

STRUCTURAL NOTES

I. GOVERNING CODES:

This design is based on the following codes:

- Florida Building Code, 2007 with 2009 Supplement.
- Building Code Requirements for Structural Concrete ACI 318 (2005 EDITION)
- Building Code Requirements for Masonry Structures, ACI 530-05 / ASCE 5-05 / TMS 402-05)

II. DESIGN LOADS:

- Wind load based on using Chapter 6 of the ASCE 7-05 "Minimum Design Loads for Buildings and Other Structures" methods of calculation for wind pressures and the following factors:
 - Mean Roof Height of less than 30'-0"
 - Wind speed of 120 MPH.
 - Exposure Category "B".
 - Importance factor of 1.0 (Building Category II).
 - Internal Pressure Coefficient of +/- 0.18 ("Enclosed" building).
 - This building is NOT IN A WIND BORNE DEBRIS REGION as defined by Florida Building Code.
- Roof live load of 20 PSF with allowable load reductions based on area as outlined in the Florida Building Code. Roof drainage shall conform to the requirements of the Florida Plumbing Code Section 11. Overflow drains shall be located so that, in the event of the primary drains being blocked, no more than 3-1/2" of water can accumulate before entering the overflows.
- Roof dead load of 20 PSF.
- Elevated concrete slab dead load of 90 PSF.
- Allowable soil bearing of 2,000 PSF.

III. SHOP DRAWINGS:

- Contractor shall allow for (10) ten business days for shop drawing review.
- Our office will accept shop drawings in both electronic and paper format.
- If the Shop Drawings are in a paper format, we will require (3) three copies minimum submitted with (1) one copy to be retained by our office.
- If the Shop Drawings are in electronic format the following shall apply:
 - The only accepted electronic format shall be Adobe PDF format.
 - If the electronic files are e-mailed to our office, the e-mail address is Mail@Adams-Engineers.com and a faxed transmittal shall be sent to our office informing us that the drawings were sent via e-mail.
 - If the electronic files are sent to our office on a CD or DVD a transmittal shall be included in the package.
 - The reviewed shop drawings shall be returned to Project Architect (or directed party) in either electronic format or paper format as directed by Client. If paper format is requested, it shall be blackline copies with any comments generated by our office in contrasting font or "boxed". Additionally we will invoice for the printing costs associated with the production of these drawings based on the prevailing prints costs in the Tampa Bay Area.

IV. DRAWINGS AND SPECIFICATIONS:

- Do not scale these drawings for dimensions that are not given. Advise the Project Architect of any conflicts between these drawings and the Architectural drawings. Verify all field conditions and confirm column locations in respect to architectural wall alignment prior to the start of work.
- These drawings are to be used in combination with the architectural, mechanical, plumbing and civil drawings. Refer to these other drawings for details that relate to structural components.
- These construction documents have been prepared from the most complete information available to the engineer. All data on existing construction conditions are approximate and shall be verified prior to commencing work.
- The contractor shall comply with the manufacturer's instructions and recommendations to the extent-printed information are more detailed or stringent than the requirements contained in the plans.
- The plans show the location of all fixtures and equipment and are intended to convey the general intent of the work in scope and layout. They are not intended to show in minute detail every and all of the accessories intended for the purpose of execution of the work, but it is understood that such details are part of this work.
- The Contractor shall not perform any portion of the work at any time without Contract Documents or, where required, approved shop drawings, product data or supplemental details for such portion of the work.
- The Contractor is responsible for means and methods of construction to ensure the safety of the building until the structural system is completed. The structural system is unstable until all connections have been made and all concrete has reached the minimum design strength as specified in these drawings.
- The use of electronic files or reproductions of these contract documents by any contractor, subcontractor, erector, fabricator or material supplier in lieu of prepared shop drawings signifies their acceptance of all information shown hereon as correct, and obligates themselves to any job expense, real or implied, arising due to any error that may occur hereon.

V. CONCRETE:

- Concrete strength requirement:
 - 3,000 psi: Foundations, block fill, slab-on-grade, elevated slabs
- Maximum Slump: 4" (+/- 1") for all concrete, except use 8"-11" for filling cells in block. Fly ash, if used, shall not exceed 20% by weight of total cementitious content. Slump limits shall be strictly adhered to.
- The concrete shall contain the maximum size aggregate permitted by ACI Code up to 3/4" maximum. The guidelines for maximum aggregate size are not greater than 1/5 the narrowest opening in the forms, and/or 1/3 the depth of the slab.
- Concrete formwork: Concrete formwork shall be in clean condition for use as finished surface forms. Forms shall not be removed until the concrete is of sufficient strength to support its own weight and proposed construction loads.
- Minimum Concrete Cover
 - Concrete cast against and permanently exposed to earth = 3 inches.
 - Concrete exposed to earth or weather = 1-1/2 inches
 - Concrete not exposed to earth or weather = 3/4 inches
- Concrete must be batched, mixed, and transported in accordance with The Specifications for Ready-Mixed Concrete ASTM C94. Concrete shall be placed with-in 90 minutes of batch time.

- A qualified testing laboratory shall be retained to perform the following concrete tests. The concrete samples shall be taken in accordance with ASTM C 172 and specimens made in accordance with ASTM C 31. Testing of specimens shall be in accordance with ASTM C 39. Each test shall consist of a minimum of 3 cylinders. One sample shall be tested at 7 days, and one at 28 days. Reports showing the results of testing shall be submitted at the earliest possible date following testing and shall indicate date, time, weather conditions (temperature), composition of mix (per delivery ticket), slump, location of concrete, compressive strength, type of break, and other pertinent information helpful in the evaluation of the tests. All tests shall be sequentially numbered for easy identification. The concrete test cylinders shall be taken for each type of class of concrete and not less than once per daily pour, nor less than the following intervals:
 - Footings and sidewalks: One set of samples for each 100 cubic yards of concrete placed, nor less than once per daily pour.
 - Floor slabs: One set of samples for each 50 cubic yards of concrete placed, nor less than once per daily pour.
 - Concrete beams and Columns: One set of samples for each 50 cubic yards of concrete placed, nor less than once per daily pour.
 - Tilt wall panels: One set of samples for each 50 cubic yards of concrete placed, nor less than once per daily pour.
- Concrete Mix submittals shall include any relevant information regarding the use of fiber (Poly and/or Steel) reinforcing that will be added at the batch plant. Fiber shall not be added at the job site.
- The addition of Calcium Sulfate to a mix design to increase the Heat of Hydration to offset cold weather pours where freezing is possible is not permitted.
- Concrete pours where freezing is possible shall follow the recommendations of ACI 306.
- Expansion and Contraction Joints: Floor (contraction) joints shall be saw cut or prefabricated at a maximum spacing of 2 to 3 times the slab thickness in feet (i.e. 8'-12" o/c for a 4" thick slab). These contraction joints shall be approximately 1/8" wide and extend to a minimum depth of 1/4 the slab thickness. A 1/4" perimeter expansion (isolation) joint shall be used at floors adjoining walls and around all columns. These isolation joints shall be formed by installing an asphalt impregnated fiber sheet that extends the entire thickness of the slab.

VI. CONCRETE REINFORCEMENT:

- Reinforcing steel bars shall be Grade 60 (60 KSI ASTM A615) steel and tied with drawn steel wire.
- Welded Wire Fabric shall conform to ASTM A185.
- Placement of reinforcing steel shall be as shown on plans and per the "Manual of Standard Practice for Detailing Reinforced Concrete Structures", ACI 315 manual on placing steel reinforcing.
- Provide minimum lap splice of 48 bar diameters, but not less than 18 inches, for all reinforcing bars, unless noted otherwise. Stagger splices in adjacent bars at least 24 inches, except in beams and columns.
- In wall footings, grade beams and bond beams, provide bent bars at corners and intersections of the same number and size as the straight bars.
- Provide for an allowance of 1% of the total reinforcing steel for the project to be fabricated and placed during progress of the work as may be directed by the Structural Engineer, in addition to the reinforcing steel indicated on the drawings. A credit for any unused quantity of this material at the end of the project shall be given to the Owner.

VII. CAST IN PLACE CONCRETE:

- The concrete supplier shall provide mix designs of all concrete used in structural applications to Richard Adams Engineers.
- When pouring against earth, the embankment shall be wetted first and all pours on direct sun days will be misted at least twice following initial set. Isolation joints shall be provided at all columns and expansion felt at the perimeter of the slab.
- Finish on the surface of floor shall be machined troweled followed by hand finishing as required.
- Exterior walks and parking areas to be light brushed finished.
- Curing of concrete shall be in accordance with ACI 318.

VIII. FOUNDATIONS:

- Maximum soil bearing pressure used for design.....2000 PSF
- Notify Engineer if footing excavation reveals unsuitable or unstable soils, or materials or conditions not anticipated in the area.
- Concrete placement shall occur immediately after footing excavation and placement of reinforcing steel. Any freestanding water shall be pumped out of footing excavation prior to concrete placement
- A qualified testing laboratory shall be retained to perform the following minimum in-place density tests: This suggested testing shall be used in the absence of a soil report or in the absence of a testing program suggested by a soil engineer as contained in a soil report.
 - One density test for each 2,500 square feet of compacted subgrade.
 - One density test at each column.
 - One density test per 50 feet of wall footing.
- In the absence of a soil report the soil compaction shall adhere to the following minimum requirements for the Modified Proctor dry density test:
 - Slab-on-Ground: Shall be compacted to a minimum depth of one (1) foot below stripped grade. Any loose, soft or undesirable material shall be removed and replaced with structural fill is placed in loose lifts not exceeding 12" in depth:
 - Slabs 4" to 5" thick - 93%
 - Slabs greater than 5" thick - 95%
 - Foundations: For foundations excavations that appear to have suitable bearing materials compaction shall be to one (1) foot below the bottom of the footing depth. When structural fill material is required sand fills shall be placed in loose lifts not exceeding 12" in depth.
 - Strip footings 24" wide or less, and pad footings with a footprint not exceeding 16 sq. ft.: 93%
 - Strip footings greater than 24" wide and pad footings exceeding 16 sq. ft.: 97%
 - Back fill soils placed adjacent to footings, walls, or otherwise providing footing restraint shall be compacted in loose lifts not exceeding 6" in depth to 95%. To avoid damage the compaction shall be carefully done using either a light tired roller or vibratory plate compactor

IX. CONCRETE MASONRY UNITS:

- Concrete block work under this section shall be as per plans and shall be plumb, true to line with level courses accurately placed. Where no pattern is indicated, masonry shall be laid in a running bond.
- The masonry work performed under this section shall be constructed under the quality assurance program meeting or exceeding "Level 2 Quality Assurance" as defined in the latest edition of the ACI 530 Building Code Requirements for Masonry Structures. The visual inspection portions of Level 2 shall be performed by the local building code authority and / or a qualified testing laboratory. The verification of fm shall be performed by the material supplier's laboratory or qualified testing laboratory. The cost of this testing shall be paid by the contractor and reports shall be distributed to the Owner, Project Architect and Structural Engineer of Record.
- All concrete blocks shall have a minimum fm of 1500 PSI and be of standard weight conforming to ASTM C-90 Type N-2. Concrete masonry units shall be dry when laid.
- Mortar shall be used within 2 1/2 hours after initial mixing. Mortar that has stiffened due to evaporation within this period shall not be retempered or restored to workability. Mortar shall be Type S Type S (fm = 1800 PSI at 28 days) for above grade work, and Type M (fm = 2500 PSI at 28 days) for below grade (and retaining walls).
- Hollow units shall be laid with full mortar coverage of horizontal and vertical face shells. Webs shall also be bedded in all courses of piers, columns, and pilasters, and in the starting courses on footings, and where adjacent to cells or cavities to be filled with coarse grout. Mortar joints shall be 3/8" thick except where otherwise indicated. Exterior walls to be covered shall have flush joints, and interior wall joints shall be tooled with a round jointer.
- Horizontal joint reinforcing (wire type with 9 gage equal to Dur-o-wal) shall be placed at 16" o/c. vertically and shall extend at least 6" into vertical columns or pilasters. Horizontal reinforcement shall not be continuous across control joints and shall be placed fully embedded in face-shell mortar beds for their entire length (minimum mortar cover of 5/8").
- Vertical reinforcement (where required) shall be placed in the center of masonry cores unless shown otherwise. This reinforcement shall be lapped (where required) a minimum of 48 bar diameters or 2'-1" whichever is greater. Masonry cores shall be filled with coarse grout conforming to ASTM C476.
 - 3000 PSI at 28 days
 - 3/8" aggregate
 - 8" - 11" slump
- Bond beams shall consist of load-bearing units filled with coarse grout and reinforced as indicated unless noted other wise in contract drawings. Reinforcement shall be continuous except through expansion (control) joints. Where bond beam is not broken at control joint, a dummy control joint shall be formed in the bond beam.
- Unfinished work shall be stepped back for tooling with new work. Tooothing may be employed only when specifically approved. Before laying new work, loose mortar shall be removed and the exposed joint thoroughly cleaned.
- Use masonry saws to cut block as required.
- If wall reinforcing is not shown plans, place one #5 bar in a cell filled with coarse grout at a maximum spacing of 48". Also fill the first cell adjacent to any opening, and located three filled cells at any wall corner or intersection.
- Provide clean-outs for filling cells in lifts exceeding 4 ft, but lifts shall not exceed 12'-0.
- At the completion of the work all holes in joints of masonry surfaces to be exposed or painted (except weep holes) shall be filled with mortar and suitably tooled. Masonry walls shall be dry brushed at the end of each day's work and also after final pointing, and shall be left clean and free from mortar spots and droppings. Any cracks in masonry shall be repaired. Defective joints shall be cut out and repointed.



STRUCTURAL NOTES

X. PRE-FABRICATED WOOD ROOF TRUSSES:

- A. These roof trusses shall be designed by a State of Florida licensed professional engineer and all shop drawings created for this project shall be signed and sealed by a Delegated Engineer. This submittal shall comply with the Delegated Engineer Requirements listed below.
- B. The truss web configuration shown in these drawings is for informational purposes only. The final web layout shall be the responsibility of the truss manufacturer (designer).
- C. The architectural drawings shall control as to the shape of the trusses.
- D. The design criteria for these trusses is:
 1. Wind load design criteria is stated in the project criteria section.
 2. Trusses are components of the building, thus the parts and components factors (based on area) shall be applied to the trusses to obtain wind loads internal to the truss.
 3. Roof dead and live load is stated in the project criteria section.
- E. Truss design drawings shall include the following minimum information:
 1. Span, depth of slope and spacing of trusses.
 2. Minimum bearing width as controlled by Fc of the lumber in the truss.
 3. Design dead, live and wind uniform loads and any concentrated loads and their point of application.
 4. Adjustment to allowable lumber values and plates for condition of use.
 5. Reactive forces and locations. Special attention shall be made for uplift forces.
 6. Connection plate type, thickness (or gauge), size and location for each joint.
 7. Lumber size, species, and grade for each member.
 8. Location of all continuous lateral bridging.
- F. Truss placement diagrams shall be prepared by the truss manufacturer and presented to the architect for review. The diagrams shall show all truss-to-truss connections and locations of all continuous lateral bracing members required by truss manufacturer's design.
- G. The uplift forces calculated by the truss manufacturer shall control in determining the final hurricane clips to be placed at the truss reactions. The truss manufacturer shall use "Main Wind Force Resistance System" loads to calculate these loads for connection to building. The truss manufacturer shall confirm the hurricane clips indicated on these project drawings are adequate for their design. Additional clips or larger clips are the responsibility of the truss manufacturer.
- H. Locations where three or more adjacent trusses use the same continuous lateral bracing (CLB) member, a 1x4 SYP #2 or equal diagonal brace shall be attached on the opposite side of the braced web from the roof to the ceiling diaphragms placed at 30 to 60 degree angle. Diagonal braces shall be placed at 20 feet intervals, maximum. Installation of bracing shall be in accordance with "Commentary and Recommendations for Handling, Installing and Bracing Metal Plate Connected Wood Trusses (HIB-91)" as published by the Truss Plate Institute.
- I. Trusses shall be designed so that no horizontal reactions are imposed on the structure under vertical loads.
- J. Design standards shall conform to the applicable provisions of the "National Design Specification for Wood Construction" published by the American Forest and Paper Association and the "Design Specification for Metal Plate Connected Wood Trusses" published by the Truss Plate Institute.
- K. All connection plates shall be a minimum thickness of 0.036" and shall be manufactured from steel meeting the requirements of ASTM A446 Grade A or a higher grade when required by truss design. Connection plates shall be hot dipped galvanized according to ASTM A525, coating designation G60.
- L. Lumber used in trusses shall not have wane or knots occurring in the connector plate area which effects more than 10% of the required plate area or number of teeth required by the design. Connector plates shall be applied to both faces of truss at each joint and should provide firm even contact between the plate and the wood. All wood members shall be accurately cut and fabricated so that all truss units are uniform. See Truss Plate Institute "Quality Standards for Metal Plate Connected Wood Trusses QST-88" for tolerance and other special requirements.
- M. All trusses must be securely braced and anchored both during erection and after permanent installation in accordance with "Commentary and Recommendations for Handling, Installing and Bracing Metal Plate Connected Wood Trusses (HIB-91)" as published by the Truss Plate Institute. Erection bracing shall hold trusses straight and plumb and in safe condition until decking and permanent truss bracing is applied to form a structural sound framing system. All erection and permanent bracing shall be installed and all trusses shall be permanently fastened before application of any loads. Safe erection of the trusses is the responsibility of the building contractor.
- N. Truss bottom chord and web erection bracing (temporary bracing), as specified in HIB-91, shall be utilized as permanent bracing of roof system. See other notes and details herein for additional bracing requirements.

XI. WOOD FRAMING:

- A. The design and workmanship of all wood framing shall be in accordance with the latest edition of the National Design specifications of the National Forest Products Association.
- B. All lumber shall be kiln dried to maximum moisture content of 15% unless noted otherwise. All lumber shall be sound, seasoned and free from warp.
- C. Structural wood:
 1. Rafter and Joists: No. 2 southern pine (or equal) psi, E = 1,600,000 psi, Fv = 90 psi.
 2. Roof sheathing: 1/2" APA rated plywood sheathing Exposure I with clips or solid blocking at edges.
 3. Hurricane clips and joist hangers: Galvanized metal with gauges and dimensions as specified (manufactured by Simpson or approved equal).
- D. All wood in contact with concrete shall be pressure treated in conformance with requirements of AWPA. All fasteners, bolts, Hurricane clips and joist hangers which are in contact with wood treated using ACQ-C, ACQ-D, CA-B or CBA-A shall be galvanized in "Dry Areas". In areas with these same treated materials that are "Wet Areas" these all fasteners, bolts, Hurricane clips and joist hangers shall be stainless steel.
- E. All nailing and bolting shall comply with American Institute of Timber Construction requirements and as noted on plans.
- F. Hurricane straps or clips shall be installed at all bearing points of all roof trusses and rafters.

XII. DELEGATED (SPECIALTY) ENGINEERING REQUIREMENTS:

- A. GENERAL REQUIREMENTS:
 1. Definition of Delegated (Specialty) Engineer: A Professional Engineer, who is licensed in the same state as the Project, not the Structural Engineer of Record, who specializes in and who undertakes the design of structural components prepared for this Project.
 2. Submittals for custom designed, manufactured or fabricated load-carrying items and custom fabricated

- items that are required by codes or standards to resist forces and stresses, including their connections, anchorages, and attachments require a Delegated Engineer.
- 3. For each category of submittal requiring input from a Delegated Engineer, the Contractor shall attach to the first submittal a signed and sealed letter from the responsible Delegated Engineer stating "I certify that the design and drafting of the shop drawings which are signed and sealed by me were prepared under my direct supervision and control and to the best of my knowledge the shop drawings comply with the applicable minimum building codes and contract drawings."
- 4. Review by the Structural Engineer of Record of submittals is LIMITED TO the following:
 - a) The specified structural submittals have been furnished.
 - b) The structural submittals have been signed and sealed by the Delegated Engineer.
 - c) The Delegated Engineer has understood the design intent and has used the specified structural criteria. No detailed check of calculations will be made.
 - d) The configuration set forth in the structural submittals is consistent with the contract documents. No detailed check of dimensions or quantities will be made.
- 5. SUBMITTALS NOT MEETING THE ABOVE CRITERIA WILL NOT BE REVIEWED.
- B. Exterior curtainwalls shall be designed by the vendor's Delegated Engineer and shall include frame, glazing, and connections. Shop drawings shall be submitted for review and be signed and sealed by a structural engineer licensed in the same state as the Project. Design loads shall be based on wind speed and factors listed above under building design criteria.

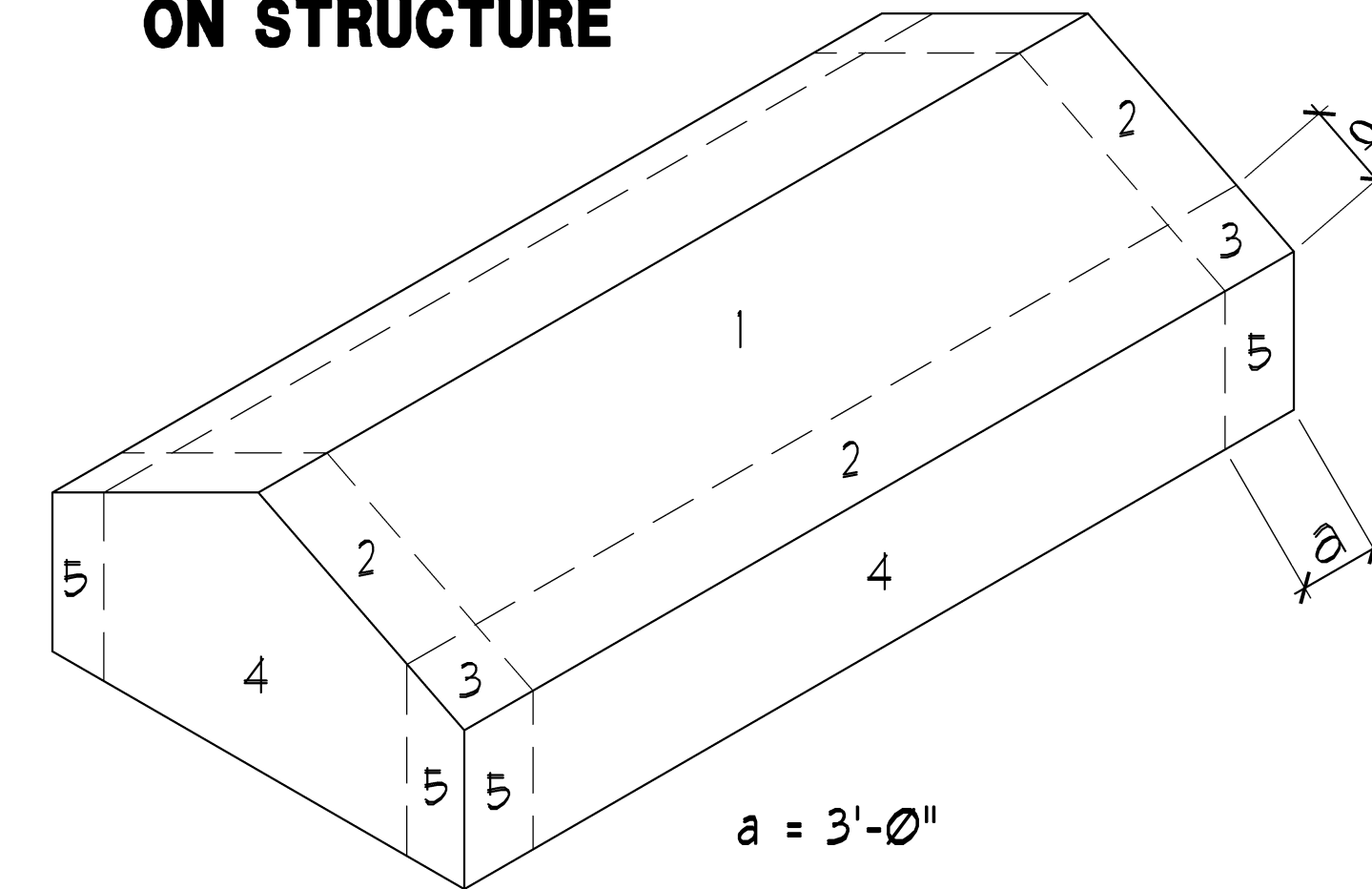
XIII. EPOXY ANCHORS:

- A. The epoxy anchors shown on this plan are based on the properties of HILTI HY 150 Injection Adhesive Anchors. The Contractor may use other manufacturers provided that their anchors meet or exceed the allowable tension and shear loads for the size and depth anchors specified in these design drawings. Additionally the product data for the substituted anchors shall be submitted to the Structural Engineer of Record for approval. No work shall be performed using any alternate anchors without first receiving approval of our Richard Adams Engineers.
- B. Anchoring adhesive shall be a two-part component 100% solid epoxy based system supplied through a static-mixing nozzle supplied by the manufacturer. This requirement shall be met regardless of which epoxy product or manufacturer that is used on this project.
- C. The threaded rods to be used in combination with the HILTI HY 150 Injection Epoxy system shall be fabricated from steel meeting or exceeding the properties of ASTM A36.

XIV. SHORING REQUIREMENTS:

- A. Shoring equipment shall be required for this project and these materials shall be designed by a structural engineer licensed in the same state as the Project and all shop drawings created for this project shall be signed and sealed by a Delegated Engineer. This submittal shall comply with the Delegated Engineer Requirements listed in these specifications.
- B. These shop drawings or plans, including all revisions, for the jack layout, formwork (including shoring equipment), working decks, and scaffolds, shall be available at the jobsite.
- C. Formwork shall be designed, fabricated, erected, supported, braced, and maintained so that it will be capable of supporting without failure all vertical and lateral loads that may reasonably be anticipated to be applied to the formwork. Formwork that is designed, fabricated, erected, supported, braced and maintained in conformance with OSHA guidelines and the manufacturer's guidelines.
- D. All Shoring equipment (including equipment used in reshoring operations) shall be inspected prior to erection to determine that the equipment meets the requirements specified in the formwork drawings. Shoring equipment found to be damaged such that its strength is reduced to less than that required by the shop drawings shall be removed from the site.
- E. Erected shoring equipment shall be inspected immediately prior to, during, and immediately after concrete placement.
- F. All base plates, shore heads, extension devices, and adjustment screws shall be in firm contact, and secured when necessary, with the foundation and the form. Eccentric loads on shore heads and similar members shall be prohibited unless these members have been designed for such loading.
- G. Whenever single post shores are used one on top of another (tiered), the Contractor shall comply with the following specific requirements in addition to the general requirements for formwork:
 1. The single post shores shall be vertically aligned.
 2. The single post shores shall be adequately braced in two mutually perpendicular directions at the splice level. Each tier shall also be diagonally braced in the same two directions.
- H. Forms and shores (except those used for slabs on grade and slip forms) shall not be removed until the Contractor determines that the concrete has gained sufficient strength to support its weight and superimposed loads. Such determination shall be based on compliance with one of the following:
 1. The plans and specifications stipulate conditions for removal of forms and shores, and such conditions have been followed.
 2. The concrete has been properly tested with an appropriate ASTM standard test method designed to indicate the concrete compressive strength, and the test results indicate that the concrete has gained sufficient strength to support its weight and superimposed loads.
- I. Reshoring shall not be removed until the concrete being supported has attained adequate strength to support its weight and all loads in place upon it.

WIND ZONES ON STRUCTURE



POSITIVE WIND PRESSURES ON GLAZING & WALL COMPONENTS				
LOCATION ON BUILDING	POS. PRESSURE < 10 SQ. FT.	POS. PRESSURE < 20 SQ. FT.	POS. PRESSURE < 50 SQ. FT.	POS. PRESSURE < 100 SQ. FT.
FIELD AREA [4]	25.9 F&S	24.1 F&S	23.2 F&S	22.0 F&S
CORNER AREA [5]	25.9 F&S	24.1 F&S	23.2 F&S	22.0 F&S

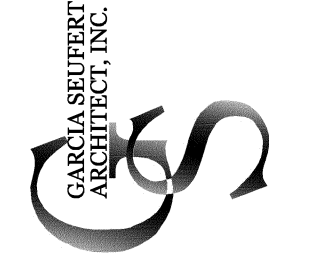
NEGATIVE WIND PRESSURES ON GLAZING & WALL COMPONENTS				
LOCATION ON BUILDING	NEG. PRESSURE < 10 SQ. FT.	NEG. PRESSURE < 20 SQ. FT.	NEG. PRESSURE < 50 SQ. FT.	NEG. PRESSURE < 100 SQ. FT.
FIELD AREA [4]	28.1 F&S	26.9 F&S	25.4 F&S	24.2 F&S
CORNER AREA [5]	34.1 F&S	32.4 F&S	29.3 F&S	26.9 F&S

ROOF WIND UPLIFT PRESSURES					
ZONE	UPLIFT PRESSURE < 10 SQ. FT.	UPLIFT PRESSURE < 20 SQ. FT.	UPLIFT PRESSURE < 50 SQ. FT.	UPLIFT PRESSURE < 100 SQ. FT.	NET UPLIFT PRESSURE ON BAR JOIST
[1]	23.1 F&S	23.0 F&S	22.2 F&S	21.5 F&S	9.5 F&S
[2]	50.1 F&S	45.4 F&S	39.3 F&S	34.1 F&S	22.1 F&S
[3]	50.1 F&S	45.4 F&S	39.3 F&S	34.1 F&S	22.1 F&S

WIND LOAD BASED ON USING THE ASCE 7-05 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" METHODS OF CALCULATION FOR WIND PRESSURES AND THE FOLLOWING FACTORS:

1. WIND SPEED OF 120 MPH.
2. BUILDING IMPORTANCE FACTOR OF 1.0 (BUILDING CATEGORY II PER ASCE-11).
3. "ENCLOSED" BUILDING CLASSIFICATION (GCP1 = #2.0).
4. BUILDING EXPOSURE CATEGORY "B".
5. MEAN ROOF HEIGHT LESS THAN 30'-0".
6. ROOF ANGLE OF 10-30 DEGREES.

GARCIA SEUFERT ARCHITECT, INC.
ARCHITECTURAL DESIGN SERVICES
121 W. 122nd Ave. TAMPA, FL 33612
PHONE 813-915-8300
FAX 813-915-0168
FL REGISTRATION # AA28000767



PROJECT NAME :
MARTIAL, CROWN AND PATAS MONKEY EXHIBIT
LOWREY PARK ZOO
SLIGH AVENUE, TAMPA, FLORIDA

SHEET CONTENT :
GENERAL NOTES

RICHARD ADAMS ENGINEERS & CONSULTANTS, INC.
FLORIDA REG. # BR036
NOT VALID WITHOUT SEAL

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE DRAWINGS & SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.

JOB NO :
0963

DRAWN/REVIEWED:
PJH / RA

ISSUE DATE :
04/28/10

REVISIONS

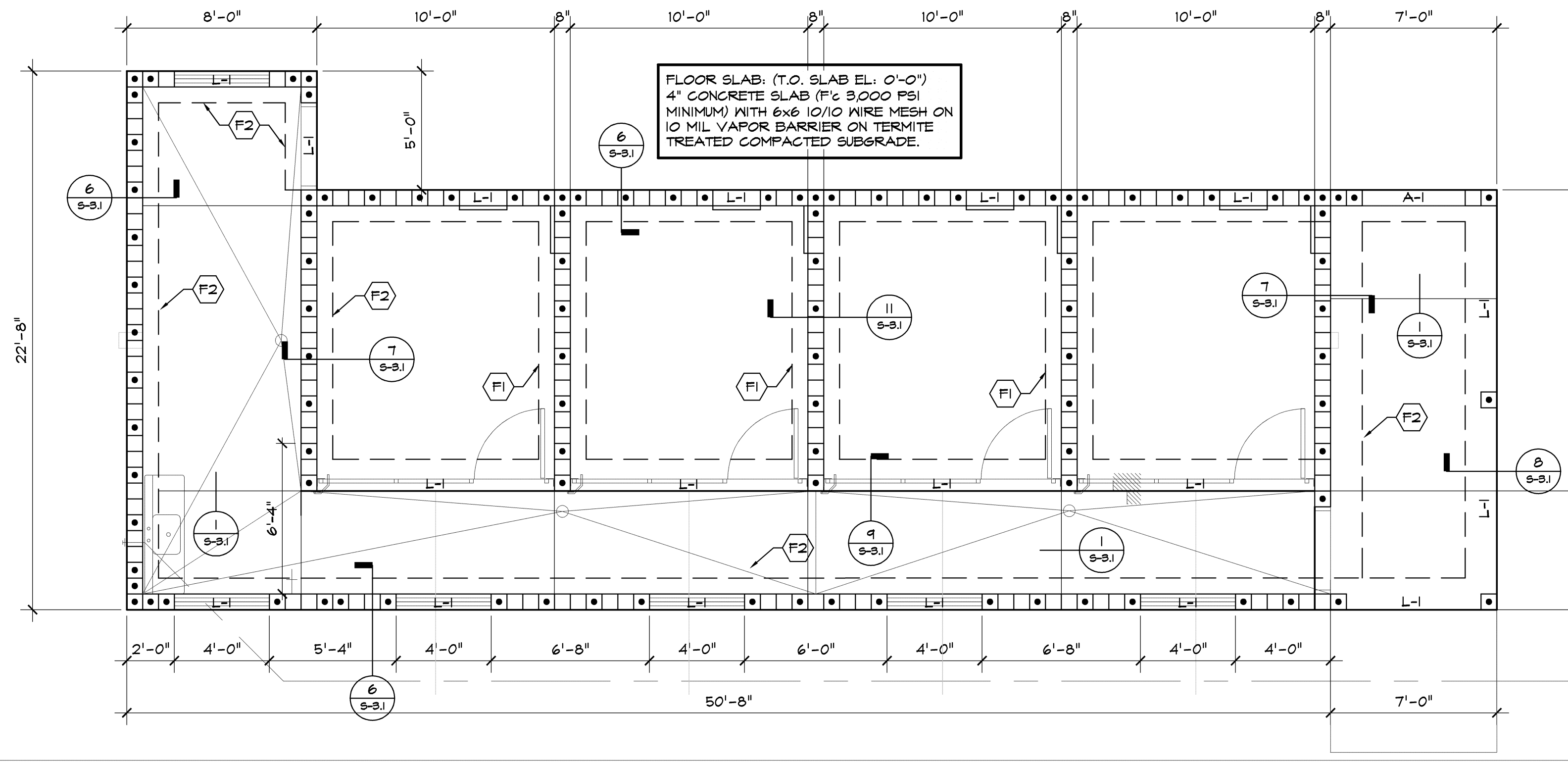
1
2
3

THIS DESIGN AND DRAWING ARE THE PROPERTY OF R.A.E. AND NO PART OF THIS DESIGN OR DRAWING SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM R.A.E.

SHEET NUMBER
S-12

R.A.E. JOB No. 10079

RICHARD ADAMS ENGINEERS & CONSULTANTS, INC.
5507 E BUSCH BLVD TAMPA, FL 33617
PH: 813.985.4600 FX: 813.985.4506
MAIL@ADAMS-ENGINEERS.COM
FLORIDA CERTIFICATE OF AUTHORIZATION No. 7565



FOUNDATION PLAN
 SCALE: 1/4" = 1'-0"
 1 S-2.1

MASONRY WALL REINFORCING

GENERAL NOTES:

- USE (1) #5 BAR IN FILLED CELL @ 24" O.C. MAXIMUM
- USE (1) #5 BAR ON EACH SIDE OF OPENINGS AND USE (3) #5 BARS AT CORNERS PER DETAIL 2/S-3.1
- REFER TO 3/S-3.1 FOR CONTROL JOINTS IN MASONRY. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS.
- USE #5 DUR-O-WALL @ 16" O.C. FOR HORIZONTAL REINFORCING
- REFER TO 4/S-3.1 FOR BOND BEAM CORNER REINFORCING.
- GROUT ALL CELLS SOLID.

FOOTING SCHEDULE

MARK	SIZE			REINFORCEMENT		REMARKS
	LENGTH	WIDTH	DEPTH	TOP	BOTTOM	
F1	CONT.	2'-0"	1'-0"	-	(3) #5 BARS CONTINUOUS	-
F2	CONT.	1'-4"	1'-6"	-	(2) #5 BARS CONTINUOUS	-
F3	-	-	-	-	-	-

NOTES:

- THE BOTTOM OF ALL FOOTINGS SHALL BE (1'-0") MIN. BELOW FINISHED EARTH GRADE.

LINTEL SCHEDULE

MARK	LOCATION	TYPE	MIN. LOAD/FT.	MAX. LENGTH	REMARK
L-1	DOORS/WINDOWS	8FB-1B/IT	750	9'-4"	REFER TO DETAIL (5) S-3.1

NOTES:

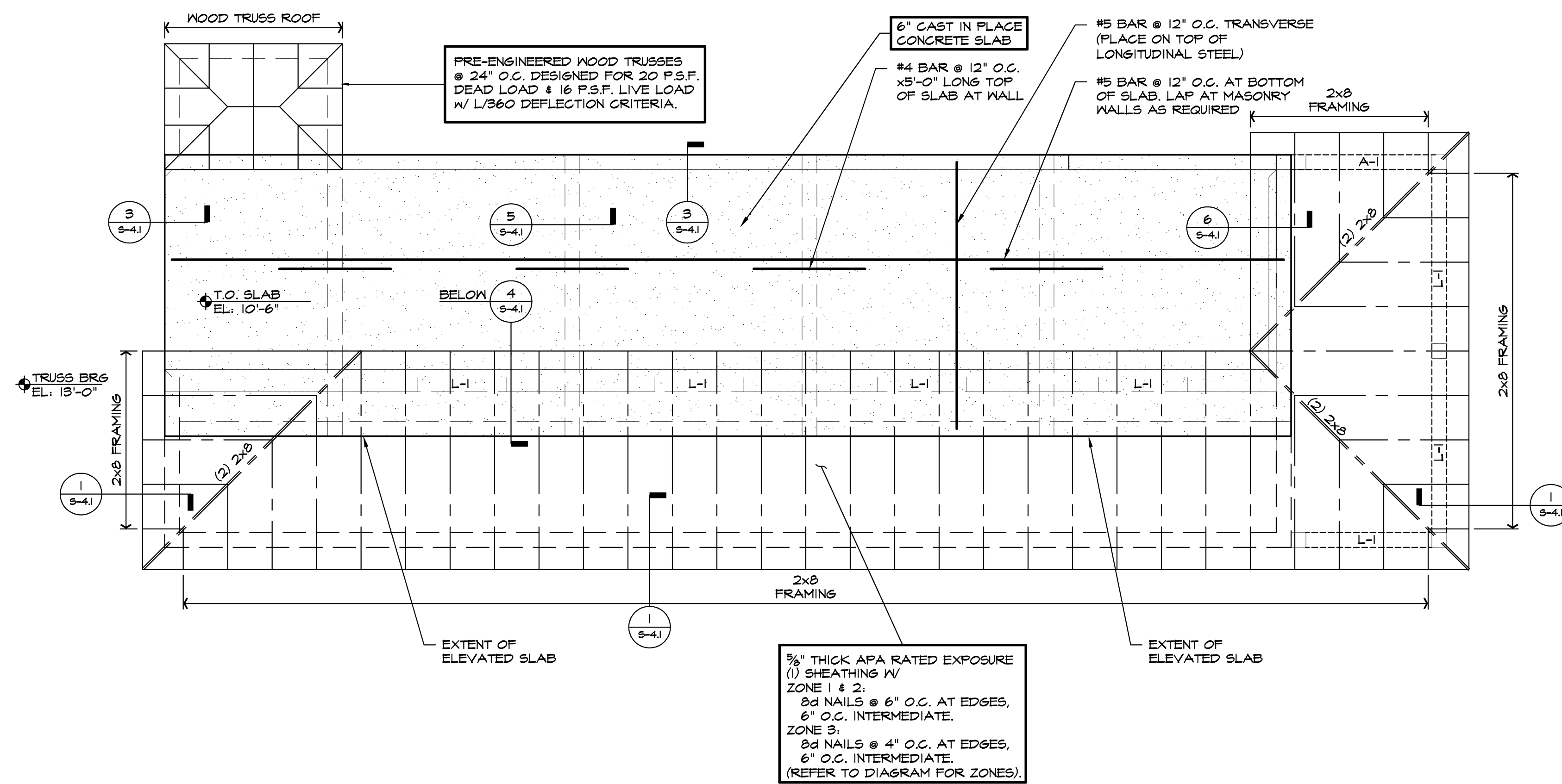
- ALL LINTELS ARE 8" WIDE PRECAST LINTELS AS MANUFACTURED BY CAST-CRETE OR APPROVED EQUAL.
- LENGTH REPRESENTS THE OVERALL LENGTH OF THE LINTEL WITH A MINIMUM 4" BEARING AT EACH END.
- ALTERNATE LINTELS WILL BE ACCEPTED BASED ON REQUIRED LOAD CAPACITY AS STATED IN CHART.

CONCRETE ARCH SCHEDULE

DESIGNATION	d MIN	b	REINFORCEMENT			
			'A' (TOP)	'B' (BOTTOM)	'C'	'D'
A-1	8"	17 1/2"	(1) #5 BAR EACH FACE	(1) #5 BAR EACH FACE	(2) #5 BARS EACH FACE	#5 TIES @ 6" O.C.

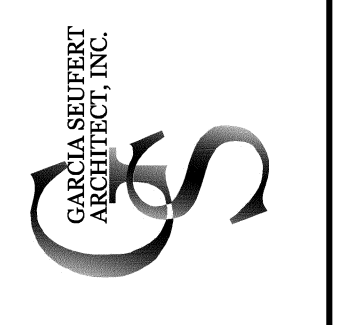
NOTES:

- 'C' REINFORCEMENT BARS SHALL BE ON EACH SIDE OF THE BEAM.
- 'D' TIES SHALL BE SPACED @ 3" O.C. FROM THE BEARING POINT FOR THE FIRST (3) TIES AND THE NOTED SPACING THEREAFTER.
- 'd' MIN' REPRESENTS THE MINIMUM BEAM DEPTH ABOVE THE TOP OF THE ARCH. THIS VALUE MAY BE INCREASED UP TO 4" TO COURSE OUT WITH THE CMU, BUT SHALL NOT BE DECREASED.
- AT B4 ARCH CONTINUE 'B' REINFORCING TO CORNER OF CMU WALL.
- BARS 'A' AND 'C' SHALL HAVE 180 DEGREE HOOKED ENDS.
- REFER TO DETAIL 6/S-4.1 FOR MORE INFORMATION.



ROOF FRAMING PLAN
 SCALE: 1/4" = 1'-0"
 2 S-2.1

GARCIA SEUFERT ARCHITECT, INC.
 ARCHITECTURAL DESIGN SERVICES
 121 W. 122nd Ave. TAMPA, FL 33612
 PHONE 813-915-8300
 FAX 813-915-0168
 FL REGISTRATION # AA28000767



PROJECT NAME :
MARTIAL, CROWN AND PATAS MONKEY EXHIBIT
LOWREY PARK ZOO
 SLIGH AVENUE, TAMPA, FLORIDA

SHEET CONTENT :
FOUNDATION AND ROOF FRAMING PLAN

RICHARD ADAMS ENGINEERS & CONSULTANTS, INC.
 FLORIDA REG. # 39834
 (NOT VALID WITHOUT SEAL)

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE DRAWINGS & SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.

JOB NO :
0963

DRAWN/REVIEWED:
 PJH / RA

ISSUE DATE :
04/28/10

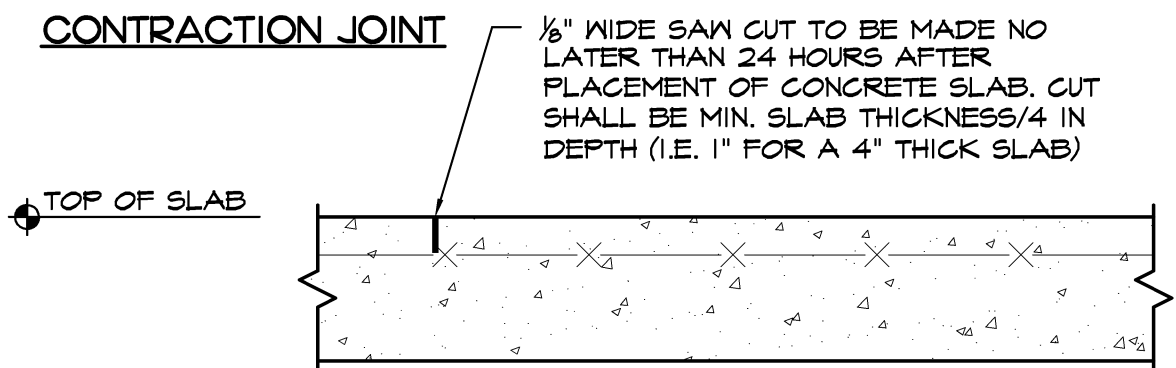
REVISIONS

1	
2	
3	

SHEET NUMBER
S-2.1

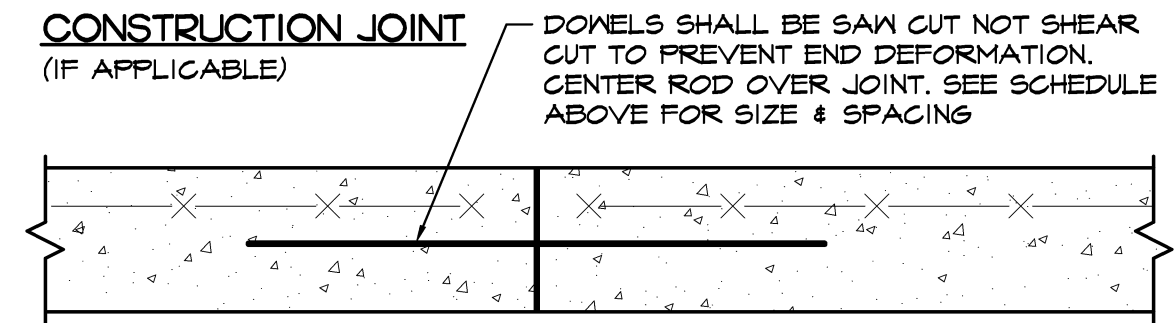
R.A.E. JOB No. 10079
RICHARD ADAMS ENGINEERS & CONSULTANTS, INC.
 5507 E BUSCH BLVD TAMPA, FL 33617
 PH: 813.985.4600 FX: 813.985.4506
 MAIL@ADAMS-ENGINEERS.COM
 FLORIDA CERTIFICATE OF AUTHORIZATION No. 7565

I:\2010\0079 Eagles-Monkeys-Lowrey Zoo\Structural\DWG\0079 S-2.dwg Plotted: May 12, 2010 - 2:17pm by Bflood
 THIS DRAWING IS THE PROPERTY OF RICHARD ADAMS ENGINEERS AND MAY NOT BE REPRODUCED OR USED FOR ANY OTHER PROJECT IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION.

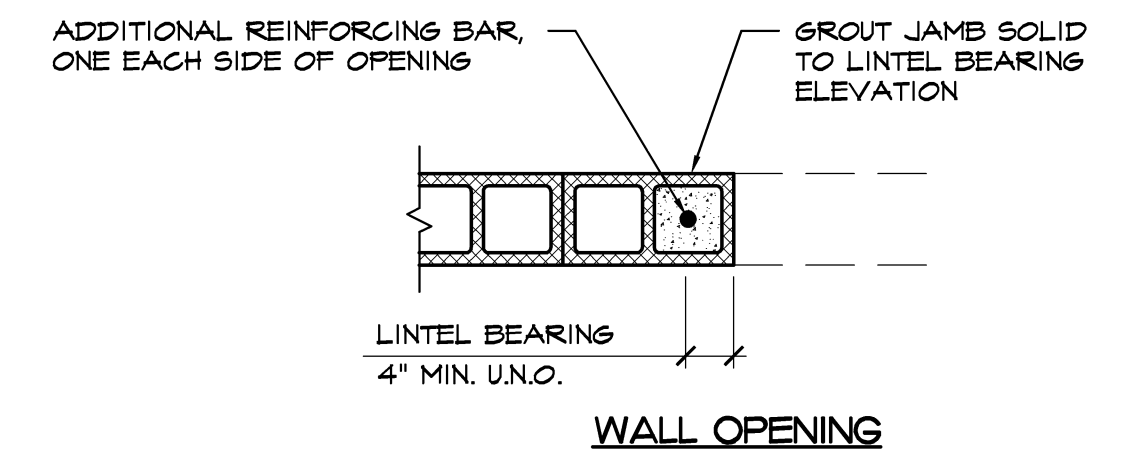
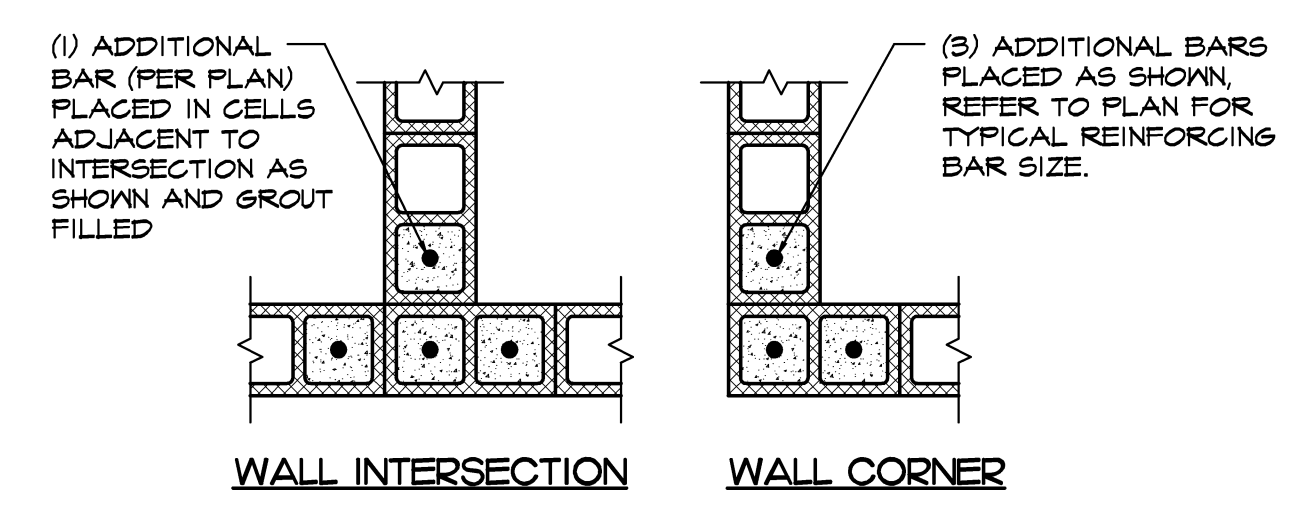


SMOOTH DOWEL SCHEDULE

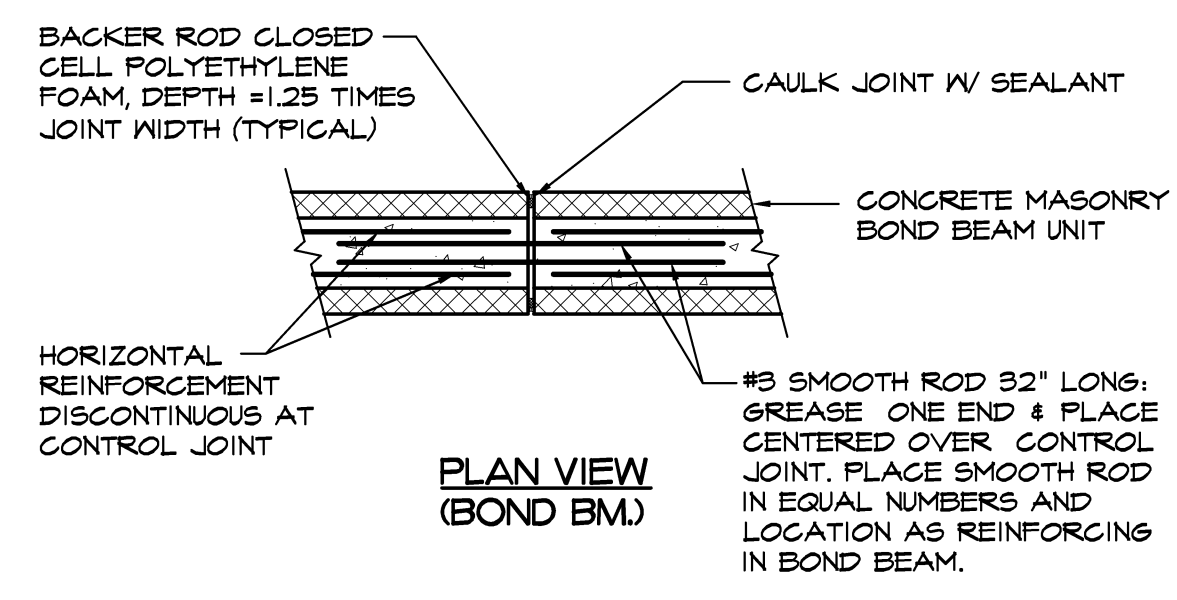
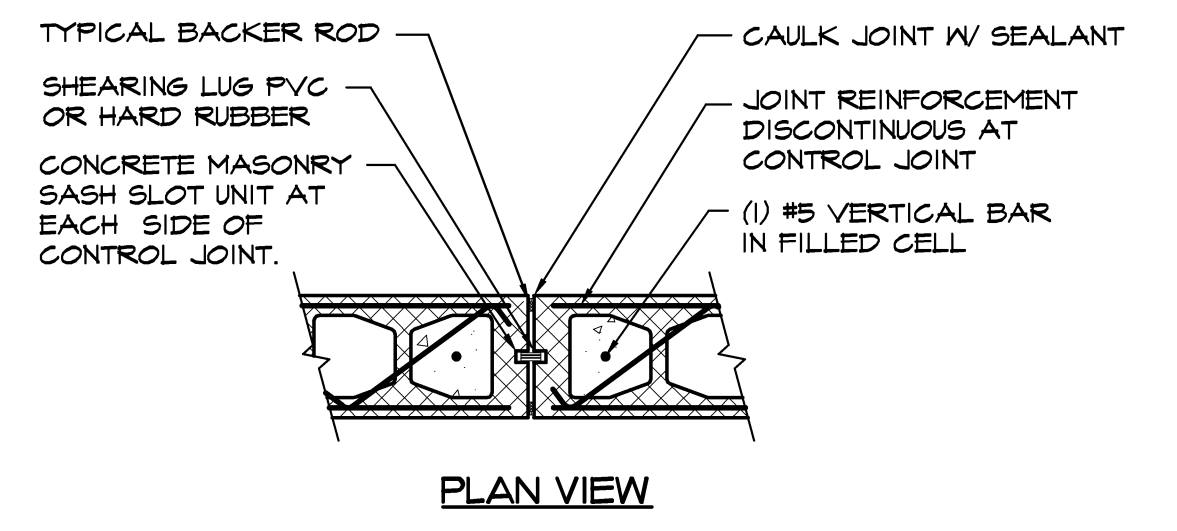
SLAB DEPTH (IN.)	DIAMETER (IN.)	TOTAL LENGTH (IN.)	SPACING C TO C (IN.)
4	1/2	18	12
5	5/8	18	12
6	3/4	18	12
7	7/8	24	12
8	1	24	12
9	1 1/8	24	12
10	1 1/4	24	12



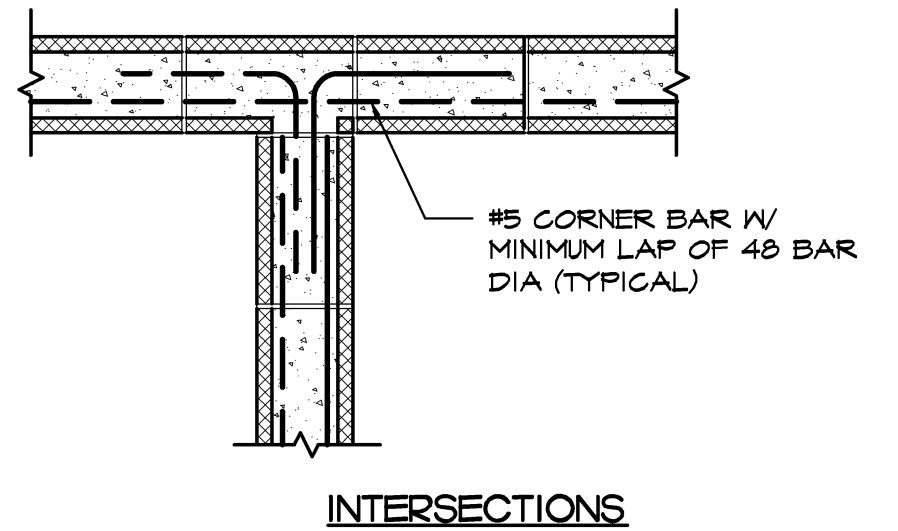
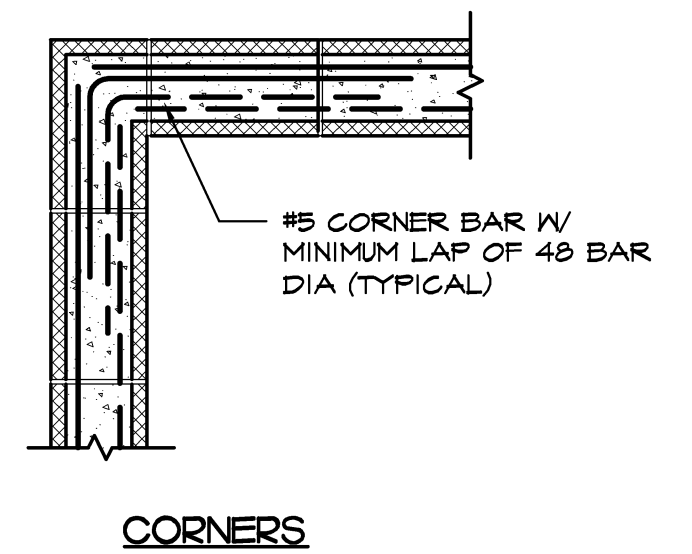
1 CONTRACTION & CONSTRUCTION JOINTS
SCALE: 1 1/2" = 1'-0"



2 TYPICAL MASONRY REINFORCEMENT
SCALE: 3/4" = 1'-0"

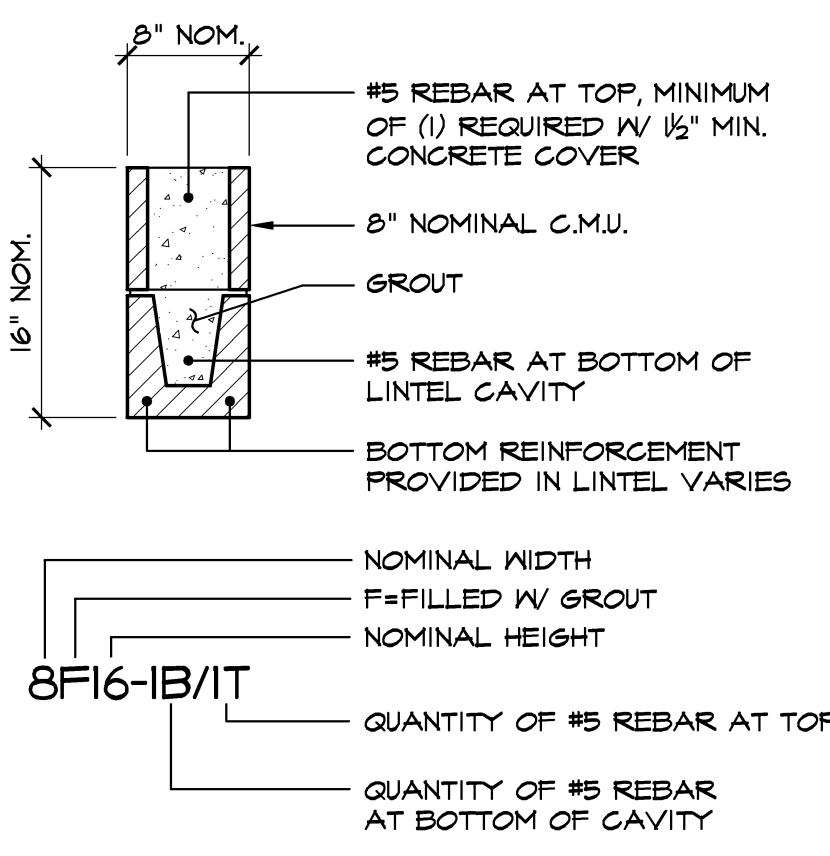


3 CONTROL JOINT (MASONRY AND BOND BEAM)
SCALE: 1" = 1'-0"



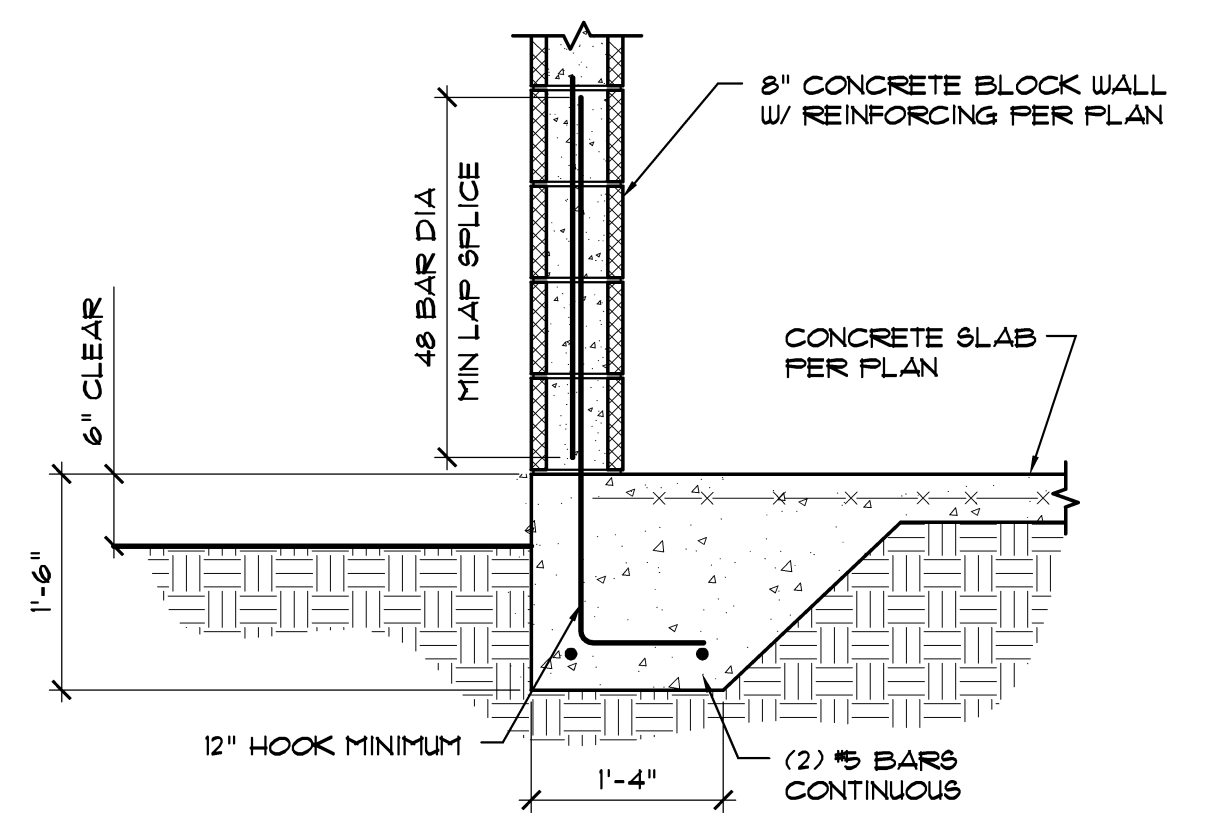
4 BOND BEAM REINFORCING (CONTINUITY AT CORNERS)
SCALE: 3/4" = 1'-0"

LINTEL TYPE DESIGNATION

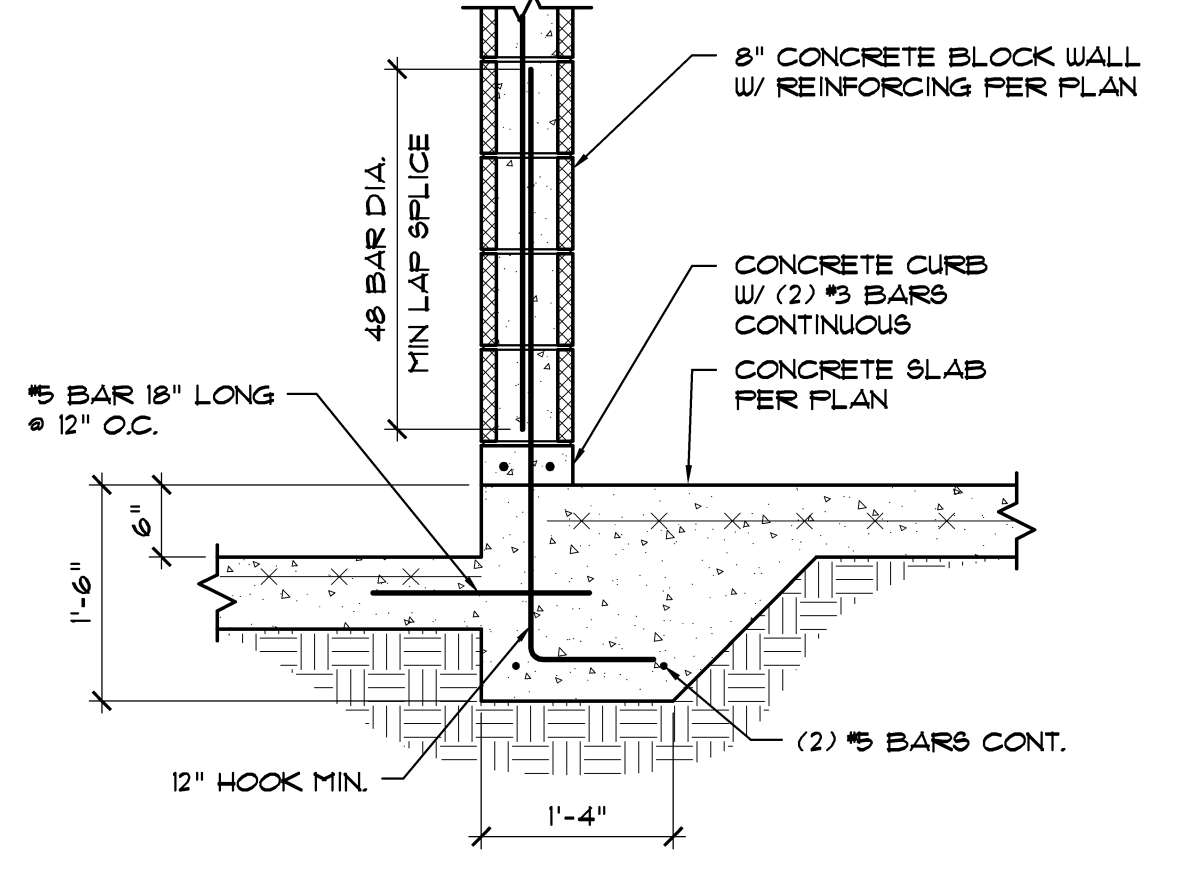


ALL LINTELS SHALL HAVE A MINIMUM LOAD BEARING CAPACITY AS STATED IN THE LINTEL SCHEDULE, UNLESS NOTED OTHERWISE.

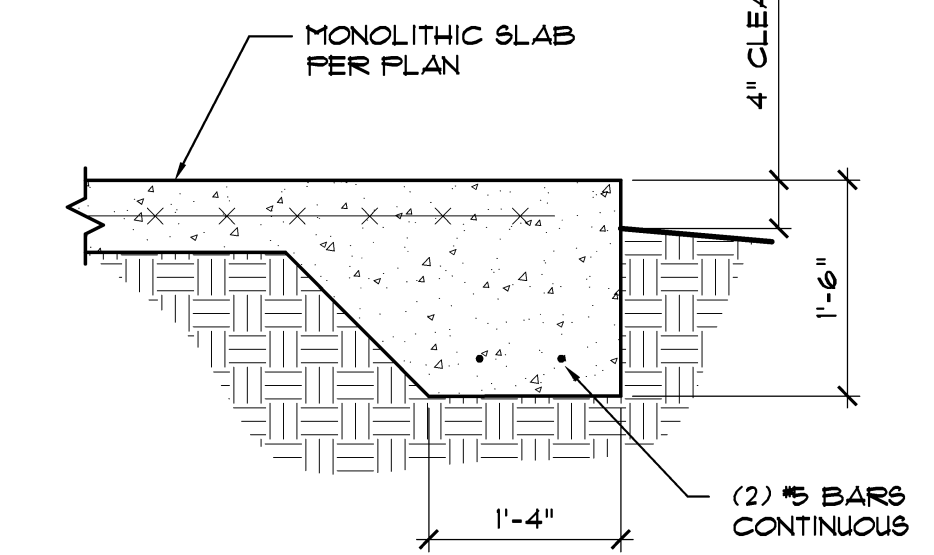
5 LINTEL DESIGN
SCALE: 1" = 1'-0"



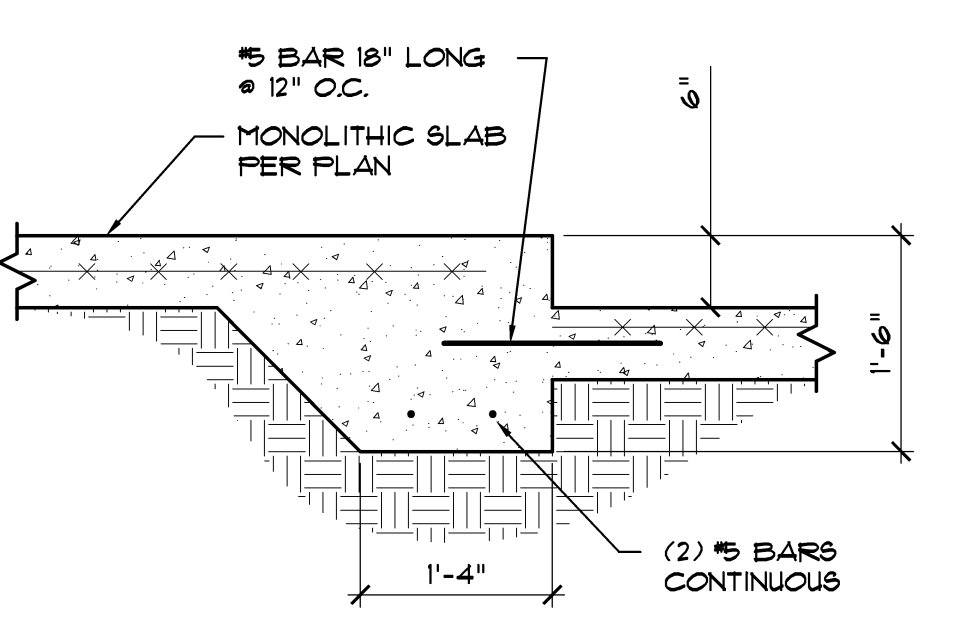
6 MONOSLAB FOOTING AT PERIMETER
SCALE: 3/4" = 1'-0"



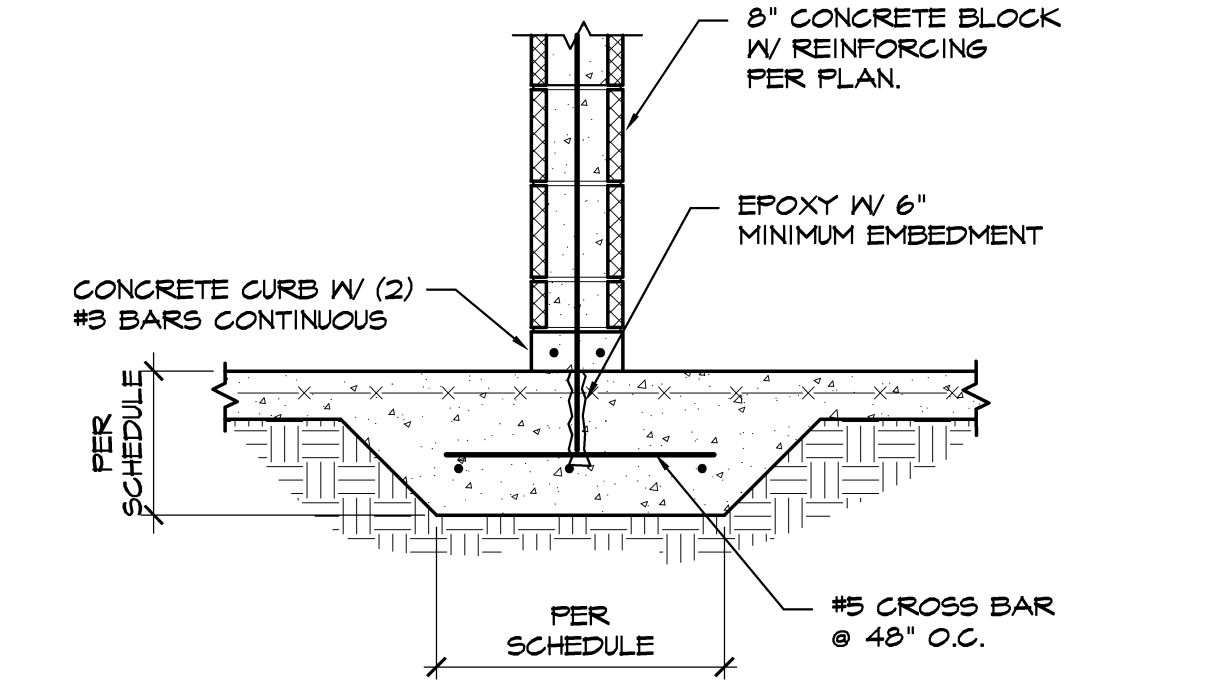
7 MONOSLAB FOOTING AT PERIMETER
SCALE: 3/4" = 1'-0"



8 PERIMETER SLAB FOOTING
SCALE: 3/4" = 1'-0"



9 SLAB TRANSITION
SCALE: 3/4" = 1'-0"



10 FOOTING AT KNEE WALL EPOXIED INTO MONO FOOTING
SCALE: 3/4" = 1'-0"

I:\2010\0079 Eagles-Monkeys-Laurey Zoo\Structural\DWG\0079_S-3.dwg Plotted: May 12, 2010 - 2:56pm by BMDaddy
THIS DRAWING IS THE PROPERTY OF RICHARD ADAMS ENGINEERS AND MAY NOT BE REPRODUCED OR USED FOR ANY OTHER PROJECT IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION.

GARCIA SEUFERT ARCHITECT, INC.
ARCHITECTURAL DESIGN SERVICES
121 W. 122nd Ave. TAMPA, FL 33612
PHONE 813-915-8300
FAX 813-915-0168
FL REGISTRATION # AA28000767



PROJECT NAME :
MARTIAL, CROWN AND PATAS MONKEY EXHIBIT
LOWREY PARK ZOO
SLIGH AVENUE, TAMPA, FLORIDA

SHEET CONTENT :
STRUCTURAL DETAILS

RICHARD ADAMS ENGINEERS & CONSULTANTS, INC.
FLORIDA REG. # 39836
NOT VALID WITHOUT SEAL

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE DRAWINGS & SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.

JOB NO :
0863
DRAWN/REVIEWED:
PJH / RA
ISSUE DATE :
04/28/10

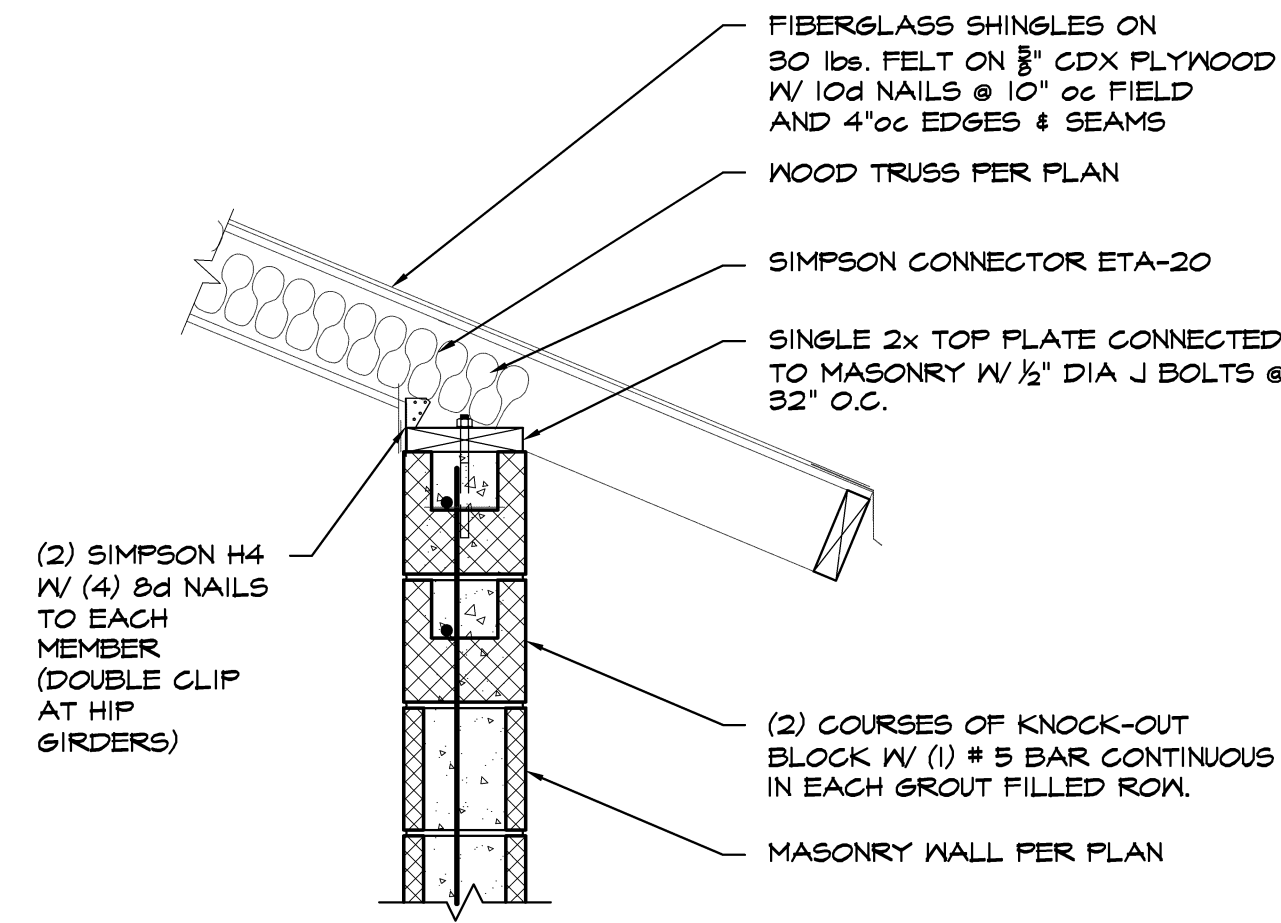
REVISIONS Δ

1	
2	
3	

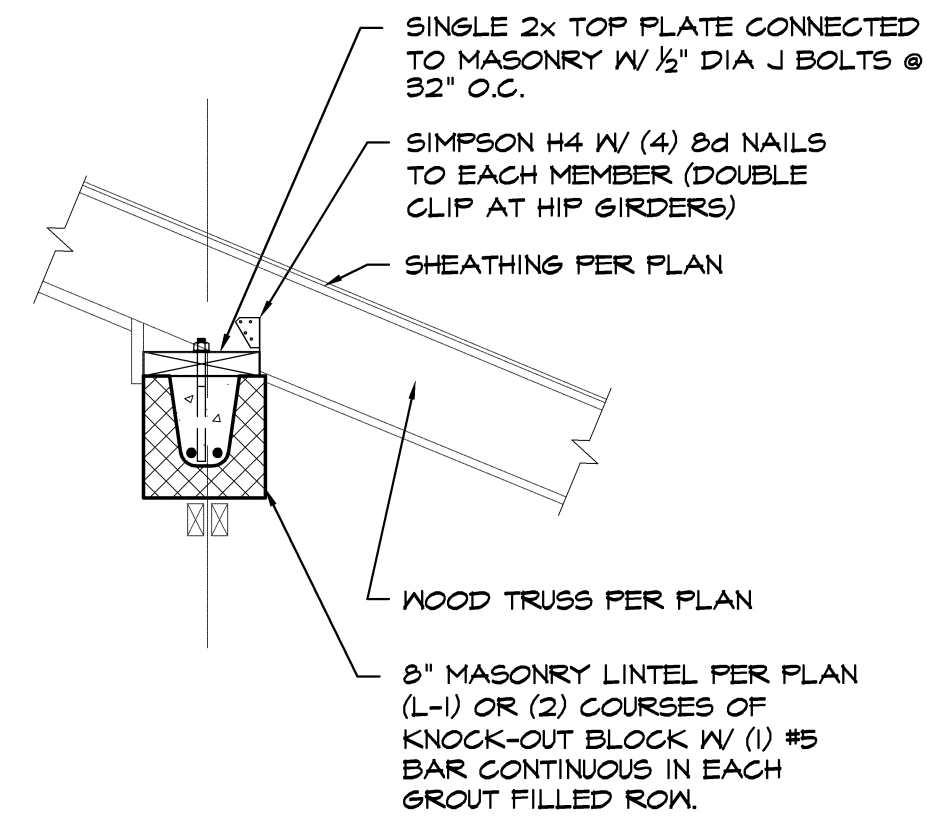
SHEET NUMBER
S-3.1

R.A.E. JOB No. 10079

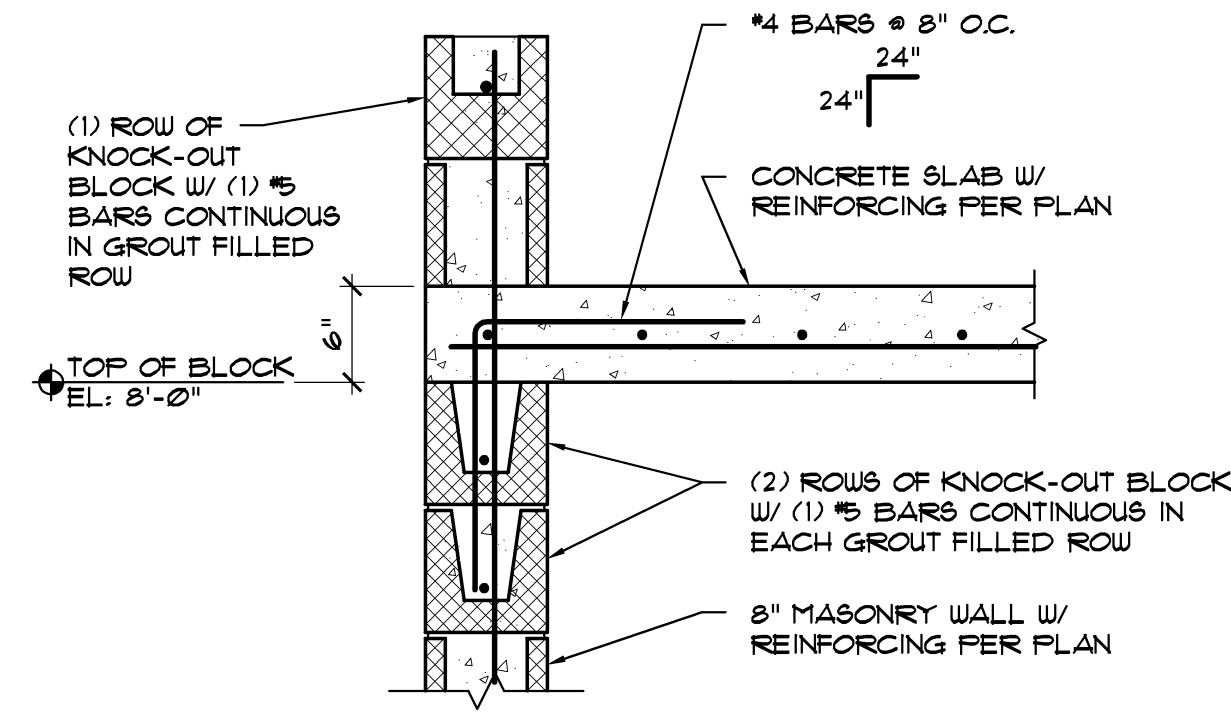
RICHARD ADAMS ENGINEERS & CONSULTANTS, INC.
5507 E BUSCH BLVD TAMPA, FL 33617
PH: 813.985.4600 FX: 813.985.4506
MAIL@ADAMS-ENGINEERS.COM
FLORIDA CERTIFICATE OF AUTHORIZATION No. 7565



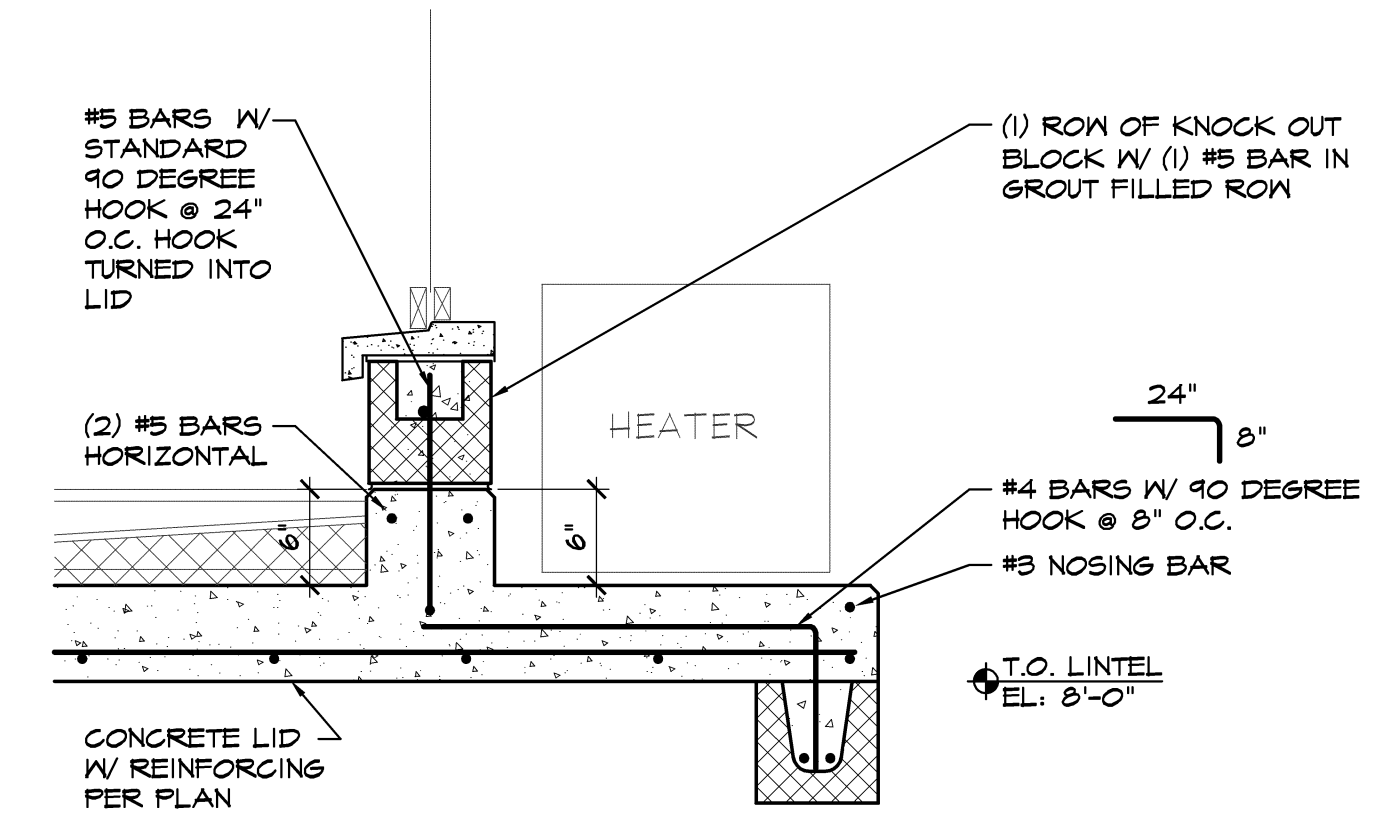
1 JOIST BEARING
SCALE: 1" = 1'-0"



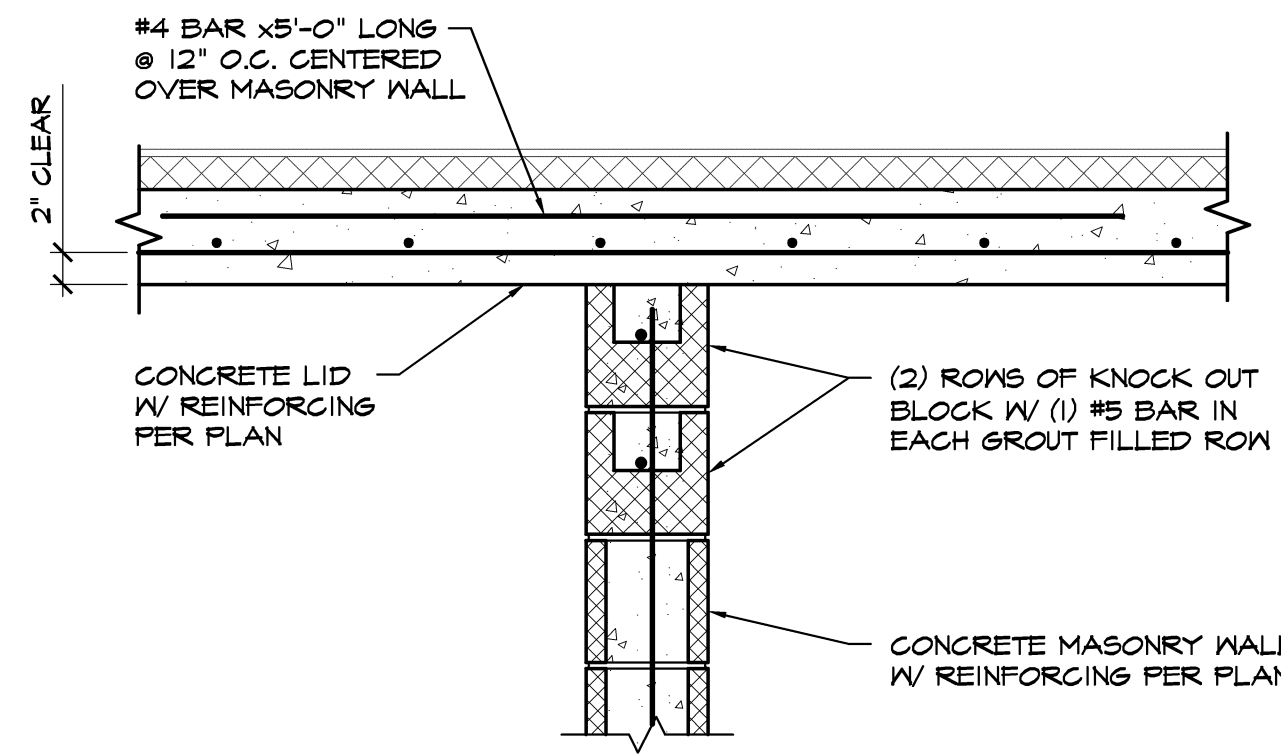
2 JOIST BEARING
SCALE: 1" = 1'-0"



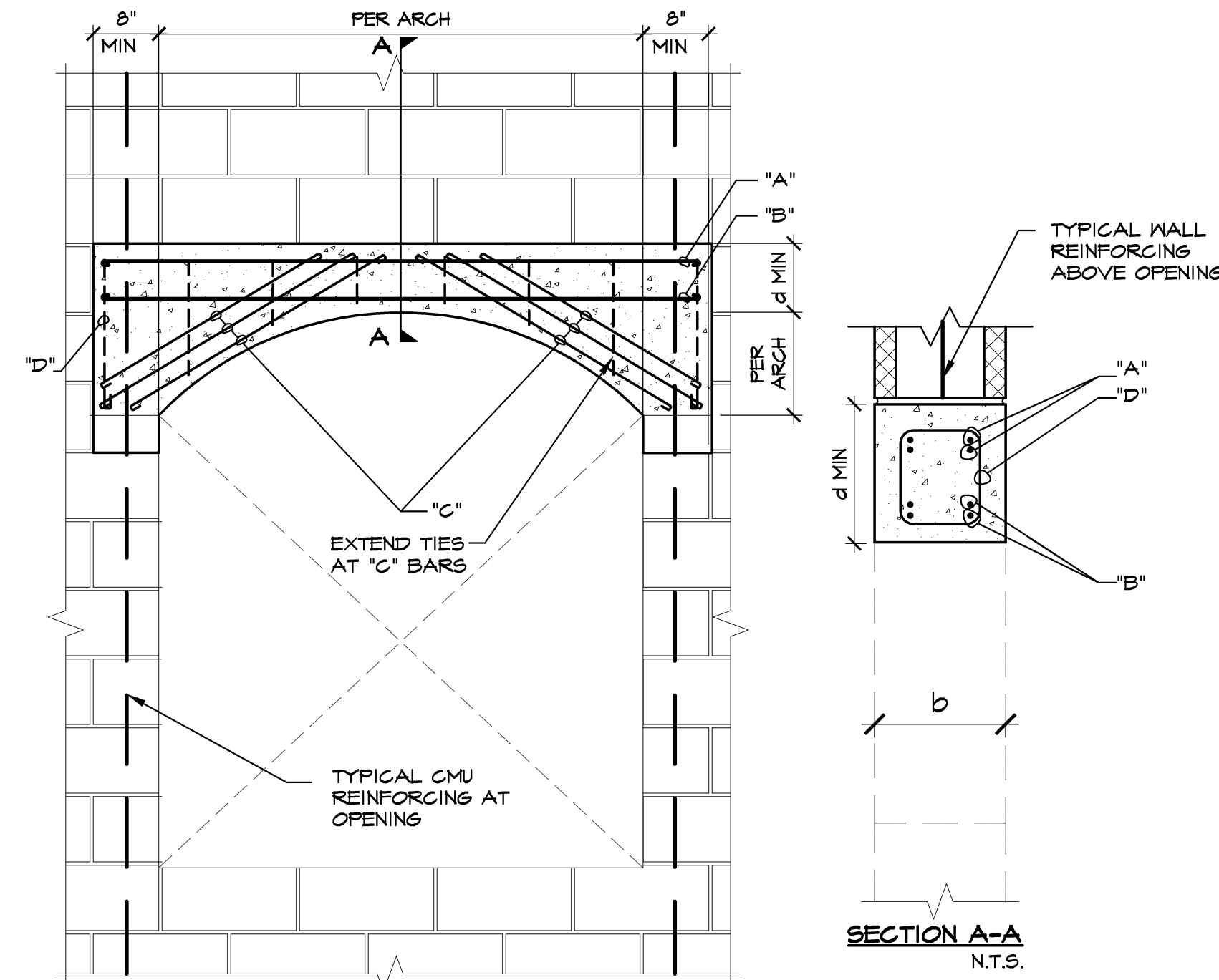
3 CONCRETE LID TO MASONRY
SCALE: 1" = 1'-0"



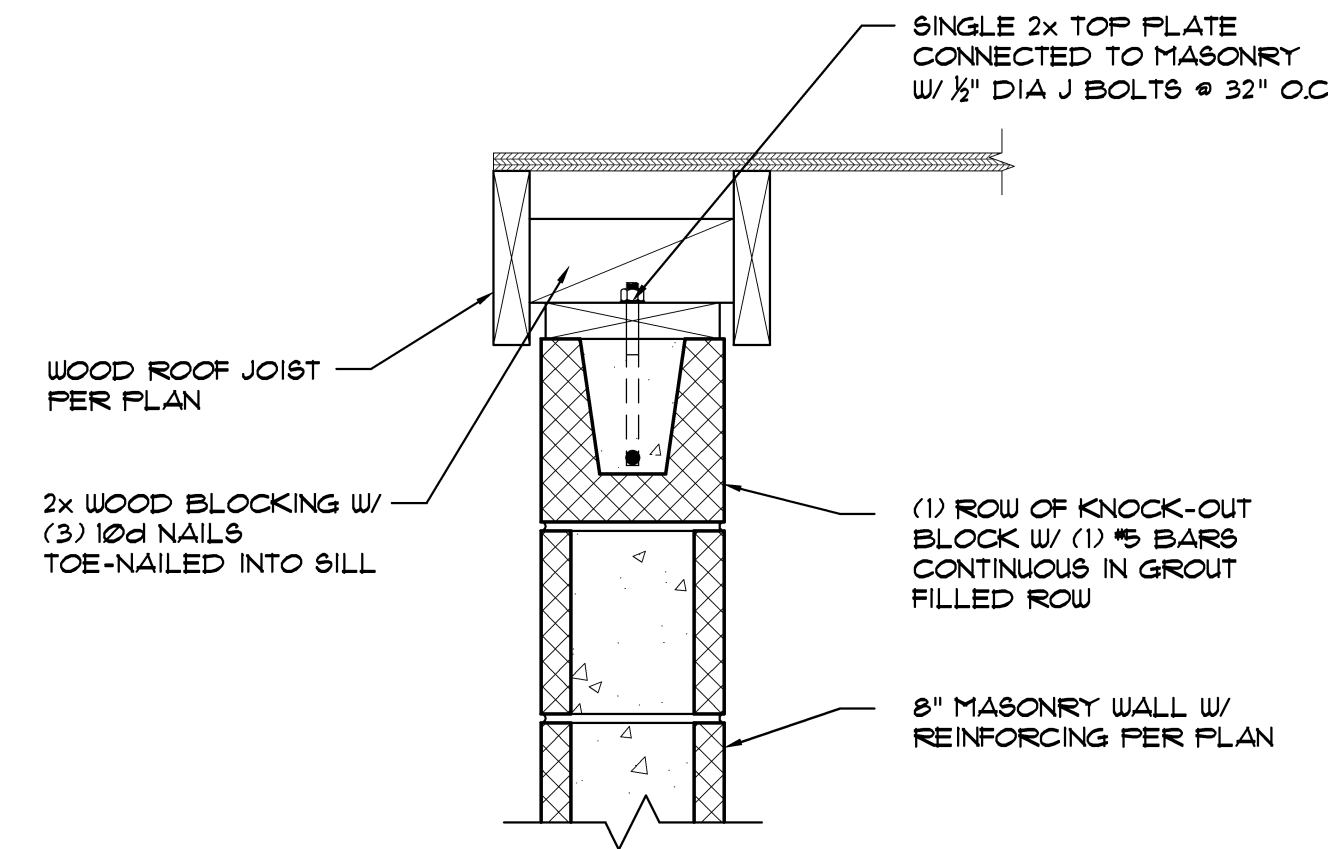
4 SLAB EDGE CONDITION
SCALE: 1" = 1'-0"



5 SLAB INTERIOR SUPPORT
SCALE: 1" = 1'-0"



6 CONCRETE ARCH ELEVATION
SCALE: 3/4" = 1'-0"



7 WOOD ROOF AT RAKED WALL
SCALE: 1 1/2" = 1'-0"

I:\2010\0079 Eagles-Monkeys-Lowrey Zoo\Structural\DWG\0079 S-4.dwg Plotted: May 12, 2010 - 2:56pm by BMDaddy
THIS DRAWING IS THE PROPERTY OF RICHARD ADAMS ENGINEERS AND MAY NOT BE REPRODUCED OR USED FOR ANY OTHER PROJECT IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION.

GARCIA SEUFERT ARCHITECT, INC.
ARCHITECTURAL DESIGN SERVICES
121 W. 122nd Ave. TAMPA, FL 33612
PHONE 813-915-8300
FAX 813-915-0168
FL REGISTRATION # AA28000767



PROJECT NAME :
MARTIAL, CROWN AND PATAS MONKEY EXHIBIT
LOWREY PARK ZOO
SLIGH AVENUE, TAMPA, FLORIDA

SHEET CONTENT :
STRUCTURAL DETAILS

RICHARD ADAMS ENGINEERS
FLORIDA REG. # 38836
NOT VALID WITHOUT SEAL

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE DRAWINGS & SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.

JOB NO :
0863

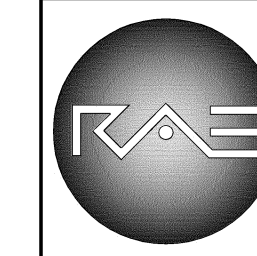
DRAWN/REVIEWED:
PJH / RA

ISSUE DATE :
04/28/10

REVISIONS	
1	
2	
3	

SHEET NUMBER
S-4.1

RAE JOB No. 10079
RICHARD ADAMS ENGINEERS & CONSULTANTS, INC.
5507 E BUSCH BLVD TAMPA, FL 33617
PH: 813.985.4600 FX: 813.985.4506
MAIL@ADAMS-ENGINEERS.COM
FLORIDA CERTIFICATE OF AUTHORIZATION No. 7565



THIS DESIGN & THIS DRAWING ARE THE PROPERTY OF RAE AND NO PART OF THIS DESIGN OR DRAWING MAY BE REPRODUCED OR USED FOR ANY OTHER PROJECT WITHOUT WRITTEN PERMISSION FROM RAE.

STRUCTURAL NOTES

I. GOVERNING CODES:

This design is based on the following codes:
 A. Florida Building Code, 2007 with 2009 Supplement.

II. DESIGN LOADS:

- A. Wind load based on using Chapter 6 of the ASCE 7-05 "Minimum Design Loads for Buildings and Other Structures" methods of calculation for wind pressures and the following factors:
1. Mean Height of less than 30'-0"
 2. Wind speed of 120 MPH.
 3. Exposure Category 'B'.
 4. Importance factor of 1.0 (Building Category II).
 5. Velocity Pressure Coefficient of 21.9 PSF
 6. Ratio of Solid Area to Gross Area of Netting of 0.15
 7. This building is NOT in a WIND BORNE DEBRIS REGION as defined by Florida Building Code.
- B. Netting dead load of 0.65 PSF.
 C. Allowable soil bearing of 2,000 PSF.

III. DISCREPANCIES BETWEEN DRAWINGS AND EXISTING CONDITIONS:

These drawings were prepared based on field data gathered during the design process. As the demolition of the existing structure allows for better views of the existing structure, there may be discrepancies between the drawings and the actual conditions. These discrepancies should be brought to the attention of the architect immediately. Please confirm all dimensions to the existing structure before ordering, purchasing, or installing any new work.

IV. SHOP DRAWINGS:

- A. Contractor shall allow for (10) ten business days for shop drawing review.
 B. Our office will accept shop drawings in both electronic and paper format.
 C. If the Shop Drawings are in a paper format, we will require (3) three copies minimum submitted with (1) one copy to be retained by our office.
 D. If the Shop Drawings are in electronic format the following shall apply:
1. The only accepted electronic format shall be Adobe PDF format.
 2. If the electronic files are e-mailed to our office, the e-mail address is Mail@Adams-Engineers.com and a faxed transmittal shall be sent to our office informing us that the drawings were sent via e-mail.
 3. If the electronic files are sent to our office on a CD or DVD a transmittal shall be included in the package.
 4. The reviewed shop drawings shall be returned to Project Architect (or directed party) in either electronic format or paper format as directed by Client. If paper format is requested, it shall be blackline copies with any comments generated by our office in contrasting font or "boxed". Additionally we will invoice for the printing costs associated with the production of these drawings based on the prevailing prints costs in the Tampa Bay Area.

V. DRAWINGS AND SPECIFICATIONS:

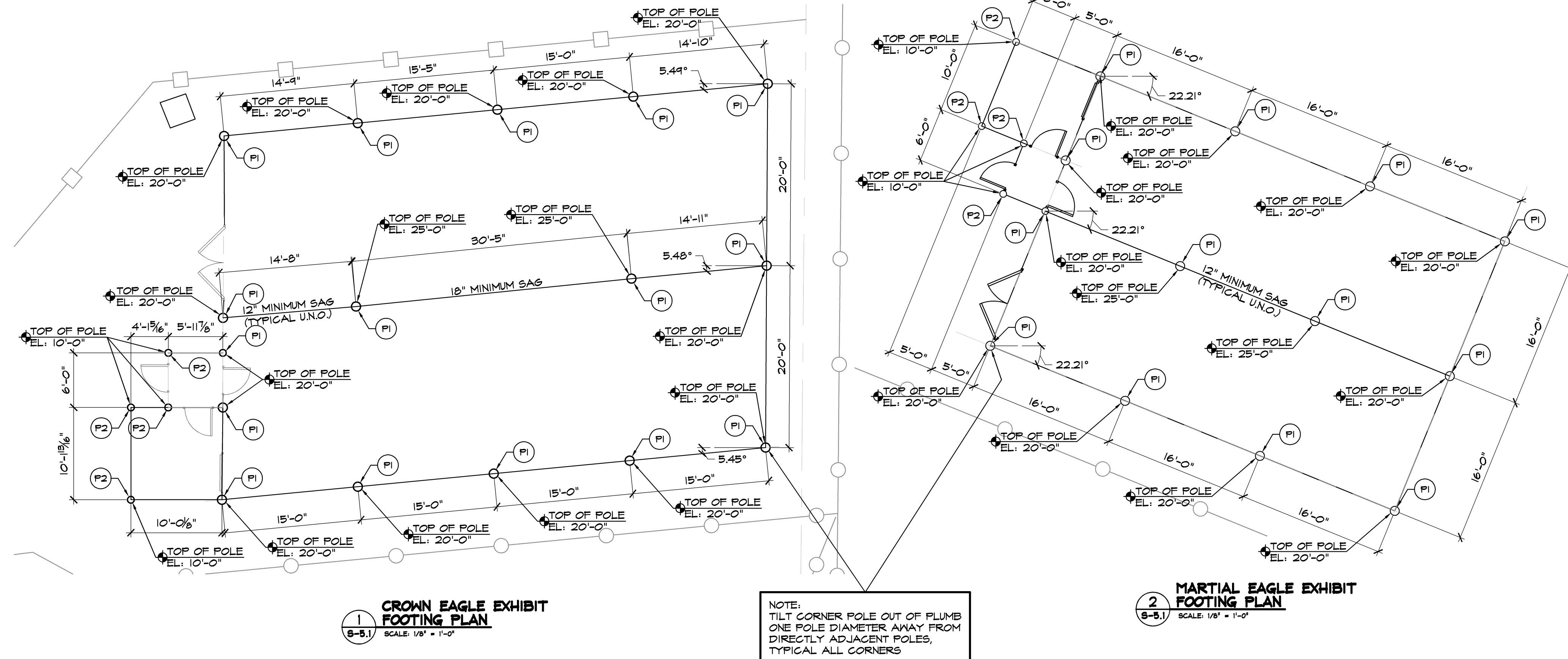
- A. Do not scale these drawings for dimensions that are not given. Advise the Project Architect of any conflicts between these drawings and the Architectural drawings. Verify all field conditions and confirm column locations in respect to architectural wall alignment prior to the start of work.
 B. These drawings are to be used in combination with the architectural, mechanical, plumbing and civil drawings. Refer to these other drawings for details that relate to structural components.
 C. These construction documents have been prepared from the most complete information available to the engineer. All data on existing construction conditions are approximate and shall be verified prior to commencing work.
 D. The contractor shall comply with the manufacturer's instructions and recommendations to the extent-printed information are more detailed or stringent than the requirements contained in the plans.
 E. The plans show the location of all fixtures and equipment and are intended to convey the general intent of the work in scope and layout. They are not intended to show in minute detail every and all of the accessories intended for the purpose of execution of the work, but it is understood that such details are part of this work.
 F. The Contractor shall not perform any portion of the work at any time without Contract Documents or, where required, approved shop drawings, product data or supplemental details for such portion of the work.
 G. The Contractor is responsible for means and methods of construction to ensure the safety of the building until the structural system is completed. The structural system is unstable until all connections have been made and all concrete has reached the minimum design strength as specified in these drawings.
 H. The use of electronic files or reproductions of these contract documents by any contractor, subcontractor, erector, fabricator or material supplier in lieu of prepared shop drawings signifies their acceptance of all information shown hereon as correct, and obligates themselves to any job expense, real or implied, arising due to any error that may occur hereon.

VI. WOOD FRAMING:

- A. The design and workmanship of all wood framing shall be in accordance with the latest edition of the National Design specifications of the National Forest Products Association.
 B. All lumber shall be kiln dried to maximum moisture content of 15% unless noted otherwise. All lumber shall be sound, seasoned and free from warp.
 C. Structural wood:
 1. Pole designs to conform with USBR standards.
 D. Creosote treatment is strictly prohibited.

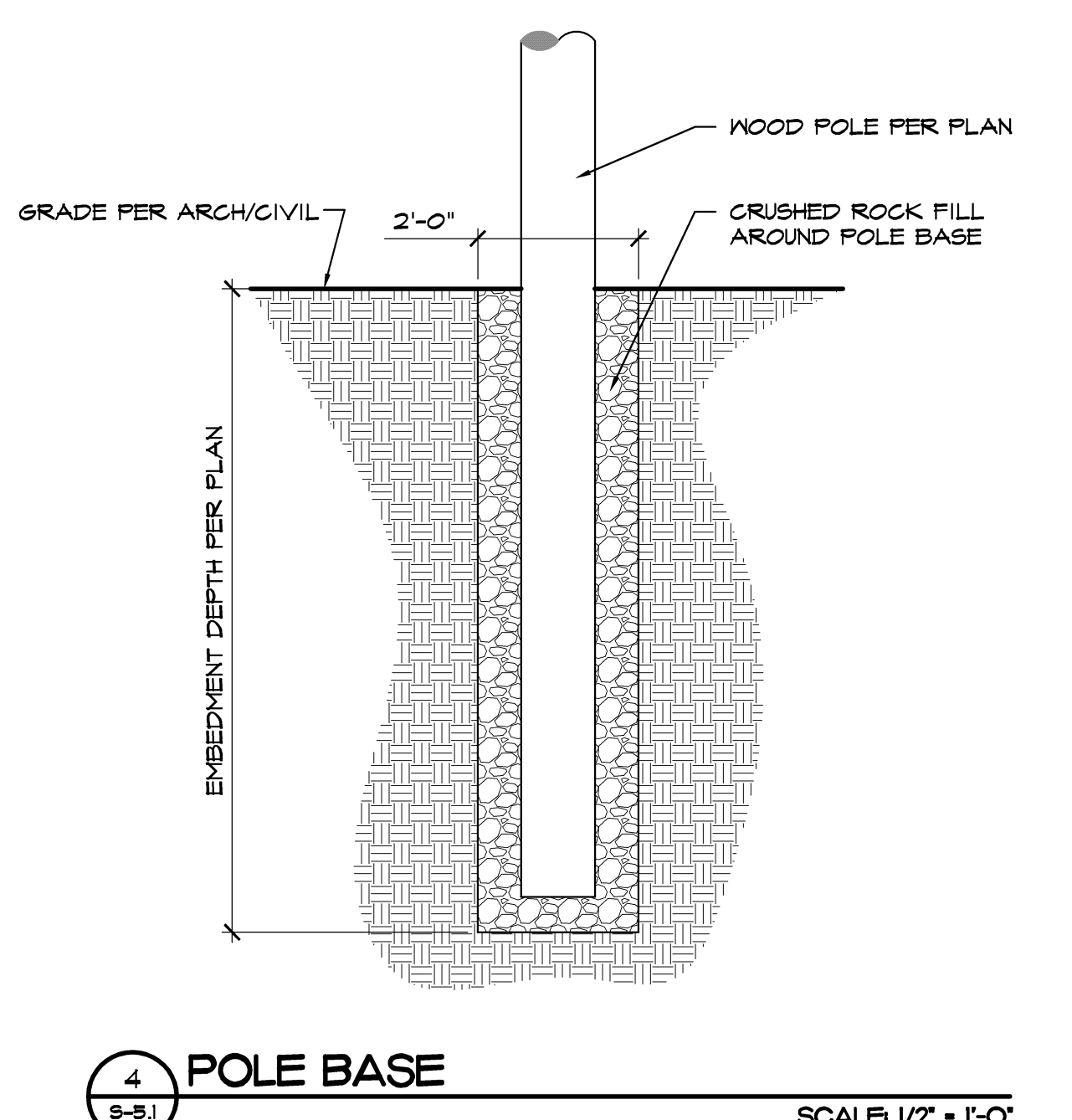
VII. DELEGATED (SPECIALTY) ENGINEERING REQUIREMENTS:

- A. GENERAL REQUIREMENTS:
1. Definition of Delegated (Specialty) Engineer: A Professional Engineer, who is licensed in the same state as the Project, not the Structural Engineer of Record, who specializes in and who undertakes the design of structural components prepared for this Project.
 2. Submittals for custom designed, manufactured or fabricated load-carrying items and custom fabricated items that are required by codes or standards to resist forces and stresses, including their connections, anchorages, and attachments require a Delegated Engineer.
 3. For each category of submittal requiring input from a Delegated Engineer, the Contractor shall attach to the first submittal a signed and sealed letter from the responsible Delegated Engineer stating "I certify that the design and drafting of the shop drawings which are signed and sealed by me were prepared under my direct supervision and control and to the best of my knowledge the shop drawings comply with the applicable minimum building codes and contract drawings."
 4. Review by the Structural Engineer of Record of submittals is LIMITED TO the following:
 - a) The specified structural submittals have been furnished.
 - b) The structural submittals have been signed and sealed by the Delegated Engineer.
 - c) The Delegated Engineer has understood the design intent and has used the specified structural criteria. No detailed check of calculations will be made.
 - d) The configuration set forth in the structural submittals is consistent with the contract documents. No detailed check of dimensions or quantities will be made.
 5. SUBMITTALS NOT MEETING THE ABOVE CRITERIA WILL NOT BE REVIEWED.



MARK	TYPE	SPECIES	NOTE
(C)			
(P1)	11" DIAMETER MINIMUM	SOUTHERN YELLOW PINE	U.S.B.R. STANDARD 8'-0" EMBEDMENT
(P2)	8" DIAMETER MINIMUM	SOUTHERN YELLOW PINE	U.S.B.R. STANDARD 8'-0" EMBEDMENT

NOTE: SEE DETAIL 4/5-5.1 FOR POLE BASE CONDITION



GARCIA SEUFERT ARCHITECT, INC.
 ARCHITECTURAL DESIGN SERVICES
 121 W. 122nd Ave. TAMPA, FL 33612
 PHONE: 813-915-8300
 FAX: 813-915-0168
 FL REGISTRATION # AA28000767

PROJECT NAME :
MARTIAL, CROWN AND PATAS MONKEY EXHIBIT
LOWREY PARK ZOO
 SLIGH AVENUE, TAMPA, FLORIDA

SHEET CONTENT :
 STRUCTURAL NOTES
 EXHIBIT PLANS
 STRUCTURAL DETAILS

RICHARD ADAMS ENGINEERS & CONSULTANTS, INC.
 FLORIDA REG. # 39836
 NOT VALID WITHOUT SEAL

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE DRAWINGS & SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.

JOB NO :
0963

DRAWN/REVIEWED:
B.M.M.

ISSUE DATE :
04/28/10

REVISIONS
 1
 2
 3

SHEET NUMBER
S-5.1

R.A.E. JOB No. 10079
RICHARD ADAMS ENGINEERS & CONSULTANTS, INC.
 5507 E BUSCH BLVD TAMPA, FL 33617
 PH: 813.985.4600 FX: 813.985.4506
 MAIL@ADAMS-ENGINEERS.COM
 FLORIDA CERTIFICATE OF AUTHORIZATION No. 7565

I:\2010\0079 Eagles-Monkeys-Lowrey Zoo\Structural\DWG\0079_S-5.dwg Plotted: May 12, 2010 - 2:23pm by BMM\addy
 THIS DRAWING IS THE PROPERTY OF RICHARD ADAMS ENGINEERS AND MAY NOT BE REPRODUCED OR USED FOR ANY OTHER PROJECT IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION.