOUBLE CURTAIN REINFORCING

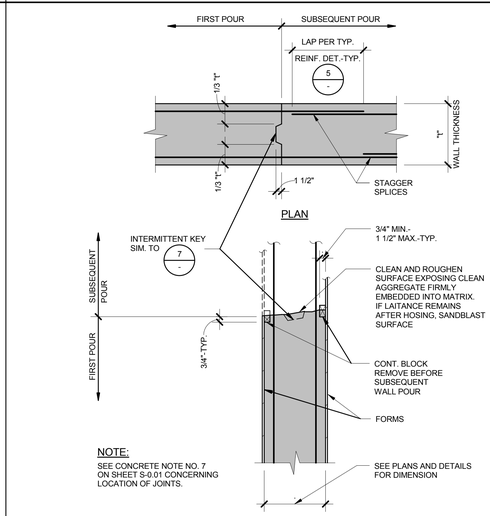
CORNER | INTERSECTION | JAMB

TYP. REINFORCING AT INTERSECTION DETAILS | NONE | 6



NOTE:
SEE CONCRETE NOTE NO. 7 ON SHEET S0.01 CONCERNING LOCATION OF JOINTS.

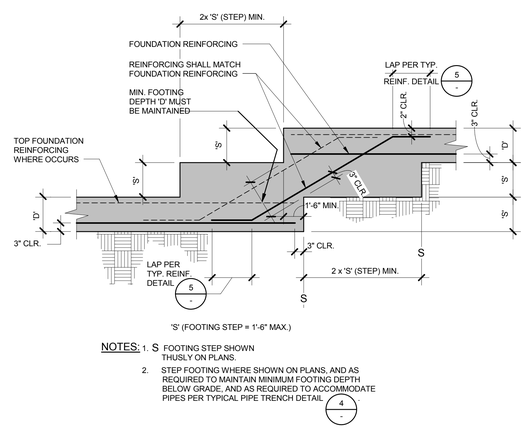
TYP. CONSTRUCTION JOINT DETAILS | NONE | 7



NOTE:
SEE CONCRETE NOTE NO. 7 ON SHEET S-0.01 CONCERNING LOCATION OF JOINTS.

SECTION

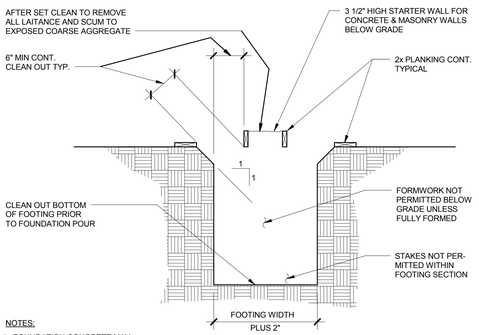
TYP. WALL CONSTRUCTION JOINT DETAIL | NONE | 8



'S' (FOOTING STEP = 1'-6" MAX.)

NOTES: 1. S FOOTING STEP SHOWN THUSLY ON PLANS.
2. STEP FOOTING WHERE SHOWN ON PLANS, AND AS REQUIRED TO MAINTAIN MINIMUM FOOTING DEPTH BELOW GRADE, AND AS REQUIRED TO ACCOMMODATE PIPES PER TYPICAL PIPE TRENCH DETAIL 4

TYP. STEPPED FOOTING DETAIL | NONE | 9



NOTES:
1. FOUNDATION CONCRETE MAY BE PLACED DIRECTLY INTO EXCAVATION (AS SHOWN) PROVIDED THE TRENCH WALLS ARE STABLE AS DETERMINED BY THE SOIL ENGINEER.
2. FOUNDATIONS SHALL BEAR ON ACCEPTABLE SOIL, PER THE SOIL REPORT, AS DETERMINED BY THE SOIL ENGINEER.
3. ALTERNATE PROCEDURE IN LIEU OF STARTER WALL:
   A. LEAVE AGGREGATE ROUGH AT WALL AREAS. DO NOT WOOD FLOAT.
   B. STAMP KEYWAY AT WALL AREAS SIM. TO 7
   C. DRY SANDBLAST TO EXPOSE AGGREGATE AND SANDBLAST.
   D. CLEAN WITH AIR COMPRESSOR AND BLOWPIPE.
   E. RECLEAN PRIOR TO CLOSING WALL FORMS.
   F. DAMPEN WALL BEFORE POURING WITH A LIMITED AMOUNT OF WATER AND KEEPING DIRT OFF OF THE BOND SURFACE.

TYP. FOOTING FORMING DETAIL | NONE | 10

PLOT DATE: 3/23/2015 8:05:18 PM TEMPLATE VERSION:

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REGISTERED PROFESSIONAL ENGINEER — EDWIN VASVORI — No.5145 — Exp. 09/30/16 — STRUCTURAL — STATE OF CALIFORNIA

REVISION

No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

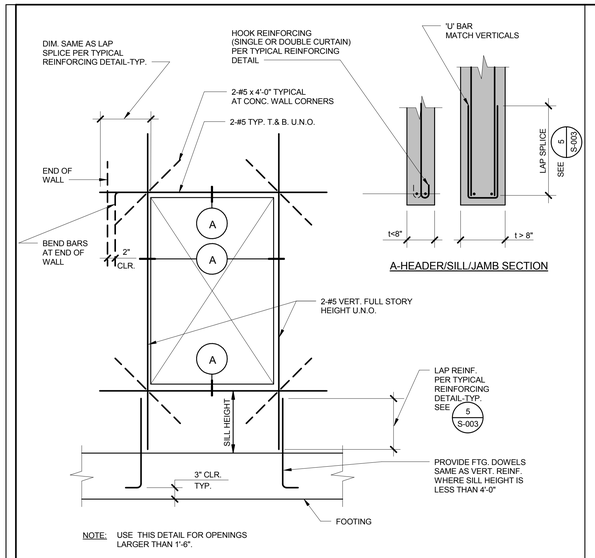
HKS PROJECT NUMBER
15002.200

DATE
3/24/2015

ISSUE
LADBS BUILDING PERMIT

SHEET TITLE
TYPICAL DETAILS

SHEET NO.
S-003

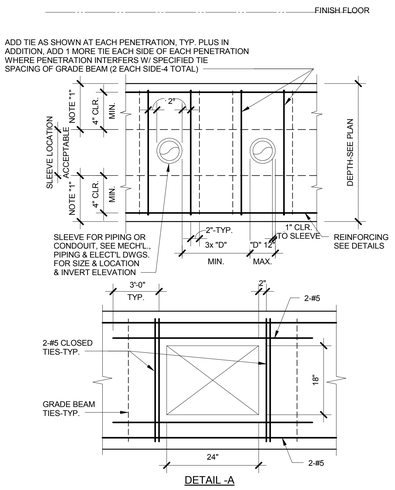


NOTE: USE THIS DETAIL FOR OPENINGS LARGER THAN 1'-6".

A-HEADER/SILL/JAMB SECTION

TYP. WALL OPENING DETAIL | NONE | 1

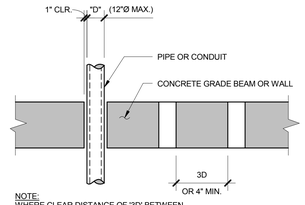
NOTE:
1. PENETRATION THRU BEAM ARE NOT PERMITTED IN THESE AREAS, OR WHERE SPLICES OF REBAR OCCUR.
2. FOR 24" WIDE x 18" DEEP OPENING IN GRADE BEAM AT GRID LINE 6 BETWEEN GRID LINES A AND B, FOLLOW DETAIL 'A' FOR REINFORCING.



DETAIL -A

PIPE/CONDUIT THRU GRADE BEAM DETAIL | NONE | 2A

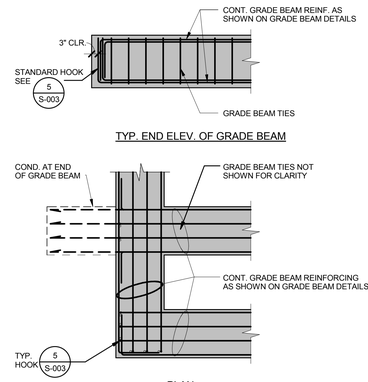
NOTE:
NO PIPING OR CONDUIT PERMITTED IN CONC. SLABS ON METAL DECKING.



NOTE:
WHERE CLEAR DISTANCE OF '3D' BETWEEN SLEEVES IS IMPOSSIBLE, THIS AREA SHALL BE TREATED AS A SLAB OPENING PER TYPICAL DETAILS.

PIPING OR CONDUIT THROUGH GRADE BEAM OR WALL

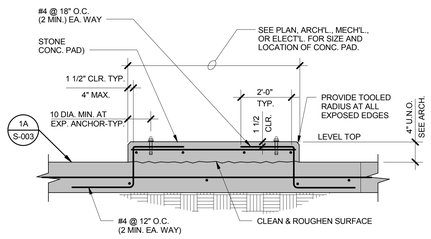
PIPE/CONDUIT THRU GRADE BEAM/WALL DETAIL | NONE | 3



TYP. END ELEV. OF GRADE BEAM

PLAN

TYP. GRADE BEAM REINFORCING | NONE | 4

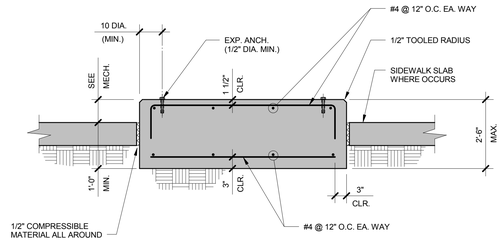


NOTES:
SEE MECHANICAL AND ELECTRICAL DWGS. FOR THE FOLLOWING:
1. LOCATION AND DIMENSION S OF PADS.
2. LOCATION AND SIZE OF ANCHORE BOLTS.
3. DETAILS OF SUPPORTS, ISOLATORS OR OTHERS.

NOTE:
GENERAL CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR SIZES, LOCATION AND HEIGHT OF EQUIPMENT PADS.

ALTERNATE DETAIL:
WHERE NEW HOUSEKEEPING PAD OCCURS ON EXISTING SLAB DRILL 1" HOLEx 3" DEEP FOR #4 DOWELS. DRYPACK W/ NON-SHRINK GROUT.

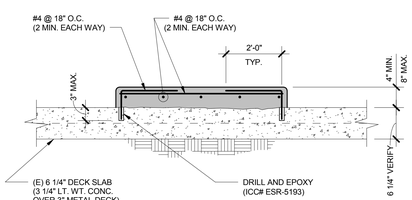
TYP. CONCRETE EQUIP. PAD ON GRADE | NONE | 5



NOTES:
SEE MECHANICAL AND ELECTRICAL DWGS. FOR THE FOLLOWING:
1. LOCATION AND DIMENSIONS OF PADS.
2. LOCATION AND SIZE OF ANCHOR BOLTS.
3. DETAILS OF SUPPORTS, ISOLATORS OR OTHERS.

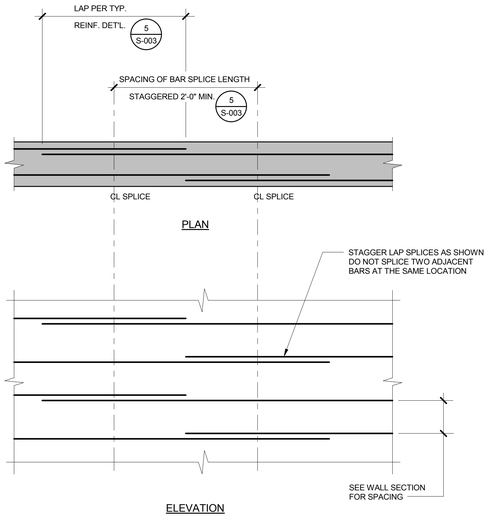
NOTE:
GENERAL CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR SIZES, LOCATION AND HEIGHT OF EQUIPMENT PADS.

TYP. ISOLATION PAD DETAIL | NONE | 6



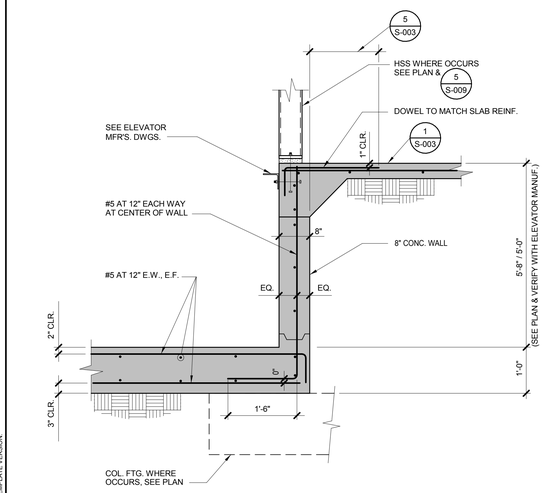
NOTE:
FOR INFORMATION NOT NOTED OR SHOWN SEE 6 -

NEW CONC. PAD ON (E) DECK SLAB | NONE | 7



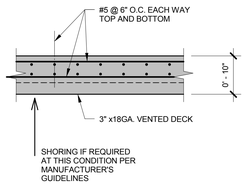
ELEVATION

SPLICE AT HORIZ. WALL REINF. | NONE | 8



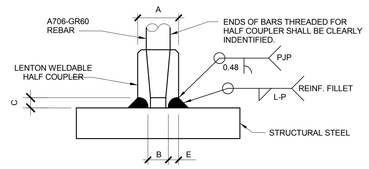
NOTE:
1. COORD. WITH ELEVATOR MANUF.
2. SEE 1 / 3S6.04 FOR GUIDE RAIL SUPPORT DETAIL.

ELEVATOR PIT SECTION | NONE | 9



10" SLAB DETAIL | NONE | 10

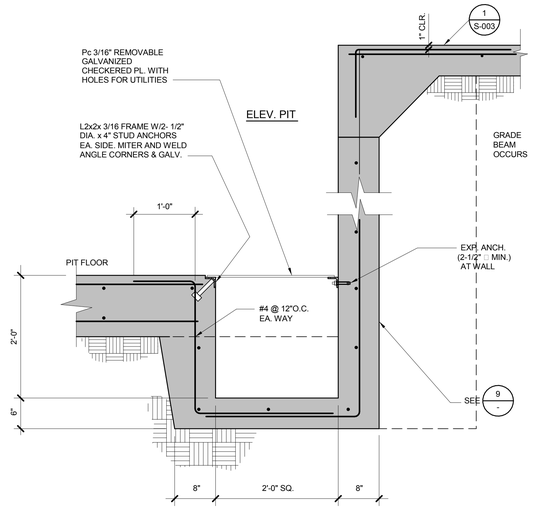
REBAR WELDABLE HALF COUPLER



NOTES:
1. LENTON WELDABLE HALF COUPLER - C3J SERIES LARR# 24507 (IAPMO REPORT # 0129).
2. ELECTRODES FOR REFERENCE AWS A5.1: E7018-1 H4R LOW HYDROGEN OR QUALIFIED ALTERNATIVE TO BE SUBMITTED WITH WPS FOR APPROVAL. CVN SHALL BE GREATER THAN OR EQUAL TO 40 FT-LBS @ 70 DEG F.
3. SUBMIT WELDING PROCEDURE SPECIFICATION, INCLUDING PQR AND PREHEAT OF BASE METAL, PRIOR TO WELDING PER SPECIFICATIONS SECTION 05 1210.
4. WELDED COUPLER PJP AND REINF FILLET WELDS ARE DC-A WELDS.
5. PREHEAT BASE METAL PRIOR TO WELDING PER WPS AND SPECIFICATIONS SECTION 05 1210.
6. PROVIDE NONDESTRUCTIVE TESTING (NDT) OF BASE METAL AT COMBINED PJP AND REINFORCING FILLET WELDS. SEE SPECIFICATIONS 05 1210.
7. SEE SCHEDULE FOR A, B, C AND E.

REBAR SIZE	DIMENSIONS (IN.)			
	A	B	C	E
#9	1.563	0.938	0.468	0.415
#10	2	0.938	0.686	0.336
#11	2	1.125	0.593	0.471

REBAR TO WELDABLE HALF COUPLERS | NONE | 11



SUMP PIT DETAIL | NONE | 12

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REGISTERED PROFESSIONAL ENGINEER — EDWIN (GEVORG) NAJARIAN — No.5145 — Exp. 09/30/16 — STRUCTURAL — STATE OF CALIFORNIA

REVISION

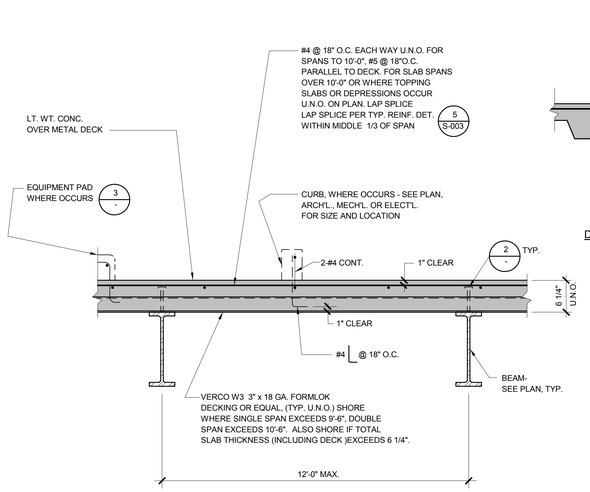
No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

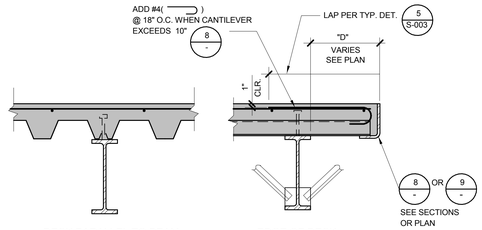
HKS PROJECT NUMBER
15002.200
DATE
3/24/2015
ISSUE
LADBS BUILDING PERMIT
SHEET TITLE
TYPICAL DETAILS

SHEET NO.
S-004

PLOT DATE: 3/23/2015 6:02:22 PM TEMPLATE VERSION



DECK PERPENDICULAR TO SUPPORTS



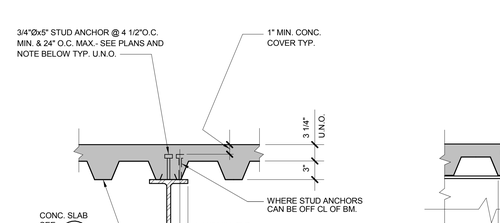
DECK PARALLEL TO BEAM EDGE OF DECK

NOTES:

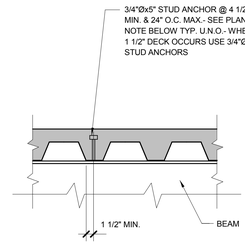
1. WELD DECK TO SUPPORTS W/ 1/2"□ PUDDLE WELDS @ 12"O.C. TYP. PUDDLE WELDS MAY BE OMITTED ALTOGETHER WHERE STUD ANCHORS ATTACH TO SUPPORT.
2. BUTTON PUNCH DECK SIDE SEAMS @ 18"O.C.
3. NO CONDUITS ALLOWED IN SLAB.
4. FOR TYPICAL CONSTRUCTION JOINT DET. SEE 4 -
5. SEE GENERAL NOTES FOR ADDITIONAL DECK INFORMATION.
6. FOR DECK OPENING AT COLUMNS SEE 7 -
7. FOR TYP. SLAB OPENING DETAILS SEE 8 - & 9 -
8. FOR INFORMATION NOT SHOWN SEE 9 -
9. FOR 7" NORMAL WT. CONCRETE OVER METAL DECK, SHORING IF REQUIRED AT THIS CONDITION PER MANUFACTURER'S GUIDELINES

TYP. CONCRETE SLAB ON METAL DECK DETAILS

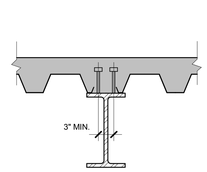
NONE | 1



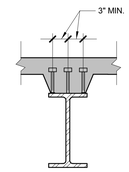
SINGLE STUD PER ROW



DECK PERPENDICULAR TO BEAM



TWO STUDS PER ROW



THREE STUDS PER ROW

STUD ANCHOR LEGEND

[8] INDICATES NUMBER OF STUD ANCHORS (8)ON BEAM (SEE FRAMING PLANS). WHERE NO SYMBOL IS SHOWN, SEE NOTE AT RIGHT.

ONE SYMBOL INDICATES NUMBER OF STUD ANCHORS EQUALLY SPACED ALONG FULL LENGTH OF BEAM.

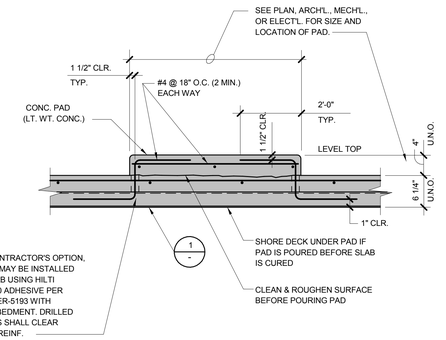
MORE THAN ONE SYMBOL INDICATES NUMBER OF STUD ANCHORS BETWEEN SPECIFIC POINTS ALONG BEAM (PERPENDICULAR BEAMS).

NOTES:

1. IF NUMBER OF STUDS IS NOT SHOWN ON PLANS, PROVIDE A SINGLE ROW OF STUDS SPACED @ 1'-0" O.C., EXCEPT AT W8 & W10 BEAMS PROVIDE @ 2'-0" O.C. CENTERED ON BEAM.
2. WHERE BEAM FLANGE THICKNESS IS LESS THAN 0.30", STUD ANCHORS MUST BE PLACED AT CL OF THE BEAM.
3. AT MOMENT FRAME BEAMS, PROVIDE 2 - 3/4"Ø STUDS @ 12" O.C. TYP.
4. AT DRAG BEAMS (DENOTED BY: ●——●) , PROVIDE 2 - 3/4"Ø STUDS @ 12" O.C. MINIMUM, TYP.

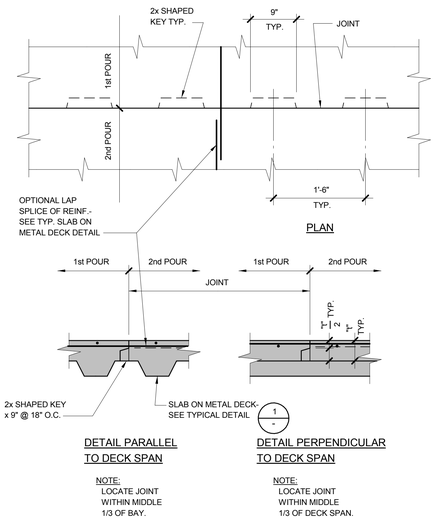
TYP. STUD ANCHOR DETAILS

NONE | 2



TYP. CONCRETE PAD ON METAL DECK DETAIL

NONE | 3



PLAN

DETAIL PARALLEL TO DECK SPAN

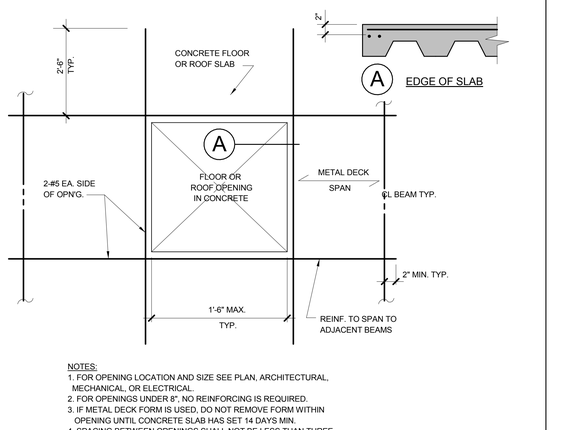
NOTE: LOCATE JOINT WITHIN MIDDLE 1/3 OF BAY.

DETAIL PERPENDICULAR TO DECK SPAN

NOTE: LOCATE JOINT WITHIN MIDDLE 1/3 OF DECK SPAN.

TYP. CONSTRUCTION JOINT DETAILS

NONE | 4

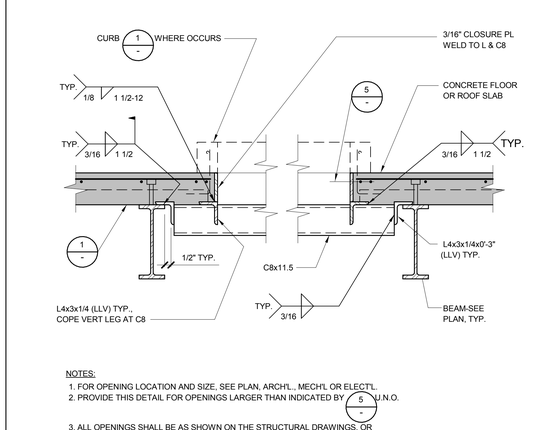


NOTES:

1. FOR OPENING LOCATION AND SIZE SEE PLAN, ARCHITECTURAL, MECHANICAL, OR ELECTRICAL.
2. FOR OPENINGS UNDER 8", NO REINFORCING IS REQUIRED.
3. IF METAL DECK FORM IS USED, DO NOT REMOVE FORM WITHIN OPENING UNTIL CONCRETE SLAB HAS SET 14 DAYS MIN.
4. SPACING BETWEEN OPENINGS SHALL NOT BE LESS THAN THREE TIMES THE OPENING SIZE, EDGE TO EDGE.
5. FOR LARGER OPENINGS THAN INDICATED PROVIDE REINFORCING SHOWN AND FRAMING PER 1 - U.N.O.
6. ALL OPENINGS SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS, OR APPROVED BY THE STRUCTURAL ENGINEER.

TYP. SLAB OPENING DETAIL

NONE | 5



NOTES:

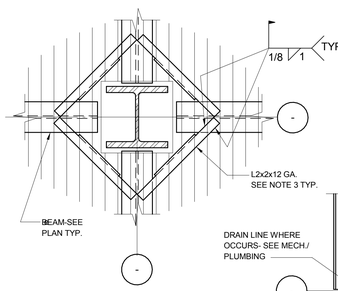
1. FOR OPENING LOCATION AND SIZE, SEE PLAN, ARCH'L., MECH'L OR ELECT'L.
2. PROVIDE THIS DETAIL FOR OPENINGS LARGER THAN INDICATED BY 5 - U.N.O.
3. ALL OPENINGS SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS, OR APPROVED BY THE STRUCTURAL ENGINEER.
4. ATTACH METAL DECK TO ANGLE AND CHANNEL SUPPORTS PER 1 - NOTE 1.
5. MAXIMUM ANGLE SPAN = 6'-0" .
6. IF OPENING IS ADJACENT TO BEAM USE EDGE FORM DET. 8 -

TYP. SLAB OPENING DETAIL

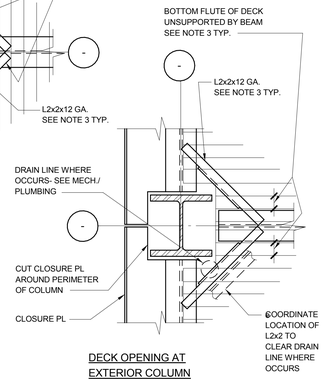
NONE | 6

NOTES:

1. CONCRETE SHALL BE PLACED TIGHT ALL AROUND COLUMN.
2. PROVIDE SHEET METAL CLOSURE AS REQUIRED TO PREVENT CONCRETE LEAKAGE.
3. PROVIDE ANGLE WHERE COLUMN INTERRUPTS BOTTOM FLUTE OF DECK SUCH THAT IT IS UNSUPPORTED BY A BEAM.



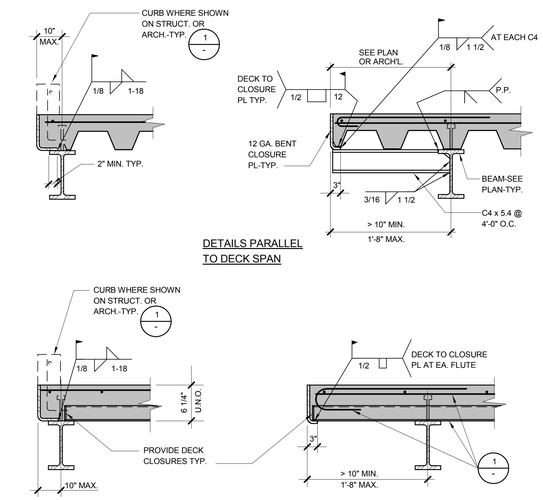
DECK OPENING AT INTERIOR COLUMN



DECK OPENING AT EXTERIOR COLUMN

TYP. DECK OPENING AT COLUMN

NONE | 7

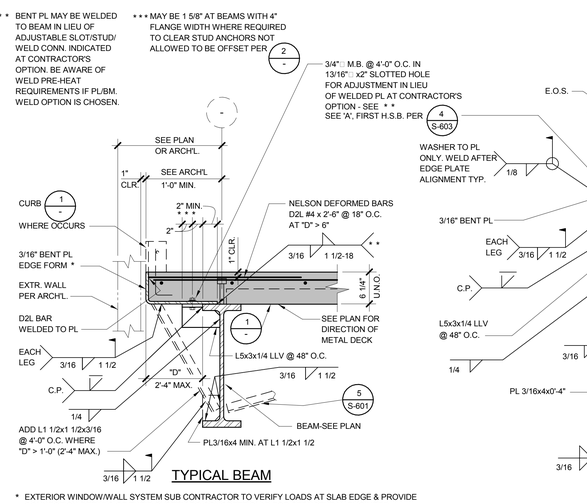


DETAILS PARALLEL TO DECK SPAN

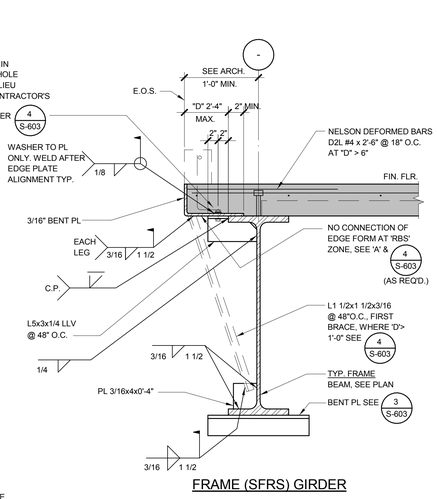
DETAILS PERPENDICULAR TO DECK SPAN

TYP. INTERIOR EDGE FROM DET. AT SMALL OPNG'S

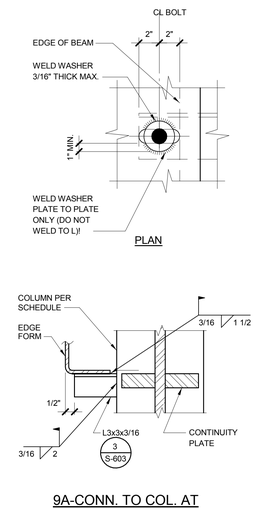
NONE | 8



TYPICAL BEAM



FRAME (SFRS) GIRDER



9A-CONN. TO COL. AT RBS LOCATION

TYPICAL STAIR, ELEVATOR AND EXTERIOR EDGE FORM DETAIL (U.N.O.)

NONE | 9

PLOT DATE: 3/23/2015 6:05:29 PM TEMPLATE VERSION:

HKS

ARCHITECT
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2001 N. SOTO STREET, SBA #329
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REGISTERED PROFESSIONAL ENGINEER EDWIN IGE/JORGINALJAMIN No.5145 Exp. 09/30/16 STRUCTURAL STATE OF CALIFORNIA

REVISION

No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015

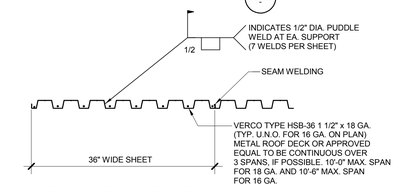
C&S GMP BID SET 16 JUNE 2015

HKS PROJECT NUMBER
15002.200
DATE
3/24/2015
ISSUE
LADBS BUILDING PERMIT
SHEET TITLE
TYPICAL DETAILS

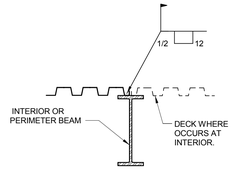
SHEET NO.
S-005

NOTES:

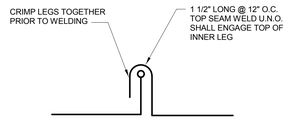
1. SEE GENERAL NOTES FOR ADDITONAL DECK INFORMATION.
2. SEE (2/-) & (3/-) FOR TYPICAL OPENING DETAILS.
3. PROVIDE TWO ROWS OF WELDS INDICATED ALONG INTERIOR STRUTS.
4. FOR EXTERIOR EDGE FORM DETAIL AT ROOF SEE (4/-)



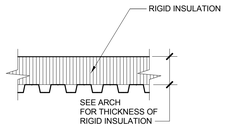
TYPICAL TYPE "HSB" METAL DECK DETAIL



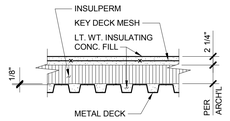
CONNECTION PARALLEL TO FLUTES DETAIL



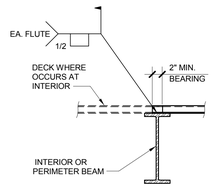
SEAM WELD DETAIL



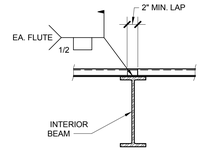
TYP. RIGID INSULATION SECTION



TYP. LT. WT. INSULATING CONCRETE FILL W/ INSULPERM



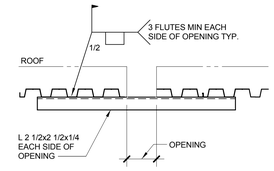
CONNECTION PERPENDICULAR TO FLUTES DETAIL



TYPICAL DECK LAP DETAIL

TYP. ROOF DECK DETAILS

NONE | 1

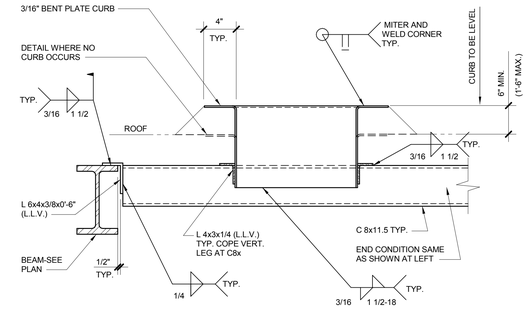


NOTES:

1. PROVIDE THIS DETAIL FOR OPENINGS 4" TO 16" MAX. DIMENSION WHERE NO CURB IS REQUIRED AND NO EQUIPMENT IS SUPPORTED.
2. FOR OPENING LOCATION AND SIZE SEE PLAN, ARCH'L., MECH'L. OR ELECT'L.
3. FOR LARGER OPENINGS THAN INDICATED, WHERE EQUIPMENT IS SUPPORTED, OR WHERE CURB IS REQUIRED, PROVIDE FRAMING PER (3/-) U.N.O.
4. ALL OPENINGS SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS, OR APPROVED BY THE STRUCTURAL ENGINEER.

TYP. ROOF OPNING DETAIL

NONE | 2

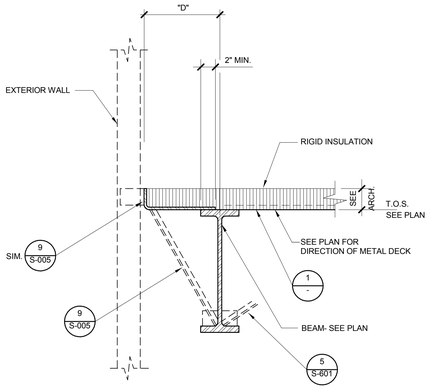


NOTES:

1. FOR OPENING LOCATION AND SIZE SEE PLAN, ARCH'L., MECH'L., OR ELECT'L.
2. PROVIDE THIS DETAIL FOR OPENINGS LARGER THAN INDICATED BY (2/-) WHERE CURB IS REQUIRED OR EQUIPMENT IS SUPPORTED.
3. ALL OPENINGS SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
4. MAXIMUM ANGLE SPAN = 6'-0".

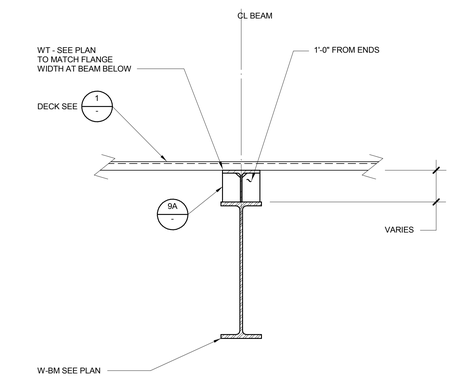
TYP. ROOF OPENING DETAIL

NONE | 3



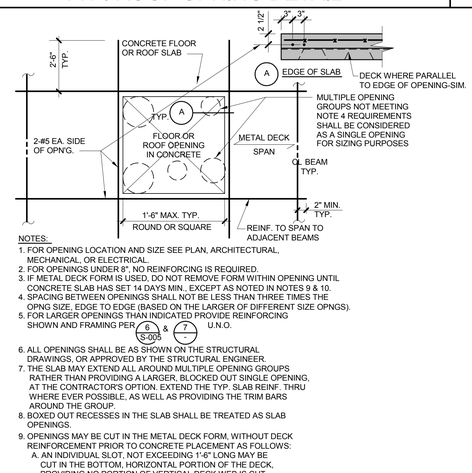
EXTERIOR EDGE FORM AT ROOF DECK DETAIL

NONE | 4



WT TO STEEL BEAM

NONE | 5

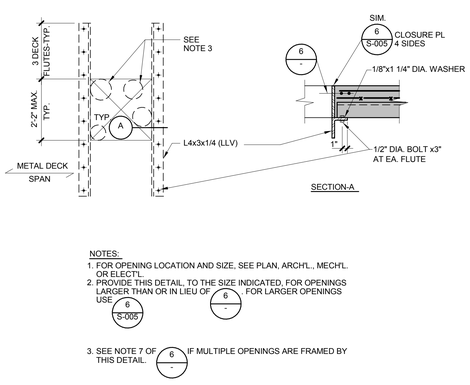


NOTES:

1. FOR OPENING LOCATION AND SIZE SEE PLAN, ARCHITECTURAL, MECHANICAL, OR ELECTRICAL.
2. FOR OPENINGS UNDER 8", NO REINFORCING IS REQUIRED.
3. IF METAL DECK FORM IS USED, DO NOT REMOVE FORM WITHIN OPENING UNTIL CONCRETE SLAB HAS SET 14 DAYS MIN., EXCEPT AS NOTED IN NOTES 9 & 10.
4. SPACING BETWEEN OPENINGS SHALL NOT BE LESS THAN THREE TIMES THE OPNG SIZE, EDGE TO EDGE (BASED ON THE LARGER OF DIFFERENT SIZE OPNGS).
5. FOR LARGER OPENINGS THAN INDICATED PROVIDE REINFORCING SHOWN AND FRAMING PER (6/S-005) & (7/-) U.N.O.
6. ALL OPENINGS SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS, OR APPROVED BY THE STRUCTURAL ENGINEER.
7. THE SLAB MAY EXTEND ALL AROUND MULTIPLE OPENING GROUPS RATHER THAN PROVIDING A LARGER, BLOCKED OUT SINGLE OPENING, AT THE CONTRACTOR'S OPTION. EXTEND THE TYP. SLAB REINF. THRU WHERE EVER POSSIBLE, AS WELL AS PROVIDING THE TRIM BARS AROUND THE GROUP.
8. BOXED OUT RECESSES IN THE SLAB SHALL BE TREATED AS SLAB OPENINGS.
9. OPENINGS MAY BE CUT IN THE METAL DECK FORM, WITHOUT DECK REINFORCEMENT PRIOR TO CONCRETE PLACEMENT AS FOLLOWS:
   A. AN INDIVIDUAL SLOT, NOT EXCEEDING 1'-8" LONG MAY BE CUT IN THE BOTTOM, HORIZONTAL PORTION OF THE DECK, PROVIDING NO PORTION OF VERTICAL DECK WEB IS CUT.
   B. AN INDIVIDUAL HOLE, NOT EXCEEDING 6–8", AND NOT CUTTING MORE THAN ONE VERTICAL DECK WEB MAY BE CUT, PROVIDING THE HOLE IS NO CLOSER TO SIMILAR ADJACENT HOLES THAN INDICATED IN NOTE 4, FOR EACH DIRECTION OF THE DECK.
10. OPENINGS MAY BE CUT IN METAL DECK FORM PRIOR TO CONCRETE PLACEMENT, BEYOND THAT INDICATED IN NOTE 9, AT THE CONTRACTOR'S OPTION. SHORING SHALL BE PROVIDED, PER GENERAL NOTE 8 ON S-000, AS REQUIRED TO SUPPORT EVERY SPAN OF DECK FORM INCLUDING THOSE BETWEEN MULTIPLE DECK OPENINGS.

TYPICAL SLAB OPENING DETAIL

NONE | 6

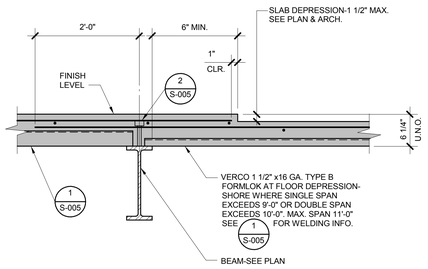


NOTES:

1. FOR OPENING LOCATION AND SIZE, SEE PLAN, ARCH'L., MECH'L. OR ELECT'L.
2. PROVIDE THIS DETAIL, TO THE SIZE INDICATED, FOR OPENINGS LARGER THAN OR IN LIEU OF (6/S-005) FOR LARGER OPENINGS USE (6/-)
3. SEE NOTE 7 OF (6/-) IF MULTIPLE OPENINGS ARE FRAMED BY THIS DETAIL.

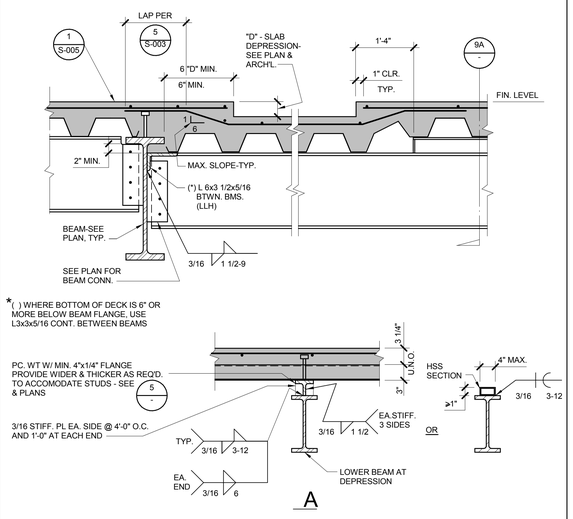
TYPICAL SLAB OPENING DETAIL

NONE | 7



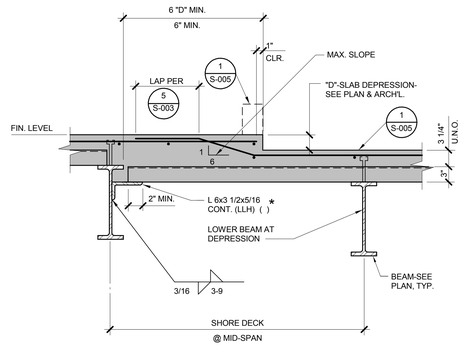
TYP. SLAB DEPRESSION DETAIL

NONE | 8



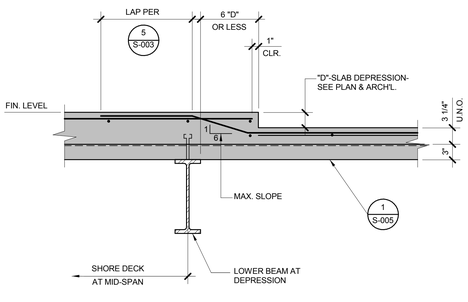
TYP. SLAB DEPRESSION DETAILS

NONE | 9



TYP. SLAB DEPRESSION DETAIL

NONE | 10



TYP. SLAB DEPRESSION DETAIL

NONE | 11

PLOT DATE: 3/23/2015 6:05:29 PM TEMPLATE VERSION:

HKS

ARCHITECT
HKS ARCHITECTS, INC.
10880 WILSHIRE BLVD. SUITE 1850
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300 N. LAKE AVENUE, 14TH FLOOR
PASADENA, CA 91101

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KPFF CONSULTING ENGINEERS
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REGISTERED PROFESSIONAL ENGINEER — EDWIN (GE)(ORIGINAL SIGNED) — No.5145 Exp. 08/31/16 — STRUCTURAL — STATE OF CALIFORNIA

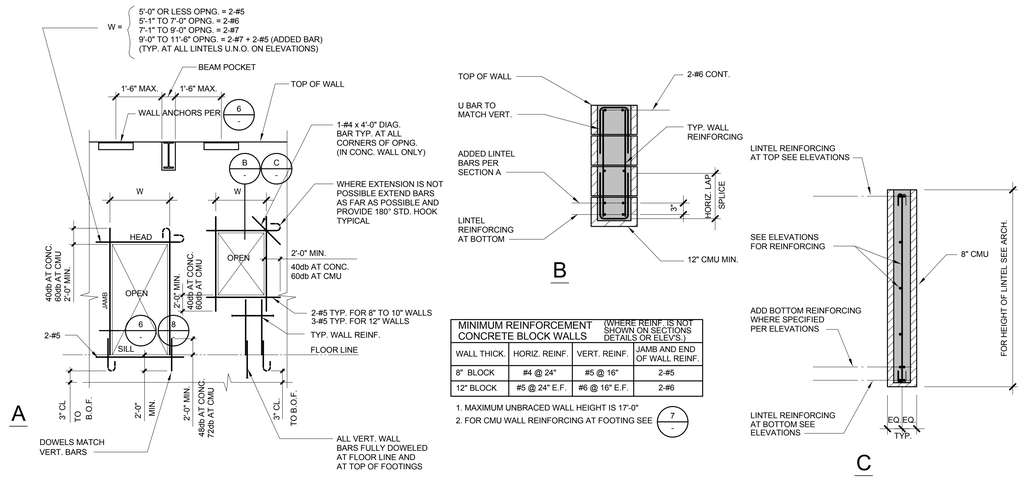
REVISION

No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

HKS PROJECT NUMBER
15002.200
DATE
3/24/2015
ISSUE
LADBS BUILDING PERMIT
SHEET TITLE
TYPICAL DETAILS

SHEET NO.
S-006

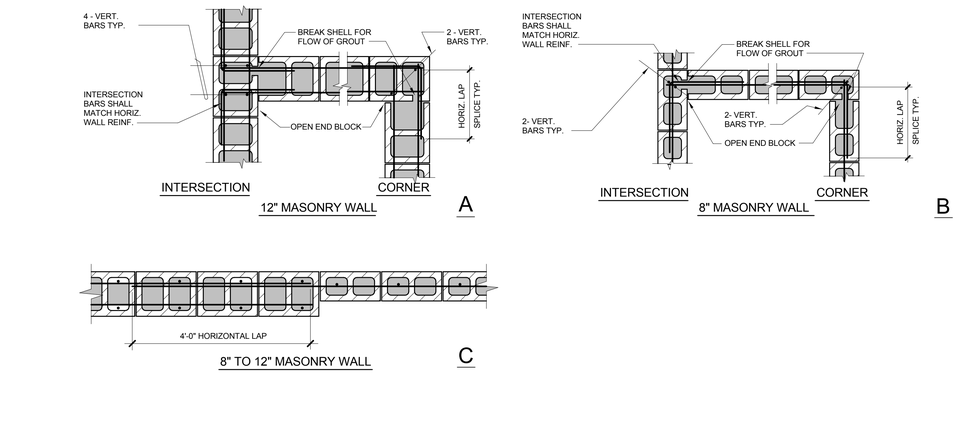


MINIMUM REINFORCEMENT CONCRETE BLOCK WALLS		(WHERE REINF. IS NOT SHOWN ON SECTIONS DETAILS OR ELEV.'s)	
WALL THICK.	HORIZ. REINF.	VERT. REINF.	JAMB AND END OF WALL REINF.
8" BLOCK	#4 @ 24"	#5 @ 16"	2-#5
12" BLOCK	#5 @ 24" E.F.	#6 @ 16" E.F.	2-#6

1. MAXIMUM UNBRACED WALL HEIGHT IS 17'-0"
2. FOR CMU WALL REINFORCING AT FOOTING SEE 7/-

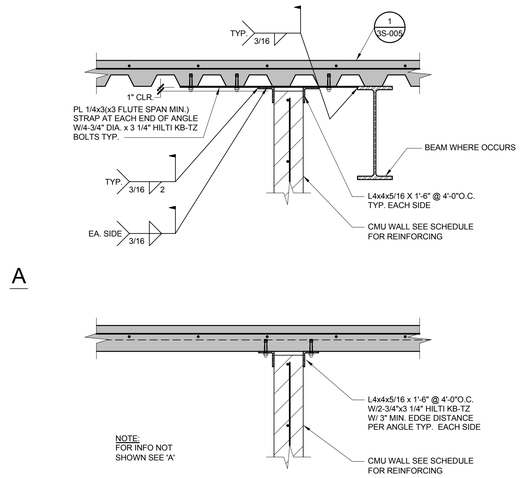
TYP. REINFORCING AT CMU WALL OPENING

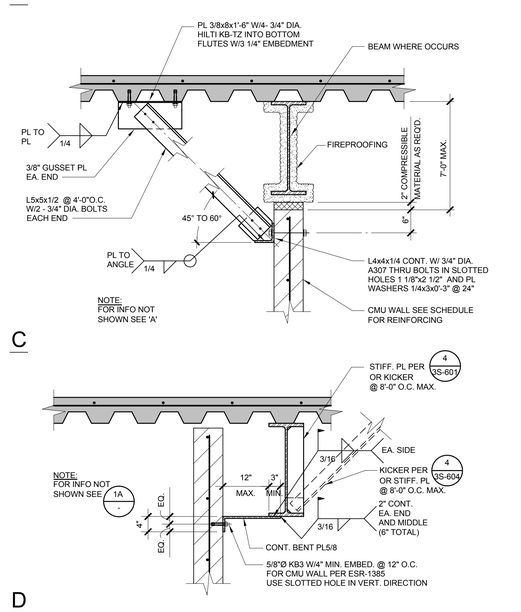
NONE | 1



CONCRETE BLOCK WALL INTERSECTION

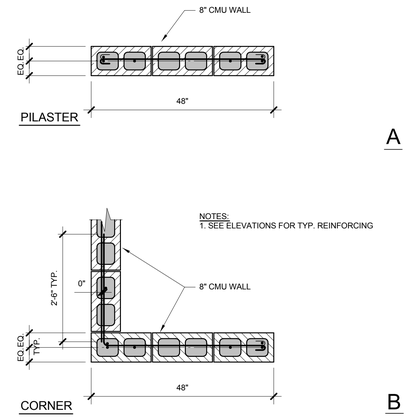
NONE | 2





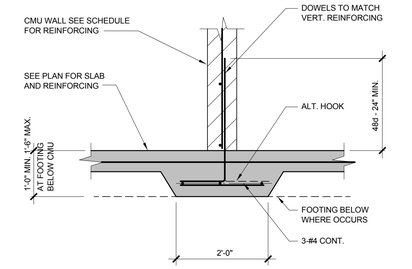
NON-BEARING CMU WALL ANCHORAGE DETAIL

NONE | 6



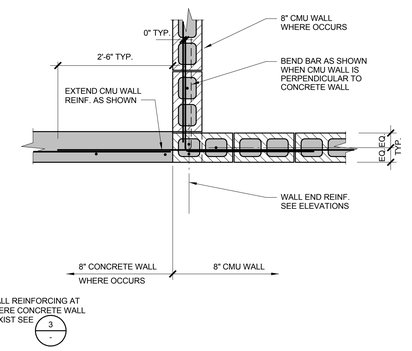
8" CMU WALL REINFORCEMENT

NONE | 3



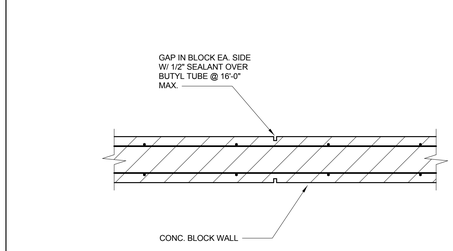
CMU WALL REINFORCING AT FOOTING

NONE | 7



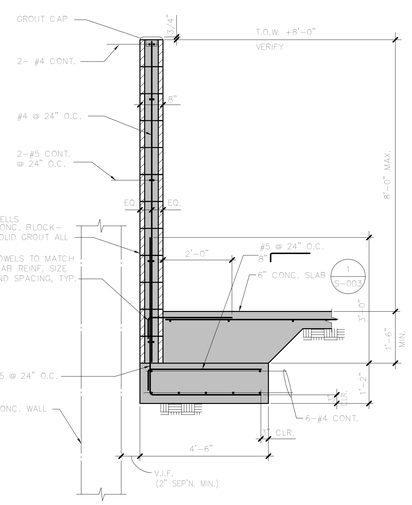
TYP. CMU WALL TO CONCRETE WALL CONN.

NONE | 4



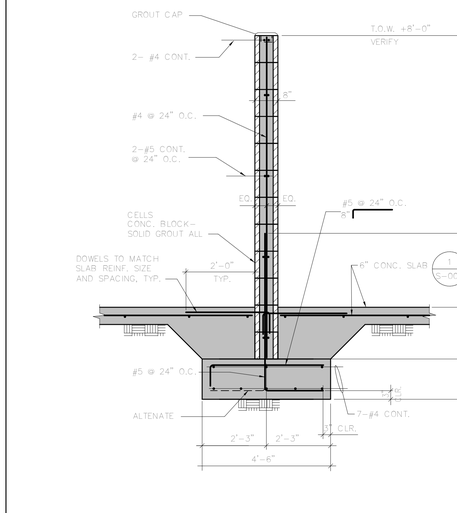
TYP. CONTROL JOINT IN BLOCK WALL

NONE | 5



ELECTRICAL YARD CMU WALL

NONE | 8



ELECTRICAL YARD CMU WALL

NONE | 9

ARCHITECT
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MEP ENGINEER
TMAD TAYLOR & GAINES
300 N. LAKE AVENUE, 14TH FLOOR
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USC University of Southern California

HEALTH SCIENCES CAMPUS

-

Norris Healthcare Center

CORE AND SHELL

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UNIVERSITY OF SOUTHERN CALIFORNIA
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REGISTERED PROFESSIONAL ENGINEER EDWIN (GEVORG) NALJARIAN No.5145 Exp. 09/30/16 STRUCTURAL STATE OF CALIFORNIA

REVISION

No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015
24	Delta 24 Revisions	6/06/2016

HKS PROJECT NUMBER
15002.200

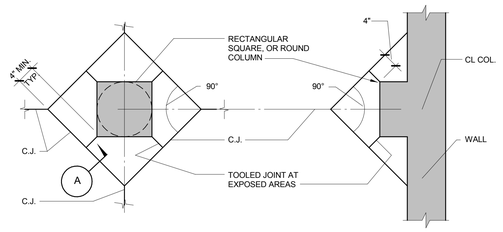
DATE
3/24/2015

ISSUE
LADBS BUILDING PERMIT

SHEET TITLE
TYPICAL DETAILS

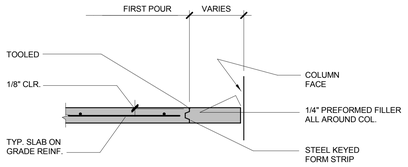
SHEET NO.
S-007

PLOT DATE: 7/20/2016 3:16:05 PM TEMPLATE VERSION



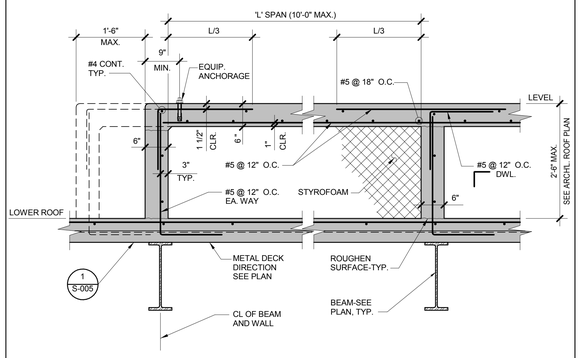
PLAN

PLAN



SECTION A

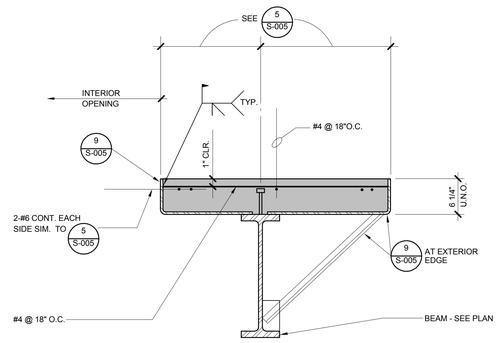
TYP. CONSTRUCTION JOINT DETAILS | NONE | 1



NOTE: ALTERNATE DETAIL:
WHERE NEW HOUSEKEEPING PAD OCCURS ON EXISTING SLAB DRILL 1" DIA. HOLE x 2 1/2" MIN. EMBED. FOR #4 DOWELS SET W/ HILTI RE500-SD, ICC ESR-2322.

NOTE:
GENERAL CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR SIZES, LOCATION AND HEIGHT OF EQUIPMENT PADS.

TYP. CONCRETE PAD DETAIL | NONE | 2



TYP. EXTERIOR EDGE FROM AT OPENG. DETAIL | NONE | 3

NOT USED | - | 4

NOT USED | - | 5

NOT USED | - | 6

NOT USED | - | 7

NOT USED | - | 8

NOT USED | - | 9

NOT USED | - | 10

NOT USED | - | 11

NOT USED | - | 12

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Exp. 09/30/16
STRUCTURAL
STATE OF CALIFORNIA

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20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

HKS PROJECT NUMBER
15002.200

DATE
3/24/2015

ISSUE
LADBS BUILDING PERMIT

SHEET TITLE
TYPICAL DETAILS

SHEET NO.
S-008

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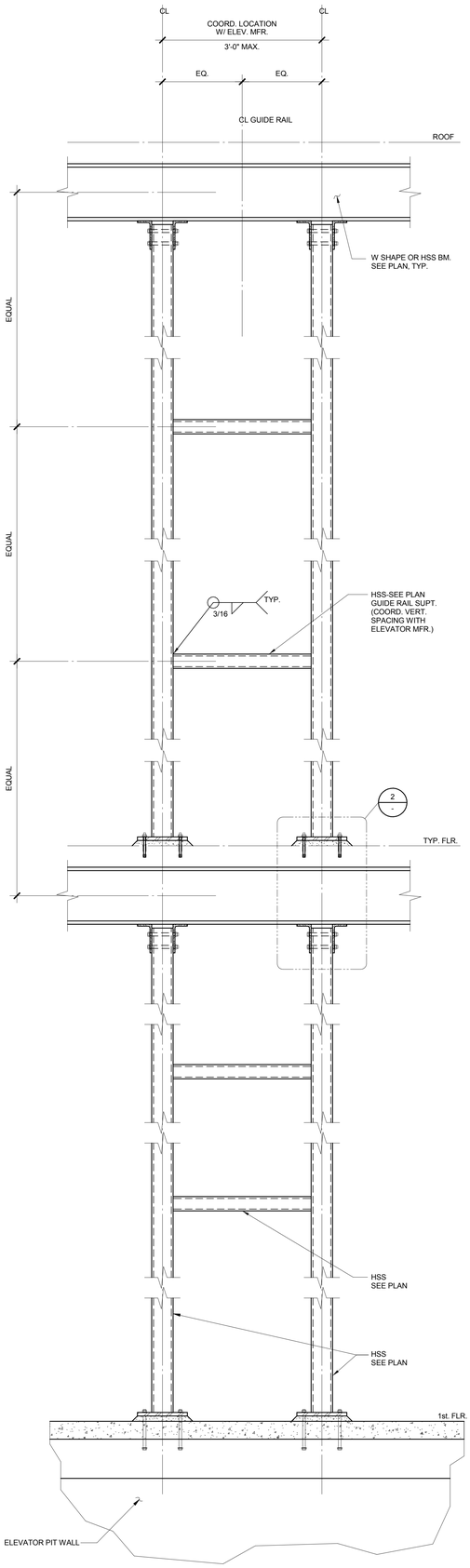
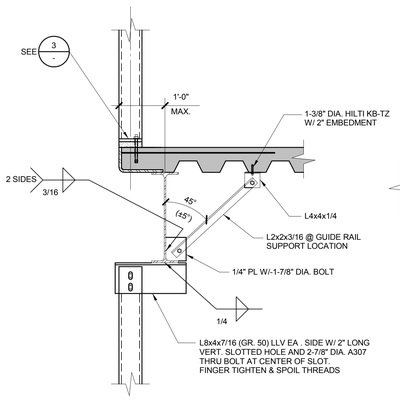
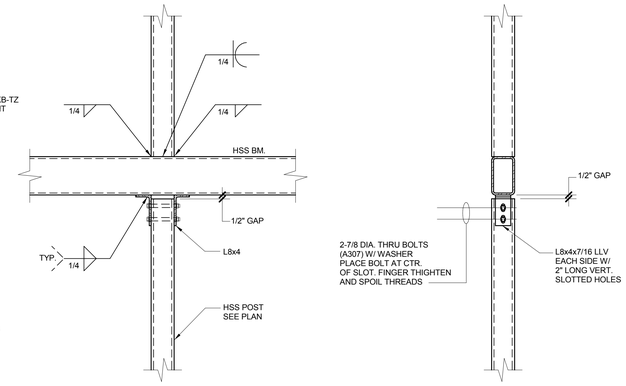


ELEVATOR GUIDE RAIL SUPPORT/ELEVATION — NONE — 1

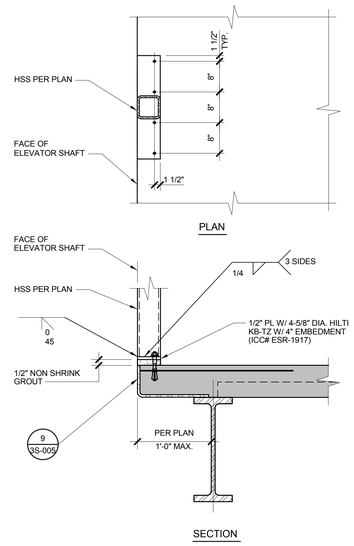


B - AT Wx BEAM



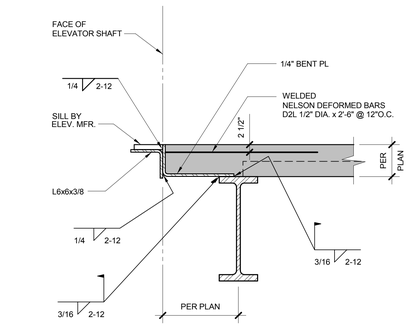
A - AT HSS BEAM

ELEVATOR GUIDE SUPPORT CONNECTION — NONE — 2

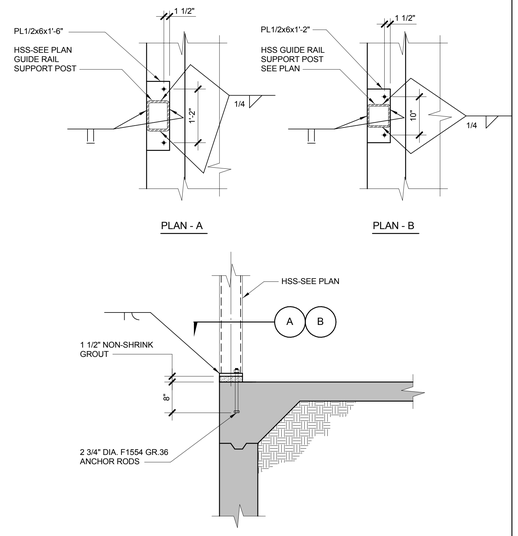


SECTION

ELEVATOR HSS POST AT EDGE OF SLAB — NONE — 3

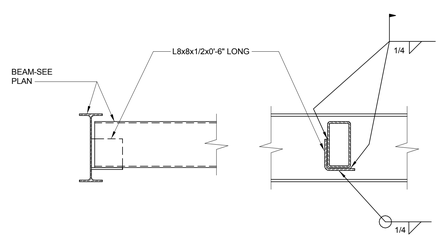


ELEVATOR SILL ANCHORAGE — NONE — 4

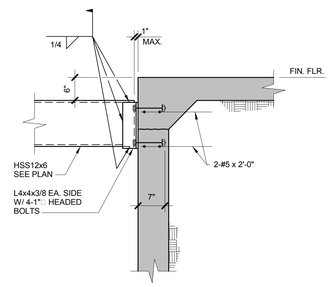


PLAN - A PLAN - B

DETAIL — NONE — 5



DETAIL — NONE — 6



GUIDE RAIL SUPPORT AT PIT WALL — 3/4" — 7

NOT USED — - — 8

PIT REACTION TABLE		
DUTY: 5000# @ 350 FPM		
KEY	REACTION (FORCE IN KIPS)	DISCRIPTION
A	77.2	CAR BUFFER
B	65.8	CWT BUFFER
C	29.9 EACH	CAR SAFETY
MACHINE ROOM REACTION TABLE		
DUTY: 5000# @ 350 FPM		
D	22.0	ELEVATOR 3
E	19.0	ELEVATOR 3
F	15.7	ELEVATOR 3
G	5.9	ELEVATOR 3
H	15.6	ELEVATOR 4
I	5.8	ELEVATOR 4
J	22.1	ELEVATOR 4
K	19.0	ELEVATOR 4
DUTY: 4000# @ 350 FPM		
D	20.5	ELEVATOR 1 AND 2
E	15.2	ELEVATOR 1 AND 2
F	13.3	ELEVATOR 1 AND 2
G	9.9	

ELEVATOR REACTION TABLES — NONE — 9

PLOT DATE: 3/23/2015 8:09:48 PM TEMPLATE VERSION

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SHEET TITLE
TYPICAL DETAILS

SHEET NO.
S-009

STANDARD QUALITY ASSURANCE PLAN

I. PURPOSE

The Standard Quality Assurance Plan (hereinafter referred to as "Standard QA Plan") for steel moment frames provides specifications, procedures, and illustrative details to comply with the requirements of the 2002 Los Angeles Building Code. The quality assurance requirements described in this Standard QA Plan are intended to promote public safety and welfare by standardizing inspections, tests, and all other applicable measures that ensure substantial compliance with the code performance objectives of steel moment frame connections.

II. HOW TO USE THIS STANDARD QA PLAN

To use the Standard QA Plan, follow the steps outlined below:

1. Standard QA Plan shall be attached to or incorporated in the structural plan.
2. Where the Standard QA Plan is attached to the structural plan, the Engineer of Record shall:
   a. Identify the type of steel moment frame to be used in the building or structure by placing an "X" mark in the box below:

      □ SPECIAL MOMENT FRAME (SMF)

      □ INTERMEDIATE MOMENT FRAME (IMF)

      □ ORDINARY MOMENT FRAME (OMF)

   b. Place a NOTE on the structural plan stating "All specifications, tables, and notes in the City of Los Angeles' Standard Quality Assurance Plan for Steel Moment Frames shall be part of this approved structural plan."
   c. Sign and stamp the Standard QA Plan in the box provided at the lower right corner of each sheet.
3. Where the Standard QA Plan is incorporated directly in the structural plan, the Engineer of Record shall place a NOTE on the structural plan to clearly indicate the type of steel moment frame to be used in the building or structure.
4. All of the quality assurance requirements listed in the Standard QA Plan shall be applied to special moment frames, intermediate moment frames, and ordinary moment frames, unless noted otherwise herein.
5. Organize and submit all reports required in Table 1 on Sheet 2 to the City Building Inspector in a timely manner for review and approval.
6. The procedures, specifications and illustrative details as described in the Standard QA Plan shall not exempt the Engineer of Record from using engineering judgment in determining the suitability of applying the Standard QA Plan to any welded connections. Any deviations in the quality assurance requirement as specified in the Standard QA Plan shall comply with Part III Item 5 of the Standard QA Plan.

III. GENERAL REQUIREMENTS

1. Referenced Documents
   The design and construction of steel moment frames shall be in compliance with the following:
   a. City of Los Angeles Building Code, 2002 Edition (hereinafter referred to as "LABC").
   b. AISC Seismic Provisions for Structural Steel Buildings, Part I and Part III, dated May 21, 2002 (hereinafter referred to as "AISC Seismic").
   c. AWS D1.1/D1.1M:2002 Structural Welding Code - Steel (hereinafter referred to as "AWS").

2. Material Specifications
   a. Structural steel shall comply with UBC Standard 22-1 and the following ASTM standard specifications:
      i. Wide flange shapes.....ASTM A572 (50), A913 (50), A992
      ii. Continuity, doubler and column base plates, shear tabs....ASTM A36
      iii. Anchor bolts at column base plates.....ASTM F1554
      iv. Fabricate and erect structural steel in compliance with either the 2001 Edition of AISC "Load and Resistance Factor Design Specification for Structural Steel Buildings" (hereinafter referred to as "AISC LRFD Specification") or 1989 Edition of the AISC "Allowable Stess Design Specification for Structural Steel Buildings" (hereinafter referred to as "AISC ASD Specification").
      v. Steel having dual ASTM designation shall be clearly identified on each specific plan detail.
   b. High strength bolts shall comply with the following requirements and ASTM standard specifications:
      i. High strength bolts, nuts, and washers.....ASTM A325, A490
      ii. Installed bolts in accordance with the "Specifications for Structural Joints using ASTM A325 or A490 Bolts."
      iii. Tighten bolts to a snug tight condition that is at least the minimum proper tension and verify using a calibrated tension measuring device.
      iv. Slip critical high strength bolts are required.
      v. All faying surfaces of connections with high strength fasteners shall be prepared as required for Class A per the AISC Seismic Section 7.2.
   c. Filler metal properties and specifications shall be as follows:
      i. Electrodes shall be of a low-hydrogen type conforming to AWS specifications as referenced in Table 7 on Sheet 2.
      ii. Filler metals shall be classified for nominal 70 ksi tensile strength.
      iii. The maximum permitted electrode diameter shall be in accordance with Table 5 on Sheet 2.
      iv. Filler metals shall have a minimum Charpy V-Notch (CVN) toughness of 20 ft-lbf at -20°F using AWS A5 classification test methods.
      v. The use of intermixed welds shall not occur unless it can be demonstrated by testing in accordance with AWS Section 4.
      vi. The parameters established by the electrode manufacturer shall be reflected in the approved WPS.
   d. Other materials not listed in UBC Standard 22-1 or LABC Chapter 35 are not permitted without specific approval from the Department.

3. Welding Processes
   Structural welding shall be limited to the Shielded Metal Arc Welding or Flux Cored Arc Welding processes.

4. Base Metal Repairs or Restorations
   Any repair or restoration of base metal shall comply with all of the following:
   a. Engineer of Record shall review and approve the WPS for repair procedures prior to welding.
   b. Ensure that repair procedures meet the requirements outlined in AWS Section 5.26 and ASTM A6/A6M-02 Section 9.2, 9.3, 9.4 and 9.5.
   c. All welding shall be performed using low-hydrogen process or with SMAW using low-hydrogen electrodes.
   d. Provide continuous visual inspection by the Deputy Inspector.
   e. Provide non-destructive testing upon completion of the repair work.

5. Deviations From the Standard Quality Assurance Plan
   Deviations from any part of the Standard QA Plan may be made provided the procedures outlined below are followed:
   a. Deviations from the Standard QA Plan must be reviewed and approved by the Engineer of Record.
   b. Engineer of Record shall provide alternate procedures, specifications, and/or details to justify the deviations.
   c. Submit the proposed deviations from the Standard QA Plan to the Department for review and approval prior to commencement of work.
   d. Supplemental testing and additional specifications may be required to justify the deviation.
   e. Conformance with all applicable provisions of the LABC, AISC, and AWS is required.

IV. QUALITY ASSURANCE

1. Certification
   a. Inspectors shall be LADBS Certified Deputy Inspectors per LABC Section 1701.2 and Information Bulletin P/BC 2002-035 "Regulations Regarding Registration for Deputy and Controlled Activities Inspection." Employment shall be in accordance with Information Bulletin P/BC 2002-034 "Employment and Duties of a Registered Deputy Inspector."
   b. Welders shall be LADBS Certified Welders for the Structural Steel classification per LABC Section 1701.18.1, 2205.10, and Information Bulletin P/BC 2002-045 "Welder Certification Rules and Regulations."
   c. Shop welds shall be performed in an LADBS Certified Fabricator's Shop per LAMC Section 96.204(g) and Information Bulletin P/BC 2002-042 "Application for Approval as Fabricator."
   d. Technicians performing Non Destructive Testing (NDT) shall be certified for Level II in accordance with ASNT SNT-TC-1A 2002 Edition by a Testing Agency approved per LAMC Section 98.0503 and Information Bulletin P/BC 2002-058 "Guidelines for Recognition of Testing Agencies."

2. Pre-Construction Meeting
   a. The Owner (or owner's representative) shall arrange a pre-construction meeting(s) with the Engineer of Record (or Structural Observer designated by the Engineer of Record), the Contractor (or affected Sub-Contractor), and the Deputy Inspector to discuss and review welding procedures, bolting procedures, and inspection requirements for all welding and bolting operations.
   b. The City Building Inspector shall be notified of such meeting(s) and may participate at his/her discretion.
   c. Meeting record(s) shall be included in the first report submitted to the City Building Inspector.

3. Structural Observation
   Structural observation shall be performed in accordance with Information Bulletin P/BC 2002-024. The Structural Observer shall:
   a. Perform structural observation listed in Table 6 on Sheet 2.
   b. Perform structural observation prior to placement of decking, covering by fireproofing, encasement in concrete or placement of other finishes.
   c. Submit observation report(s) to the City Building Inspector at each stage observed and upon completion of the structural system.
   d. State in the report that the steel moment frame system substantially conforms with the approved structural plans and specifications.
   e. Use the Department's Structural Observation Report Form to report all observations. Structural Observation Report Form can be obtained at www.ladbs.org, keyword "Information Bulletin P/BC 2002-024".

4. Deputy Inspection
   The following are the basic Quality Assurance responsibilities of the Deputy Inspectors:
   a. Arrive on the job in sufficient time to verify the permit information, check for prior inspections and/or approvals by the City Building Inspector or previous Deputy Inspectors, check the quality of all materials and become familiar with the approved structural plans and specifications.
   b. Verify that structural steel delivered is from a fabricator currently licensed by the Department.
   c. Identify material from an offsite fabricator in accordance with LABC Section 2203 and compare to the approved plans and specifications.
   d. Verify that each steel piece is labeled with the approved fabricator's shop name and license number.
   e. Visual check shop welds, joint preparation, faying surfaces, indentation stamps and color codes of high strength steel, excessive mill scale or lamination, and dimensional conformity with the approved plans.
   f. Before any welding begins, inspect joint preparation, fit-up, condition of surfaces to be welded, storage and use of electrodes, current license of all welders, and voltage/amperage of welding machines.
   g. Ensure that all welding and inspection activities complies with AWS.
   h. Measure voltage/amperages near the arc with a hand held calibrated averaging type meter. The meter shall be calibrated not less than once a year. This equipment shall be used by the Fabricator, Erector, and Deputy Inspector.
   i. During welding operation, provide continuous inspection particularly on multiple pass welds to assure that each pass has been prepared correctly, preheat and interpass temperatures are maintained and that finished welds shall be the correct size and without rejectable discontinuities.
   j. Mark steel near the weldment to indicate that inspection was made.
   k. Verify type and size of bolts and washers, check mill certificates, and verify faying surfaces are free of burrs, scale, rust, grease or anything that may inhibit full contact.
   l. Verify connections involving high strength bolts and welds are fabricated per Part III Item 2(b) and 2(c) and erected in a sequence per Part V Item 2, unless specified otherwise by the Engineer of Record.
   m. Verify high strength bolts are not welded or damaged by preheating.
   n. Verify washers are always installed with all bolts, except A-490 bolts which require washers under both elements.
   o. Verify that any deficiency noted in the Structural Observation Report Form has been corrected.
   p. Verify that the Engineer of Record has approved the written Welding Procedure Specification (WPS) prepared by the Fabricator or Erector. The WPS shall include the following:
      i. All applicable requirements from the codes, the Standard QA Plan, and any other information necessary to produce the welds.
      ii. List the applicable base metal types and thicknesses.
      iii. List the welding joint detail, including joint type, weld type, joint geometry, and applicable dimensions. Individual weld passes shall be identified in sketches and numbered to identify the sequence of their deposition (see Detail 13 on Sheet 3 for example). The sketches shall identify the maximum layer thicknesses and bead widths. In no case shall layer thicknesses exceed 1/4 inch nor shall the maximum bead widths exceed 5/8 inch.
      iv. List the welding processes.
      v. Specify the required welding positions.
      vi. List the filler metal per AWS for electrode specification and classification (see Table 7 on Sheet 2), as well as information regarding shielding material to be used.
      vii. Indicate the minimum preheat and interpass temperatures (see Table 4 on Sheet 2) and post weld heat treatment per Part V Item 5.
      viii. List all applicable electrical characteristics for the welding process employed. WPS shall clearly indicate the specific values required for each welding pass. These electrical characteristics shall include at minimum the following:
         (1) Electrode diameter (see Table 5 on Sheet 2),
         (2) Type of current, and acceptable ranges of current measured in amperage,
         (3) Voltage,
         (4) Travel speed (range), and
         (5) Amperage, voltage and electrode extension (as applicable) shall be within the filler metal manufacturer's recommendations.
      ix. A copy of the electrode manufacturer's technical information with ID # listed shall be attached to the WPS .
   q. Weld joints not conforming to AWS Chapter 3 must be tested by an approved testing agency, accepted by the Engineer of Record, and approved by the Department's Material Control Section before the weld is performed. Material Control Section can be contacted at:

      LADBS Material Control Section
      221 N. Figueroa St., Suite 1540
      Los Angeles, CA 90012
      (213) 482-0380 or 1-888-LA-4BUILD

   r. Notify the Contractor, Engineer of Record, and City Building Inspector of any deviations or non-compliance with the approved WPS, plans or specifications.
   s. "Deputy Inspection Report Form B-94" shall be submitted on a weekly basis to the City Building Inspector and Engineer of Record, unless determined otherwise by the City Building Inspector.
   t. During the execution of the work, the Deputy Inspector shall not undertake or engage in any other task or occupation which will interfere with the proper performance of the duties of such inspection.

5. Electrode Storage and Atmospheric Exposure
   a. Electrodes are considered to be exposed to the atmoshpere if:
      i. the manufacturer's sealed electrode containers or packagings are opened or damaged, or
      ii. outside of baking or storage ovens.
   b. Modification or lubrication of electrodes are not permitted.
   c. Drying of electrodes in baking or storage ovens are permitted as recommended by the manufacturer.
   d. Electrodes shall be identified to facilitate monitoring of total atmospheric exposure time.
   e. Storage and atmospheric exposure of AWS A5.1-91 and A5.5-96 low-hydrogen SMAW electrodes shall be in accordance with AWS Section 5.3.2.
   f. FCAW electrodes not consumed within 24 hrs of accumulated atmospheric exposure time shall not be used. Manufacturer's recommendations that show that drying effectively removes moisture and restores electrodes to their designated diffusible hydrogen levels are permitted.
   g. FCAW electrode welding suspended more than 8 hrs shall be removed from the machines and stored in an electrode wire baking or storage oven maintained at a temperature between 250° and 550°F, or as recommended by the electrode manufacturer.

6. Plastic Hinging Zone Protection
   a. The plastic hinging zone shall be identified diagrammatically, as illustrated in Detail 15 on Sheet 3, on the structural plans by the Engineer of Record.
   b. The Engineer of Record and Contractor shall be responsible for reviewing shop drawings of ALL relevant trades to ensure compliance. This shall be discussed and documented in pre-construction meetings.
   c. The Contractor shall be responsible for developing a program to ensure that all workers on the project, including their subcontractors, are aware of and understand this requirement. Failure to comply with these requirements may cause the replacement of steel.
   d. Plastic hinging zones shall be defined by permanent markings such as paint or ink.
   e. A note, as illustrated in Detail 15 on Sheet 3, shall be prominently placed on the structural plans (general note sheet and adjacent to moment frame detail) and the construction documents of ALL trades.
   f. Welded, bolted, screwed, or shot-in (powder driven) attachments for perimeter edge angles, shear studs, exterior facades, partitions, duct work, piping, or other connections shall not be permitted within the plastic hinging zones.
   g. Any penetrations or damage from temporary welded attachments within the plastic hinging zones shall be repaired as required by the Engineer of Record and comply with Part III Item 4.
   h. Initially, the plastic hinging zone "Warning Sign", as illustrated in Detail 15 on Sheet 3, may be temporary. However, the temporary "Warning Sign" shall be replaced by a permanent "Warning Sign" before project completion. This sign and identification of the plastic hinging zone shall be maintained during construction; and may require repair after operations such as fireproofing.
   i. Signs shall be affixed to the beam and located within the plastic hinging zone. The City Building Inspector may accept alternate methods of attaching the "Warning Sign" to the plastic hinging zones.

7. Additional Charpy V-Notch Toughness (not required for OMF)
   Welds at the locations indicated below shall be made with filler metal having a CVN toughness of 20 ft-lbf at -20°F AND 40 ft-lbf at 70°F as determined by test procedure prescribed in the AISC Seismic Appendix X "Weld Metal / Welding Procedure Specification Toughness Verification Test."
   a. Beam flanges to columns,
   b. Single plate shear connections to columns,
   c. Beam webs to columns, and
   d. Column splices.

8. Non-Destructive Testing (NDT) Requirements
   a. The minimum non-destructive testing at each weld joints or parts shall be conducted at the locations and frequencies as specified in Table 2 and Table 3 on Sheet 2 respectively.
   b. A copy of each NDT report shall be provided to the Contractor, Engineer of Record, Deputy Inspector, and City Building Inspector with the following information:
      i. Document the accepted and rejected welds, parts, or joints.
      ii. Identify the tested weld by piece mark and location in the piece.
      iii. Identify the tested weld location in the structure.
   c. NDT Technician shall perform the following tasks:
      i. Coordinate the NDT scope and schedule with the Deputy Inspector.
      ii. Perform NDT in a timely manner (so as not to hinder construction work) and to detect welding problems soon after occurrence so that corrective measures can be taken by the Contractor.
      iii. Mark the inspected and accepted welds, parts, and joints with a distingquishing mark or die stamp.
   d. Reduction Rate for NDT
      i. The rate of UT testing on CJP groove welds may be reduced if approved by the Engineer of Record and the Department. The NDT rate for an individual welder or welding operator may be reduced to 25%, provided the reject rate is demonstrated to be 5% or less of the welds tested for the welder or welding operator. A sampling of at least 40 completed welds for a job shall be made for such reduction evaluation.
      ii. The rate of MT testing on CJP groove welds may be reduced if approved by the Engineer of Record and the Department. The MT rate for an individual welder or welding operator may be reduced to 10%, provided the reject rate is demonstrated to be 5% or less of the welds tested for the welder or welding operator. A sampling of at least 20 completed welds for a job shall be made for such a reduction evaluation. This reduction is not permitted on welds in the k-area, at repair sites, weld tab and backing removal sites and access holes.
      iii. Reject rate shall mean the number of welds containing rejectable defects divided by the number of welds completed.

9. Documentations
   The reports listed in Table 1 on Sheet 2 shall be submitted to the City Building Inspector in a timely manner.

V. WELDING PROCEDURES

1. Bottom Beam Flange Moment Connection Welding
   Where welding of the bottom beam flange to the column flange is in the flat welding position, welding shall be completed with the following sequence:
   a. Start welding from Side A (one side of the beam) with a maximum 1/4 inch thick root pass beyond the center of the joint on Side B (other side of the beam), reaching past the beam web through the weld access hole.
   b. After the arc is initiated, electrode travel shall progress toward the edge of the Side A beam flange, terminating on the Side A weld tab.
   c. The Side A root pass, and the root pass deposit on Side B, shall be thoroughly cleaned to allow the Deputy Inspector to verify that the resulting bead profile is suitable for obtaining good fusion by the subsequent root pass to be initiated from Side B. If the profile is not conducive to good fusion, the start of the first root pass shall be grounded, gouged, chipped, or otherwise prepared to ensure adequate profile to achieve fusion.
   d. Complete the root pass on Side B before any other weld passes are performed.
   e. The arc shall be initiated at the start of the first Side A root pass, and electrode travel shall progress toward the edge of the Side B beam flange, terminating on the Side B weld tab.
   f. The above sequence shall be repeated for subsequent weld layers, and each weld layer shall be completed on both sides of the joint before a new layer is deposited. The order of operations (Side A, then Side B, or vice versa) is not restricted and may vary for each weld layer. Weld passes shall be placed in horizontal layers. Each pass shall be thoroughly cleaned of slag and wire brushed. Each pass shall be visually inspected by the Deputy Inspector, as described above in Step (c).

   An alternate welding sequence may be made provided the Welder or Contractor submits in writing an alternate sequence that is approved by the Engineer of Record and complies with the requirements of Part III Item 5 of the Standard QA Plan.

2. Sequence for Welding at Multiple Locations
   When welding occur at multiple locations of welded steel moment frame connections, the following sequence shall be followed:
   a. Weld both top and bottom beam flanges prior to any supplemental welding to the beam web or shear tab.
   b. Engineer of Record shall review and approve all field welding sequences prior to the start of work.
   c. Field welding of web shear plates with bolts shall occur after field welding of beam flanges to column flange.
   d. High strength bolts shall be in the snug tight condition prior to welding.
   e. Notwithstanding AISC LRFD Specification Section J1.9 to the contrary, high strength bolts shall be fully tensioned upon completion of all welding activities.

3. Welding Technique
   a. Stringer beads shall be used during all welding operations. Maximum bead width, bead thickness, and layer thickness shall be considered. Weaving is not permitted, except when the WPS approved by the Engineer of Record limits electrode oscillation transverse to the weld axis to a maximum of:
      i. 3d for 1G/1F, 2G/2F, and 4G/4F weld positions, or
      ii. 5d for the 3G/3f position, where d = electrode diameter.
   b. Welding layers should progress from the face of the column flange outward toward the groove face of the beam flange as illustrated in Detail 13 on Sheet 3.

4. Preheat and Interpass Temperature
   a. The minimum preheat and interpass temperature requirements in Table 4 of Sheet 2 shall be observed. Special attention shall be given to AWS Section 3.5.1 and Section 5.6 for the thickness of the base metal to be welded.
   b. Preheat and all subsequent interpass temperatures shall be maintained during the welding operation for a distance at least equal to the thickness of the thicker welded part, but not less than 3", in all directions from the point of welding.
   c. Where base metals are of different thickness, the higher minimum preheat and interpass temperature requirements of the thicker plate shall govern.
   d. Maximum preheat and interpass temperature shall not exceed the lesser of:
      i. 550°F, or
      ii. The maximum temperature recommended by the manufacturer.

5. Post Weld Heat Treatment
   Unless specified otherwise in an approved WPS, the minimum post weld heat treatment shall be provided as follows:
   a. Apply temperature in the 400°F to 600°F range immediately after completion of welding to prevent the weld metal from cooling below the minimum preheat and interpass temperature.
   b. Maintain temperature for approximately 1 hour per inch of thickness of weld metal or 2 hours, whichever is less.
   c. Conditions specified in AWS Section 3.14 and Section 5.8 should carefully be considered when applying post weld heat treatment.

   Alternatively, the use of insulating blankets after the completion of welding in lieu of post weld heat treatment may be permitted to control the cooling of the welded connection to ambient temperature if recommended by the Engineer of Record and approved by the City Building Inspector; unless required otherwise by an approved WPS.

VI. WELDING AND FABRICATION DETAILS

1. Base Metal Joint Preparation
   a. Base metal preparation shall be in comply with AWS Section 5.15.
   b. All beam flange to column flange welds are to be made with an AWS prequalified CJP groove welded joint detail.
   c. Bevel, fit-up and detail tolerances shall be as required by the selected prequalified welded joint detail.
   d. Whenever possible, use the AWS prequalified CJP groove welded joint detail as illustrated in Detail 14 on Sheet 3 and the following:
      i. Use single bevel CJP groove welds made with a 30° groove angle or double bevel CJP groove welds when flange thickness exceed 1-1/2 inch.
      ii. "As Fit-Up" and "As Detailed" shall be the maximum tolerances.
      iii. Meet all prequalified WPS variables in Table 5 on Sheet 2.

2. Weld Access Hole
   a. Where weld access holes are provided, they shall be detailed as illustrated in Detail 12 on Sheet 3.
   b. Notches and gouges shall be repaired following a WPS approved by ther Engineer of Record.
   c. Weld access holes shall be prepared by grinding to a suitable finish in accordance with AISC LRFD Specification Section J1.6 and provided with a minimum radius of 3/8 inch as illustrated in Detail 12 on Sheet 3.

3. Backing Bar
   a. Backing bar used in connections with a CJP groove weld of beam flange to column flange shall be removed except that top flange backing bar attached to the column by a continuous fillet weld on the edge below thee CJP groove weld need not be removed.
   b. Following removal of backing bar, the root pass shall be backgouged to sound weld metal, and back welded. A reinforcing fillet weld with a minimum leg size of 5/16 inch or the root opening plus 1/16 inch, whichever is larger, shall be provided. The reinforcing fillet weld need not be grounded.
   c. When backing bar is other than AWS Table 3.1 and Section 5.2.2 approved base metal is used, the following shall apply:
      i. Ceramic, flux or glass tape may be used provided the manufacture's recommendations are followed.
      ii. When a non-metallic backing bar is used, the WPS and the Welder shall be qualifed using the type of backing bar intended for welding.
      iii. Nonferrous metallic (e.g. copper) backing materials are not permitted.

4. Weld Tab
   a. Weld tabs shall be aligned parallel to the joint preparation.
   b. No weld dams are allowed.
   c. Weld tabs shall extend beyond the edge of the joint a minimum distance equal to the part thickness, but not less than one inch.
   d. Weld tab shall be removed upon completion of the welded joint as follows:
      i. No more than 1/8 inch beyond the edge of the joint shall remain, except at continuity plate where up to 1/4 inch is acceptable.
      ii. Edges of the weld tab shall be finished to a surface roughness value of 500 micro inch or better. Grinding to a flush condition is not required.

SITE ADDRESS:

OWNER:

STANDARD QUALITY ASSURANCE PLAN
For Steel Moment Frames

The specifications and illustrative details presented in this Standard Quality Assurance Plan are for general information only. This Standard Quality Assurance Plan shall not be used or relied upon for any specific application without competent professional examination and verification of its accuracy, suitability, and applicability by the Engineer or Architect of Record. By signing and sealing this document, the Engineer or Architect of Record assumes full responsibility for the application of all of the specifications and illustrative details contained herein to the design of the project. By using this Standard Quality Assurance Plan, the Engineer or Architect of Record acknowledge that the City of Los Angeles assumes no responsibility for the application of the specifications and illustrative details contained in this Standard Quality Assurance Plans and all liability arising from such use.

Engineer of Record

Date: 06/20/2005

Scale: Not to Scale

Sheet:

Sheet 1 of 3

1. This sheet is included for standard quality assurance purpose per Los Angeles city requirements. Note this sheet is based on older 2002 LABC code and new version based on 2011 LABC code is not prepared by LA DBS yet. Contractor to review LA DBS updated references as listed on note #3 and ensure compliance with them.
2. The requirements of sheet S-603 and S-001 shall be also followed and they superceed this sheet in the case of conflict or repetition.

3. The updated references and requirement to be followed as per LA DBS are as follows:
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   2 - AISC 341 - The AISC Seismic Provisions for Structural Steel Building, March 9, 2005 with Supplemental No.1 Nov 16, 2005, published by the American Institute of Steel Constructions.
   3 - AISC 360 - Specification for Structural Steel Buildings, Mar 9, 2005.
   4 - P/BC 2008-098 - Information Bulletin P/BC 2008-098 for Structural Design Requirements for Steel Moment Frame Connections.
   5 - FEMA 350 - Recommended Seismic Design Criteria for New Steel Moment Frame Buildings, July 2000 by Federal Emergency Management Agency.
   6 - AWSD1.1 - The Structural Welding Code-Steel AWS D1.1/D1.1M:2008 by American Welding Society.
   7 - AWS D1.8 - Structural Welding Code-Seismic Supplement AWS D1.8/D1.8M:2009 by American Welding Society.
   8 - ASCE 7 - The Minimum Design Loads for Building and other structures ASCE 7-05 by American Society of Civil Engineers. Including Supplemental No. 1 and 2, excluding Chapter 14 and Appendix 11A.
   9 - ACI 318 - Building Code Requirements for Structural Concrete ACI 318-08 by American Concrete Institute.

PLOT DATE: 7/23/2015 6:08:54 PM TEMPLATE VERSION:

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REVISION

No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

HKS PROJECT NUMBER
15002.200
DATE
3/24/2015
ISSUE
LADBS BUILDING PERMIT
SHEET TITLE
GENERAL NOTES

SHEET NO.
S-010

CONTINUED FROM SHEET 1

e. Gouges and notches are not permitted. The transitional slope of any area where gouges and notches have been removed shall not exceed 1:5.
f. Material removed by grinding that extends more than 1/16 inch below the surface of the base metal shall be filled with weld metal. The contour of the weld at the ends shall provide a smooth transition, free of notches and sharp corners.

5. Continuity Plate
a. Continuity plates shall be detailed as illustrated in Detail 11 on Sheet 3.
b. The weld attaching the continuity plate to the column flange shall be as follows:
i. Use a CJP groove weld for the full length of the groove preparation.
ii. When backing bars are omitted, the root shall be backgouged and back welded.
iii. When backing bars are used and remain in place, backing bars shall be attached to the column flanges with a reinforcing fillet weld.
iv. Fillet weld shall not be used to connect backing bars to continuity plates.
v. The fillet weld size need not exceed the minimum size requirements of AWS Table 5.8.
c. Weld terminations near the end of the column flange tips may be completed using weld tabs as follows:
i. Weld tabs may be steel or nonfusible material.
ii. Weld terminations near the radius of the column need not be made using weld tabs. The use of small nonfusible weld tabs to assist in weld terminations is permitted.
iii. Weld tabs shall be removed following completion of welding.
d. Continuity plates may be welded to the column web with groove welds, fillet welds, or a combination of the two. Fillet welds shall terminate a minimum distance of 1/4 inch from each end of the joint.

6. Doubler Plate
Web doubler plates, as illustrated in Detail 2, 3, or 4 on Sheet 3, shall be welded using either Detail 5, 6, or 7 on Sheet 3.

7. Requirements for "k" Area
Welds shall terminate short of the "k" area for continuity plates as illustrated in Detail 11 on Sheet 3.

VII. EXEMPTIONS

1. Reduction from certain quality assurance components of this Standard QA Plan, as listed in Part VII Item 2, are permitted for the following buildings or structures:
a. One or two family dwellings not more than 1 story in height and 2,500 sf of floor area,
b. Buildings or structures accessory to residential uses (such as carport, storage, garage), and
c. Miscellaneous structures (such as walkway, canopy, patio cover, gazebo, storage rack).

2. Buildings or structures, as listed in Part VII Item 1, are exempt from providing the following quality assurance components:
a. Electrode Storage and Atmospheric Exposure, Part IV Item 5(f) and 5(g).
b. Plastic Hinging Zone Protection, Part IV Item 6.
c. Additional CVN Notch Toughness Testing, Part IV Item 7.
d. Non-Destructive Testing, Part IV Item 8.
e. Preheat and Interpass Temperature, Part V Item 4.
f. Post Weld Heat Treatment, Part V Item 5.

Table 7. PREQUALIFIED BASE METAL - FILLER METAL COMBINATIONS FOR MATCHING STRENGTH (1, 2, 3, 4)

BASE METAL		FILLER METAL		
Group	Steel Specification	Welding Process	AWS Electrode Specification	Electrode Classification
I	ASTM A36 < 3/4 in.	SMAW	A5.1	E70XX
			A5.5 (6)	E70XX-X
		FCAW	A5.20 (5)	E70XT-X, E7XT-XM
			A5.29 (6)	E70XTX-X, E7XTX-XM
II	ASTM A36 ≤ 3/4 in. ASTM A572 Grade 50 ASTM A913 Grade 50 ASTM A992	SMAW	A5.1	E7015, E7016, E7018, E7028
			A5.5 (6)	E70XX-X
		FCAW	A5.20 (5)	E70XT-X, E7XT-XM
			A5.29 (6)	E70XTX-X, E7XTX-XM
RELATIONSHIP	BASE METAL(S)	FILLER METAL STRENGTH RELATIONSHIP REQUIRED		
Matching	Any steel to itself or any steel to another in the same group	Any filler metal listed in the same group		
	Any steel in one group to any steel in another	Any filler metal listed for a lower strength group [SMAW electrodes shall be the low-hydrogen classification]		
Under-Matching	Any steel to any steel to any group			

NOTES:
1. The base metal/filler metal strength relationships above shall be used to determine whether matching or under-matching filler metals are required. Refer to AWS D1.1/D1.1M:2002, Section 3.3.
2. Preheating of joints involving base metals of different groups shall be in conformance with the requirements applicable to the higher strength group.
3. When welds are to be stress-relieved, the deposited weld metal shall not exceed 0.05 percent vanadium.
4. Adapted with permission from the AWS D1.1 Committee on Structural Welding, Structural Welding Code - Steel, AWS D1.1/D1.1M: 2002, Miami: American Welding Society, Table 3.1.
5. FCAW electrodes with the -2, -2M, -3, -4, -7, -10, -11, -13, -14, G, -GS suffix shall be excluded and electrodes with the -11 suffix shall be excluded for thicknesses greater than 1/2 in.
6. Filler metals of alloy group B3, B3L, B4, B4L, B5, B5L, B6, B6L, B7, B7L, B8, B8L, B9, or any BXH grade in AWS A5.5 or A5.29 are not prequalified for use in the as-weld condition.

Table 5. PREQUALIFIED WPS REQUIREMENTS (1, 2, 3)

VARIABLE	POSITION OF WELD	WELD TYPE	SMAW	FCAW
Maximum Electrode Diameter	Flat (F)	Fillet (4)	5/16 in.	1/8 in.
		Groove (4)	1/4 in.	
		Root Pass	3/16 in.	
	Horizontal (H)	Fillet	1/4 in.	1/8 in.
		Groove	3/16 in.	
	Vertical (V)	All	3/16 in.	3/32 in.
	Overhead (OH)	All	3/16 in.	5/64 in.
Maximum Current	All	Fillet	Within the range of recommended operation by the filler metal manufacturer and a WPS approved by engineer of record.	Within the range of recommended operation by the filler metal manufacturer and a WPS approved by engineer of record.
	All	Groove weld root pass with opening		
		Groove weld root pass without opening		
		Groove weld fill passes		
		Groove weld cap pass		
Maximum Root Pass Thickness (5)	Flat (F)	All	3/8 in.	3/8 in.
	Horizontal (H)		5/16 in.	5/16 in.
	Vertical (V)		1/2 in.	1/2 in.
	Overhead (OH)		5/16 in.	5/16 in.
Maximum Fill Pass Thickness	All	All	3/16 in.	1/4 in.
Maximum Single Pass Fillet Weld Size	Flat (F)	Fillet	3/8 in.	1/2 in.
	Horizontal (H)		5/16 in.	3/8 in.
	Vertical (V)		1/2 in.	1/2 in.
	Overhead (OH)		5/16 in.	5/16 in.
Maximum Single Pass Layer Width	All	Root opening >1/2 in.	Not applicable.	Split layers
		Any layer of width w		(6)

NOTES:
1. Applicable provisions of AWS D1.1/D1.1M:2002 Section 3 "Prequalification of WPSs" must be maintained for prequalified status of SMAW and FCAW WPSs.
2. Refer to Detail 13 on Sheet 3 for diagram of weld pass sequence.
3. Adapted with permission from the AWS D1.1 Committee on Structural Welding, Structural Welding Code - Steel, AWS D1.1/D1.1M: 2002, Miami: American Welding Society, Table 3.7.
4. Except root passes.
5. See AWS D1.1/D1.1M:2002, Section 3.7.2, for width-to-depth limitations.
6. In the F, H, or OH positions for nontubulars, split layers when the layer width w > 5/8 inch. In the V position for nontubulars or the 5G or 6G for tubulars, split layers when the width w > 1 inch.

Table 6. STRUCTURAL OBSERVATION CHECKLIST

STRUCTURAL OBSERVATION PROGRAM (Steel Moment Frame for Seismic Application)
☐ Orientation and placement of connected components.
☐ Removal of backing bars, as required on the plans.
☐ Removal of runoff tabs, as required on the plans.
☐ Presence of continuity plates, as required on the plans.
☐ Presence of doubler plates, as required on the plans.
☐ Configuration and finish of weld access holes, if applicable.
☐ Contour of RBS profile, if applicable.
☐ Verify that no welded attachments occur in the plastic hinging region.
☐ Review NDT and deputy inspection reports for general compliance.

NOTES:
1. Weld qualities shall be verified by the Deputy Inspector.
2. The structural observations listed in this Table are in addition to the structural observations that may be required on the structural plans.

Table 1. REPORTS TO BE SUBMITTED TO THE CITY BUILDING INSPECTOR

	PREPARED BY	TYPE OF REPORT
1.	Structural Observer(s)	Structural Observation Reports
2.	Deputy Inspector(s)	Deputy Inspection Reports
3.	NDT Technician(s)	Non-Destructive Testing Reports

Table 2. NON-DESTRUCTIVE TEST LOCATIONS

	REQUIRED LOCATIONS	OMF	IMF	SMF
1.	CJP Groove Weld Ultrasonic test shall be performed on all CJP groove welds in materials 5/16 inch (8 mm) thick or greater. In addition, magnetic particle test shall be performed on all beam-to-column CJP groove welds.	B	A	A
2.	"k" Area When welding of doubler plates, continuity plates, or stiffeners has been performed in the k-area, the web shall be tested for cracks using magnetic particle testing. The magnetic particle test area shall include the k-area base metal within 3 in. (75 mm) of the weld.	C	B	B
3.	Beam Cope and Access Hole At welded splices and connections, thermally cut surfaces of beam copes and access holes shall be tested using magnetic particle testing, when the flange thickness exceeds 1-1/2 in. (38 mm) for rolled shapes.	C	B	B
4.	Reduced Beam Section Repair Magnetic particle testing shall be performed on any weld and adjacent area of the RBS plastic hinge region that has been repaired by welding, or on the base metal of the RBS plastic hinge region if a sharp notch has been removed by grinding.	B	B	A
5.	Base Metal Lamellar Tearing and Laminations at CJP Groove Weld Base metal thicker than 1-1/2 in. (38 mm) shall be ultrasonically tested for discontinuities behind and adjacent to the fusion line when the base metal is loaded in tension in the through thickness direction in tee and corner joints and the connected material is greater than 3/4 in. (19 mm). Any base metal discontinuities found within t/4 of the steel surface shall be accepted or rejected on the basis of criteria of AWS D1.1 Table 6.2, where t is the thickness of the part subjected to the through-thickness strain.	B	B	A
6.	End of Weld at Weld Tab Removal Site Magnetic particle testing shall be performed on the end of welds from which the weld tabs have been removed, except for continuity plate weld tabs.	C	B	B
7.	PJP Groove Weld Ultrasonic testing shall be performed on PJP groove welds used in column splices with an effective throat of 3/4 in. (19.1 mm) thick or greater.	C	B	A

NOTE: A, B, and C are the frequencies of non-destructive tests listed in Table 3.

Table 3. NON-DESTRUCTIVE TEST FREQUENCY

	Frequency Designation		
	A	B	C
Ultrasonic Testing (UT)	100% of joints	50% of joints	25% of joints
Magnetic Particle Testing (MT)	50% of joints	25% of joints	Not Required

NOTES:
1. Refer to Table 2 for locations of non-destructive testing.
2. Rate of non-destructive testing may be reduced as permitted in Sheet 1, Part IV, Item 8(d).

Table 4. PREQUALIFIED MINIMUM PREHEAT AND INTERPASS TEMPERATURE

STEEL SPECIFICATION	WELDING PROCESS	THICKNESS OF THICKEST PART AT POINT OF WELDING (in.)	MINIMUM PREHEAT AND INTERPASS TEMPERATURE (°F)
ASTM A36 ASTM A572 Grade 50 ASTM A913 Grade 50 ASTM A992	SMAW with low-hydrogen electrodes, FCAW	1/8 to 3/4 incl.	32
		Over 3/4 to 1-1/2 incl.	50
		Over 1-1/2 to 2-1/2 incl.	150
		Over 2-1/2	225

NOTES:
1. Surfaces to be welded and surfaces adjacent to welds shall be free of moisture pursuant to AWS D1.1/D1.1M:2002 Section 5.15. Use a higher preheat temperature from this Table to remove moisture.
2. Adapted with permission from the AWS D1.1 Committee on Structural Welding, Structural Welding Code - Steel, AWS D1.1/D1.1M: 2002, Miami: American Welding Society, Table 3.2.

SITE ADDRESS:

OWNER:

STANDARD QUALITY ASSURANCE PLAN
For Steel Moment Frames

Engineer of Record

Date: 06/20/2005

Scale: Not to Scale

Sheet:

Sheet 2 of 3

1. This sheet is included for standard quality assurance purpose per Los Angeles city requirements. Note this sheet is based on older 2002 LABC code and new version based on 2011 LABC code is not prepared by LA DBS yet. Contractor to review LA DBS updated references as listed on note #3 and ensure compliance with them.
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PLOT DATE: 3/23/2015 6:06:56 PM
TEMPLATE VERSION:

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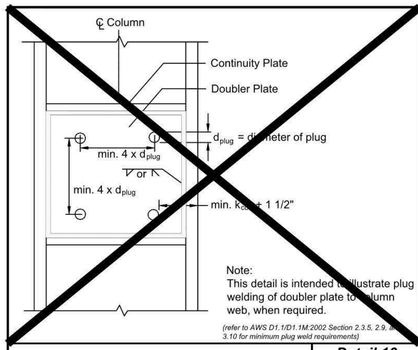
REVISION

No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015

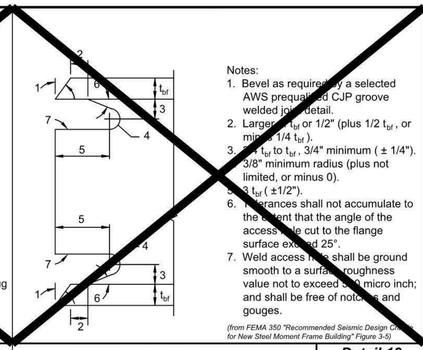
C&S GMP BID SET 16 JUNE 2015

HKS PROJECT NUMBER
15002.200
DATE
3/24/2015
ISSUE
LADBS BUILDING PERMIT
SHEET TITLE
GENERAL NOTES

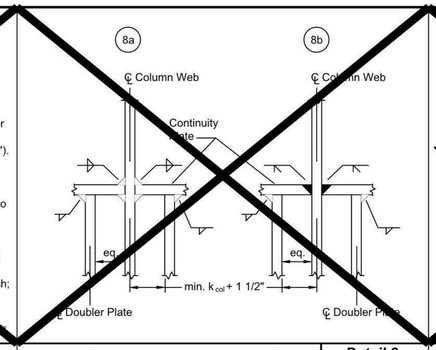
SHEET NO.
S-011



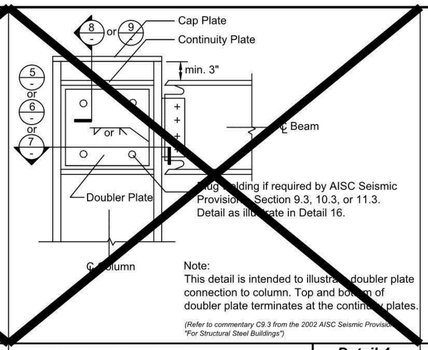
Plug Welding of Doubler Plate to Column — Detail 16
Scale: Not to Scale



Weld Access Hole Detail — Detail 12
Scale: Not to Scale



Doubler Plate Welds to Continuity Plate — Detail 8
Scale: Not to Scale

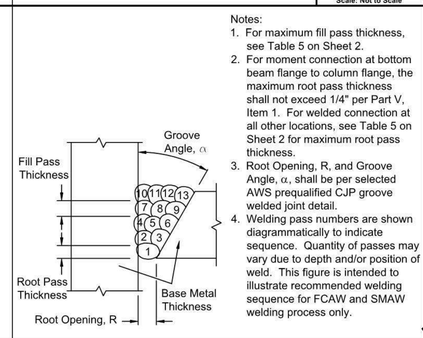


Web Doubler Plate Detail — Detail 4
Scale: Not to Scale

TYPICAL SHEET 3 GENERAL NOTES:

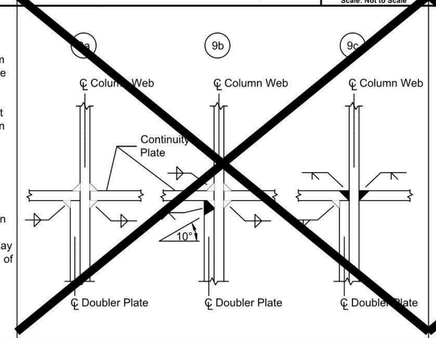
1. The illustrative details provided herein are intended to highlight the minimum fabrication and welding details that should be reflected on the structural plan. It shall not be used as a substitute for or in lieu of structural details that the Engineer or Architect of Record must provide on the structural plan.
2. The illustrative details does not provide information such as, but not limited to, size of columns or beams, continuity or doubler plate thicknesses, size and length of the fillet welds, the type of beam to column moment connections, steel column frame to foundation connections, or length and location of plastic hinging zones. This information shall be determined by the Engineer or Architect of Record and specified on the structural plan.
3. Where the illustrative details provide information such as weld type to use at a particular weld joint, minimum or maximum dimensions for length, weld size, or gap between base metals, it should be appropriately reflected on the structural plan by the Engineer or Architect of Record.

Typical Sheet 3 Notes

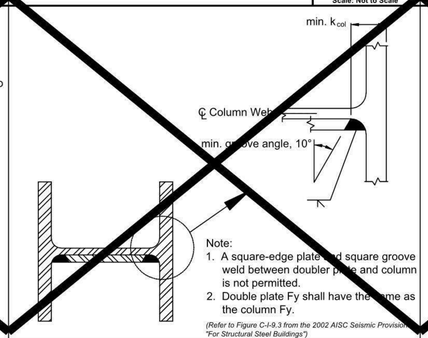


Weld Pass Sequence — Detail 13
Scale: Not to Scale

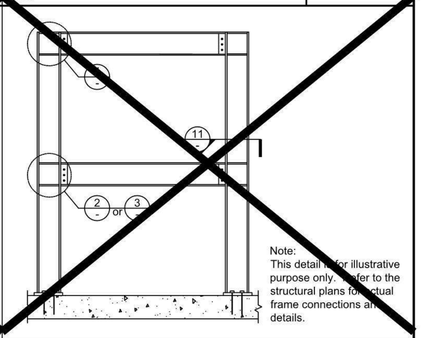
Notes:
1. For maximum fill pass thickness, see Table 5 on Sheet 2.
2. For moment connection at bottom beam flange to column flange, the maximum root pass thickness shall not exceed 1/4" per Part V, Item 1. For welded connection at all other locations, see Table 5 on Sheet 2 for maximum root pass thickness.
3. Root Opening, R, and Groove Angle, α, shall be per selected AWS prequalified CJP groove welded joint detail.
4. Welding pass numbers are shown diagrammatically to indicate sequence. Quantity of passes may vary due to depth and/or position of weld. This figure is intended to illustrate recommended welding sequence for FCAW and SMAW welding process only.



Doubler Plate Welds to Continuity Plate — Detail 9
Scale: Not to Scale

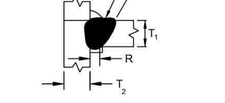


Groove Welded Doubler Plate — Detail 5
Scale: Not to Scale



Sample Steel Moment Frame — Detail 1
Scale: Not to Scale

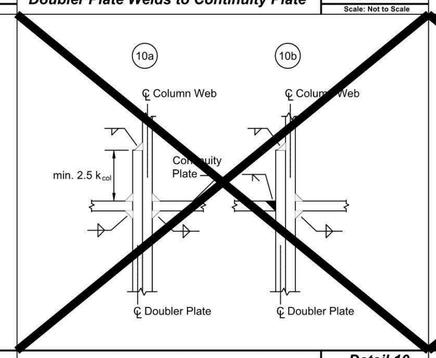
TOLERANCES	
As Detailed	As Fit-Up
R = +1/16, -0	+1/4, -1/16
α = +10°, -0°	+10°, -5°



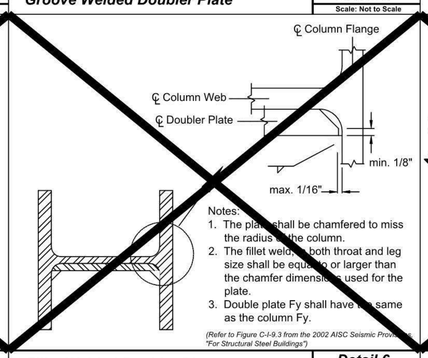
Welding Process	Joint Designation	Base Metal Thickness (U = unlimited) T_1	Base Metal Thickness (U = unlimited) T_2	Groove Preparation: Root Opening	Groove Preparation: Groove Angle	Allowed Welding Positions	Gas Shielding for FCAW
SMAW	TC-U4a	U	U	R = 1/4	α = 45°	All	-
				R = 3/8	α = 30°	F, V, OH	-
FCAW	TC-U4a-GF	U	U	R = 3/16	α = 30°	All	Required
				R = 3/8	α = 30°	F	Not required
				R = 1/4	α = 45°	All	Not required

Notes:
1. Groove welds in corner and T-joints of cyclically loaded structures shall be reinforced with fillet welds equal to T_1 /4, but need not exceed 3/8 inch.
2. For corner joints, the outside groove preparation may be in either or both members, provided the basic groove configuration is not changed and adequate edge distance is maintained to support the welding operations without excessive edge melting.
3. Adapted with permission from the AWS D1.1 Committee on Structural Welding, Structural Welding Code - Steel, AWS D1.1/D1.1M: 2002, Miami: American Welding Society, Figure 3.4 pg. 92 (top left).

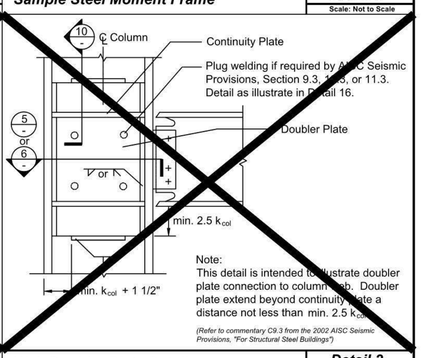
AWS Prequalified CJP Groove Welded Joint Detail — Detail 14
Scale: Not to Scale



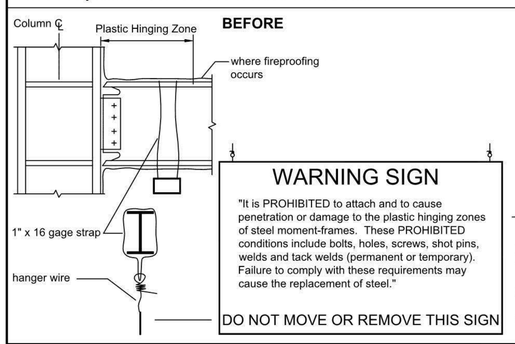
Doubler Plate Welds to Continuity Plate — Detail 10
Scale: Not to Scale



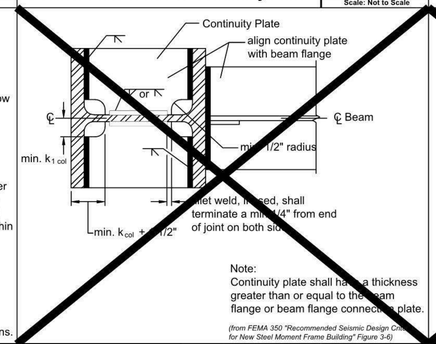
Fillet Welded Doubler Plate — Detail 6
Scale: Not to Scale



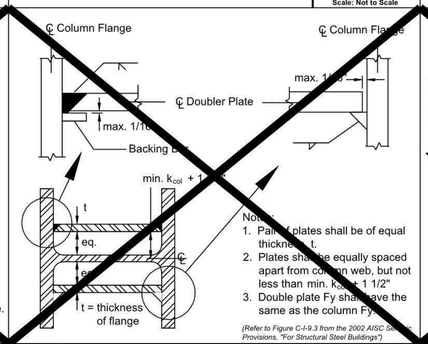
Web Doubler Plate Detail — Detail 2
Scale: Not to Scale



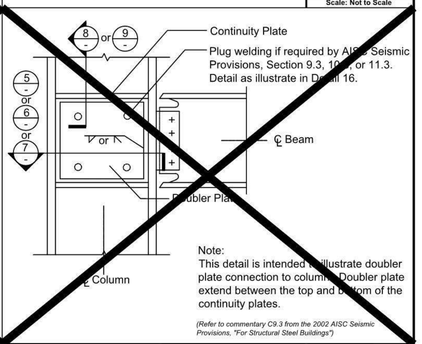
Warning Sign at Plastic Hinging Zone — Detail 15
Scale: Not to Scale



Continuity Plate Detail — Detail 11
Scale: Not to Scale



Groove or Fillet Welded Doubler Plate — Detail 7
Scale: Not to Scale



Web Doubler Plate Detail — Detail 3
Scale: Not to Scale

1. This sheet is included for standard quality assurance purpose per Los Angeles city requirements. Note this sheet is based on older 2002 LABC code and new version based on 2011 LABC code is not prepared by LA DBS yet. Contractor to review LA DBS updated references as listed on note #3 and ensure compliance with them.
2. The requirements of sheet S-603 and S-001 shall be also followed and they superceed this sheet in the case of conflict or repetition.
3. The updated references and requirement to be followed as per LA DBS are as follows:
   - 1 - LABC-2011 City of Los Angeles Building Code, Jan 2011.
   - 2 - AISC 341 - The AISC Seismic Provisions for Structural Steel Building, March 9, 2005 with Supplemental No.1 Nov 16, 2005, published by the American Institute of Steel Constructions.
   - 3 - AISC 360 - Specification for Structural Steel Buildings, Mar 9, 2005.
   - 4 - P/BC 2008-098 - Information Bulletin P/BC 2008-098 for Structural Design Requirements for Steel Moment Frame Connections.
   - 5 - FEMA 350 - Recommended Seismic Design Criteria for New Steel Moment Frame Buildings, July 2000 by Federal Emergency Management Agency.
   - 6 - AWSD1.1 - The Structural Welding Code-Steel AWS D1.1/D1.1M:2008 by American Welding Society.
   - 7 - AWS D1.8 - Structural Welding Code-Seismic Supplement AWS D1.8/D1.8M:2009 by American Welding Society.
   - 8 - ASCE 7 - The Minimum Design Loads for Building and other structures ASCE 7-05 by American Society of Civil Engineers. Including Supplemental No. 1 and 2, excluding Chapter 14 and Appendix 11A.
   - 9 - ACI 318 - Building Code Requirements for Structural Concrete ACI 318-08 by American Concrete Institute.

SITE ADDRESS:

OWNER:

STANDARD QUALITY ASSURANCE PLAN
For Steel Moment Frames

The specifications and illustrative details presented in this Standard Quality Assurance Plan have been prepared in accordance with recognized engineering principles and are for general information only. This Standard Quality Assurance Plan should not be used without the services of a registered engineer of competent professional examination and verification of its accuracy, suitability, and applicability by the Engineer or Architect of Record. By signing and sealing this document, the Engineer or Architect of Record assumes full responsibility for the application of all of the specifications and illustrative details associated with the subject property. Furthermore, by signing and sealing this document, the Engineer or Architect of Record acknowledges and accepts the fact that the City of Los Angeles assumes no responsibility for the application of any of the specifications and illustrative details contained in this Standard Quality Assurance Plan in the building permit process.

Engineer of Record

Date: 06/20/2005

Scale: Not to Scale

Sheet:

Sheet 3 of 3

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REGISTERED PROFESSIONAL ENGINEER — EDWIN GEVORGYAN — No.5145 Exp. 09/2016 — STRUCTURAL — STATE OF CALIFORNIA

REVISION No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

HKS PROJECT NUMBER
15002.200
DATE
3/24/2015
ISSUE
LADBS BUILDING PERMIT
SHEET TITLE
GENERAL NOTES

SHEET NO.
S-012

PLOT DATE: 3/23/2015 6:06:08 PM
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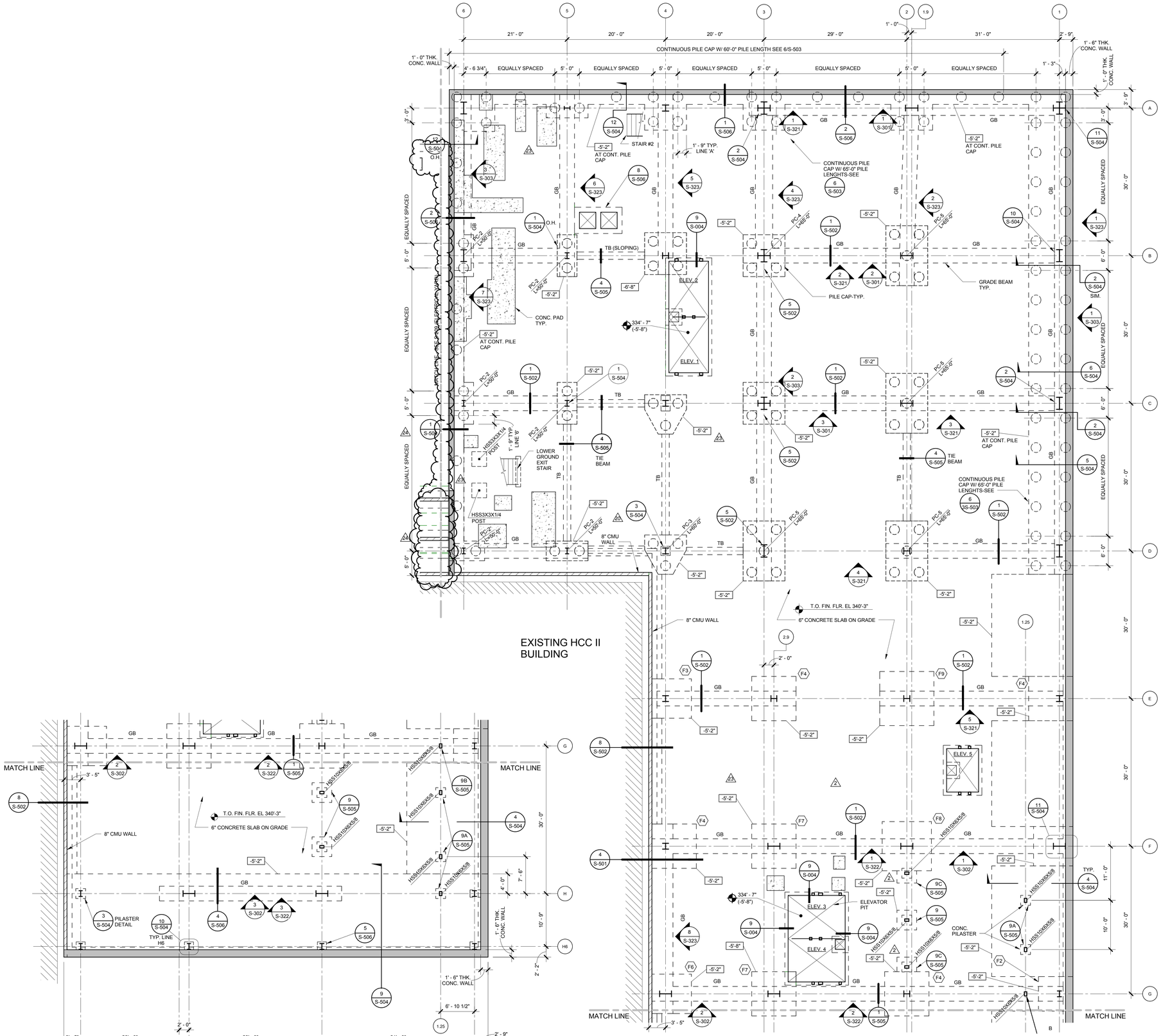

2 CONTINUATION - LOWER LEVEL FOUNDATION PLAN
1/8" = 1'-0"

1 LOWER LEVEL FOUNDATION PLAN
1/8" = 1'-0"

REFERENCE NOTES

1. SEE SHEET S-001 AND S-002 FOR GENERAL NOTES.
2. SEE SHEET S-003 THRU S-006 FOR TYPICAL DETAILS.
3. ALL SLAB OPENINGS, EDGES, PADS, CURBS AND DEPRESSIONS SHALL BE LOCATED/COORDINATED PER THE ARCHITECTURAL DRAWINGS.
4. CONTRACTOR TO PROVIDE SHORING AS REQUIRED FOR THE LOCATIONS AS NEEDED. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS.

LEGEND

- PC-2 (L=65'-0") - INDICATES PILE AND PILE CAP TYPE. SEE SHEETS S-503 AND S-504 FOR SECTIONS AND DETAILS. INDICATES PILE EMBEDMENT LENGTH INTO BEDROCK.
- INDICATES CONCRETE WALL, SEE PLAN FOR THICHNESS.
- INDICATES 8" CMU WALL U.N.O.
- F1 - INDICATES PAD FOOTING MARK, SEE 1/S-501 FOR SCHEDULE.
- - 1 1/2" - INDICATES DIMENSION OF SLAB DEPRESSION FROM REFERENCE FINISH FLOOR ELEVATION
- -5'-0" - INDICATES TOP OF FOOTING/PILE CAP ELEVATION FROM REFERENCE FINISH FLOOR ELEVATION . 2
- INDICATES CHANGE OF LEVEL
- INDICATES STEPPED FOOTING PER 9/S-003
- GB - GRADE BEAM
- TB - TIE BEAM
- CONCRETE PAD 5/S-004

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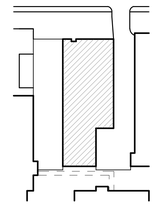
KEY PLAN

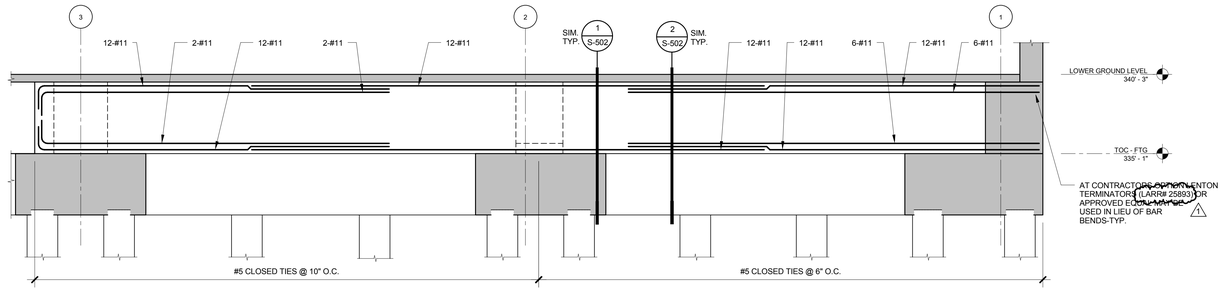


REVISION

No.	DESCRIPTION	DATE
2	RFI-1	10/21/2014
20	LADBS BUILDING PERMIT	3/24/2015
23	Delta 23 Revisions	6/30/2015
24	Delta 24 Revisions	6/06/2016

HKS PROJECT NUMBER
15002.200
DATE
3/24/2015
ISSUE
LADBS BUILDING PERMIT
SHEET TITLE
FOUNDATION PLAN - LOWER GROUND LEVEL
SHEET NO.
S-200LG

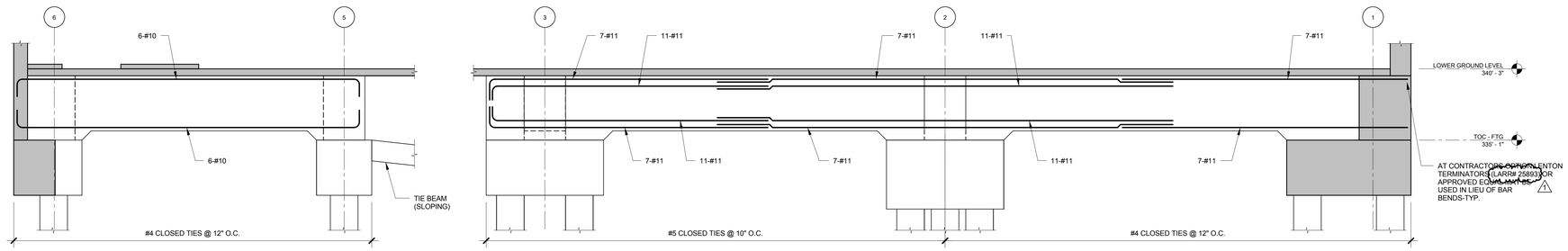
PLOT DATE: 7/20/2016 3:19:06 PM TEMPLATE VERSION



NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

GRADE BEAM ELEVATION AT LINE - A (63" WIDE x 48" DEEP - TYP.)

1/4" | 1



NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

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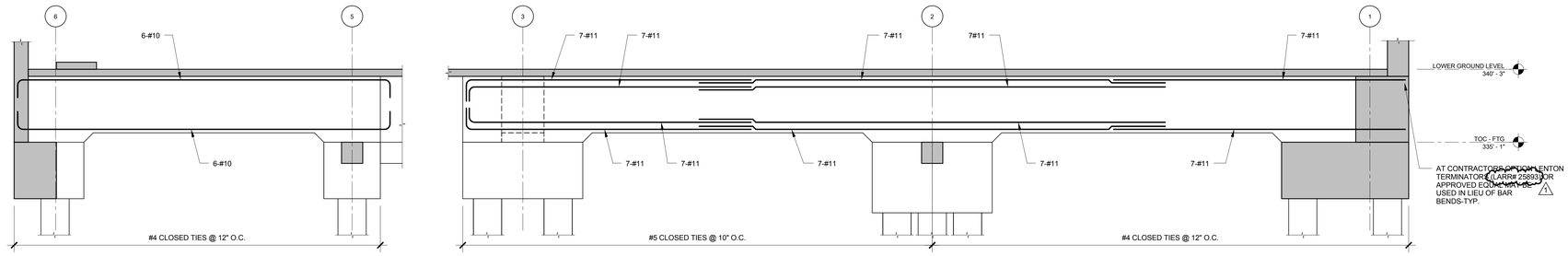
1/4" | 2



NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

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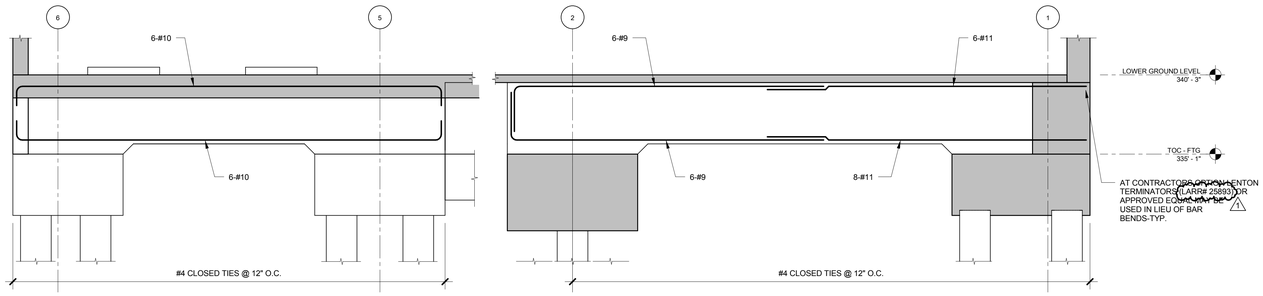
1/4" | 3



NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

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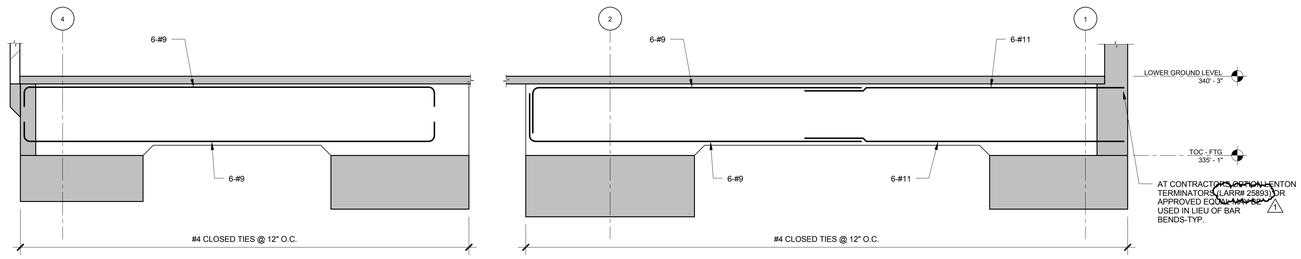

NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

GRADE BEAM ELEVATION AT LINE - E (36" WIDE x 48" DEEP - TYP.)

1/4" | 5

PLOT DATE: 3/23/2015 6:06:34 PM TEMPLATE VERSION

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REGISTERED PROFESSIONAL ENGINEER EDWIN GEIORGINALARSON No.5145 Exp. 06/30/16 STRUCTURAL STATE OF CALIFORNIA

REVISION

No.	DESCRIPTION	DATE
1	BACK CHECK	09/30/2014
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

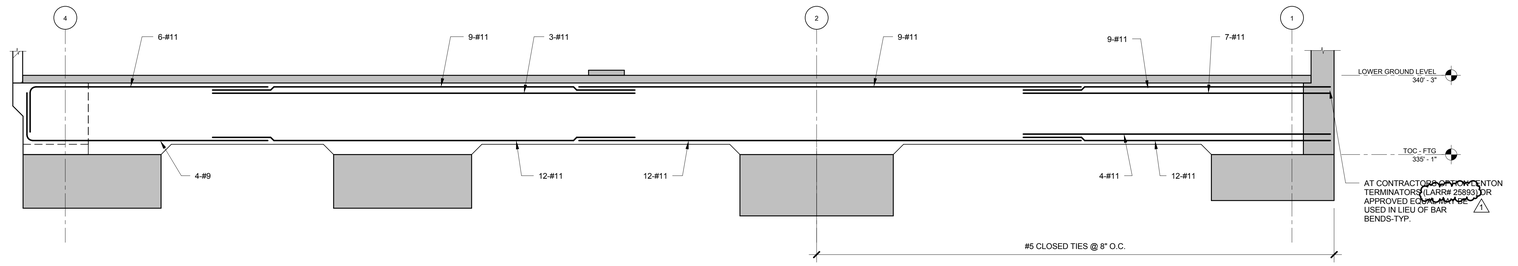
HKS PROJECT NUMBER
15002.200

DATE
3/24/2015

ISSUE
LADBS BUILDING PERMIT

SHEET TITLE
GRADE BEAM ELEVATIONS

SHEET NO.
S-321



NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

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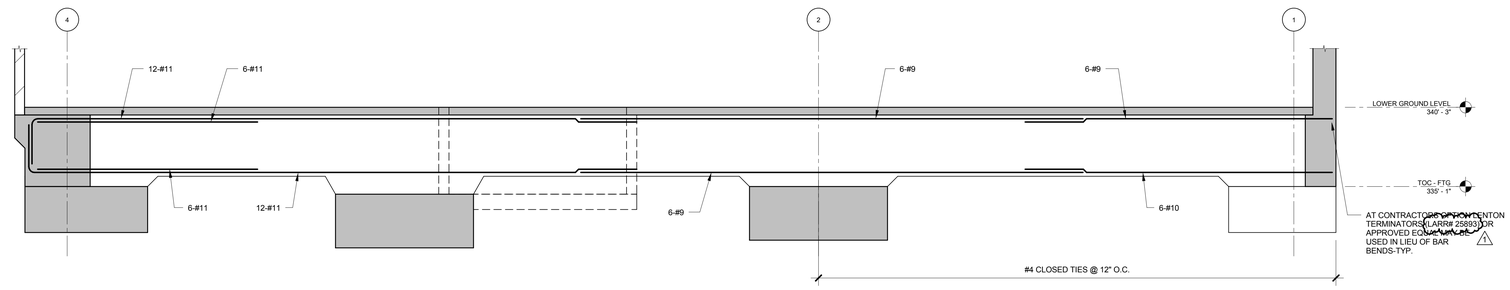

NOTE:
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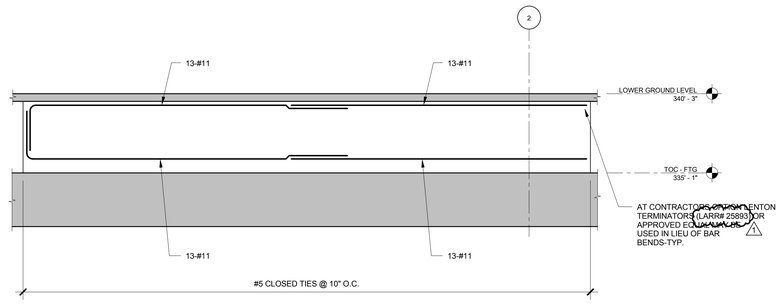

NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

GRADE BEAM ELEVATION AT LINE - H (36" WIDE x 48" DEEP - TYP.) | 1/4" | 3

PLOT DATE:
3/23/2015 6:06:37 PM
TEMPLATE VERSION:

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Exp. 06/2016
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REVISION

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20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

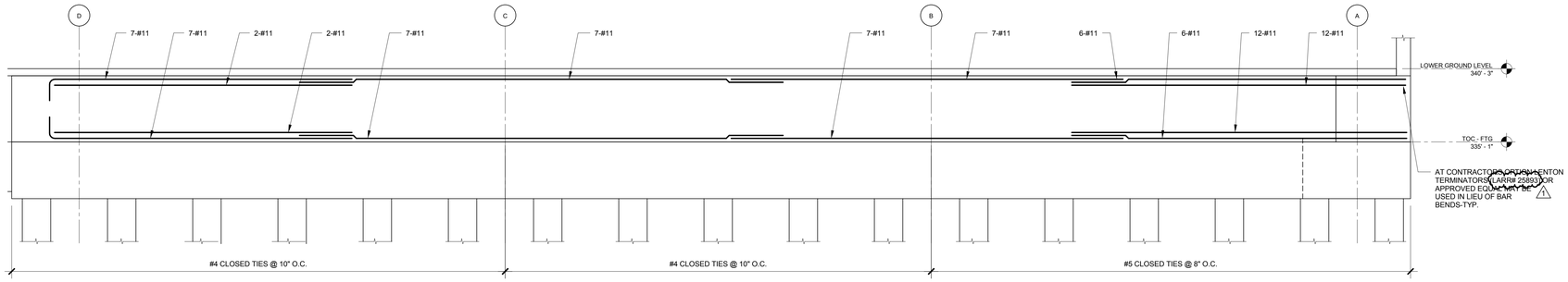
HKS PROJECT NUMBER
15002.200

DATE
3/24/2015

ISSUE
LADBS BUILDING PERMIT

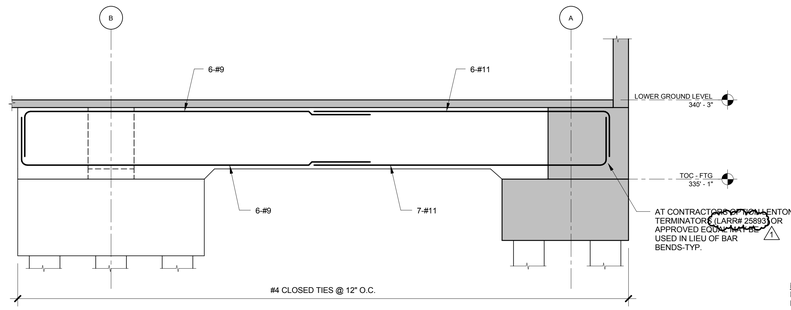
SHEET TITLE
GRADE BEAM ELEVATIONS

SHEET NO.
S-322



NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

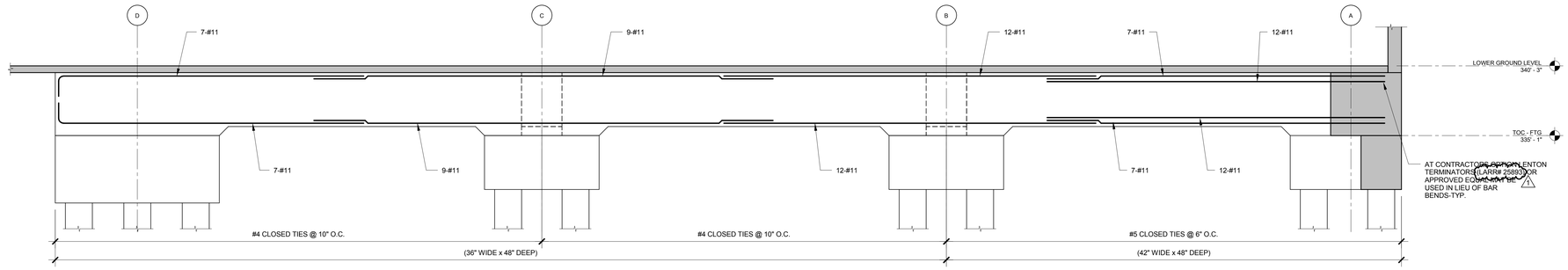
GRADE BEAM ELEVATION AT LINE - 1 (51" WIDE x 48" DEEP - TYP.) | 1/4" | 1



NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

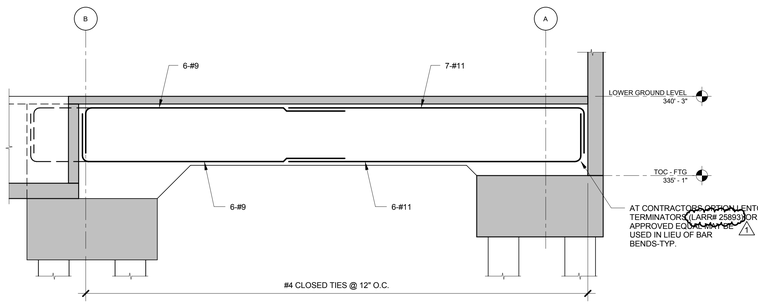
GRADE BEAM ELEVATION AT LINE - 2 (BETWEEN LINES B & A; 36" WIDE x 48" DEEP - TYP.) | 1/4" | 2

NOT USED | - | 3



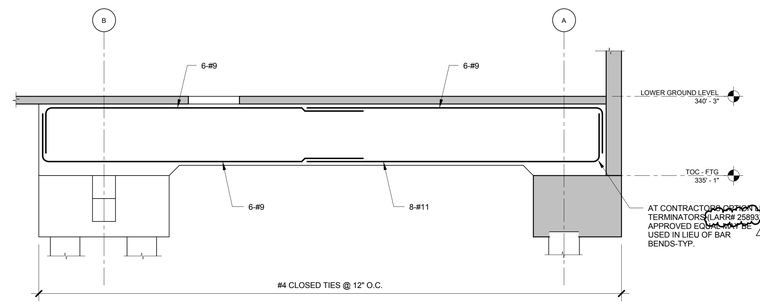
NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

GRADE BEAM ELEVATION AT LINE - 3 | 1/4" | 4



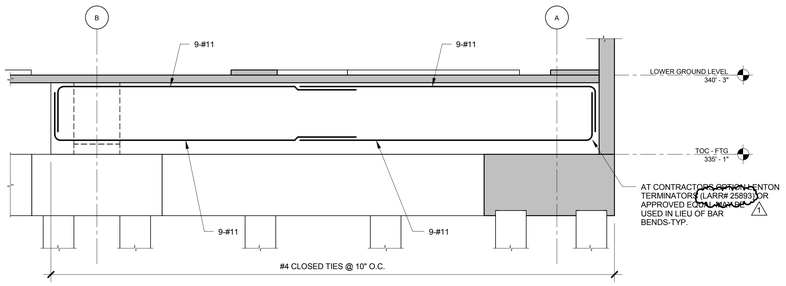
NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

GRADE BEAM ELEVATION AT LINE - 4 (BETWEEN LINES B & A; (36" WIDE x 48" DEEP - TYP.) | 1/4" | 5



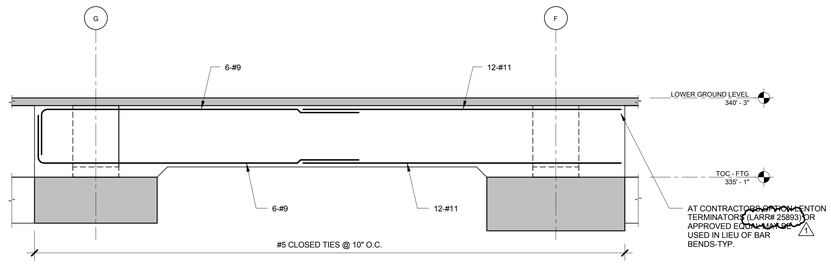
NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

GRADE BEAM ELEVATION AT LINE - 5 (36" WIDE x 48" DEEP - TYP.) | 1/4" | 6



NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

GRADE BEAM ELEVATION AT LINE - 6 (41" WIDE x 48" DEEP - TYP.) | 1/4" | 7



NOTE:
FOR INFO. NOT SHOWN SEE DETAIL SHEET S-502.

GRADE BEAM ELEVATION AT LINE - 4 (BETWEEN LINES G & F) | 1/4" | 8

PLOT DATE:
3/23/2015 8:07:19 PM
TEMPLATE VERSION:

HKS

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REGISTERED PROFESSIONAL ENGINEER
EDWIN (GEORGE) NAJARIAN
No.5145
Exp. 09/30/16
STRUCTURAL
STATE OF CALIFORNIA

REVISION

No.	DESCRIPTION	DATE
1	BACK CHECK	09/30/2014
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

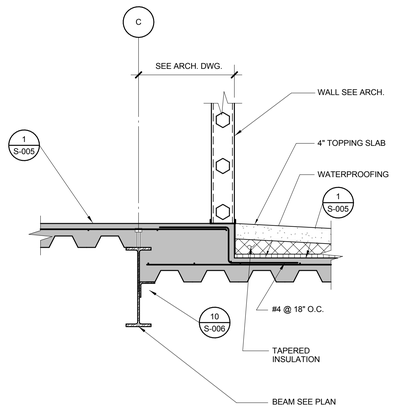
HKS PROJECT NUMBER
15002.200

DATE
3/24/2015

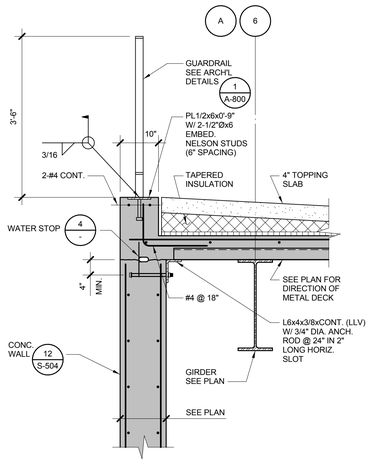
ISSUE
LADBS BUILDING PERMIT

SHEET TITLE
GRADE BEAM ELEVATIONS

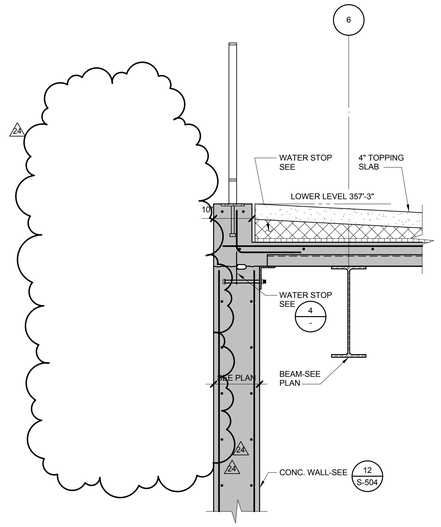
SHEET NO.
S-323



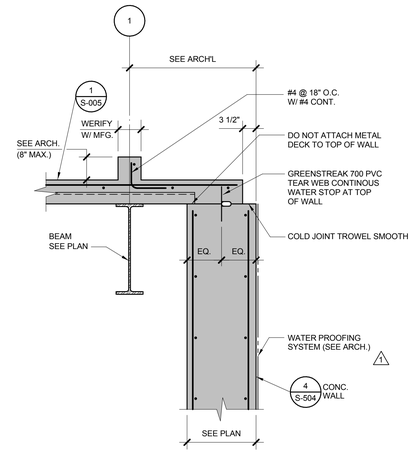
SECTION AT LINE C | 1" | 1



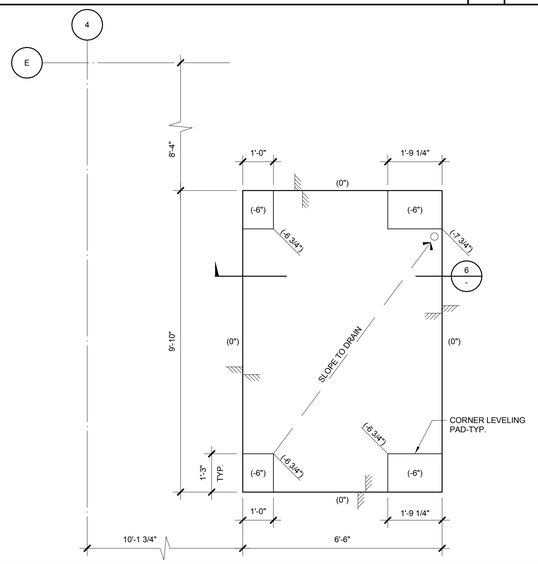
WALL SECTION | 1" | 2



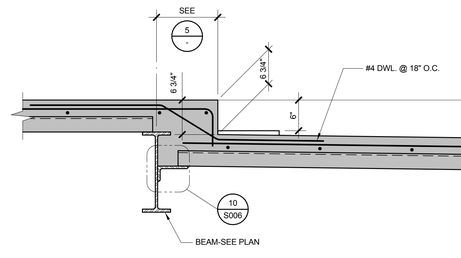
WALL SECTION | 1" | 3



LOWER LEVEL SECTION AT WALL PERIMETER | NONE | 4

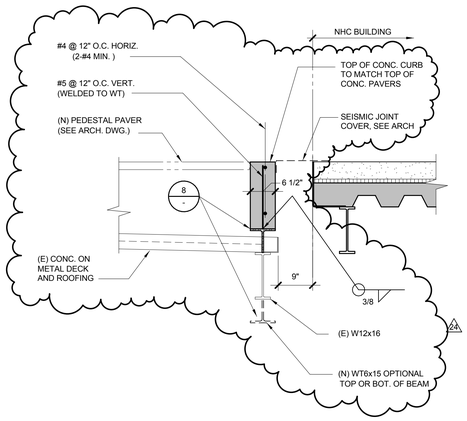


STERIS VISION 1327 CART WASH DEPRESSION PLAN | 1/2" | 5

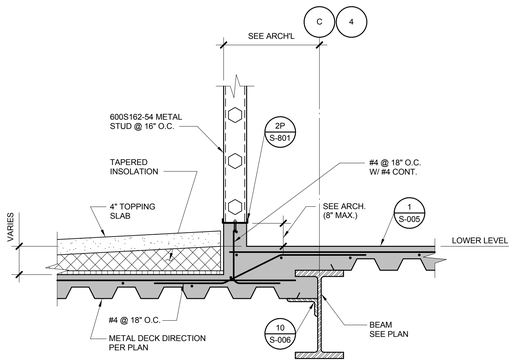


FLOOR DEPRESSION SECTION AT STERIS 1327 | 1" | 6

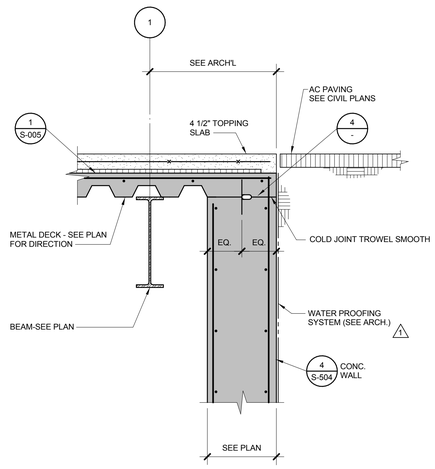
NOT USED | - | 7



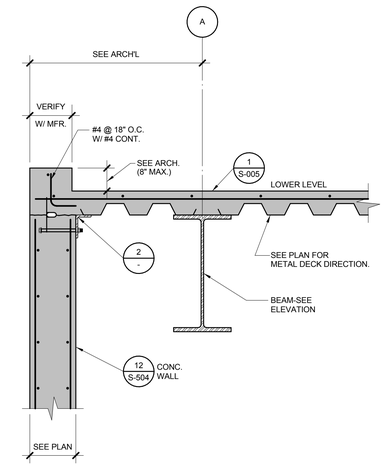
SECTION AT BRIDGE | 3/4" | 9



SECTION LOWER LEVEL LINE C | 1" | 10



WALL SECTION AT CURB | 1" | 11



SECTION AT LOWER LEVEL - LINE 'A' | 3/4" | 12

PLOT DATE: 6/7/2016 4:45:10 PM TEMPLATE VERSION

HKS

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REGISTERED PROFESSIONAL ENGINEER — EDWIN GEVORGIAN — No.5145 — Exp. 09/30/16 — STRUCTURAL — STATE OF CALIFORNIA

REVISION

No.	DESCRIPTION	DATE
1	BACK CHECK	09/30/2014
20	LADBS BUILDING PERMIT	3/24/2015
24	Delta 24 Revisions	6/06/2016

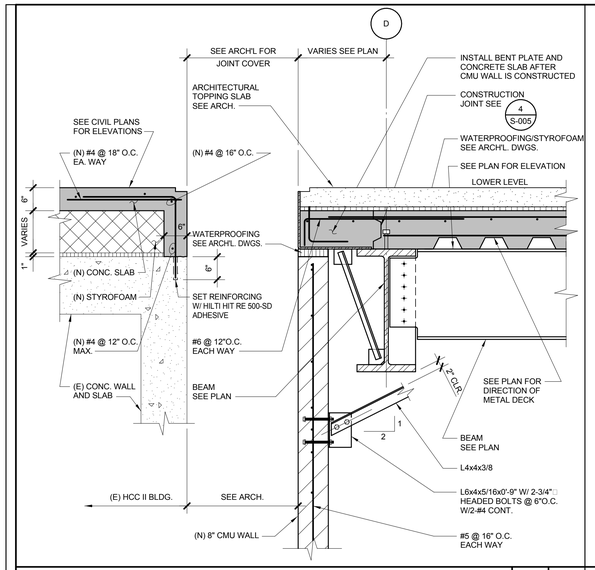
HKS PROJECT NUMBER
15002.200

DATE
3/24/2015

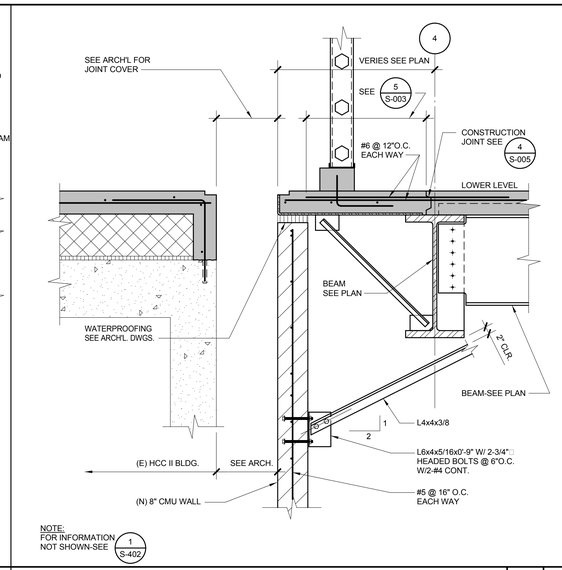
ISSUE
LADBS BUILDING PERMIT

SHEET TITLE
CONCRETE SECTIONS AND DETAILS

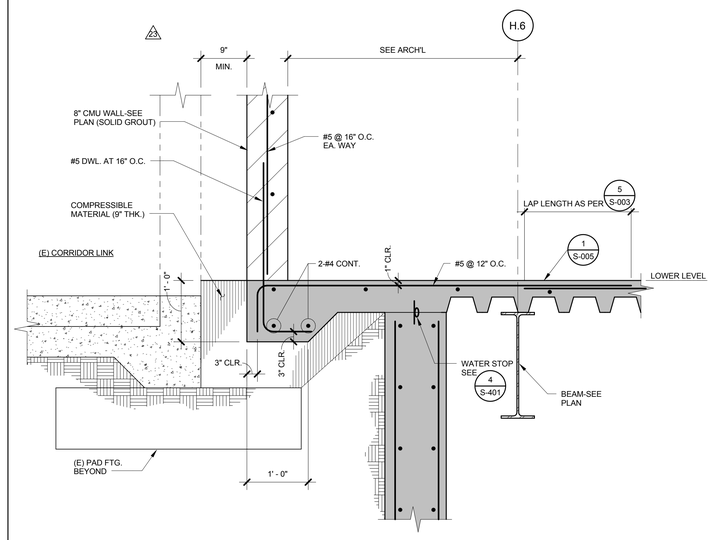
SHEET NO.
S-401



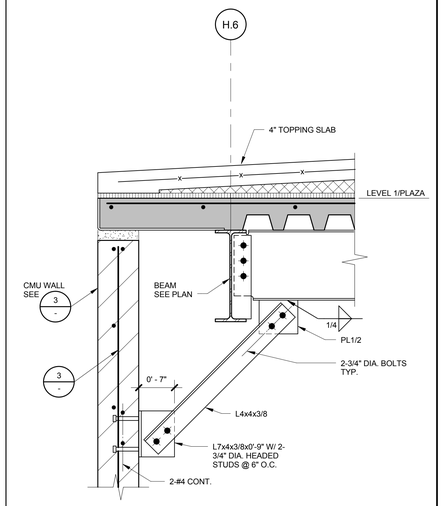
FLOOR SECTION AT LINE - D | 3/4" | 1



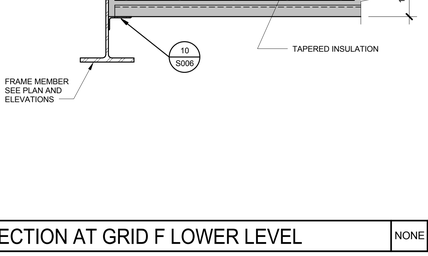
FLOOR SECTION AT LINE - 4 | 3/4" | 2



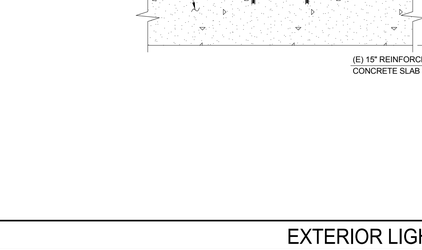
SECTION AT GRID LINE H.6 (LOWER LEVEL) | 1" | 3



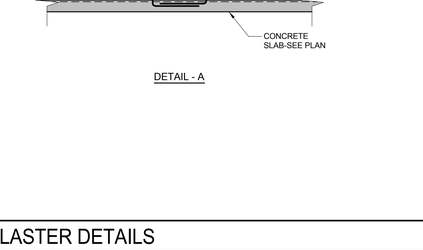
SECTION AT GRID LINE H.6 | 1" | 4



LOWER LEVEL AT LINE H6 | 3/4" | 5

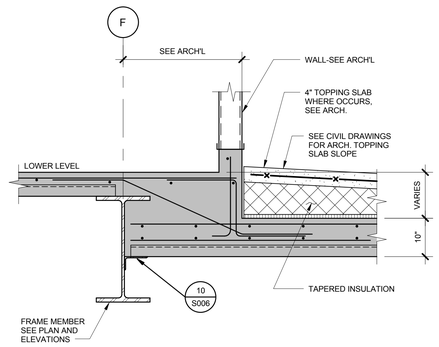


SECTION | 3/4" | 6

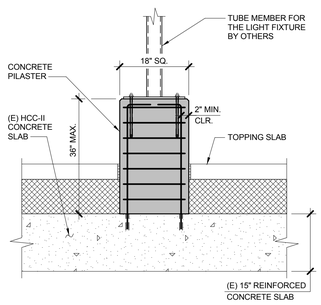


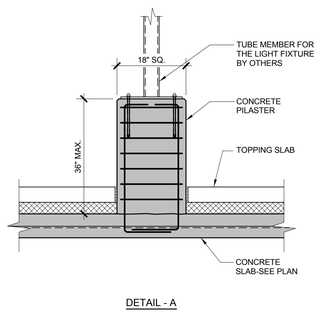
SECTION AT LOWER LEVEL TRUCK DECK | 3/4" | 7

SECTION AT SLAB TRENCH | 1" | 8



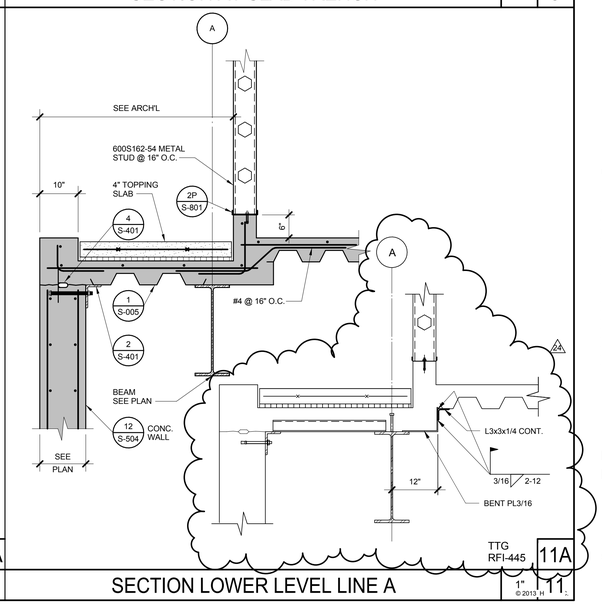
SECTION AT GRID F LOWER LEVEL | NONE | 9





DETAIL - A

EXTERIOR LIGHT FIXTURE PILASTER DETAILS | 3/4" | 10



SECTION LOWER LEVEL LINE A | 1" | 11

10A

TTG RFI-445

11A

PLOT DATE: 6/7/2015 3:45:11 PM TEMPLATE VERSION:

HKS

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REGISTERED PROFESSIONAL ENGINEER EDWIN (GEVORG) MARDIAN No.5145 Exp. 06/2016 CIVIL STRUCTURAL STATE OF CALIFORNIA

REVISION

No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015
23	Delta 23 Revisions	6/30/2015
24	Delta 24 Revisions	6/06/2016

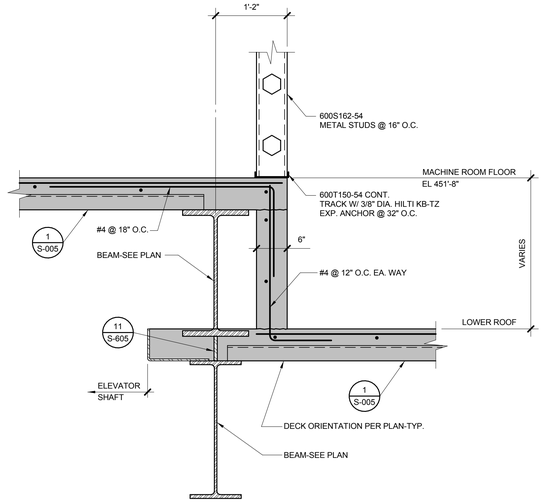
HKS PROJECT NUMBER
15002.200

DATE
3/24/2015

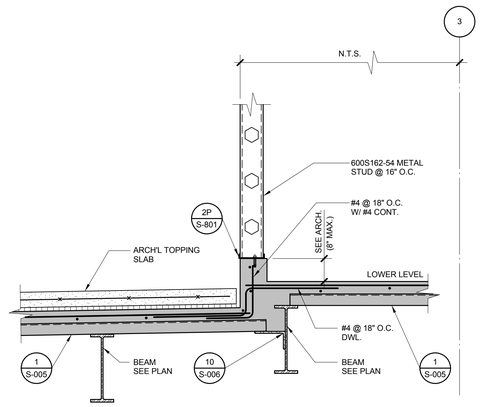
ISSUE
LADBS BUILDING PERMIT

SHEET TITLE
CONCRETE SECTIONS AND DETAILS

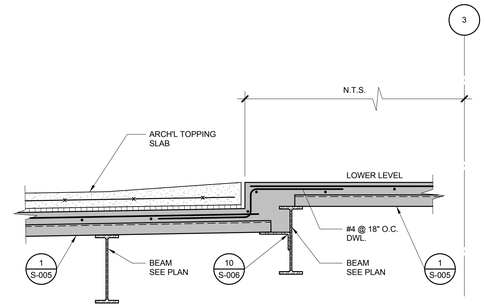
SHEET NO.
S-402



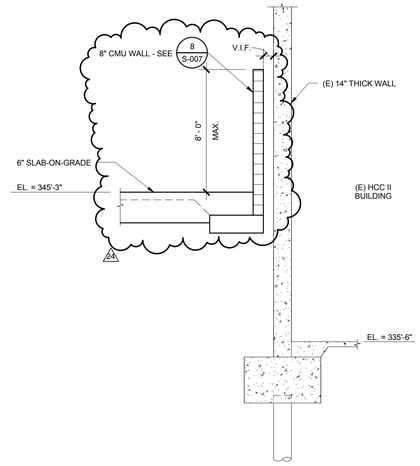
SECTION AT ELEV. MACHINE ROOM | NONE | 1



SECTION LOWER LEVEL LINE 3 | 3/4" | 2

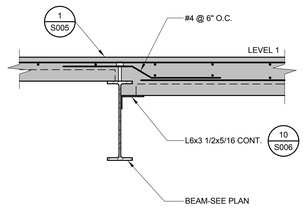


SECTION LOWER LEVEL LINE 3 | 3/4" | 3

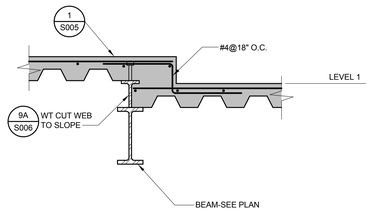


3

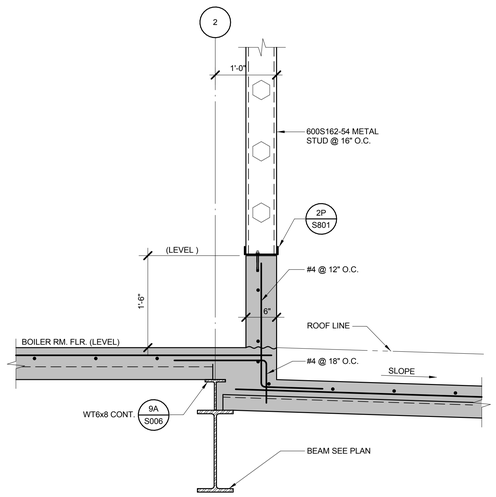
SECTION AT EXISTING CONC. WALL | 1/4" | 4



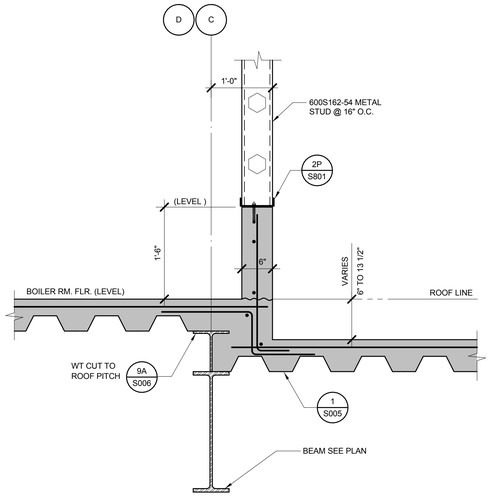
SECTION AT THICKEN SLAB | 3/4" | 5



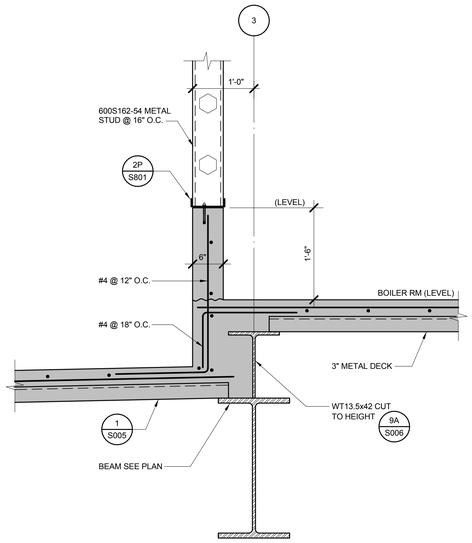
SECTION AT DEPRESSED SLAB | 3/4" | 6



SECTION AT BOILER ROOM | 1" | 7



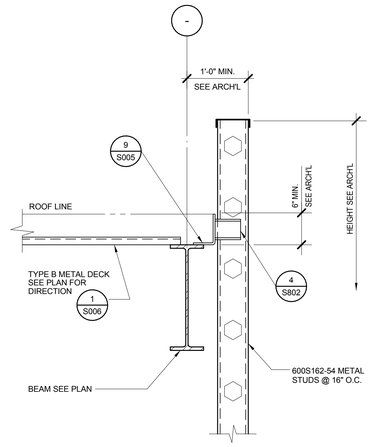
SECTION AT BOILER ROOM | 1" | 8



SECTION AT BOILER ROOM | 1" | 9

NOT USED | - | 10

NOT USED | - | 11



ROOF SECTION AT 'B' DECK | 1" | 12

PLOT DATE: 7/29/2016 3:27:23 PM TEMPLATE VERSION

HKS

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EDWIN GEVORGIAN
No.5145
Exp. 09/30/16
STRUCTURAL
STATE OF CALIFORNIA

REVISION

No.	DESCRIPTION	DATE
3	LADBS BACKCHECK	01/15/2015
20	LADBS BUILDING PERMIT	3/24/2015
24	Delta 24 Revisions	6/06/2016

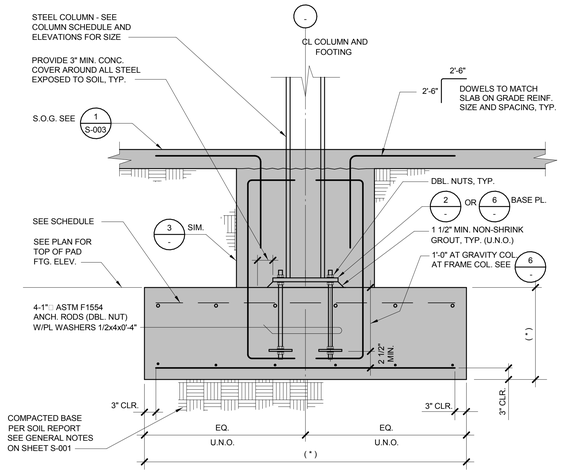
HKS PROJECT NUMBER
15002.200

DATE
3/24/2015

ISSUE
LADBS BUILDING PERMIT

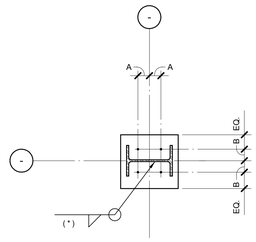
SHEET TITLE
CONCRETE SECTIONS AND DETAILS

SHEET NO.
S-403



FOOTING SCHEDULE				
MK	SIZE	DEPTH	REINFORCING	DETAIL
F1	6'-0" x 6'-0"	2'-6"	9-#6 E.W. BOTTOM	1
F2	7'-0" x 7'-0"	3'-0"	10-#7 E.W. BOTTOM	1
F3	8'-0" x 8'-0"	3'-0"	9-#8 E.W. BOTTOM	1
F4	9'-0" x 9'-0"	3'-6"	11-#8 E.W. BOTTOM	1
F5	10'-0" x 10'-0"	4'-0"	14-#8 E.W. BOTTOM	1
F6	8'-0" x 8'-0"	3'-0"	9-#8 E.W. TOP & BOTTOM	1
F7	9'-0" x 9'-0"	3'-6"	11-#8 E.W. TOP & BOTTOM	1
F8	10'-0" x 10'-0"	4'-0"	14-#8 E.W. TOP & BOTTOM	1
F9	11'-0" x 11'-0"	4'-0"	16-#8 E.W. BOTTOM	1

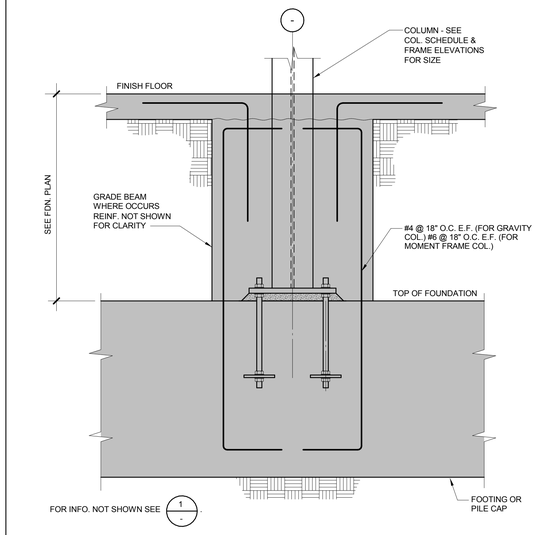
PAD FOOTING W/ 'W' COLUMN AND SCHEDULE — NONE 1



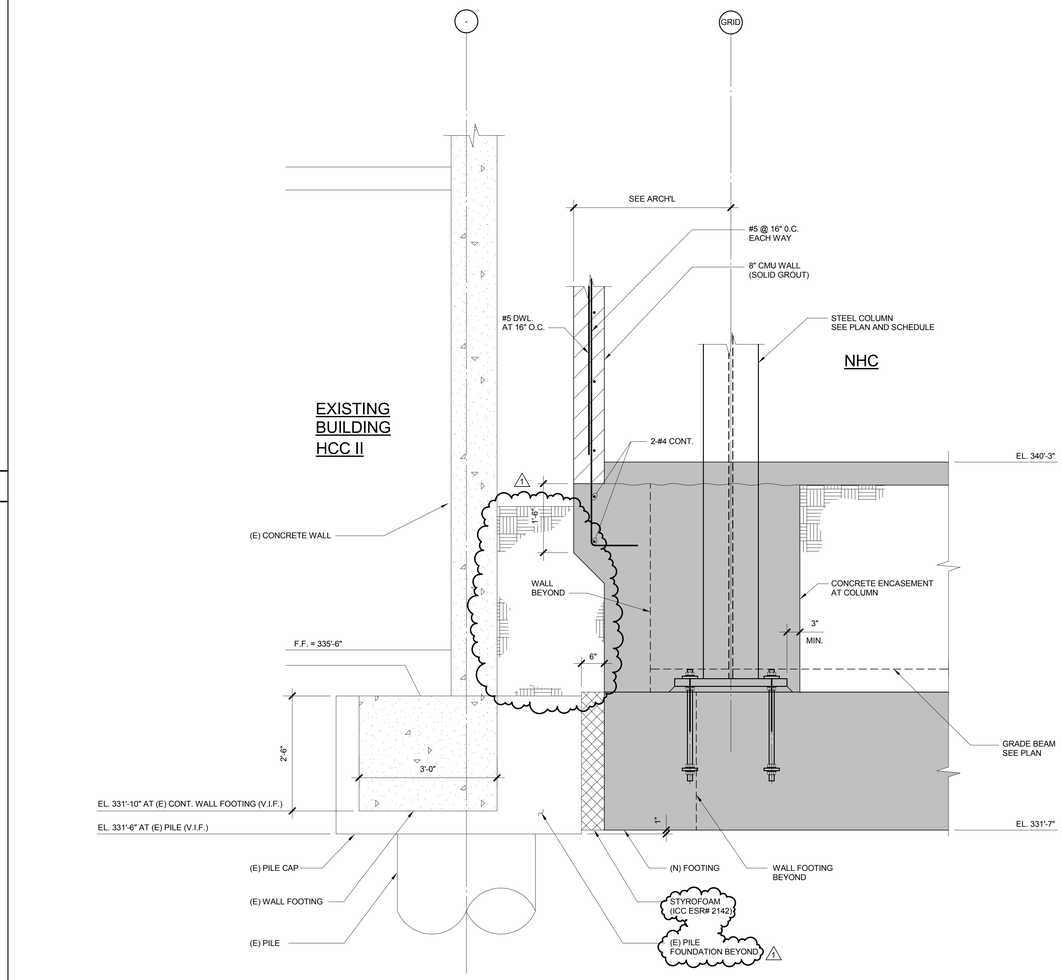
GRAVITY COLUMN PLAN

BASE PLATE SCHEDULE Fy=50 ksi				
COLUMN	PLATE SIZE	A	B	WELD (*)
W8x & W10x	1"x12"x1'-0"	2 1/2"	3"	3/8
HSS6x6	3/4"x12"x1'-0"	5 1/2"	5 1/2"	3/8
W12x	1"x16"x1'-4"	3"	3"	3/8
W14x43, W14x53, W14x61, W14x68	1"x16"x1'-4"	4"	4"	5/16
W14x74, W14x82, W14x90	1 1/2"x18"x1'-6"	4"	4"	3/8
W 14x99, W14x109, W14x120, W14x123, W14x145	1 3/4"x20"x1'-8"	4"	4"	1/2

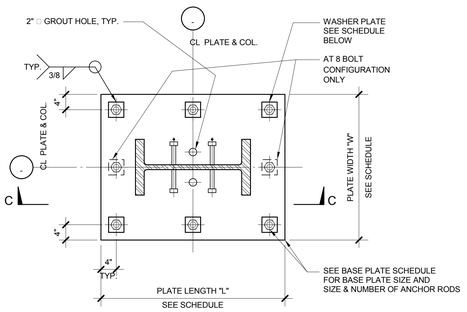
GRAVITY COLUMN BASE PLATE DETAIL & SCHEDULE — NONE 2



TYP. LOWERED COLUMN BASE PLATE DETAIL — NONE 3

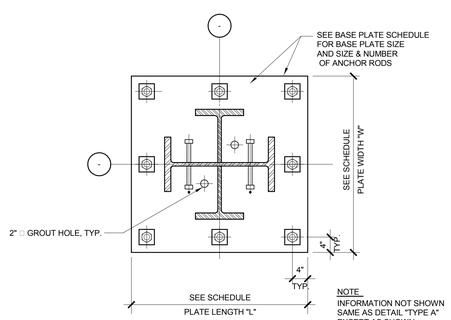


FOUNDATION SECTION AT (E) HCC II BUILDING AT NEW NHC BUILDING — NONE 4



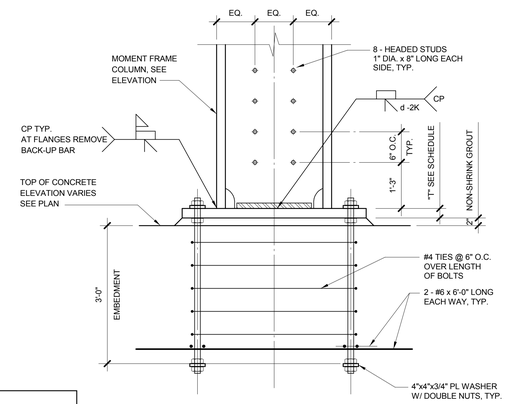
TYP. BASE PLATE PLAN - TYPE A

BASE PLATE SCHEDULE, Fy = 50 ksi							
COLUMN SIZE	BASE PL TYPE	PLATE THICK. "T"	L	W	ANCHOR ROD (SEE PL WASHER SCHED.) TYPE	ANCHOR ROD NO.	REMARKS
W27x336	A	2 1/2"	44"	28"	AR-1	6	
W27x307	A	2 1/2"	42"	28"	AR-1	6	
W27x281	A	2 1/2"	44"	28"	AR-1	6	
W27x235	A	2 1/2"	42"	28"	AR-1 SEE REMARK	6 SEE REMARK	USE 8 AR-2 AT G/4
W27x307 W27x307	B	2 3/4"	44"	44"	AR-1 SEE REMARK	8	USE AR-2 AT A/1
W27x336 W27x336	B	2 3/4"	44"	44"	AR-1 SEE REMARK	8	USE AR-2 AT A/3



BASE PLATE PLAN AT CRUCIFORM COLUMN - TYPE B

PLATE WASHER SCHEDULE				
ANCHOR ROD TYPE	ANCHOR ROD DIAMETER	MAX. BASE PLATE HOLE DIAMETER	MIN. SQ. WASHER DIM.	MIN. WASHER THICKNESS (50 KSI)
AR-1	1"	1 13/16"	3"	3/4"
AR-2	1 1/2"	2 5/16"	3 1/2"	3/4"



ELEVATION C - C

MOMENT FRAME COLUMN BASE PLATE DETAIL — NONE 6

NOT USED — - 7

PLOT DATE: 3/23/2015 6:05:38 PM TEMPLATE VERSION

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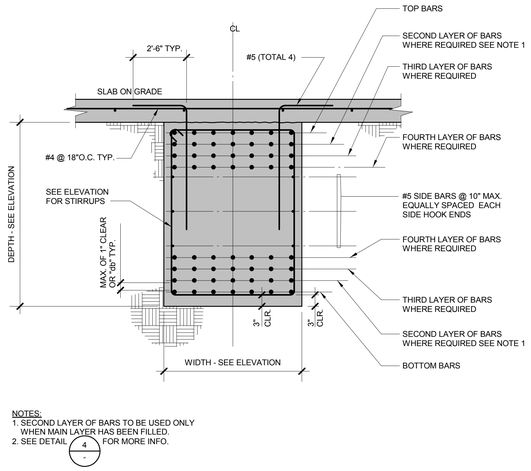
REGISTERED PROFESSIONAL ENGINEER — EDWIN (GEVORG) NAJARIAN — No.5145 — Exp. 09/30/16 — STRUCTURAL — STATE OF CALIFORNIA

REVISION No.	DESCRIPTION	DATE
1	BACK CHECK	09/30/2014
20	LADBS BUILDING PERMIT	3/24/2015

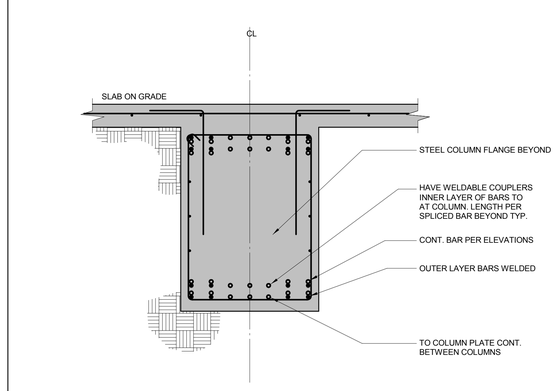
C&S GMP BID SET 16 JUNE 2015

HKS PROJECT NUMBER
15002.200
DATE
3/24/2015
ISSUE
LADBS BUILDING PERMIT
SHEET TITLE
FOUNDATION SECTIONS AND DETAILS
SHEET NO.
S-501



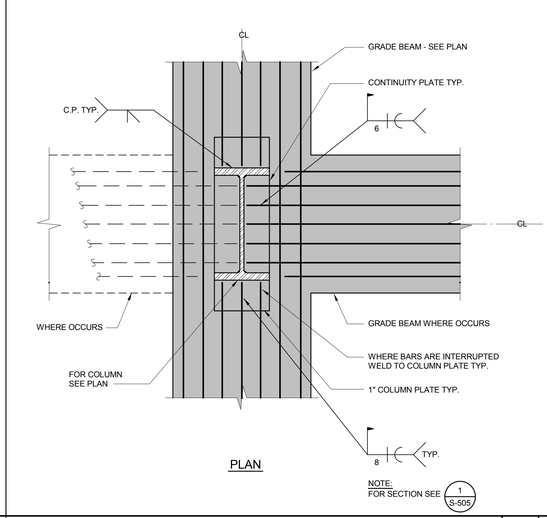
NOTES:
1. SECOND LAYER OF BARS TO BE USED ONLY WHEN MAIN LAYER HAS BEEN FILLED.
2. SEE DETAIL 4/- FOR MORE INFO.

TYPICAL CONCRETE GRADE BEAM SECTION | 3/4" | 1



NOTE:
1. FOR INFO NOT SHOWN SEE 1/-

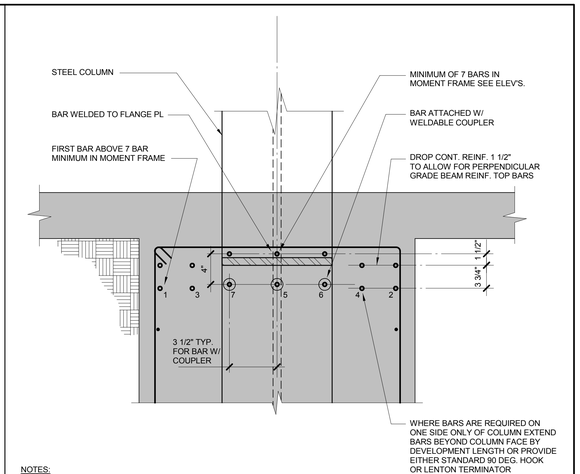
GRADE BEAM REINF. SPLICE/BAR PLACEMENT | 3/4" | 2



PLAN

NOTE:
FOR SECTION SEE 1/S-505

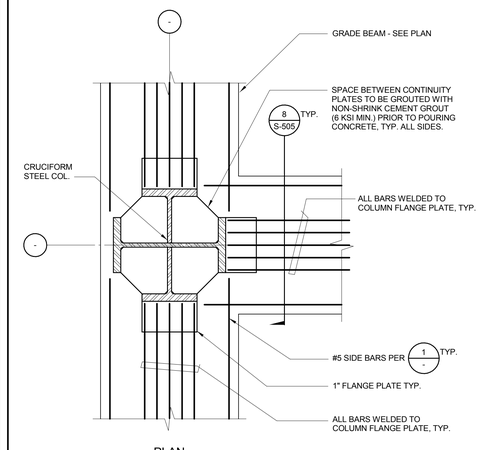
DETAIL AT MOMENT FRAME GRADE BEAM CONDITION | 3/4" | 3



NOTES:
1. PLACEMENT ORDER SIM. AT BOTTOM OF BEAM
2. FOR INFO NOT SHOWN SEE 8/S-505

AT (NON-CRUCIFORM) MOMENT FRAME COLUMNS

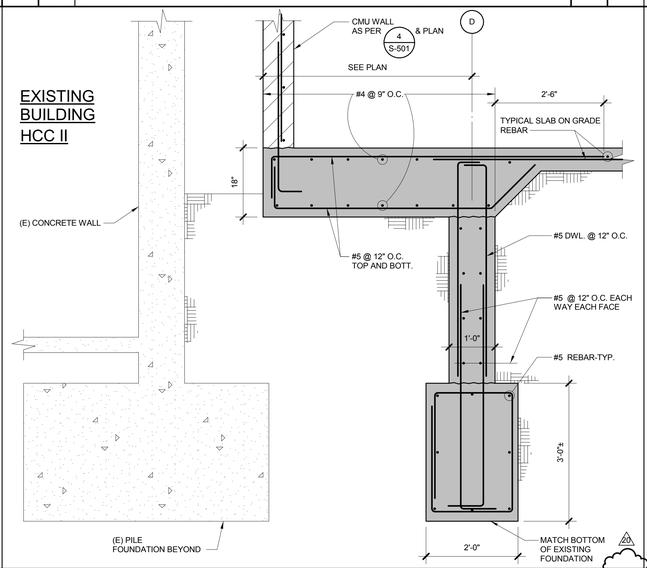
REBAR PLACEMENT ORDER FOR GRADE BEAM | 1 1/2" | 4



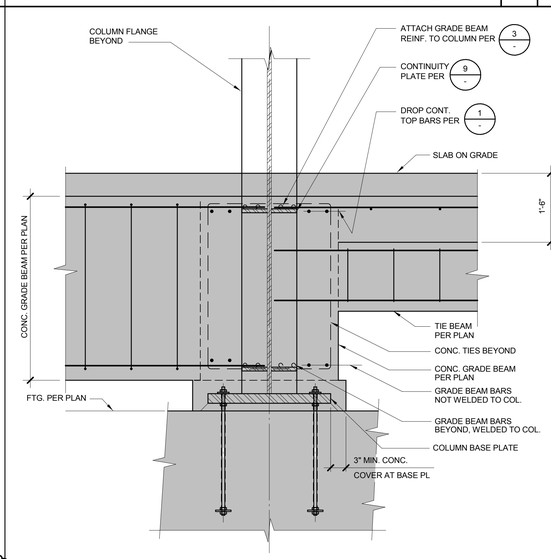
PLAN

NOTE:
1. SEE DETAIL 3/- FOR MORE INFO.

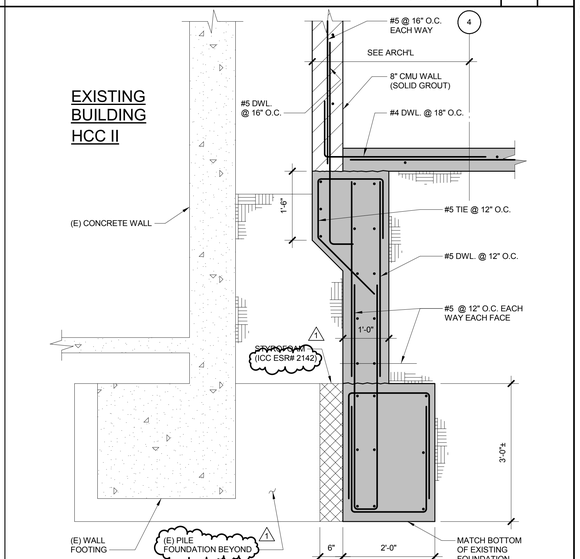
GRADE BM. REINF. AT CRUCIFORM COL. | 3/4" | 5



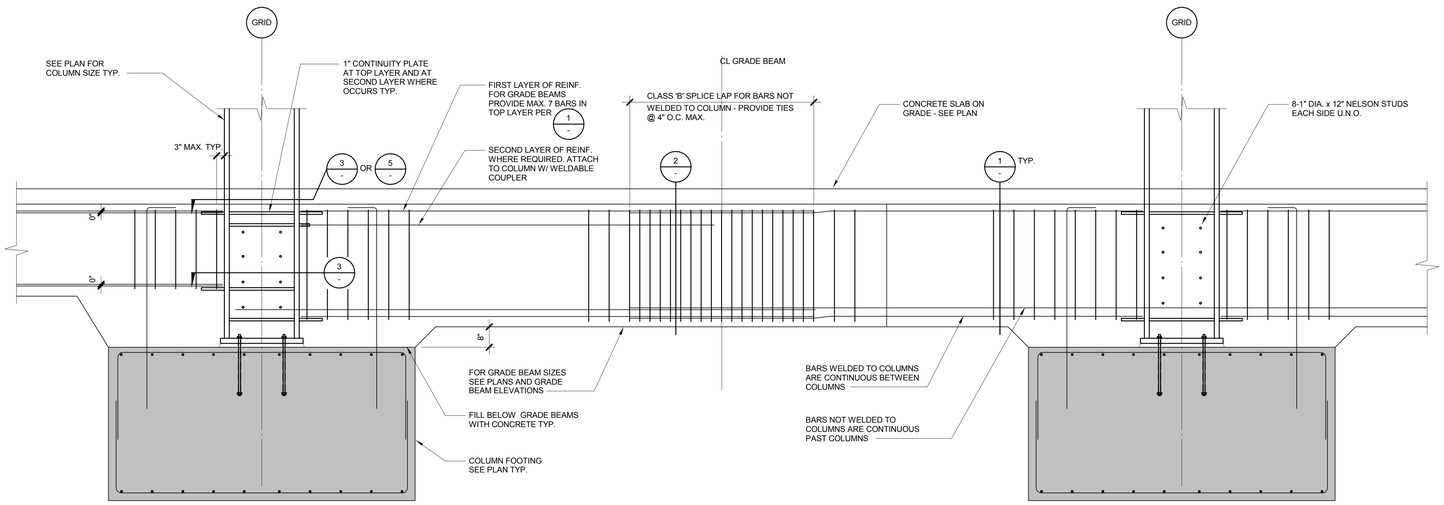
CMU WALL SECTION | 3/4" | 6



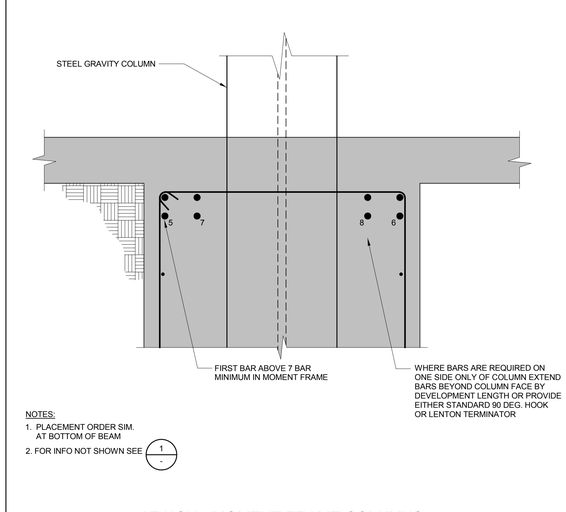
SECTION THRU MF COLUMN AT GRADE BEAM | 3/4" | 7



CMU WALL SECTION AT TIE BEAM | 3/4" | 8



GRADE BEAM ELEVATION AT MOMENT FRAME | 3/4" | 9



NOTES:
1. PLACEMENT ORDER SIM. AT BOTTOM OF BEAM
2. FOR INFO NOT SHOWN SEE 1/-

AT NON - MOMENT FRAME COLUMNS

REBAR PLACEMENT ORDER FOR GRADE BEAM | - | 10

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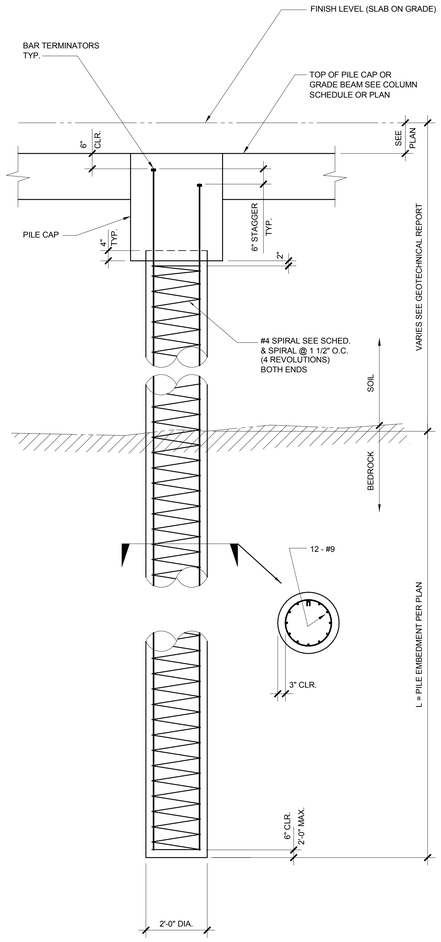
REVISION No.	DESCRIPTION	DATE
1	BACK CHECK	09/30/2014
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

HKS PROJECT NUMBER
15002.200
DATE
3/24/2015
ISSUE
LADBS BUILDING PERMIT
SHEET TITLE
FOUNDATION SECTIONS AND DETAILS
SHEET NO.
S-502

PLOT DATE: 3/23/2015 8:05:42 PM TEMPLATE VERSION



PILE REINF.		
(VERT.)	VERT. STL. GR. (KSI)	SPIRAL SPACING
12-#9 (TERMINATE 6-#9 AT 30' BELOW THE BOTT. OF PILE CAP AND CONT. THE REST TO THE BOTT. OF THE PILE)	60	#4 @ 3"O.C.

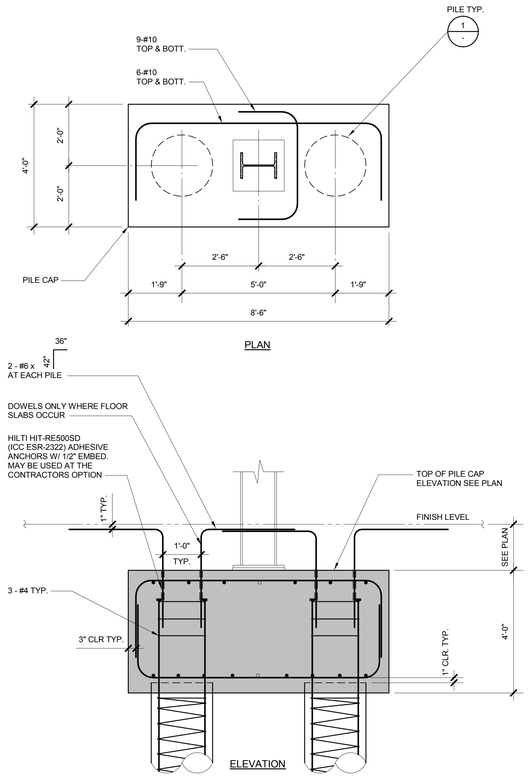
PILE ALLOWABLE LOADS	
PENETRATION INTO BEDROCK	DOWNWARD
50'-0"	136K
55'-0"	164.6K
60'-0"	195.9K
65'-0"	229.9K

NOTE:
UPWARD CAPACITY IS ONE-HALF OF THE DOWNWARD CAPACITY.

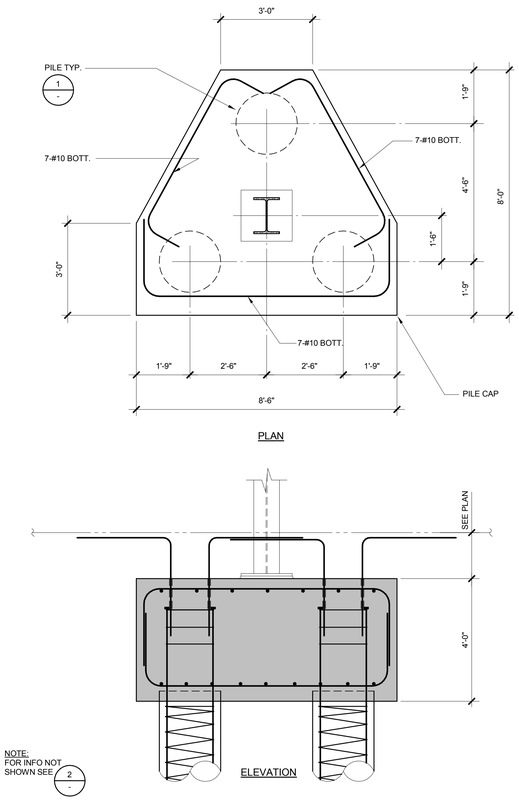
CAST-IN-PLACE PILE NOTES:

1. PILES SHALL EXTEND DEEPER THAN POINT WHERE GROUND WATER MAY OCCUR ONLY WITH SPECIAL INSTALLATION TECHNIQUES AS GIVEN IN THE GEOTECHNICAL REPORT AND ALL SUBSEQUENT SUPPLEMENTS AND/OR ADDENDA.
2. IF WATER IS ENCOUNTERED DURING DRILLING, STRENGTH OF CONCRETE SHOULD BE INCREASED MINIMUM OF 1000 PSI WITH NO EXTRA COST TO THE OWNER.
3. IF RAVELING OR CAVING OCCURS DURING DRILLING OF HOLES, USE SPECIAL CARE TO AVOID THIS BY SLOW DRILLING, DRILLING MUD OR OTHER MEANS. EXTRA CONCRETE FOR FILLING THE EXCAVATION SHOULD BE ANTICIPATED, AND NO REQUEST FOR EXTRA COST WILL BE CONSIDERED.
4. FILL THE PILE EXCAVATION AS SOON AS POSSIBLE AFTER EXCAVATING. DO NOT LEAVE ANY HOLE OPEN OVERNIGHT.
5. DO NOT EXCAVATE ADJACENT PILES UNTIL THE CONCRETE HAS SET A MINIMUM OF EIGHT HOURS.
6. EXCAVATION OF PILES, PLACING OF CONCRETE, AND TESTING OF PILES SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT (INCLUDING ALL SUPPLEMENTS AND/OR ADDENDA) AND CONTINUOUSLY OBSERVED AND APPROVED BY THE SOIL ENGINEER.
7. ORIENTATION OF PILES & REINFORCING CAGE TO BE THE SAME FOR ALL PILES IN A PILE CAP. ORIENTATION TO BE PARALLEL TO THE PILE CAP GRID LINE.
8. AT CONTRACTOR'S OPTION ASTM 615 REINFORCING STEEL CAN BE USED FOR CIDH PILES AS LONG AS THEY ARE NOT WELDED.
9. SEE GEOTECHNICAL REPORT FOR OTHER REQUIREMENTS.

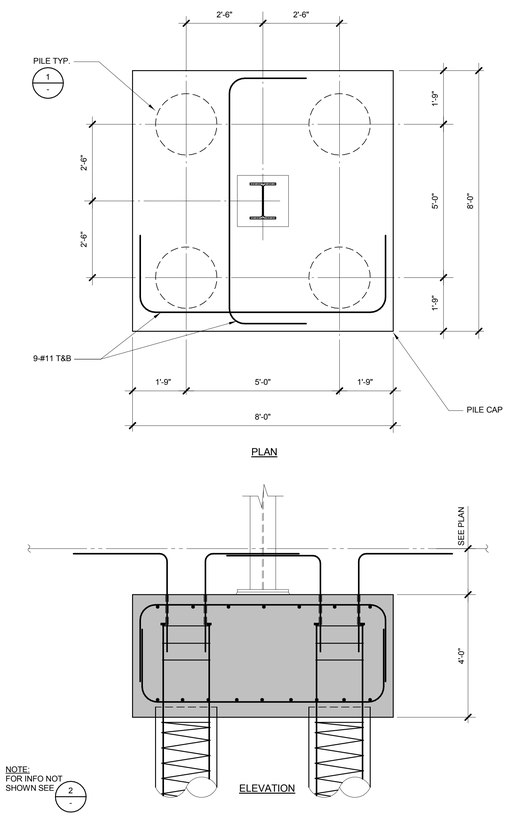
TYPICAL PILE DETAIL | 1/2" | 1



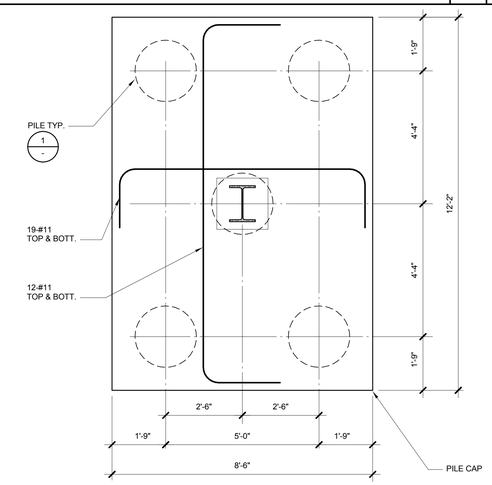
2 PILE-PILE CAP | 1/2" | 2



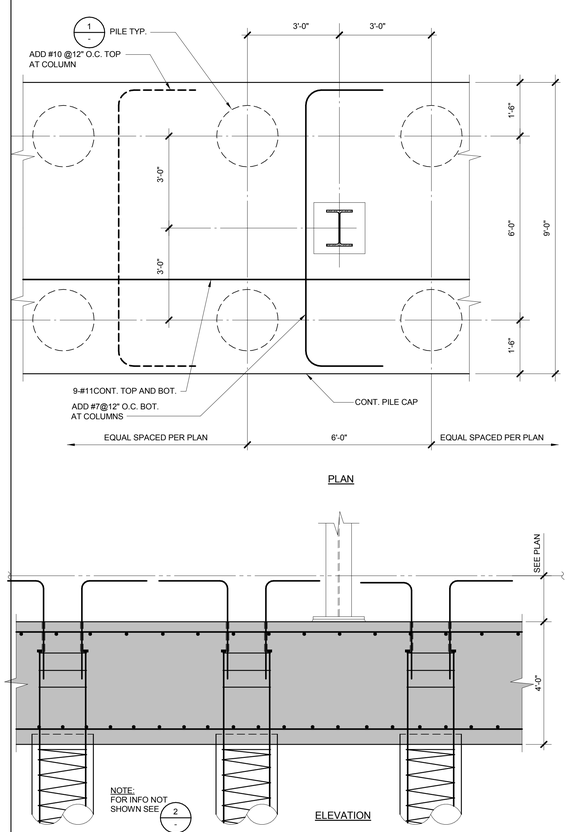
3 PILE-PILE CAP | NONE | 3



4 PILE-PILE CAP | NONE | 4



5 PILE-PILE CAP | NONE | 5



CONTINUOUS PILE CAP | NONE | 6

NOT USED | - | 7

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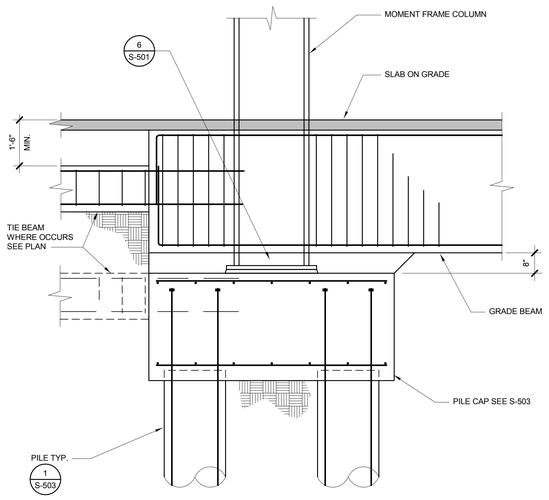
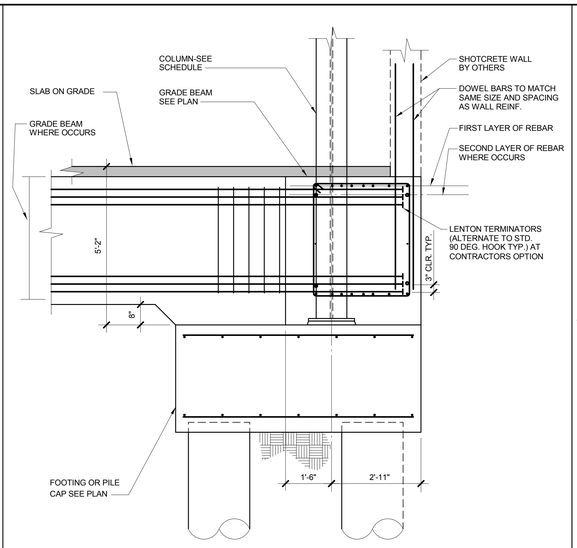
SHEET TITLE
FOUNDATION SECTIONS AND DETAILS
SHEET NO.
S-503

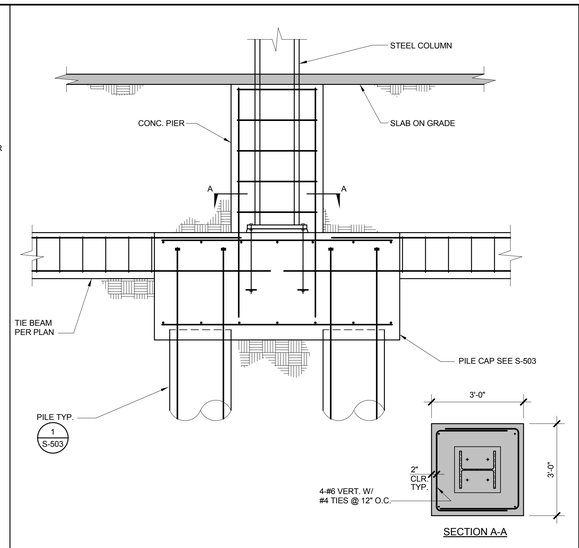
PLOT DATE: 3/20/2015 6:05:45 PM TEMPLATE VERSION



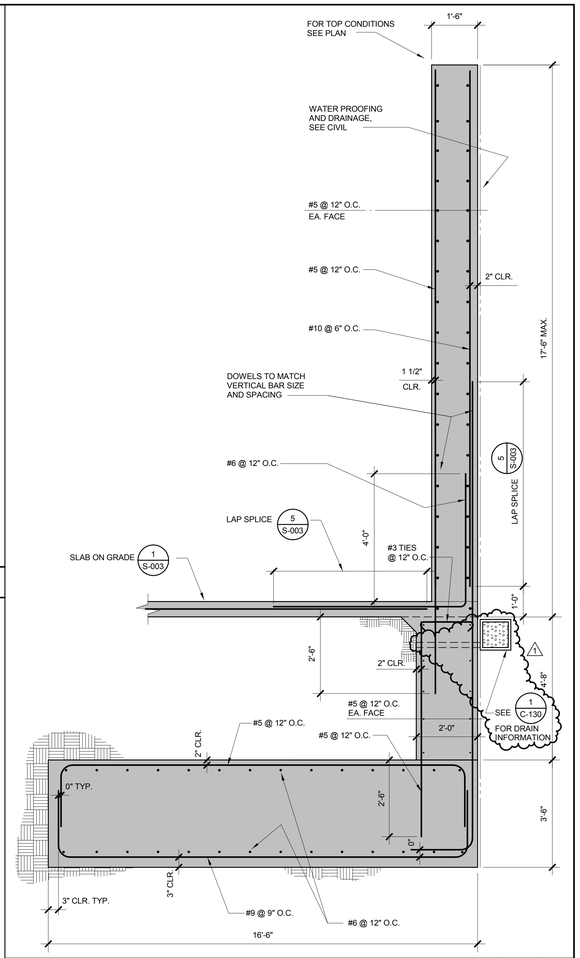
PILE CAP AT GRADE BEAM | 1/2 | 1



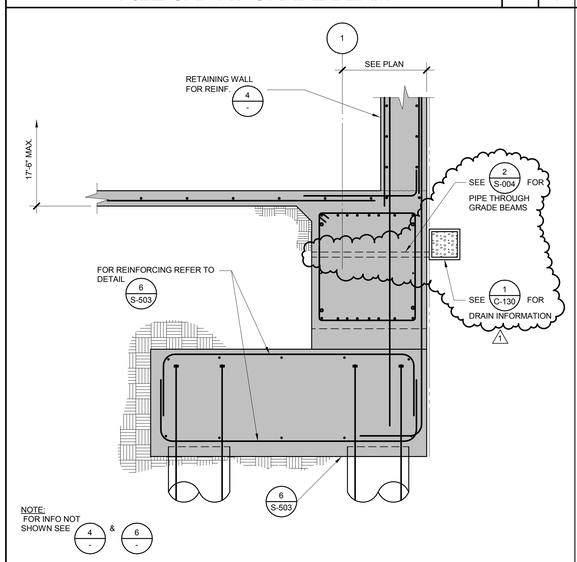
TYP. SECTION AT GRADE BEAM | 1/2 | 2



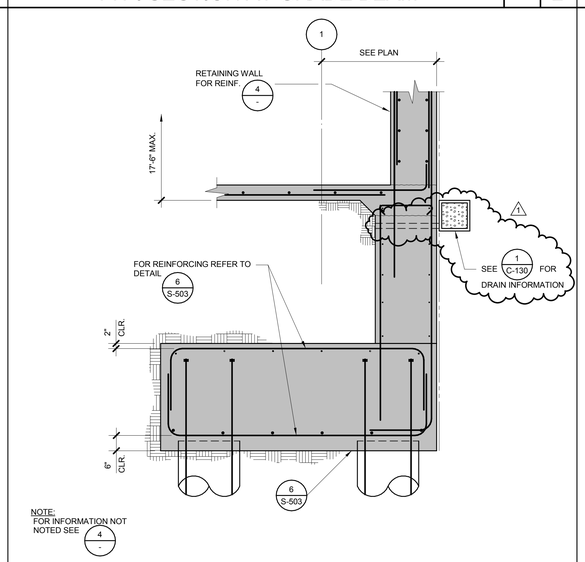
PILE CAP AT COLUMN DETAIL | 1/2 | 3



SECTION AT RETAINING WALL | 1/2" | 4

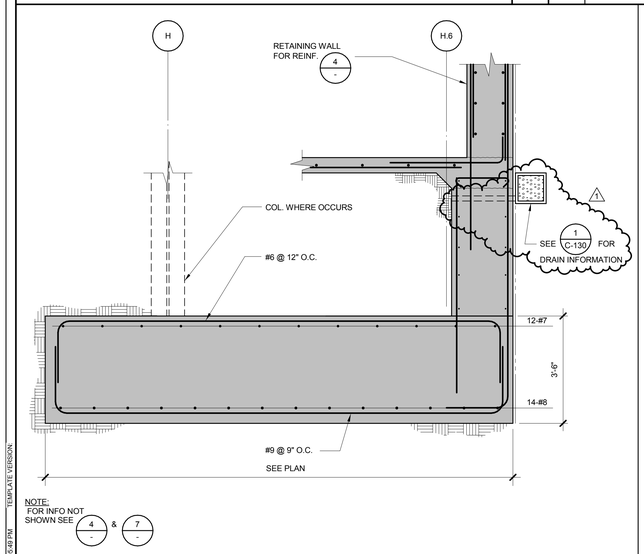


FOUNDATION SECTION AT RETAINING WALL | 1/2" | 5

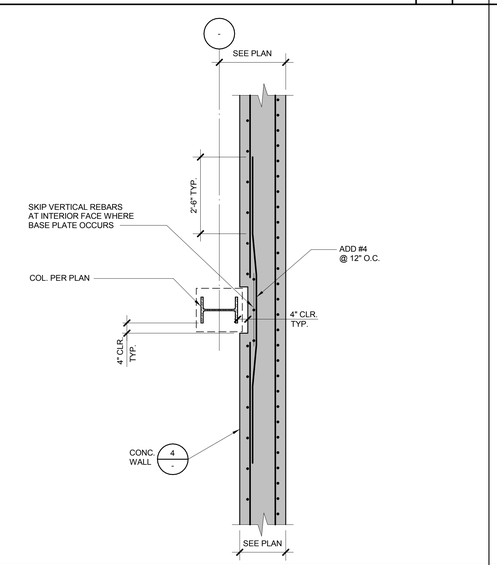


FOUNDATION SECTION AT RETAINING WALL | 1/2" | 6

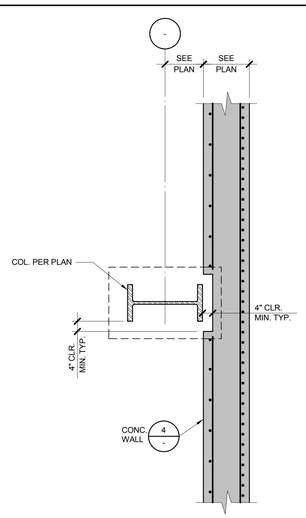
FOOTING DETAIL AT OR POSTS | 3/4" | 7



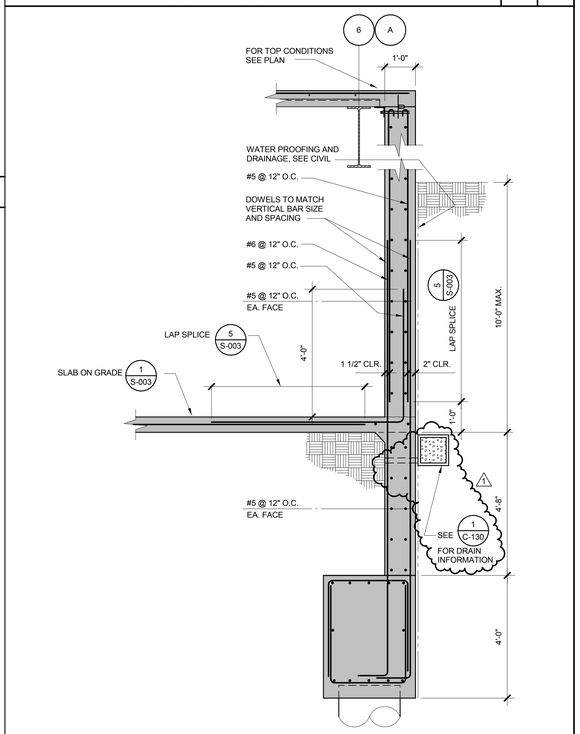
FOUNDATION SECTION AT RETAINING WALL | 1/2" | 9



COLUMN AT RETAINING WALL | 1/2" | 10



COLUMN AT RETAINING WALL | NONE | 11



SECTION AT RETAINING WALL - LINES 'A' & '6' | 1/2" | 12

PLOT DATE: 3/23/2015 8:05:49 PM
TEMPLATE VERSION

HKS

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-
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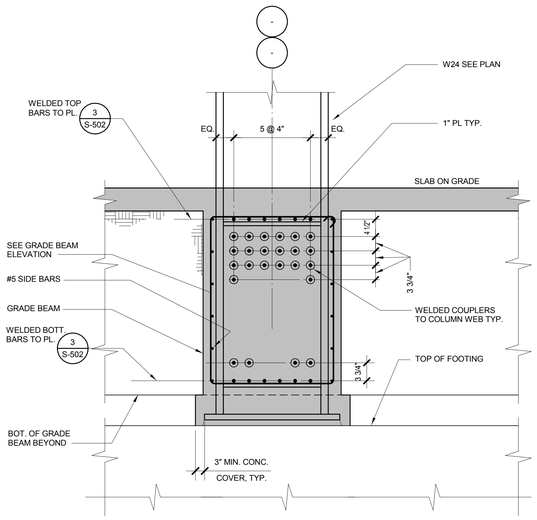
REGISTERED PROFESSIONAL ENGINEER EDWIN GEORGE ORGINALAKKAN No.5145 Exp. 09/30/16 STRUCTURAL STATE OF CALIFORNIA

REVISION

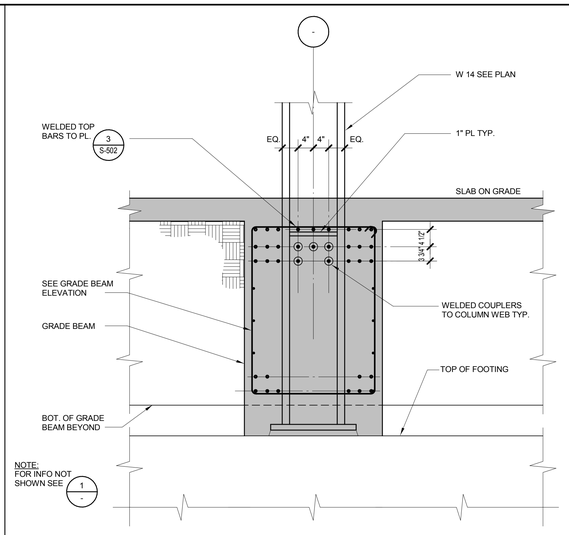
No.	DESCRIPTION	DATE
1	BACK CHECK	09/30/2014
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

HKS PROJECT NUMBER
15002.200
DATE
3/24/2015
ISSUE
LADBS BUILDING PERMIT
SHEET TITLE
FOUNDATION SECTIONS AND DETAILS
SHEET NO.
S-504

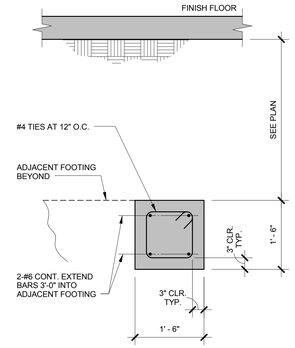


GRADE BEAM REINFORCING TO COLUMN | 3/4" | 1



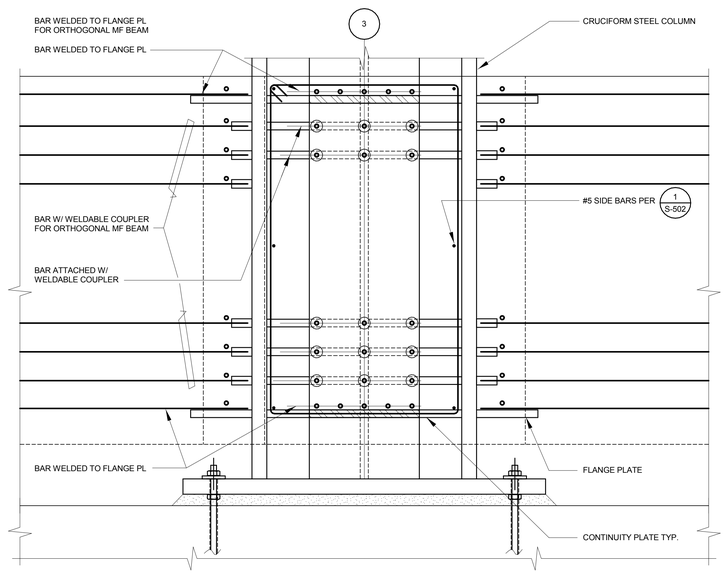
GRADE BEAM REINFORCING TO COLUMN | 3/4" | 2

NOT USED | - | 3

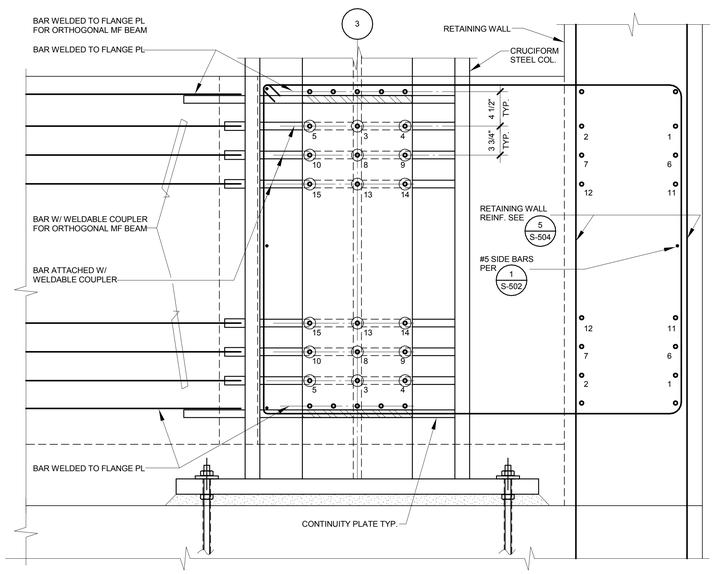


TYPICAL TIE BEAM SECTION | NONE | 4

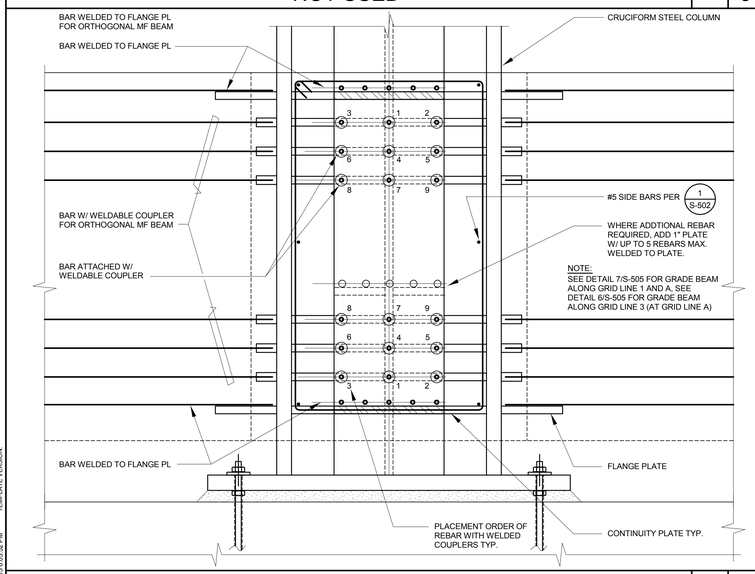
NOT USED | - | 5



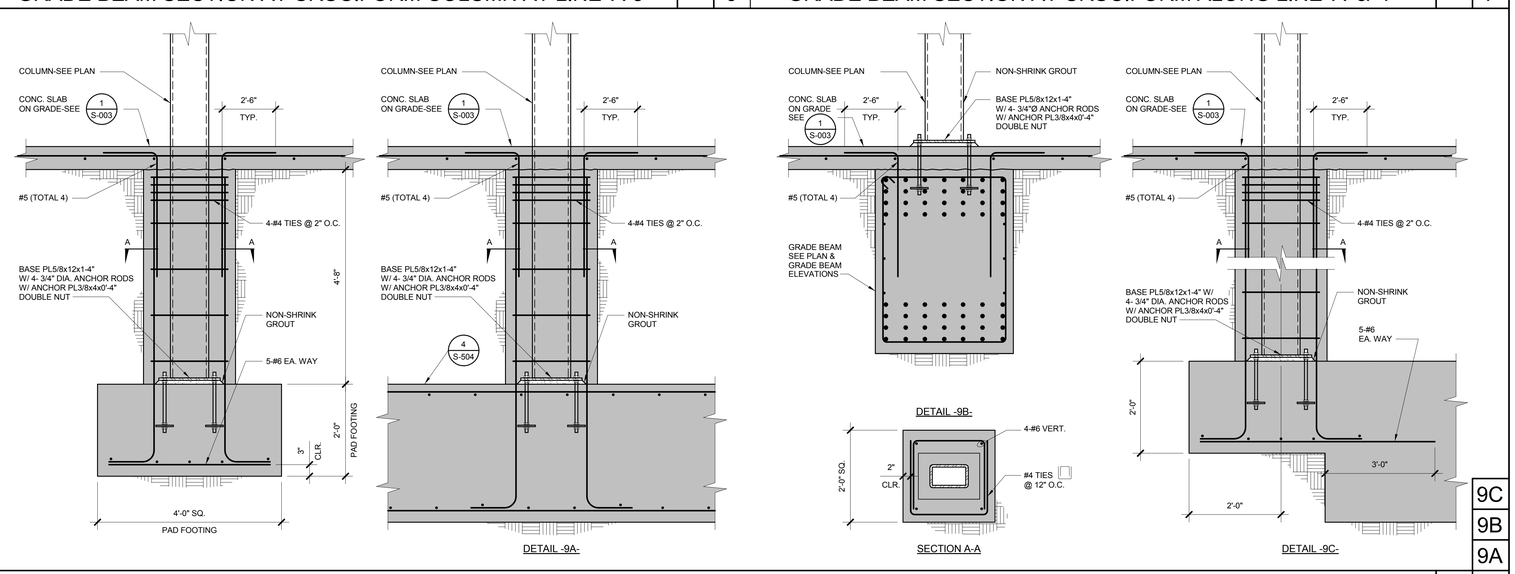
GRADE BEAM SECTION AT CRUCIFORM COLUMN AT LINE 'A-3' | NONE | 6



GRADE BEAM SECTION AT CRUCIFORM ALONG LINE 'A' & '1' | NONE | 7



GRADE BEAM SECTION AT CRUCIFORM COLUMN | NONE | 8



FOOTING DETAILS | NONE | 9

9C	
9B	
9A	

PLOT DATE: 3/23/2015 6:05:52 PM TEMPLATE VERSION:

HKS

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REGISTERED PROFESSIONAL ENGINEER EDWIN (GEVORG) MAKARIAN No.5145 Exp. 06/30/16 STRUCTURAL STATE OF CALIFORNIA

REVISION No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015

C&S GMP BID SET 16 JUNE 2015

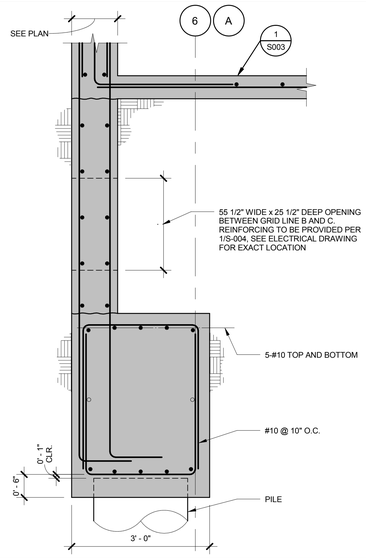
HKS PROJECT NUMBER
15002.200

DATE
3/24/2015

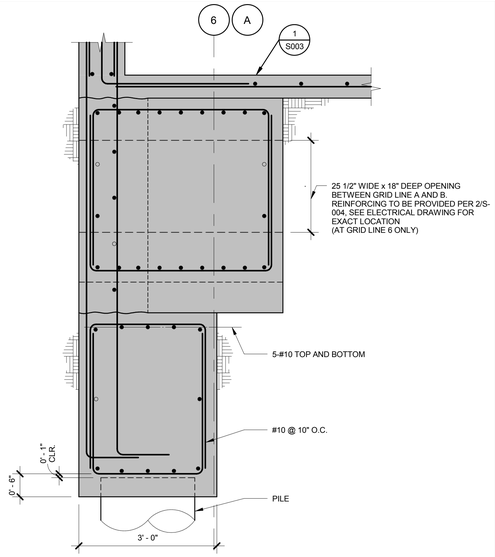
ISSUE
LADBS BUILDING PERMIT

SHEET TITLE
GRADE BEAM SECTIONS AND DETAILS

SHEET NO.
S-505

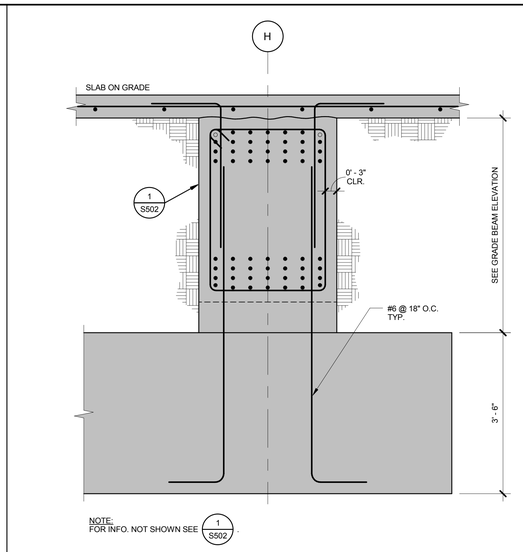


DETAIL | NONE | 1

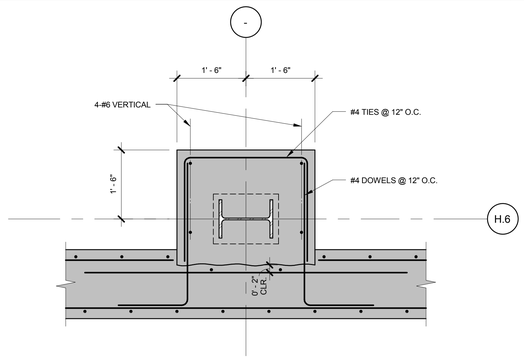


DETAIL | NONE | 2

NOT USED | - | 3



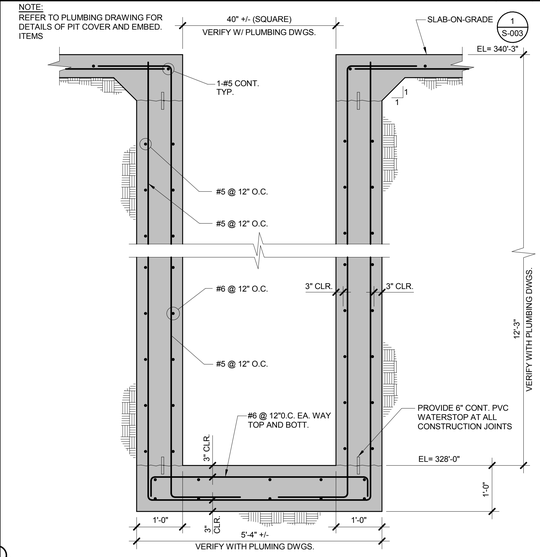
GRADE BEAM DETAIL | NONE | 4



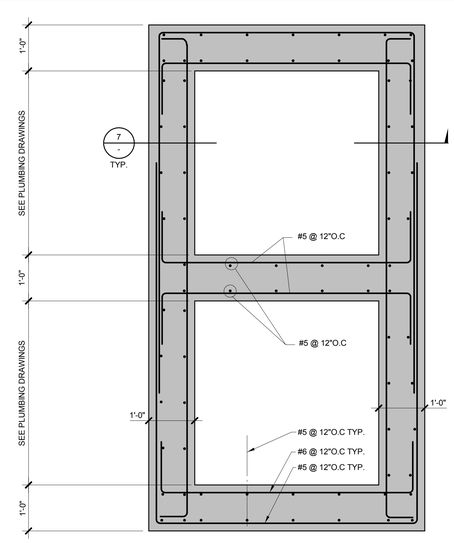
DETAIL | NONE | 5

NOT USED

NOT USED | 1" | 6



PIT SECTION | 3/4" | 7



PLAN - PIT | 3/4" | 8

NOT USED | 1" | 9

NOT USED | - | 10

NOT USED | - | 11

NOT USED | - | 12

PLOT DATE: 6/19/2015 11:30:09 AM
TEMPLATE VERSION:

HKS

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REGISTERED PROFESSIONAL ENGINEER EDWIN GEVORGIAN No.5145 Exp. 09/2016 STRUCTURAL STATE OF CALIFORNIA

REVISION

No.	DESCRIPTION	DATE
20	LADBS BUILDING PERMIT	3/24/2015
23	Delta 23 Revisions	6/30/2015

HKS PROJECT NUMBER
15002.200

DATE
3/24/2015

ISSUE
LADBS BUILDING PERMIT

SHEET TITLE
GRADE BEAM SECTIONS AND DETAILS

SHEET NO.
S-506