



CITY PROJECT # 07-24

PALM SPRINGS ANIMAL CARE FACILITY

ADDENDUM NO. 3

THIS ADDENDUM SHALL TAKE PRECEDENCE OVER ANYTHING CONTRARY ON THE PREVIOUSLY ISSUED PLANS, SPECIFICATIONS AND INSTRUCTIONS AND SHALL BE REFERRED TO HEREINAFTER AS PART OF THE CONTRACT DOCUMENTS.

Section 1 – Answers to questions:

1. CORRECTION TO ADDENDUM #2 QUESTION #9:

Are all interior aluminum door and window frames to be by Wilson Partitions? The window schedule for most of the windows only calls for aluminum and does not specify Knock Down or Storefront.

Revised Response: Please see revised Window Schedule Sheet A10.31 Addendum #3. "A" Series Windows includes Aluminum Storefront and Aluminum Curtain Wall. "B" Series Windows includes Aluminum Knock Down and Hollow Metal.

2. Will Precision Air Balance Co.'s NEBB certification be accepted as an equal (Section 15800 3.14)?

Response: Yes a NEBB certification is acceptable as long as the company is completely independent of any mechanical contractors, has over 5 years of experience in test and balance, perform all work to the engineer's specification, will produce AutoCAD drawings of the test and balance systems and will provide a NEBB written warranty. DM 2-08-10

3. Will Associated Air Balance's TABB certification be accepted as an equal (Section 15800 3.14)?

Response: Yes a TABB certification is acceptable as long as the company is completely independent of any mechanical contractors, has over 5 years of experience in test and balance, perform all work to the engineer's specification, will produce AutoCAD drawings of the test and balance systems and will provide a TABB written warranty. DM 2-08-10

4. Sheet S1 (General Notes), under section E "Structural Steel" note 3 states "Structural Steel Fabricators (Approved by the Building Dept.) shall furnish shop drawings of all steel for review ..." Does this mean that the structural steel fabricator needs to be approved by the Bldg. Dept? If so, how do we get any structural steel fabricator approved prior to bid?

Response: The City does not require Building Department Approval for Structural Steel Fabricators, but the minimum requirement is to provide quality control certification in compliance with AISC provisions.

5. Under "Instruction To Bidders" Page 12, section 14 states that liquidated damages, if any, would be specified under the technical specifications for "Beginning and Completion of the work" in section entitled "Summary of Work". Upon review of that section there is no mention of liquidated damages, are there any liquidated damages on this Project? If so please specify that amount per day!

Response: Yes there are liquidated damages for this project; see "Article 2 – Commencement and Completion" of the Agreement. The Liquidated Damages are specified as \$500 per day.

6. 08334 Overhead Grilles – Confirm standard 4" pipe is acceptable in lieu of the 6" specified under 2.02E. Manufacturer uses barrel rings and standards 4" pipe on grilles this small. Confirm standard construction is acceptable.

Response: Steel tubing of not less than 4-inches in diameter is acceptable.

7. Operation 2.03C implies the use of battery back-up system to allow egress in case of loss of power, to allow use of an "open" button. Battery back-up can add several thousand dollars to the project cost. Is a standard emergency egress handel acceptable in lieu of the Battery Back-up?

Response: At Overhead Coiling Grilles, battery back-up is not required. Standard emergency egress handle is acceptable.

8. Re 14/A911 – Confirm who is to provide tube steel supports, misc. Metals or grille manufacturer?

Response: Steel tub supports at overhead coilding grilles are to be sized and provided by the grill manufacturer.

9. 08333 – Overhead Doors – What type of support is available inside the walls? Are tubes required at this location? If so, who provides?

Response: See Sheet S2A, at Overhead Coiling Door foundation Mark C-3 identifies column HSS5x5x5/16 at jamb sides of opening.

10. Finish Spec. 2.01B.3 calls for custom powdercoat paint. This will add \$3,000 to the cost of Standard RAL (over 200 colors available). Is standard RAL acceptable, or will the custom powdercoat paint be required?

Response: Custom color is not required. RAL selection will be adequate.

11. Please clarify where Cirrus Themes #S550 Critter Series is to be utilized, along with the desire pattern.

Response: Cirrus Themes #S550 Critter Series locations have been added to the Reflected Ceiling Plan Sheet A2.11 at Rooms #103, 108, 111, 116, and 117. See revised Addendum #3 Sheet A2.11.

12. Please clarify which rooms receive ACT # 2 type acoustic tiles vs rooms that receive ACT # 3 type acoustic tiles.

Response: See Addendum #3 Sheet A2.11 and A10.11 for revised ACT requirements. Note: ACT #3 is not used.

13. Area's to receive grid ceilings with no tiles, if I understand correctly the grid is supposed to be Silhouette with the ¼" reveal, is this correct?

Response: At Open Grid Ceiling. Silhouette with ¼" reveal is correct with Black Finish.

14. DDC/Energy Management Controls – Specification is calling for Honeywell Web –AX system only. Is this the intent of the City or is the City willing to consider a Native BACnet option? The specification also states that there is only one manufacturer/contractor and that R&R Controls Inc. must be used. Is the City willing to consider a proposal from Automated Controls, Inc.? In addition, the specification states the intent to provide a peer-to-peer networked, stand-alone, distributed control system with the capability to integrate ANSI/ASHRR Standard 135-2001 BACnet, LonWorks Technology. (Spec 15900 2.3.1). As I stated above the "Delta" System is a Native BACnet product that is a true "Open" protocol system that uses no gateways or protocol converters. Is the City willing to accept "Delta Controls" Native BACnet system?

Response: The control system shall be Honeywell or Automated Logic. The manufacturer/contractor must be a Controls Contractor authorized to be a Honeywell "Automation Controls Integrator" or Automated Logic authorized contractor.

15. Could you please issue the appropriate California Wage Rate for this project?
Response:

Response: California Prevailing Wage Rates can be found on the following WEBB site www.dir.ca.gov/DSL/PWD/Southern.html. Be sure to look at Southern California.

16. Please refer to the "Min O.C. Spacing of screws for symbol FT1 on detail 17 of Sheet SD7". In other details such as detail 15 & 19/SD2 the spacing call out for "FT1" screw spacing is specific and is a different spacing from those shown in the fastener schedule shown in Detail 17/SD7. I am quite confused as to how the table in 17/SD7 is to be used. Could you please clarify the intent for the use of Table? Also please clarify how we determine screw spacing when conflict exists? In the "Min. 1/2 O.C. Spacing" correct for any application? If so please indicate where !

Response: Detail 17/SD7 – the minimum spacing and edge distances listed in the table is the minimum allowed distances between fasteners as per Manufacture's specifications. The actual spacing between the fasteners is listed on the specific details.

17. Refer to "Dog Ward" 301 thru 308 indicated on sheet A2.02 to have fence and gate dividers per Key Note #4. The same are on sheet S2A references detail 8/SD1 as typical for these 6 areas calling out a metal stud partition. Please clarify the proper call out for the divider walls in the Dog Wards?

Response: Architectural key note #4 on Sheet A2.02 is correct indicating OPCI Dividers and Gates by "T-Kennel" over raised concrete curb as indicated on Sheet A2.03. Structural Detail 8/SD1 is for curb requirement only.

18. There are various locations where interior metal stud and drywall walls receive a plywood shear panel at one or both ends of a wall segment. Drywall will then be applied over the shear panel. It appears the stud face between shear panels will require a spacer to "bring the drywall finish into plane" with the plywood shear panel. Will strips of materials applied to the face of the studs be acceptable or will full sheets of materials be required?

Response: Provide full sheets of Gypsum Wall Board of equal thickness at locations where shear walls are required with infill needed to provide aligned plan for installing final finish substrate material.

19. Please issue specification sections 21110 Site Clearing & Demolition and 2200 Earthwork!

Response: For site clearing and demolition requirements, see Landscape Drawings and Specifications and details provided on the Civil Engineering Drawings.

20. Please issue Specification Section 02520 Asphalt Paving.

Response: For Asphalt paving, See Landscape Drawings and Specifications and details provided on the Civil Engineering Drawings.

21. Section 16720, Part 2.04, Section A states that the only acceptable fire alarm manufacturer will be Silent Knight. But, plans call for Notifier. Please Clarify.

Please see Question 11 Addenda 2.

22. Sheet A1.11 Detail 20 – What is the letter finish?

Response: Facility name and address are to be “Brushed” Stainless Steel letters, sized as noted on Sheet A1.11 Detail 20.

23. Sheet A3.01 Detail A West Elevation – Additional detail is required for main building ID.

Response: Facility name is to be 14” H. Brushed Stainless Steel Letters.

24. Sheet A6.01 – What is the material and finish for “Figurines”?

Response: Figurines are to be painted metal or Plexiglas. We will accept either as long as edges are crisp. Finish to be semi-gloss.

25. Sheet A6.01 – What is the finish for the cut out letters?

Response: Raised metal letters indicated on Sheet A6.01 at Adoption Lobby are to be 6” H. Brushed Aluminum.

26. Sheet A6.01 – Missing Detail 13 on A10.32. Please provide additional detail for acrylic insert holders?

Response: Detail Reference is to read: Detail 1 on A9.12.

27. Sheet A6.03 – What is the finish for the letters?

Response: Detail Reference is to read: Detail 1 on A9.12.

28. Sheet A6.04, Detail 128C – Please provide additional details for images in the glass doors.

Response: Electronic artwork will be made available upon request to the successful bidder.

29. Finish schedule/ A10.11 – Ceiling finish for room 338 is not clear, it does not specify what type ACT.

Response: Sheet A10.11 has been updated and reissued with this Addendum #3. Room 338 Ceiling is to be ACT-1.

30. Equipment Schedule A10.41 – Schedule lists X-ray Viewer as OPCI, but does not show where it applies, does this mean it is not used? If it is part of the scope please advise.

Response: X-Ray View (OPCI) is required at Prep Room #355 South wall between prep tables. Sheets A2.02 and Equipment Schedule A10.41 have been revised accordingly. Electrical Drawings have been revised to add 1 new receptacle at +6’-8” AFF.

31. Equipment Schedule A10.41 – Schedule list Cage Dryers as OPOI, but does not show where applies, does this mean it is not used? If it is part of the scope please advise?

Response: Cage Dryer (OPOI) is required at Grooming Room #336 West wall over animal cages. Sheets A2.02 and Equipment Schedule A10.41 have been revised accordingly.

32. Sheet A6.05 – Detail 203 shows flip-down stainless steel dry exam table as CPCI, but Equipment Schedule on A10.41 does not show this dry table in Room 203, or who purchases or who installs, Please clarify.

Response: Stainless Steel Fold-Up Exam Table is by Shor-Line. Item #903.1130.00, located as noted on Sheet A2.02 Keynote Tag 41 in Room A203.

33. Section 02751 – The Cement Concrete Pavement section looks like it is in draft form, with different color type, etc, please clarify if this is the final version, or if further revisions are forth coming.

Response: Specifications Section 02751 – Cement Concrete Pavement has been updated and is reissued in this Addendum #3.

34. Sheets P1.2, P2.5 – Please confirm whether water heater solar panels shown on P1.2 and P2.5 are included in the based bid scope or part of Alternate #14. If they are part of the base bid, please provide a specification.

Response: Solar Panel Hot Water System is to be included in the Base Bid as detailed on Sheets P1.2 and P2.5. Solar Water Heating System shall be provided with: 1) Delta-T Pro Advanced Solar Control Unit with Ethernet Plug-In Model DLTA 000 001. Designed to regulate the operation of a solar heating system, the Delta-T monitors collector and storage temperatures and automatically turns pumps on or off when the right temperature is reached. The controller shall provide freeze protection, by recirculation and storage tank high-limit shut-off. Product Features include Exportable energy data, Fully adjustable system settings, Variable speed pump operation, Zone pump operation, High capacity relays and 120/240 VAC, 50-60 Hz power. Provide Vortex Flow Sensor is required to utilize BTU monitoring function and two 10k sensors required for basic differential function. 2) Provide a Grundfos Hot Water Circulating Pump, Bronze Body, Flange Mount UPS26-99BFC1/6 HP 3 speed; Bronze integral check valve, flanged housing; 115 volt Super Brute. 3) Provide a insulated Heat-Flo Model HD80 indirect storage tank with double heat exchanger for solar heating applications. 4) Provide two Empire Flat Plate 4 x 8 collectors model EP32 as manufactured by SunEarth. Provide brackets for roof installation. Collectors shall provide low iron tempered glass, low-binder fiberglass insulation, rigid foam insulation, stainless steel fasteners, extruded anodized aluminum casing, aluminum backsheet, vent plugs, copper absorber plate, flush mounting hardware.

35. Section 07140 – Please clarify the waterproofing scope of work. Does waterproofing occur at all below grade concrete walls? Earth-retaining concrete structures? For example, Addendum drawings A1-S3 and Q1-S4 do not show waterproofing membrane. Please clarify.

Response: Provide interior Fluid-Applied Waterproofing with Protection Board at all site poured in place raised concrete planters. See Specifications Section 07140.

36. Per Paragraph 15900.1.2.2, we respectfully request that Lonworks products from Schneider Electric which are Lonmark approve, be allowed as an equal to the Loworks products specified? Athena Engineering, Inc. has successfully used these Schneider Vista Lonworks products with the Niagra system. We also ask that a C-20 Licensed control contractor be acceptable if a C-10 contractor installs the control wire and conduit.?

Response: The specified system is to be a Honeywell DDC system using LonWorks Controllers or Automated Logic authorized contractor. For the purpose of maintenance and support, all furnished DDC controllers must be able to be purchased through a local authorized distributor. The HVAC Controls Contractor is responsible for the installation and all electrical connections of the control devices, appliances, apparatus, raceways, conduits and any part thereof which generate, transmit, transform or utilize electrical energy in any form or for any purpose and thus by definition of the California Licensing Board must have a C-10 license.

37. Please provide details for the Concrete Seat Walls in the Adoption Courtyard – Note 39/A2.2.

Response: See A3-A3 for Adoption Courtyard Concrete Bench.

38. There are a number of rooms with a note in the remarks column indication something is “partial”. In most cases I see the asterisk (*) but am unsure to what the asterisk refers. Please review and clarify the remarks indicated “partial”.

Response: Asterisk notation indicated on the Room Finish Schedule Sheet A10.11 references additional information noted in the Remarks only.

39. Section 09300 – Please provide specifications for tile material, including sizes, colors, ID numbers and distributors for Restrooms 114 and 115.

Response: Provide Floor and Wall Tiles at Restrooms #114 and 115 as follows: Daltile, Quarry Tile CT-1B at Floors and Walls; colors to be selected at a later date.

40. Section 12512 – RCP shows locations for the curtain pockets that the blinds are to be installed in (curtain pockets) at Rooms 106,107 an 313. Are vertical blinds in these pockets to cover the windows only, or as shown on the plan , to cover the entire length of the wall at these rooms?

Response: Vertical blind only covers the window. The curtain track runs the length of room. Blind to slide completely free of window opening.

41. Sheets S2C, S4C – Alternate #4 for structural is on sheets S2C and S4C between E-K/12 and E-K/13, but at sheet A0.50, it is shown at Training Room 117. Which is correct?

Response: Alternate #4 shall be as shown on Architectural Drawings.

41. Per the door hardware specifications section 08710, page 10, hardware groups #1 and #2 both call for LCN Autoequalizer pneumatic automatic swing door operators with compressors while the automatic door operators specifications section 08730 calls for a Horton Automatics "4000 Series – Low Energy". Can you please advise which type of operator and which manufacturer will be acceptable for these two hardware groups?

Response: Provide Horton Automatics "4000 Series – Low Energy" or equal.

42. As it is written ONLY Ingersol Rand Products will be accepted as the base bid. However after the award you will look to value engineer the project with "or equal" products. With IR knowing that they have no competition for the base bid they have no incentive to be competitive. With "Or Equal" as a part of the base bid all manufacturers will fight for the job. This will only benefit the City. I would also use caution if the evaluator of the or equal is a direct employee of IR.

Response: It is not the intent to require only Ingersol Rand Products; "Or Equal" will be acceptable, with the exception of no equal for Schlage Keyway which is City standard.

43. Per section 15900, 1.2.1 & 1.2.2, we are asking that the Lynxspring be an approved equal to the Honeywell WEBS-AX System?

Response: Lynxspring control system is not approved. Provide a Honeywell or Automated Logic control system.

Section 2 – Addenda Notes/Clarifications:

1. Substitutions: Please take note of Section 01630, "Product Substitution Procedures". This section outlines the procedure that a contractor must follow when attempting to get products substituted for those called for in the specifications.
2. Underground Utilities: See Electrical for Underground Dry Utilities. See Civil Drawings for Specification Requirements.

2.A. Fill Material: Please take note that due to recent rain activity the local flood control agency will be transporting suitable clean fill material to the borrow pit that is immediately east of the Animal Shelter site. The Contractor for the Animal Shelter project will have access to that fill and will not be required to import any fill from off the site.

3. Exterior Cement Plaster Control Joints are noted on Revised Sheets A3.01 and A3.02 Per this Addendum #3. Control Joint Spacing Generally conforms to create panels no larger than 100 sq ft with no dimension exceeding 10 feet or a length to width ratio of 2-1/2 : 1.
4. Volume II – Technical Specifications revisions as follows:
 - a. VOID SECTION 01270 – UNIT PRICES
 - b. VOID SECTION 01400 – QUALITY REQUIREMENTS
 - c. VOID SECTION 01700 – EXECUTION REQUIREMENTS
 - d. REVISED SECTION 02751- CEMENT CONCRETE PAVEMENT
 - e. REVISED SECTION 02827 – GATE OPERATORS
 - f. REVISED SECTION 03300 – CAST IN-PLACE CONCRETE
 - g. REVISED SECTION 08330 – OVERHEAD COILING DOORS
 - h. REVISED SECTION 11027 – LOCK BOXES
 - i. REVISED SECTION 08412 – ALUMINUM-FRAMED STOREFRONTS
 - j. NEW SECTION 08920 – GLAZED ALUMINUM CURTAIN WALLS
 - k. REVISE SECTION 08623-TUBULAR SKYLIGHTS, Change “Part 2-Products, Section 2.01 Approved Manufacturers” to read: Solatube International, Inc. “SolaMaster Series – 21” diameter” or approved equal.
5. Architectural:
 - a. Sheet A10.21 Door Schedule: Revise Opening # 342C Sallyport Coiling Door to read Width = 10’-8” and Height = 9’-6”.
 - b. Sheet A10.41 Equipment Schedule:
 - i. Add Equipment “Cage Dryers Shoreline (OPCI) at Room #336 Grooming 1 ea.
 - ii. Add X-Ray Viewer (OPCI) at Room #355 Prep., 1 ea.
6. Mechanical:
 - a. SHEET NO. M1.0: Revise the “Rooftop Packaged Gas Heating and Electric Cooling Schedule”. Remark *7 shall be revised to read “Provide Heat Recovery Wheel with Desiccant Material. Provide Exhaust Fan with variable frequency drive for air to be drawn through heat recovery wheel. Remark *7 applies to AC-2 and AC-3. The variable frequency drive on the exhaust fan for AC-2 and AC-3 will allow the Honeywell Controls shown on M1.7 to vary the speed of the fan to maintain static pressure control in the areas served.
 - b. SHEET NO. M1.1: Revise the Exhaust Fan Schedule to include Remark *6. Remark *6 shall state “Provide variable frequency drive for exhaust fan motor. Motor for exhaust fan shall be rated for variable frequency drive use. Remark *6 shall be added to EF-6, EF-7 and EF-9. EF-6, EF-7 and EF-9 shall be provided with a variable frequency drive for the exhaust fan motor and fan motor shall be rated for variable frequency drive use. Interconnect EF-6, EF-7 and EF-9 variable frequency drives per Honeywell Controls Drawing M1.8

7. Mechanical Acoustical:

- a. AC-1-Supply Side: Apply 1/8" coat of damping glue such as QuietSolution's QuietGlue to the portion of the duct that falls within the Training Room (Room # 117) footprint. Lag the entire portion of the duct that is located within the footprint of the Training room with 1-layer of 5/8" gypsum board, screwed directly to the duct with a spacing not to exceed 18" o.c. – See A3-A1.
- b. AC-2-Supply Side: Enclose the two 34"x20" sections of duct with two layers of 5/8" gypsum board and fiberglass batt insulation – See A3-A2. Lag the entire length of 26"x16" duct located within the footprint of the Special Exhibits Area (Room #127) with 2 layers of 5/8" gypsum board.
- c. AC-2-Return Side: Enclose the entire section of duct from the drop to Canine Room #131 with two layers of 5/8" gypsum board and fiberglass batt insulation – See A3-A2. Apply 1/8" coat of damping glue such as QuietSolution's QuietGlue and lag the remainder of the duct (from Special Exhibits #127 to Canine Room #131) with two layers of 5/8" gypsum wall board screwed directly to the duct with screws spacing not to exceed 18" o.c. – See A3-A1.
- d. AC-3-Supply Side: Enclose the entire portions of the 66"x24" and 50"x20" (branch duct line) with two layers of 5/8" gypsum wall board and fiberglass batt insulation.
- e. AC-3-Return Side: Apply 1/8" coat of damping glue such as QuietSolution's QuietGlue and lag the entire duct (from Dispatch Office #106 to AC-3) with two layers of 5/8" gypsum wall board screwed directly to the duct with screws spacing not to exceed 18" o.c. – See A3-A1.

8. Electrical:

- a. Sheet E1.1
Provide 2" PVC conduit only from telephone backboard to CATV point of connection in street. Run in same trench with telephone conduits. Point of connection in street is to be determined with Time Warner Cable.
- b. Sheet E3.1
In room 336 provide duplex receptacle on west wall, approximately three feet north of south wall above cages at +6'-8". Connect to 20A, 1P circuit breaker in space 40 of Panel "LC".

Section 3 – Revised Full Size Drawing Sheets

Architectural:

Sheet A2.11 Reflected Ceiling Plan
Sheet A3.01 Building Elevations
Sheet A3.02 Building Elevations
Sheet A3.11 Wall Sections
Sheet A10.11 Finish Schedule
Sheet A10.31 Window Schedule
Sheet A10.32 Window Details

Section 4 – Added 8 ½” X 11” Drawings

Architectural:

- A3-A1: Standard Detail for Acoustical Duct Lagging w/ Gypsum Board.
- A3-A2: Standard Detail for Acoustical Duct Encasing Schematic Detail.
- A3-A3: New Detail Concrete Bench at Adoption Courtyard.
- A3-A4: Revised Details 20 and 25 on A1.12 to indicated Single Scored CMU Block.
- A3-A5: Revised A2.02 Adding New Windows at Rooms #336, 355, 356.
- A3-A6: Revised A2.21 Adding New GSM Mechanical Platform

Structural:

- A3-S1: Comment #16 - 8/SD1 revised to reflect a similar condition where curb is present but the wall above shall as it occurs on the Architectural drawings.
- A3-S2: S4A – partial roof plan along gridline E and between 2 and 4 – a beam and two steel columns have been added to accommodate the increased duct load that area. Stronger joists called out at Socialization at duct. Roof joists at Special Exhibit area revised to J3.
- A3-S3: S4A – Roof joist schedule revised for roof joist type J6 at Socialization duct area.
- A3-S4: S2A - partial foundation plan along gridline E and between 2 and 4 – two steel columns and pad footings called out at beam above. Shearwall and two holdowns eliminated.
- A3-S5: New detail 6/SD8 has been added at gridline E (Socialization).

BY ORDER OF THE CITY OF PALM SPRINGS, CALIFORNIA



Craig L. Gladders, C.P.M.
Procurement and Contracting Manager

2/10/10
Dated

ADDENDUM ACKNOWLEDGMENT:

Acknowledgment of Receipt of Addendum 3 is required by indicating receipt on Page 2 of the Bidding Packet (Yellow Sheets). **Failure to acknowledge this Addendum may result in your bid being deemed non-responsive.**

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- B. LEED Scorecard

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SECTION 02751**CEMENT CONCRETE PAVEMENT****PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes exterior cement concrete pavement for the following:
 - 1. Steps
 - 2. Walkways.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete pavement mixture.

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.
- B. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.

PART 2 - PRODUCTS**2.1 STEEL REINFORCEMENT**

- A. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
- B. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.
- C. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 deformed.
- D. Plain Steel Wire: ASTM A 82, as drawn.
- E. Deformed-Steel Wire: ASTM A 496.
- F. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice."

2.2 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout the Project:
 - 1. Portland Cement: ASTM C 150, Type II gray
- B. Normal-Weight Aggregates: ASTM C 33, coarse aggregate, uniformly graded. Provide aggregates from a single source.
- C. Water: ASTM C 94/C 94M.
- D. Air-Entraining Admixture: ASTM C 260.
- E. Chemical Admixtures: ASTM C 494/C 494M, of type suitable for application, certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
- F. FIBER REINFORCEMENT
- G. Monofilament fibers help reduce plastic shrinkage cracking. Manufacturers claim fibrillated fibers also improve hardened concrete properties.
- H. Synthetic Fiber: Monofilament or fibrillated polypropylene fibers engineered and designed for use in concrete pavement, complying with ASTM C 1116, Type III, 1/2 to 1-1/2 inches long.

2.3 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
- E. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
- F. White Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B.

2.4 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber
- B. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable. free of carbon black, nonfading, and resistant to lime and other alkalis.

2.5 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, with the following properties:
 - 1. Compressive Strength (28 Days): 3000 psi
 - 2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45
 - 3. Slump Limit: 4 inches, plus or minus 1 inch .
 - 4. Air Content: 3 percent plus or minus 1.0 percent.
- B. Synthetic Fiber: Uniformly disperse in concrete mix at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd.
- C. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions.

2.6 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116. Furnish batch certificates for each batch discharged and used in the Work.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Proof-roll prepared subbase surface below concrete pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.4 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness.
- E. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

- A. Moisten subbase to provide a uniform dampened condition at time concrete is placed.
- B. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- D. Screed pavement surfaces with a straightedge and strike off.
- E. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.6 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

3.7 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these methods.

3.8 PAVEMENT TOLERANCES

- A. Comply with tolerances of ACI 117 and as follows:
 - 1. Elevation: 1/4 inch
 - 2. Thickness: Plus 3/8 inch, minus 1/4 inch.
 - 3. Surface: Gap below 10-foot- long, unlevelled straightedge not to exceed 1/4 inch.
 - 4. Joint Spacing: 3 inches.
 - 5. Contraction Joint Depth: Plus 1/4 inch, no minus.
 - 6. Joint Width: Plus 1/8 inch, no minus.

3.9 REPAIRS AND PROTECTION

- A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.
- B. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement.
- C. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 02751

SECTION 02810
IRRIGATION SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes piping, valves, sprinklers, specialties, controls, and wiring for automatic control irrigation system.
- B. See ~~Division 2 Section "Water Distribution"~~ Civil Engineer plans for water supply from water service piping, water meters, protective enclosures, and backflow preventers.

1.2 DEFINITIONS

- A. **Circuit Piping:** Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure during flow.
- B. **Drain Piping:** Downstream from circuit-piping drain valves. Piping is not under pressure.
- C. **Irrigation Main Piping:** Downstream from point of connection to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.

1.3 SUBMITTALS

- A. **Product Data:** Include pressure ratings, rated capacities, and settings of selected models for the following:
 - 1. General-duty valves.
 - 2. Specialty valves.
 - 3. Control-valve boxes.
 - 4. Sprinklers.
 - 5. Irrigation specialties.
 - 6. Controllers.
- B. **As Built Drawings:** Show irrigation system piping, including plan layout, and locations of irrigation system components. Include water meters, backflow preventers, valves, mainline piping, controls, and wiring. Show wire size and number of conductors for each control cable.
- C. **Field quality-control test reports.**
- D. **Operation and maintenance data.**

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 2 - PRODUCTS

2.1 PIPES, TUBES, AND FITTINGS

- A. PVC Pipe: ASTM D 1785, PVC 1120 compound, Schedule 40.
 - 1. PVC Socket Fittings, Schedule 40: ASTM D 2466.
- B. Transition Fittings: Basic Materials and Methods" for transition fittings.
- C. Basic Materials and Methods" for commonly used joining materials.

2.2 GENERAL-DUTY VALVES

- A. PVC Ball Valves: with full-port ball, socket or threaded detachable end connectors, and pressure rating not less than 150 psig
 - 1. Material Option: MSS SP-122, of plastic other than PVC and suitable for potable water or non-potable water. Include threaded ends and pressure rating not less than 150 psig unless otherwise indicated.
 - 2. Coordinate below with Part 2 "Manufacturers" Article. Retain "Available" for nonproprietary and delete for semiproprietary specifications.

2.3 SPECIALTY VALVES

- A. Plastic Automatic Control Valves: Molded-plastic body, normally closed, diaphragm type with manual flow adjustment, and operated by 24-V ac solenoid.
- B. Automatic Drain Valves: Spring-loaded-ball type of corrosion-resistant construction and designed to open for drainage if line pressure drops below 2-1/2 to 3 psig.
- C. Quick-Couplers: Factory-fabricated, bronze or brass, two-piece assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key.
- D. Polymer-Concrete Control-Valve Boxes: Box and cover, with open bottom and openings for piping; designed for installing flush with grade. Include size as required for valves and service.

1. Shape: Round, Square, Rectangular.
 2. Sidewall Material: Polymer concrete with lateral and vertical sidewall design loading of 5000 lb minimum over 10 by 10 inches square.
 3. Cover Material: Polymer concrete with cover design loading of 5000 lb minimum over 10 by 10 inches square.
- E. Drainage Backfill: Cleaned gravel or crushed stone, graded from 3/4 inch minimum to 3 inches maximum.

2.4 SPRINKLERS

- A. Description: Brass or plastic housing and corrosion-resistant interior parts designed for uniform coverage over entire spray area indicated, at available water pressure.
1. Flush, Surface Sprinklers: Fixed pattern, with screw-type flow adjustment.
 2. Bubblers: Fixed pattern, with screw-type flow adjustment.
 3. Shrubbery Sprinklers: Fixed pattern, with screw-type flow adjustment.
 4. Pop-up, Spray Sprinklers: Fixed pattern, with screw-type flow adjustment and stainless-steel retraction spring.

SPRINKLER SPECIALTIES

- B. Strainer/Filter Units: Brass or plastic housing, with corrosion-resistant internal parts; of size and capacity required for devices downstream from unit.
- C. Emitters: PE or vinyl body.
1. Single-Outlet Emitters: To deliver the following flow at approximately 20 psig
 - a. Flow: 1/2 gph, 1 gph, 2 gph 6 gph

2.5 AUTOMATIC CONTROL SYSTEM

- A. The controller shall be of a modular design with a standard 6-station model. There shall be 6-station modules that enable the controller to be customized from 6 stations up to 30 stations in the plastic cabinet and up to 42 stations in the metal cabinet and plastic pedestal. The removable station modules shall allow servicing of, and removing of the module(s) without removing field wires from the controller.
- B. The controller shall have four independent programs (A, B, C, and D) with 8 start times per program for programs A, B, and C; and 16 start times for program D for a total of up to 40 daily start times. Any two programs shall have the capability of running concurrently. Watering times shall be available from 1 minute to 12 hours in 1-minute increments per station. There shall be a programmable delay between stations available of up to 9 hours. The controller shall

have 4 weekly schedule options to choose from: 7-day calendar, 31-day calendar, odd day programming and even day programming. It shall also have a 365-day calendar clock to accommodate true odd-even watering. Operation shall be available in automatic, semi-automatic and manual modes. All programming shall be accomplished by use of a programming dial and selection buttons with user feedback provided by a backlit LCD display. The front panel of the controller shall be removable and capable of being programmed when not attached to the controller cabinet.

- C. The controller shall be equipped with a rain sensor on-off switch that allows the user to override a sensor that has suspended watering. The controller shall have a programmable rain delay that turns off the controller for a predetermined period of time, from 1 to 180 days.
- D. The controller shall have a cycle and soak scheduling capability by station that allows a cycle to be programmed for up to 60 minutes and a soak period to be programmed for up to 120 minutes.
- E. The controller shall have a seasonal adjustment feature with 3 different modes that allows station run times to be altered from 0% to 300% by program to compensate for weather changes. The modes shall include a Global Adjust, Monthly Adjust, and a Solar Sync Adjust. The Global Adjust shall increase the station run times in a given program by a fixed percentage. The Monthly Adjust shall allow all the seasonal adjustment values for the full year to be programmed into the controller, for each program. The Solar Sync Adjust shall allow the seasonal adjustment values to occur on a daily basis when a Hunter Solar sync is connected to the controller.
- F. The controller shall be capable of monitoring up to two Clik-type sensors or flow sensors in the plastic configuration, and up to 3 Clik-type sensors or flow sensors in the metal configuration.
- G. The controller shall permit connection of a flow meter which is calibrated by the operator for the pipe diameter in which it is installed. The flow meter shall measure actual flow in gallons or liters. The controller shall have a learning mode in which the controller operates each single station for a short period, learns the actual flow for each station, and stores the information internally by station.
- H. When the learned flow is exceeded during normal operations the controller shall record a flow alarm event, cease irrigating the station or stations contributing to the high or low flow readings, and resume irrigation with any stations which do not cause alarms. The controller shall have the ability to determine high or low flow conditions when multiple stations are operating, and shall perform diagnostics to identify stations which contribute to the problem flow. Allowable limits and duration of incorrect flow shall be preset, but reprogrammable by the operator for unique local conditions. The flow meter shall be a Hunter Industries HFS in an appropriately sized FCT fitting. . It shall also be possible to except certain stations from flow monitoring devices. The controller shall also be equipped with a flow-totalizing function that will provide a running total of all the gallons or liters of water used between two reference dates.
- I. Automatic programs shall have user-programmed Non-Water windows to except certain time windows from watering, regardless of the water day schedule.
- J. Automatic programs shall also permit the designation of non-water days, even when Odd/Even or Interval Day patterns have been set. Non-water window violations shall be detected and the

- operator shall be alerted when an irrigation program would have run during a non-water window.
- K. The controller shall have a Quick Check test program, permitting all stations to run sequentially for a user-entered period of time, programmable in one-second increments up to 10 minutes each, for system startup and diagnostics.
- L. The controller shall also save an Easy Retrieve Program which stores all original programming settings. The installing contractor shall be able to restore the system to this saved state at any time after initial installation. The stored Easy Retrieve settings may also be updated at any time by the operator.
- M. The controller shall have a one-button manual station advance in Test mode for quick diagnostics checks.
- N. The controller shall be equipped with a programmable pump start/master valve circuit that can activate the pump start relay by zone. It shall also have a programmable delay between valve stations. Delays between stations shall be programmable up to a maximum of 10 hours.
- O. Transformer input shall be 120/240 VAC, 50/60Hz. Transformer output shall be 24 VAC, 1.5A (40VA). All AC power wiring connections shall be made in an internal junction box. Maximum output per station shall be 24 VAC, 0.56A. Program backup shall be provided by a non-volatile memory circuit that will hold the program information indefinitely. The controller shall have Metal Oxide Varistors (MOVs) on the AC power input portion and the secondary output portion to help protect the micro-circuitry from power surges. The secondary MOVs shall be enclosed in the station modules for easy servicing. There shall be self-diagnostic, electronic short circuit protection that detects a faulty circuit, continues watering the remainder of the program, and reports the faulty station on the display. The diagnostic procedure shall also be capable of being initiated by the user manually. The controller shall provide backup timekeeping in the event of a power outage with the use of an internal long-life lithium battery.
- P. The controller shall have a diagnostic feature that provides a visual indication via LED lights that show the current status of sensor activity, station activity and flow activity. Any station or flow alarms shall be report on the LCD display.
- Q. The controller shall have the option of 3 different enclosures; wall-mounted plastic cabinet, powder coated steel wall-mounted cabinet, and a full plastic pedestal. The steel cabinet shall also be available with a matching pedestal. The pedestal versions shall have the option of a Pedestal Wiring Board (PWB) that allows connection of the field wiring in the pedestal. Additionally, the PWB shall be equipped with MOVs that help protect the secondary output portion of the controller.
- R. The controller shall have as an option, the ROAM or ICR remote control package that enables remote operation of the controller. Connection of remotes to the controller shall be provided through factory-installed SmartPort® outlet.
- S. The controller shall have a multi-language capability that allows programming of the display in 6 different languages: English, French, Spanish, German, Italian, and Portuguese. It shall also be capable of setting the units of measure to either English (GPM) or Metric (LPM)

- T. The controller shall be installed in accordance with the manufacturer's published instructions. The controller shall carry a conditional five year exchange warranty. The automatic controller(s) shall be the IC series controller as manufactured for Hunter Industries Incorporated, San Marcos, California.

- U. Wiring: UL 493, Type UF-B multiconductor, with solid-copper conductors and insulated cable; suitable for direct burial.
 - 1. Feeder-Circuit Cables: No. 12 AWG minimum, between building and controllers.
 - 2. Low-Voltage, Branch-Circuit Cables: No. 14 AWG minimum, between controllers and automatic control valves; color-coded different from feeder-circuit-cable jacket color; with jackets of different colors for multiple-cable installation in same trench.
 - 3. Splicing Materials: Manufacturer's packaged kit consisting of insulating, spring-type connector or crimped joint and epoxy resin moisture seal; suitable for direct burial.

2.6 SENSORS

A. GENERAL

- 1. Sensor assemblies must include all components to meet requirements.
- 2. Sensors shall be Hunter as indicated on construction drawings.
- 3. Components shall be appropriate to meet demands of the system.

B. SENSING IRRIGATION CONTROLS

- 1. Solar Sync:
 - a. The Solar Sync shall automatically adjust run times for controller stations based on a local evapo-transpiration sensor, connected to a compatible automatic irrigation controller via SmartPort interface.
 - b. The Solar Sync shall include only local evapo-transpiration data, "local data" being defined as sensed climatological conditions within the immediate coverage area of the irrigation system, from a sensor dedicated to that purpose. The Solar Sync shall not require broadcast, subscription, or other generalized weather data, and shall function as a standalone ET-based irrigation system when directly connected to a compatible automatic irrigation controller of up to 48 stations.
 - c. The Solar Sync shall consist of two physical components, including a Solar Sync Sensor mounted in an optimum location for measurement of climatological data, and a module, containing database information which shall be connected to the irrigation controller's SmartPort.

- d. The Solar Sync Sensor shall be mounted within 200 ft./60m of the irrigation controller. The Solar Sync Sensor shall include individual sensors for solar radiation, and air temperature, and shall also include a rain sensor. The rain sensor shall be capable of interrupting the power from the irrigation controller to the valves when rainfall exceeds a pre-selected amount.
- e. The rain sensor circuitry shall utilize 2 sets of hygroscopic disks to activate switches in the unit. One switch will be for the total rainfall compensation unit and the other for the Quick Response™ unit. The Quick Response™ unit will turn off the irrigation system within 5 minutes of the onset of precipitation, depending on the intensity.
- f. The sensor shall be adjustable by turning a plastic collar on the device that regulates an opening, thus varying the rate of evaporation from the disks.
- g. In addition, the built-in temperature sensor shall be capable of interrupting the power from the irrigation controller to the valves when ambient air temperature falls below 37 degrees Fahrenheit (3 degrees Centigrade).
- h. All sensors shall be integrated into a single array, and shall be housed in an UV and corrosion resistant plastic casing.
- i. The sensor shall have an integral, adjustable, aluminum, mounting bracket that allows installation on angled, as well as perpendicular surfaces. The sensor shall have a mounting option that allows for installation on a rain gutter.
- j. The Solar Sync shall permit the user to designate a no water window that prevents any irrigation from occurring during a specific period of the day.
- k. The Solar Sync shall be fully functional with 24VAC input or less, with a max current draw of 25ma, and shall not require a dedicated high-voltage transformer or connection. The Solar Sync system shall be CE [C-tick] approved.
- l. The Solar Sync shall be installed in accordance with the manufacturer's published instructions.

2. WIND SENSOR

- a. The wind sensor shall be capable of interrupting the power from the irrigation controller to the valves when wind speed exceeds a set rate. The sensor can be set to actuate at various wind speeds from a minimum of 12 miles per hour (19.3 kilometers per hour) to a maximum of 35 miles per hour (56.3 kilometers per hour). The sensor shall also have an adjustable reset for wind speeds of between 8 and 24 miles per hour (12.8 to 38.6 kilometers per hour).
- b. The wind sensor circuitry shall be housed in a corrosion resistant PVC casing. The switch shall be rated at 24 VAC, 5 amps.

- c. The sensor shall have an integral, mounting adapter that allows installation on 2" PVC pipe or ½" conduit.
- d. The sensor shall be installed in accordance with the manufacturer's published instructions.

3. FLOW-SHUT OFF DEVICE

- a. The flow shut-off device shall be capable of interrupting the power from the irrigation controller to the valves when flow in the system exceeds a pre-selected amount.
- b. The device shall be of a two-piece configuration with a sensor unit and a programmable interface panel. The interface panel shall be wired directly to the irrigation controller and mounted in close proximity to the controller. The sensor unit shall be wired to the interface panel and shall be housed in a PVC sensor body. The sensor bodies shall be available in 1, 1.5, 2, 3, and 4-inch Schedule 40 PVC and 1.5, 2, and 3-inch Schedule 80 PVC.
- c. The sensor shall be of a magnetic impeller-type design. The sensor circuitry shall be housed in a corrosion resistant plastic casing, completely sealed, and waterproof. The interface panel shall be enclosed in a durable, weather-resistant, locking plastic case designed for indoor or outdoor mounting.
- d. The interface panel shall have a system calibration button that calibrates the sensor to the highest zone flow while running. All adjustments to the interrupt period and system start-up delay shall be accomplished through two dials on the interface panel. Feedback on system performance shall be provided by LEDs on the interface panel and shall indicate if power is applied to the device and if flow is acceptable. The programmable interface panel shall provide for a start-up delay of 0 seconds to 300 seconds to allow for system stabilization before detecting for overflow conditions. Interrupt period shall be programmable from 2 minutes to 60 minutes, along with a manual reset function.
- e. The device shall be installed in accordance with the manufacturer's published instructions.

PART 3 - EXECUTION

3.1 EARTHWORK

- A. Install warning tape directly above pressure piping, 12 inches below finished grades, except 6 inches below subgrade under pavement and slabs.
- B. Install piping and wiring in sleeves under sidewalks, roadways, parking lots and walls.
- C. Drain Pockets: Excavate to sizes indicated. Backfill with cleaned gravel or crushed stone, graded from 3/4 to 3 inches to 12 inches below grade. Cover gravel or crushed stone with sheet of asphalt-saturated felt and backfill remainder with excavated material.
- D. Provide minimum cover over top of underground piping according to the following:
 - 1. Irrigation Main Piping: Minimum depth of 36 inches below finished grade.
 - 2. Circuit Piping: 12 inches
 - 3. Drain Piping: 12 inches
 - 4. Sleeves: 24 inches

3.2 PIPING APPLICATIONS

- A. Aboveground Irrigation Main Piping: Type L, Type M hard copper tube, wrought- or cast-copper fittings, and soldered joints.
- B. Underground Irrigation Main Piping: Schedule 40, PVC pipe and socket fittings; and solvent-cemented joints.
- C. Circuit Piping: Schedule 40, PVC pipe and socket fittings; and solvent-cemented joints.
- D. Risers to Aboveground Sprinklers and Specialties: Schedule 80, PVC threaded pipe.
- E. Drain Piping: Schedule 40, PVC pipe and socket fittings; and solvent-cemented joints.
- F. Sleeves: Schedule 40, PVC pipe and socket fittings; and solvent-cemented joints.
- G. Transition Fittings: Use transition fittings for plastic-to-metal pipe connections according to the following:
 - 1. Couplings:
 - a. Underground Piping NPS 1-1/2 and Smaller: Manufactured fitting or coupling.
 - b. Underground Piping NPS 2 and Larger: AWWA transition coupling.
 - 2. Fittings:
 - a. Aboveground Piping: Plastic-to-metal transition fittings.
 - b. Underground Piping: Union with plastic end of same material as plastic piping.

3.3 VALVE APPLICATIONS

A. Aboveground, Shutoff-Duty Valves:

1. NPS 2 and Smaller: Bronze, stem gate valve.
2. NPS 2 and Smaller: ball valve.

B. Underground, Shutoff-Duty Valves: Use the following:

1. NPS 2 and Smaller: Curb stop with tee head, curb-stop service box, and shutoff rod.
2. NPS 3 and Larger: AWWA cast-iron gate valve with elastomeric gaskets and stem nut, valve box, and shutoff rod.

C. Underground, Manual Control Valves: Bronze globe valve with control-valve box and valve key.

D. Control Valves: Bronze, Plastic ball valve.

E. Drain Valves: Bronze, Plastic ball valve.

3.4 INSTALLATION

A. Install piping at minimum uniform slope of 0.5 percent down toward drain valves.

B. Install piping free of sags and bends.

C. Install groups of pipes parallel to each other, spaced to permit valve servicing.

D. Install fittings for changes in direction and branch connections.

E. Install unions adjacent to valves and to final connections to other components.

F. Lay piping on solid subbase, uniformly sloped without humps or depressions.

G. Underground Ball Valves: Install in valve box with top flush with grade.

1. Install valves and PVC pipe with restrained, gasketed joints.

H. Control Valves: Install in control-valve box.

I. Drain Valves: Install in control-valve box.

J. Flush circuit piping with full head of water and install sprinklers after hydrostatic test is completed.

K. Locate part-circle sprinklers to maintain a minimum distance of 4 inches from walls and 2 inches from other boundaries, unless otherwise indicated.

L. Install freestanding controllers on precast concrete bases not less than 36 by 24 by 4 inches thick, and not less than 6 inches greater in each direction than overall dimensions of controller.

- M. Install control cable in same trench as irrigation piping and at least 2 inches below or beside piping. Provide conductors of size not smaller than recommended by controller manufacturer. Install cable in separate sleeve under paved areas if irrigation piping is installed in sleeve.

3.5 CONNECTIONS

- A. Ground equipment according to Division 16 Section "Grounding and Bonding".
- B. Connect wiring according to Division 16 Section "Conductors and Cables".

3.6 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 - 2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
 - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Remove and replace units and retest, reinspect as specified above.

3.7 ADJUSTING

- A. Adjust settings of controllers.
- B. Adjust automatic control valves to provide flow rate of rated operating pressure required for each sprinkler circuit.
- C. Adjust sprinklers so they will be flush with finish grade.

END OF SECTION 02810

SECTION 02827
GATE OPERATORS

PART 1 – GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for furnishing and installing the following:

1. ~~Sliding~~ **Swinging** gate operator at Sallyport **parking entry** gate.

B. Related Sections:

1. Chain link fences and gates are specified in Section 02821.

2. Overhead coiling doors are specified in Section 08333.

3. Field-applied paint finish on gates is specified in Section 09900.

4. Vehicle detector loops are specified in Section 11150.

1.02 SUBMITTALS

A. Product Data: Manufacturer's printed information and installation instructions including required clearances.

B. Shop Drawings: Include complete details of gate operator and attachment of operator to ~~sliding~~ **swinging** gate.

1.03 QUALITY ASSURANCE

A. Installer: Company specializing in the installation of the type(s) of gate operators specified, with a minimum of 3-years successful experience.

B. Manufacturer: Company specializing in the manufacture of the type of gate operators specified, with a minimum of 5-years successful experience.

C. Comply with NEMA, UL and CSA standards.

1.04 PROTECTION

A. Protect products against damage during transportation.

B. Protect adjacent construction and finishes as required to prevent damage during installation.

1.05 COORDINATION

A. Coordinate installation of gate operators to avoid interference with work of other Sections or separate Contracts.

1.06 WARRANTY

- A. Warrant gate operators to be free from defects in materials and workmanship for a period of 5-years from date of Substantial Completion. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents.

PART 2 – PRODUCTS

~~2.01 SLIDING GATE OPERATOR~~

- ~~A. Approved Manufacturer: Hy Security Gate Operator Model 222SS or approved equal.~~
- ~~B. Type: Electric motor with hydraulic drive rail.~~
- ~~C. Horsepower: 1 HP.~~
- ~~D. Speed: Minimum 1 foot per second.~~
- ~~E. UL Usage Class: II, III, IV.~~
- ~~F. Features: Continuous duty without overloading or overheating. Rated by manufacturer at 30 or more complete cycles per hour. All components UL approved. Furnish disconnect switch with NEMA KS1: Type 3R enclosure.~~
- ~~1. Provide equipment with suitable electrical characteristics including phase, voltage, branch circuit wire size, over current protection, and connection devices coordinated with Division 16.~~
 - ~~2. Self locking.~~
 - ~~3. Weather resistant steel enclosure protecting operating parts.~~
 - ~~4. Automatic reversing upon obstruction during closing cycle and automatic stop upon obstruction during opening cycle.~~
 - ~~5. Refer to electrical drawings for power requirements.~~
- ~~G. Controls: Electric and electronic programmable controls separated from motor and drive mechanism, sealed from water and insects, with space for additional optional equipment. Operation of gate shall be controlled from the Sallyport by a 3 position push button station housed in a NEMA 1 enclosure. Operation of the gate from the exterior shall be controlled by a hand held transmitter. Transmitter shall be on the same frequency as the hand held transmitter specified in Section 08333 for the overhead coiling door. Egress operation of gate shall be controlled by vehicle detector loop specified in Section 11150. Closing of gate in either direction shall be controlled by vehicle detector loops. Provide number of hand held transmitters as directed by the Architect.~~

2.01 SWINGING GATE OPERATOR

- A. **Approved Manufacturer: Hy-Security Gate Operator Model SwingSmart DC 20 with Smart DC Controller or approved equal.**

- B.** *Operation shall be by means of a brushed DC electric motor driving a double reduction gear reducer with 600:1 ratio and an articulating arm to rotate from zero to 90-degrees. The closing action of the articulating arm shall cause the gate to be mechanically locked in place without the use of externally operated electric or mechanical locks. The opening and closing cycle times will vary depending on gate size and weight, from 10- to 15-seconds. The output of the gear reducer shall be protected from excessive torque loads by means of an adjustable breakaway torque limiter which can also function as an emergency means of opening the gate. The gear reducer shall be filled with synthetic lubricant capable of allowing operation down to -13-deg. F. without a heater. Operator shall operate in the event of a power failure in an uninterruptible power supply mode to the extent the two 8Ah batteries can maintain adequate power.*
- C.** *Standard mechanical components shall include as a minimum:*
- 1. Two piece linear low density polyethylene cover with locking toggle action latches. Access to electronics does not require removal of gate arm linkage.*
 - 2. Articulating linkage for actuation of gate with covers to protect bystanders from pinch hazards and provision to bolt linkage as well as weld linkage. Spherical connection at gate.*
 - 3. Electronic circuit boards to be conformal coated to resist moisture induced failures.*
 - 4. Frame constructed of 1/4-inch thick steel plate, welded.*
 - 5. Finish: Frame shall be zinc plated. Other components shall be zinc plated or non-corroding.*
 - 6. Easily adjustable limit switches to limit travel in each direction.*
- D.** *Minimum standard electrical components: Industrial grade.*
- 1. Motor: 1/2 HP brushed DC motor with ball bearings.*
 - 2. Components shall have overload protection.*
 - 3. Controls: Smart DC Controller Board with 512K memory containing:*
 - a. Inherent entrapment sensor.*
 - b. Built-in "Warn Before Operate" system.*
 - c. Built in timer to close.*
 - d. 2 line liquid crystal display for reporting of functions.*
 - e. 24 programmable output relay options.*
 - f. Anti-tailgate mode.*
 - g. Built-in multi-level power surge/lightening strike protection using gas discharge and optoisolation technology.*

- C. Instruct Owner's personnel on proper operation and maintenance of gate operators.

END OF SECTION

SECTION 08333**OVERHEAD COILING DOORS**

PART 1 - GENERAL**1.01 DESCRIPTION**

A. This Section describes requirements for furnishing and installing the following:

1. Exterior overhead coiling service door at Sallyport.

B. Related Sections:

1. Gates and gate operators are specified in Section 02827.
2. Metal fabrications are specified in Section 05505.
3. Access doors and frames are specified in Section 08312.
4. Overhead coiling grilles are specified in Section 08334.
5. Parking control equipment is specified in Section 11150.

1.02 SUBMITTALS

A. Product Data: Manufacturer's descriptive and technical data and illustrations.

B. Operating and Maintenance Instructions: Complete data for maintenance and operation.

1.03 QUALITY ASSURANCE

A. Manufacturer: Regularly providing assemblies of the type required for not less than 5-years, capable of maintaining, repairing, and servicing the Project location within reasonable time when service is called for by the Owner, and shall retain responsibility for installation of doors.

B. Wind Loading: Design and reinforce exterior overhead service doors to withstand a 20-psf wind loading pressure.

C. Overhead coiling doors shall be designed to a standard maximum of 25-cycles per day and an overall maximum of 50,000 operating cycles for the life of the door.

D. Door finish shall be such that there is no corrosion when the material is subjected to salt spray resistance test ASTM B117 for 1,000-hours.

1.04 WARRANTY

A. Warrant overhead coiling doors to be free from defects in materials and workmanship for a period of 2-years from the date of Substantial Completion. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents.

PART 2 - PRODUCTS**2.01 EXTERIOR OVERHEAD COILING SERVICE DOORS**

A. Approved Manufacturers: The Cookson Co. Type FCM or equal by Cornell Iron Works, Inc., Overhead Door, Pacific Rolling Door or approved equal.

B. Door Curtain: The door curtain shall be constructed of interconnected flat face strip steel slats conforming to ASTM A653, gauge as recommended by door manufacturer. Finish shall consist of the following:

1. Hot dipped galvanized G90 coating consistent with ASTM A653.
 2. Bonderized coating for prime coat adhesion.
 3. Factory applied thermosetting powder coating applied with a minimum thickness of 2-mils. Custom color to match color sample furnished by the Architect.
- C. Bottom Bar: Two 1/8-inch steel angles mechanically joined together, with safety edge system. Finish to match door curtain.
- D. Guides: 3 steel angles bolted together with 3/8-inch fasteners to form a channel for the curtain to travel and shall include an extruded vinyl snap-on weatherstripping continuously along the exterior leg of the guide. The wall angle portion shall be continuous and fastened to the surrounding structure with either minimum 1/2-inch fasteners or welds, both on 36-inch centers. Finish to match door curtain.
- E. Brackets: Constructed of steel, not less than 1/4-inch thick, bolted to the wall angle with minimum 1/2-inch fasteners. Finish to match door curtain.
- F. Barrel: Steel tubing of not less than 4-inch diameter. Oil tempered torsion springs shall be capable of counter balancing the weight of the curtain. The barrel shall be designed to limit the maximum deflection to .03-inch per foot of opening width. Springs shall be adjusted by means of an exterior wheel. Finish with one coat of rust-inhibiting primer.
- G. Hood: Fabricated of 24-gauge galvanized steel, formed to fit the curvature of the brackets. Hood shall contain a waterproof baffle to control air infiltration. Finish to match door curtain.
- H. Operation:
1. Door shall be operated at a speed of 2/3 foot per second by an open drip-proof electric motor. The motor operator shall include a geared limit switch, and an electrically interlocked emergency chain operator. The motor starter shall be housed in a NEMA 1 housing and include a magnetic reversing starter, a 24 volt control transformer, and complete terminal strip to facilitate field wiring. The motor operator shall be activated from inside the Sallyport by a 3 button push-button station in a NEMA 1 enclosure and from outside the Sallyport by a **two-button** hand-held transmitter. ~~The hand-held transmitter shall be on the same frequency as the hand-held transmitter specified in Section 02827 for the sliding gate~~ **One button of the transmitter shall operate the singing gate specified in Section 02827; the other button shall operate the overhead coiling door.** The motor shall be size as required by the door. The motor operator shall be mounted to the door bracket and be UL listed.
 - a. Provide number of hand-held transmitters as ~~directed by the Architect~~ **specified in Section 02827.**
 2. The door shall include a safety edge system on the bottom bar to automatically reverse the door if the device detects an obstruction in the downward travel of the door.
 - a. The safety edge shall consist of a rubber boot attached below the bottom bar with a switch secured to the back of the bottom bar. The safety edge shall operate with air wave technology and shall not rely on pneumatic pressure or electrical strip contacts to operate properly. The safety edge shall create an air wave that shall be detected and reverse the direction of the door.
 - b. The safety edge shall not require a connection cord or any means of electrical connection to the motor control panel.

- c. The safety edge shall be of fail-safe construction, and on every cycle shall perform a self diagnostic test. If any part of the system fails, the door closing operation shall change from momentary pressure to constant pressure requiring constant pressure on the close control station to move the door in a downward motion. Repairing the safety edge system will automatically return the closing operation to momentary pressure.
 - d. The operation of the safety edge shall not be subject to interferences by temperature, barometric pressure, water infiltration, or punctures or small tears.
- G. Locking: Equip doors for padlocking from coil side unless otherwise directed by the Architect.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install door and operating equipment with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports in accordance with manufacturer's instructions and as specified.
- B. Upon completion, lubricate, test and adjust doors to operate easily, free from warp, twist or distortion, and fitting weathertight.
- C. Exposed surfaces shall be clean and free from scratches, dents, tool marks, stains, discoloration, and other defects and damage.
- D. Train Owner's maintenance personnel on procedures and schedules related to door operation, servicing, preventative maintenance, and procedures for resetting closing devices after activation.

END OF SECTION

SECTION 11027**LOCK BOXES**

PART 1 - GENERAL**1.01 DESCRIPTION**

- A. This Section describes the requirements for furnishing and installing lock boxes.

1.02 SUBMITTALS

- A. Product Data: Manufacturer's descriptive and technical data and installation details.

1.03 QUALITY ASSURANCE

- A. Coordinate ordering lock boxes with local Fire District.

PART 2 - PRODUCTS**2.01 LOCK BOXES AT MAIN PUBLIC ADOPTION/RETRIEVAL, CLINIC AND STAFF ENTRANCES**

- A. Approved Manufacturer: Knox Company "Knox-Vault 4400 Series" or approved equal.
1. Construction: Heavy-duty, high security, ¼-inch thick plate steel housing.
 2. Door: 5/8-inch solid steel with interior gasket seal and stainless steel hinge.
 3. Lock: UL-listed, double-action rotating tumblers and hardened steel pins accessed by a biased cut key, with 1/8-inch stainless steel dust cover with tamper seal mounting capability.
 4. Size: 7-inches high x 7-inches wide.
 5. Mounting: Recessed.
 6. Color: As selected by Architect from manufacturer's standards.
- B. Fastenings: Non-ferrous, type to suit installation conditions.

2.02 LOCK BOXES AT ~~SALLYPORT~~ **PARKING ACCESS GATE**

- A. Approved Manufacturer: Knox Company Model 3200 or approved equal.
1. Construction: Heavy-duty, high security.
 2. Door: ½-inch solid steel.
 3. Size: 7-inches high x 7-inches wide.
 4. Mounting: Recessed.
 5. Color: As selected by Architect from manufacturer's standards.

- B. Fastenings: Non-ferrous, type to suit installation conditions.
- C. Key Control Switch: Knox #3502 single switch. Provide in lock box.

PART 3- EXECUTION

3.01 INSTALLATION

- A. Install lock boxes at locations indicated in accordance with manufacturer's instructions.
- B. Securely fasten in place with sides plumb and level.
- C. Exposed surfaces shall be free from scratches, tool marks, and other damage and defects.

END OF SECTION

SECTION 08412

ALUMINUM-FRAMED STOREFRONTS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section describes the requirements for furnishing and installing the following:
1. Entrance doors.
 2. Exterior fixed storefront framing system.
- B. Related Sections:
1. Joint sealants are specified in Section 07920.
 2. Interior aluminum doors and frames are specified in Section 08121.
 3. Aluminum windows in punched openings are specified in Section 08520.
 4. Door hardware is specified in Section 08710.
 5. Automatic door operators are specified in Section 08730.
 6. Glazing requirements are specified in Section 08810.
 7. ***Glazed aluminum curtain wall is specified in Section 08920.***

1.02 REFERENCE STANDARDS

- A. Leadership in Energy and Environmental Design (LEED), www.usgbc.org/LEED (United States Green Building Council (USGBC)).
1. LEED – NC v2.2 Reference Guide, first edition, dated December 2006.

1.03 EXTERIOR STOREFRONT PERFORMANCE REQUIREMENTS

- A. General: Provide exterior aluminum entrances and storefront assemblies that comply with performance characteristics specified, as demonstrated by testing the manufacturer's corresponding stock assemblies according to specified test methods.
- B. Thermal Movement: Design the aluminum entrance and storefront framing systems to provide for expansion and contraction of the component materials resulting from a surface temperature range of 180-deg. F. without buckling, failure of joint seals, undue stress on structural elements, damaging loads on fasteners, reduction of performance, stress on glass, or other detrimental effects. Entrance doors shall function normally over the specified temperature range.
- C. Wind Loads: Provide aluminum entrance and storefront framing system, including anchorage, capable of withstanding wind-load design pressures calculated according to the requirements of CBC.
- D. Structural Performance: Conduct tests for structural performance in accordance with ASTM E330. At the conclusion of the tests there shall be no glass breakage or permanent damage to fasteners, anchors, hardware or actuating mechanism. Framing members shall have no permanent deformation in excess of 0.2-percent of their clear span.

1. Deflection Normal to Plane of the Wall: Test pressure required to measure deflection of framing members normal to the plane of the wall shall be equivalent to the specified wind load. Deflection shall not exceed 1/175 of the clear span, when subjected to uniform load deflection test.
 2. Deflection Parallel to the Plane of the Wall: Test pressures required to measure deflection parallel to the plane of the wall shall be equal to 1.5 times the specified wind pressure. Deflection of any member carrying its full dead load shall not exceed an amount that will reduce glass bite below 75-percent of the design dimension and shall not reduce the edge clearance between the member and the fixed panel, glass or other fixed member above to less than 1/8-inch. The clearance between the member and an operable door or window shall be at least 1/16-inch.
- E. Air Infiltration: Provide aluminum-framed entrances and storefronts with an air infiltration rate of not more than 0.06-cfm per sq. ft. of fixed area, excluding operable door edges, when tested in accordance with ASTM E283 at an inward test pressure differential of 6.24-psf.
- F. Water Penetration: Provide storefront framing systems with no uncontrolled water penetration, excluding operable door edges, as defined in the test method when tested in accordance with ASTM E331 at an inward test pressure differential of 8-psf as defined in AAMA 501.

1.04 SUBMITTALS

- A. Refer to Section 01352 – LEED Requirements for LEED related submittal requirements.
- B. Product Data: Furnish product data for each system showing manufacturer's standard details and fabrication methods, data on finishing, hardware, and accessories, and recommendations for maintenance and cleaning.
1. Regional Materials: Furnish product data or letter stating the location (closest city, state) where product was manufactured (final processing or assembly) and, if available, the location where raw materials were harvested, extracted or recovered (mine, quarry, plantation, forest, recycling recovery center, etc.).
- C. Shop Drawings: Furnish shop drawings for each system showing layout and installation details, including relationship to adjacent work, elevations at 1/4-inch scale, detail sections of typical composite members, anchors and reinforcement, hardware mounting heights, provisions for expansion and contraction, and glazing details. Show layout and motorized window operating components.
- D. Samples for Verification: Furnish samples of each type and color of aluminum finish selected, on 12-inch long sections of extrusions or formed shapes and 6-inch square sheets.
- E. Test Reports: Furnish certified test reports from a qualified independent testing laboratory showing that aluminum entrance and storefront framing systems have been tested in accordance with specified test procedures and comply with specified performance characteristics.

1.05 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: A minimum of 5-years experience in the manufacture of aluminum entrances and storefronts of the types specified.
- B. Installer's Qualifications: Minimum 5-years experience in the installation of systems similar to those required.

1.06 ENVIRONMENTAL QUALITY ASSURANCE

- A. Applicable LEED Credits – Refer to Section 01352:
1. Credit MRc5 – Regional Materials.

2. Credit EQc4.1 – Adhesives and Sealants.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver aluminum entrance and storefront components in the manufacturer's original protective packaging.
- B. Store aluminum components in a clean, dry location away from uncured masonry or concrete. Cover components with waterproof paper, tarpaulin or polyethylene sheeting in a manner to permit circulation of air.
 - 1. Stack framing components in a manner that will prevent bending and avoid significant or permanent damage.

1.08 PROJECT CONDITIONS

- A. Field Measurements: Check openings by accurate field measurement before fabrication. Show recorded measurements on shop drawings. Coordinate fabrication with construction progress to avoid delay of the work.
 - 1. When necessary, proceed with fabrication without field measurements, and coordinate fabrication tolerances to ensure proper fit.

1.09 WARRANTY

- A. Furnish written warranty covering aluminum entrances and storefronts that fail in materials or workmanship within 3-years from date of Substantial Completion. Failures include, but are not limited to structural failures including excessive deflection, excessive leakage or air infiltration, faulty operation, and deterioration of metals, metal finishes, and other materials beyond normal weathering.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS

- A. Storefront Framing System: Kawneer Tri-Fab 451 VG Shearblock (Back – Outside Glazed), **Arcadia** or approved equal.
- B. Entrance Doors: Kawneer 500 Series with 10-inch bottom rail, **Arcadia** or approved equal.

2.02 MATERIALS

- A. Aluminum Members: 6063-T5 alloy and temper.
- B. Fasteners: Aluminum or Series 300 nonmagnetic stainless steel.
 - 1. Do not use exposed fasteners except for application of hardware. For application of hardware, use Phillips flat-head machine screws that match the finish of member or hardware item being fastened.
- C. Concealed Flashing: Dead-soft stainless steel or extruded aluminum as selected by manufacturer for compatibility with other components.
- D. Brackets and Reinforcements: Aluminum or nonmagnetic stainless steel. Provide non-staining, non-ferrous shims for installation and alignment as required.
- E. Weatherstripping: Manufacturer's standard replaceable type. Provide weatherstripping on meeting stiles of pairs of doors and at bottom rail of each door leaf.
- F. Glazing Gaskets: Compression type design, replaceable, molded or extruded santoprene, PVC or EPDM. Provide type that locks securely into the glazing reglet to prevent glazing gaskets from disengaging.

2.03 COMPONENTS

- A. Fixed Storefront Framing System:
 - 1. Continuous sub-sill and diverters shall be provided to collect water infiltration and divert from the interior of the system.
 - 2. Framing members shall be internally reinforced and secured at head and sill as required for structural performance requirements, for hardware attachment, and as indicated.
 - 3. Fasteners shall be located to ensure concealment from view in the final assembly.
 - 4. Mullion Size: 2 x 4-1/2 shear block system.
- B. Stile-and-Rail Type Entrance Doors: Door corner construction shall consist of mechanical clip fastening, SIGMA deep penetration and fillet welds.
 - 1. Glazing: Fabricate doors to facilitate replacement of glass or panels, without disassembly of stiles and rails. Provide snap-on extruded aluminum glazing stops, with exterior stops anchored for non-removal.
 - 2. Design: 1-3/4-inch thick, wide stile design.
 - 3. Each door leaf shall be equipped with an adjusting mechanism located in the top rail near the lock stile, which provides for minor clearance adjustments after installation.

2.04 FABRICATION

- A. General: Fabricate aluminum entrance and storefront components to designs, sizes and thickness indicated, and to comply with specified standards. Sizes and profile requirements are indicated on the drawings.
- B. Prefabrication: Complete fabrication, assembly, finishing, hardware application, and other work before shipment to Project site. Disassemble components only where necessary for shipment and installation.
 - 1. Perform fabrication operations, including cutting, fitting, forming, drilling and grinding of metal work to prevent damage to exposed finish surfaces. Complete these operations for hardware prior to application of finishes.
 - 2. Do not drill and tap for surface-mounted hardware items until time of installation at Project site.
- C. Welding: Comply with AWS recommendations. Grind exposed welds smooth to remove weld spatter and welding oxides. Restore mechanical finish.
 - 1. Welding behind finished surfaces shall be performed to minimize distortion and discoloration on the finished surface.
- D. Reinforcing: Install reinforcing as required for hardware, performance requirements, sag resistance and rigidity.
- E. Dissimilar Metals: Separate dissimilar metals with bituminous paint, suitable sealant, elastomeric tape, or gasket between the surfaces. Do not use coatings containing lead.
- F. Continuity: Maintain accurate relation of planes and angles with hairline fit of contacting members.
- G. Conceal fasteners wherever possible.
- H. Weatherstripping: For exterior doors, provide compression weatherstripping against fixed stops. At other edges, provide sliding weatherstripping retained in adjustable strip mortised into door edge.

2.05 FINISHES

- A. Comply with requirements of AAMA 2605.
- B. Finish exposed areas of aluminum and components with an Architectural Class I bronze anodic coating conforming to AA-M12C22A42, color range as approved by the Architect from industry standards.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Comply with manufacturer's instructions and recommendations for installation.
- B. Set units plumb, level, and true to line, without warp or rack of framing members, doors, or panels. Install components in proper alignment and relation to established lines. Provide proper support and anchor securely in place
- C. Installation Tolerances:
 - 1. Variation from Plane: Do not exceed 1/8-inch in 12-feet of length or 1/4-inch in any total length.
 - 2. Offset from Alignment: The maximum offset from true alignment between two identical members abutting end-to-end in line shall not exceed 1/16-inch.
 - 3. Diagonal Measurements: The maximum difference in diagonal measurements shall not exceed 1/8-inch.
 - 4. Offset at Corners: The maximum out-of-plane offset of framing at corners shall not exceed 1/32-inch.
- D. Separate aluminum and other corrodible metal surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
 - 1. Paint dissimilar metals where drainage from them passes over aluminum.
 - 2. Paint aluminum surfaces in contact with mortar, concrete or other masonry with alkali-resistant coating.
 - 3. Paint wood and similar absorptive material in contact with aluminum and exposed to the elements or otherwise subjected to wetting, with 2-coats of aluminum house paint. Seal joints between the materials with sealant.
- E. Drill and tap frames and doors and apply surface-mounted hardware in compliance with hardware manufacturer's instructions and template requirements. Use concealed fasteners wherever possible.
- F. Set sill members and other members in bed of sealant, or use joint fillers or gaskets to provide weathertight construction. Comply with requirements of Section 07920.
- G. Where flashings are indicated adjacent to work specified in this Section, provide flashings in 0.040-inch aluminum, finished to match entrances and storefronts.

3.02 ADJUSTING

- A. Adjust operating hardware to function properly for smooth operation without binding, and to prevent tight fit at contact points and weatherstripping.

3.03 CLEANING

- A. Clean the completed system, inside and out, promptly after installation, exercising care to avoid damage to coatings.

- B. Clean glass surfaces after installation, complying with the requirements specified in Section 08810. Remove excess glazing and sealant compounds, dirt and other substances from aluminum surfaces.

3.04 PROTECTION

- A. Institute protective measures required throughout the remainder of the construction period to ensure that aluminum entrances and storefronts will be without damage or deterioration, other than normal weathering, at time of acceptance.

3.05 FIELD QUALITY CONTROL

- A. Storefront Framing: Architect will select storefront units to be tested as soon as a representative portion of the Project has been installed, glazed, perimeter caulked and cured. Conduct tests for air infiltration and water penetration with manufacturer's representative present. Tests not meeting specified performance requirements and units having deficiencies shall be corrected at no additional cost to the Owner.
 - 1. Testing shall be performed by a qualified independent testing agency retained and paid for by the Contractor. Testing Standard per AAMA 503, including reference to ASTM E783 for air infiltration test and ASTM E1105 water infiltration test.
 - a. Air Infiltration Tests: Conduct tests in accordance with ASTM E783. Allowable air infiltration shall not exceed 1.5 times the amount specified in the performance requirements of 0.09-cfm/sq. ft., whichever is greater.
 - b. Water Infiltration Tests: Conduct tests in accordance with ASTM E1105. No uncontrolled water leakage is permitted when tested at a static test pressure of 2/3 the specified water penetration pressure but not less than 6.24-psf.
- B. Manufacturer's Field Services: Upon Architect's or Owner's request, provide manufacturer's field service consisting of periodic site visit for inspection of product installation in accordance with manufacturer's instructions.

END OF SECTION

SECTION 08920**GLAZED ALUMINUM CURTAIN WALLS**

PART 1 - GENERAL**1.01 DESCRIPTION**

- A. This Section describes the requirements for furnishing and installing glazed aluminum curtain walls.
- B. Primary components of glazed aluminum curtain walls include aluminum curtain wall framing; glass and glazing; sills and similar items indicated as integral components of the curtain wall system; joint sealants; anchorages, shims, fasteners, accessories and support brackets.
- C. Related Sections:
 - 1. Joint sealants are specified in Section 07920.
 - 2. Aluminum-framed storefronts are specified in Section 08412.
 - 3. Glazing is specified in Section 08800.

1.02 REFERENCE STANDARDS

- A. Leadership in Energy and Environmental Design (LEED), www.usgbc.org/LEED (United States Green Building Council (USGBC)).
 - 1. LEED – NC v2.2 Reference Guide, first edition, dated December 2006.

1.03 SYSTEM PERFORMANCE REQUIREMENTS

- A. General: Provide glazed aluminum curtain walls that have the following capabilities based on testing manufacturer's standard units in assemblies similar to those required for this Project.
- B. Wind Loading: Design, fabricate, and install assemblies to withstand a wind load, positive and negative, as specified in California Building Code (CBC), acting normal to the plane of the wall or assembly.
- C. Deflections and Thermal Movements: Provide assemblies capable of withstanding building movements and weather exposures, and which are capable of performing within the following limitations without causing buckling, failure of joint sealants, undue stress on fasteners and other detrimental effects:
 - 1. Normal-to-wall deflection not exceeding the lesser of 3/4-inch or L/175.
 - a. Normal-to-wall deflection shall not exceed L/1000 for walls supporting stone veneer panels.
 - 2. Normal-to-wall deflection of vertical members which overhang their anchor points by more than 6-inches shall not exceed the lesser of 2L/175 or 1/4-inch.
 - 3. Thermal movements resulting from ambient temperature range of 120-deg. F., which may cause framing range of 180-deg. F.
 - 4. Test Performance: Provide glazed aluminum curtain wall system that does not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2-percent of clear span when tested in accordance with ASTM E330.
 - a. Test Pressure: 150-percent of inward and outward wind-load design pressures.

- D. Air Leakage: Not more than 0.06-cfm per sq. ft. of wall area when tested in accordance with ASTM E283 at a test pressure differential of 6.24-psf.
- E. Water Penetration by Static Pressure: No uncontrolled leakage when subjected to water spray at a static pressure of 10-psf for 15-minutes in accordance with ASTM E331.
- F. Water Penetration by Dynamic Pressure: No uncontrolled leakage when tested in accordance with AAMA 501 at a positive test pressure of 10.0-psf for 15-minutes. Test by static and dynamic methods.
- G. Safety Factor: Design parts and assemblies, including glazing stops, gaskets, adhesives, and sealants for a safety factor not less than 1.5. Failure of any part of the assembly shall not occur at less than 1.5 times maximum wind load pressure. Failure is described as breakage, disengagement, permanent deformation of framing members in excess of $L/1000$ or 1/64-inch of their clear span, whichever is less; or permanent deformation of anchor assemblies beyond tolerance and slippage limitations.
- H. Seismic Loads: Provide glazed aluminum curtain wall systems, including anchorage, capable of withstanding the effects of earthquake motions calculated according to the requirements of CBC.
- I. Dead Loads: Provide glazed aluminum curtain wall system members that do not deflect an amount which will reduce glazing bit below 75-percent of design dimension when carrying full dead load. Provide minimum 1/8-inch clearance between member and top of fixed panels, glazing, or other fixed part immediately below. Provide a minimum 1/16-inch clearance between members and operable windows or doors.
- J. Live Loads: Provide glazed aluminum curtain wall system, including anchorage that accommodates supporting structure's deflection from uniformly distributed and concentrated live loads without failure of materials or permanent deflection. Where indicated to receive sunshades, window shades or automatic door operators, engineer aluminum frame to receive loads of those systems.
- K. Provide internal steel reinforcing as required to support loads imposed on glazed aluminum curtain wall system.

1.04 SUBMITTALS

- A. Refer to Section 01352 – LEED Requirements for LEED related submittal requirements.
- B. Product Data: Manufacturer's specifications, standard details, and installation instructions, including test reports made by an independent laboratory certifying that products have been tested and comply with performance requirements.
- C. Shop Drawings: Include for fabrication and installation, including elevations, detail sections of typical members, anchorages, reinforcement, expansion provisions, and glazing. Include full scale details at head, jambs, spandrels, sill and mullions for each type of opening.
 - 1. Include structural analysis data signed and sealed by a qualified professional engineer licensed in the State of California, responsible for their preparation. Clearly indicate all loads imposed on the primary building structure.
 - 2. Indicate interface with adjacent construction and flashings.
 - 3. Indicate flashings, brake shape trim and closures, and aluminum panels.
 - 4. Show details of intersections of frame caps.
 - 5. Reference window types, architectural elevation, plans, sections and details, and structural details and members.
- D. Samples: Furnish two samples of each type and color of aluminum finish, on 12-inch long sections of extrusions of formed shapes and 6-inch square sheets.

- E. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements. Indicate experience in the installation of glazed aluminum curtain walls similar to those required for this Project.
- F. Field Test Results: From a qualified testing laboratory indicating and interpreting test results relative to compliance with specified performance requirements.

1.05 QUALITY ASSURANCE

- A. Drawings and Specifications establish requirements for glazed aluminum curtain wall system aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sight lines and relationships to one another and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, or in-service performance.
 - 1. Do not modify intended aesthetic effects, as judged solely by the Architect, except with Architect's approval and only to the extent required to comply with specified performance requirements. Where modifications are proposed, submit comprehensive explanatory data to the Architect.
- B. Single Source Responsibility: Provide glazed curtain wall system that is the product of a single manufacturer.
- C. Testing Agency Qualifications: Independent testing agency shall demonstrate, based on evaluation of agency-submitted criteria conforming to ASTM E699, that it has the experience and capability to conduct the specified testing without delaying the work.
- D. Engineer Qualifications: Professional engineer, licensed to practice in the State of California, experienced in providing engineering services of the kind specified. Engineering services are defined as those performed for design and installation of glazed aluminum curtain walls similar to those required for this Project.
 - 1. Engineering Responsibility: Engage a qualified professional engineer to prepare or supervise the preparation of data for glazed aluminum curtain walls, including drawings, testing program development, test result interpretation, and comprehensive engineering analysis that shows system compliance with specified requirements.
- E. Manufacturer's Qualifications: A minimum of 7-years experience in the manufacture of glazed aluminum curtain walls of the type specified.
- F. Installer's Qualifications: Firm with not less than 5-years successful experience in the erection of curtain wall systems similar to those required for this Project.
- G. Standards: Comply with applicable provisions of the "Metal Curtain Wall, Window, Store Front and Entrance Guide Specifications Manual" by AAMA.
- H. Preconstruction Testing: Comply with the following requirements:
 - 1. Preconstruction Testing Service: Engage a qualified independent testing agency to perform the preconstruction testing specified.
 - 2. Test glazed aluminum curtain wall system for compliance with requirements specified for performance and test methods. Conduct tests using specimen representative of proposed materials and construction including perimeter components according to AAMA 501 recommendations.
- I. Preinstallation Conference: Conduct conference at Project site. Review methods and procedures related to glazed aluminum curtain wall system, including but not limited to, the following:
 - 1. Inspect and discuss condition of substrate and other preparatory work performed by others.

2. Review structural loading limits.
3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions.
5. Take record of conference and distribute meeting minutes.

1.06 ENVIRONMENTAL QUALITY ASSURANCE

A. Applicable LEED Credits – Refer to Section 01352:

1. Credit MRc5 – Regional Materials.
2. Credit EQc4.1 – Adhesives and Sealants.

1.07 PROJECT CONDITIONS

- ##### A. Field Measurements: Verify dimensions by field measurements before fabrication and show recorded measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver aluminum curtain walls and component parts to the Project site identified in accordance with the numbering system used on the reviewed shop drawings.
- B. Each curtain wall component shall have a protective covering on the finish or be separated from other components so the finish will not be damaged.
- C. Store curtain wall system components protected from weather and from construction activities.
- D. Damaged curtain wall system components will not be accepted. Components with minor defects or scratches on exposed finished surfaces will be considered damaged and will not be accepted.

1.09 WARRANTY

- A. Furnish written warranty covering glazed aluminum curtain wall components which fail in materials or workmanship within 5-years from date of Substantial Completion. All defective materials and workmanship shall be repaired and replaced immediately, after proper notice, at no cost to the Owner. Defective materials and workmanship include, but are not limited to, evidence of early deterioration, weathering or aging, uncontrolled water penetration or air infiltration, glass breakage, deterioration of finishes, and other evidence of deterioration or failure of the work to comply with specified requirements.
- B. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURER

- A. Kawneer Company "1600 System", Arcadia or approved equal.

2.02 MATERIALS AND COMPONENTS

- A. Aluminum Members: Alloy, temper, and thickness recommended by manufacturer to comply with specified requirements; ASTM B221 for extrusions, ASTM B209 for sheet and plate.
- B. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing or wedge-lock dry glazing system of resilient elastomeric glazing gaskets, setting blocks and shims or spacers as required; gasket material and hardness as selected by curtain wall manufacturer.
- C. Glazing Sealants: As recommended by manufacturer and as specified in Section 08800.
 - 1. Provide sealants for use inside of the weatherproofing system that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- D. Framing System Gaskets and Joint Fillers: Curtain wall manufacturer's standard permanent types, depending on joint movement and sealing requirements such as sliding joints, compression joint translation, or non-moving joints.
- E. Brackets and Reinforcements: High-strength aluminum or nonmagnetic stainless steel. Provide non-staining, non-ferrous shims for installation and alignment of curtain wall work.
- F. Concealed Flashing: Dead-soft stainless steel, 26-gauge, type selected by manufacturer.
- G. Fasteners and Accessories: Manufacturer's standard non-corrosive fasteners and accessories compatible with curtain wall framing system, with exposed portions matching finish of curtain wall system.
 - 1. At movement joints, use slip-joint linings, spacers, and sleeves of material and type recommended by manufacturer.
 - 2. Where fasteners anchor into aluminum less than 0.125-inch thick, provide reinforcement to receive threaded fasteners.

2.03 FABRICATION

- A. Fabricate glazed aluminum curtain walls according to reviewed final Shop Drawings. Fabricate components that when assembled, will have accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion. After fabrication, mark components to identify their locations. Holes for purposes of assembly shall be in locations not visible from surroundings.
- B. Fabricate curtain wall system at manufacturer's shop and prior to application of finish.
- C. Conceal fasteners unless otherwise indicated.
- D. Make provisions to weep penetrating water and condensation to exterior.
- E. Exposed work shall be matched to produce continuity of line and design. Joints in exposed work shall be accurately fitted and rigidly secured with hairline contacts.
- F. Comply with AWS recommendations for welding to avoid discoloration. Grind exposed welds smooth and restore mechanical finishes.
- G. Install reinforcing as required. Separate dissimilar metals with bituminous paint or other separator.
- H. Provide 0.090-inch thick miscellaneous aluminum brake metal closures and flashings as indicated, finished to match glazed aluminum curtain walls. Provide drip flashing at heads; sill pan flashing with back and end dams at sills.
- I. Provide minimum glazing pocket clearances for thickness and type of glass required, according to GANA "Glazing Manual".

2.04 FINISHES

- A. Comply with requirements of AAMA 2605.
- B. Finish exposed areas of aluminum and components with an Architectural Class I bronze anodic coating conforming to AA-M12C22A42, color range as approved by the Architect from industry standards.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Comply with manufacturer's instructions for protecting, handling, and installing glazed aluminum curtain wall system. Do not install damaged components. Fit frames and components to produce hairline joints free of burrs and distortions. Rigidly secure non-movement joints. Seal joints watertight. Provide means to drain water to the exterior to produce a permanently weatherproof system.
- B. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose. Where aluminum will contact concrete, protect against corrosion by painting contact surfaces with bituminous paint.
- C. Install components to drain water passing joints, condensation occurring in glazing channels, condensation occurring within framing members, and moisture migrating within the system to the exterior.
- D. Install framing members plumb and true in alignment with established lines and grades.
- E. After system components are positioned, fix connections to building structure as indicated on Shop Drawings. Provide separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
- F. Install concealed operable windows in curtain wall framing as indicated and in accordance with manufacturer's instructions.
- G. Erection Tolerances: Install glazed curtain wall system to comply with the following maximum tolerances:
 - 1. Plumb: 1/8-inch in 10-feet; 1/4-inch in 40-feet.
 - 2. Level: 1/8-inch in 20-feet; 1/4-inch in 40-feet.
 - 3. Alignment: Where surfaces abut in line, limit offset from true alignment to 1/16-inch; where a reveal or protruding element separates aligned surfaces by more than 2-inches, limit offset to 1/4-inch.
 - 4. Location: Limit variation from plane or location shown on Shop Drawings to 1/8-inch in 12-feet; 1/2-inch over total length.
- H. Coordinate with adjacent construction.
- I. Double seal at perimeter of frame. Provide primary seal at frame to adjacent construction. Provide secondary seal at frame/caps to adjacent construction.
- J. Install flashings, trims and closures.

3.02 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent testing agency to perform specified testing.

- B. Water Penetration: Test areas of installed systems where directed by the Architect for compliance with system performance requirements according to ASTM E1105 at minimum differential pressure of 20-percent of inward acting wind-load design pressure, but not less than 6.24-lbf/sq. ft.
- C. Water Spray Test: After completing the installation of first window (2-story high) area of glazed aluminum curtain wall system, test system for water penetration according to AAMA 501.2.
- D. Repair or remove work that does not meet requirements or that is damaged by testing; replace to conform to specified requirements.

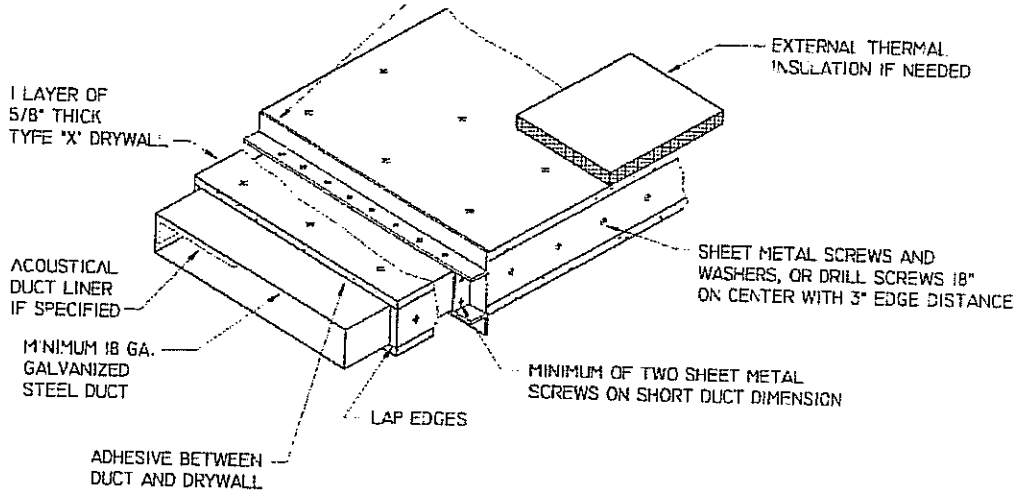
3.03 CLEANING

- A. Clean interior and exterior surfaces of curtain wall system promptly after erection and installation of glass and sealants allowing for nominal curing of liquid sealants. Remove excess glazing and joint sealants, dirt, plaster, paint, and other substances from aluminum surfaces. Clean glass surfaces not more than 4-days prior to Substantial Completion.
- B. Protect completed installations from damage and deterioration.
- C. Replace marred, defaced, scratched, or otherwise defective work at no additional cost to the Owner.

END OF SECTION

HVAC Noise Analysis
Palm Springs Animal Care Facility

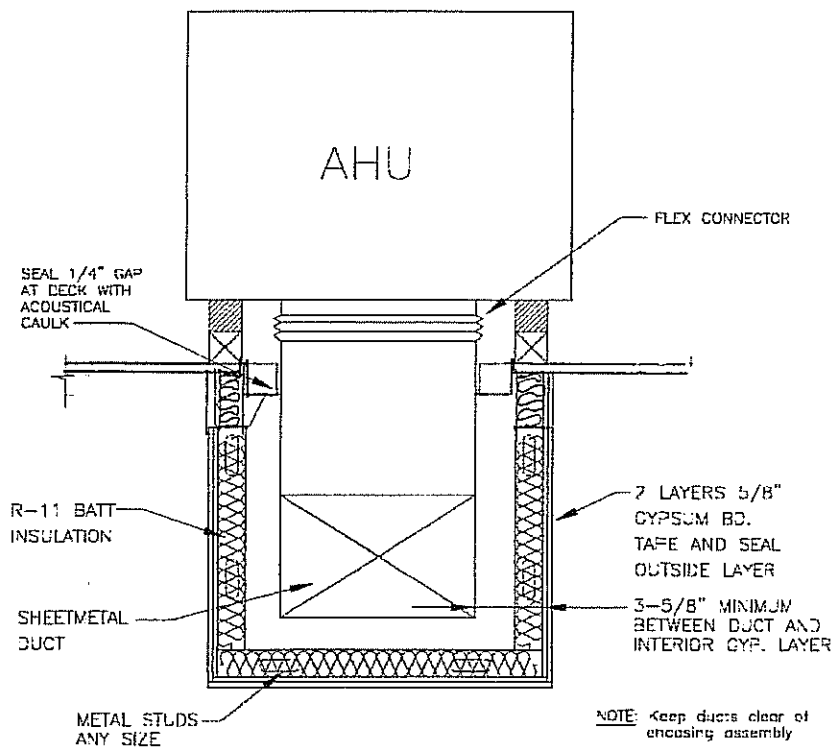
1-1/2" x 1-1/2" x 3/16" INTERMEDIATE REINFORCEMENT
ANGLES 2 FT ON CENTER. ATTACH WITH SHEET METAL
SCREWS 12" ON CENTER WITH 3" EDGE DISTANCE.



Duct lagging with GWB. Single layer detail. Double layer similar. Schematic

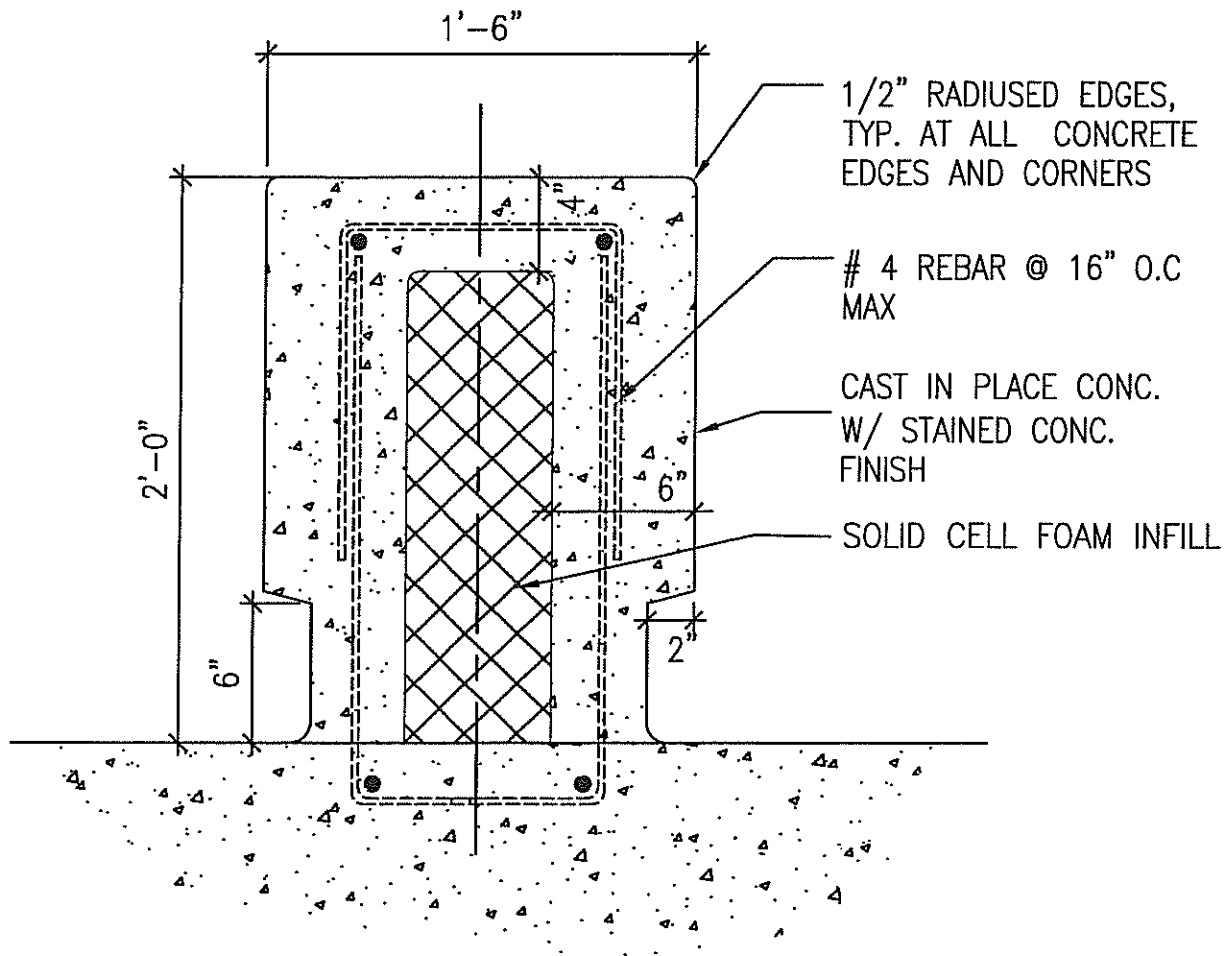
SWATT MIERS ARCHITECTS 5845 Doyle St., Suite 104 Emeryville, CA 94608 T: 510.985.9779 F: 510.985.0116 www.swattmiers.com Copyright 2009 Swatt Miers Architects	Date	Subject		Reference Number
	02/10/10	ACOUSTICAL DUCT LAGGING W/ GYP BD		ADDENDUM #3
	Scale	Project Name and Number		Sketch Number
	NTS	PALM SPRINGS ANIMAL CARE FACILITY		A3-A1
By	Drawing Reference	File Name		
TH				

HVAC Noise Analysis
Palm Springs Animal Care Facility

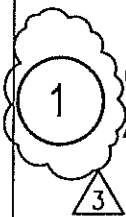


Duct encasing schematic detail

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	02/10/10	ACOUSTICAL ENCASING DUCT DETAIL		ADDENDUM #3
	Scale	Project Name and Number		Sketch Number
NTS	PALM SPRINGS ANIMAL CARE FACILITY		A3-A2	
By	Drawing Reference	File Name		
TH				



NOTE: ALL BENCHES ARE TO BE 7'-0" LONG.



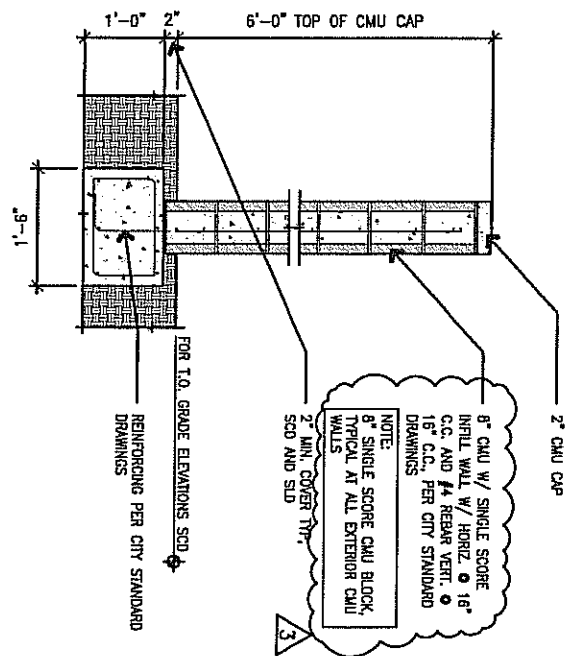
CONCRETE BENCH
AT EXTERIOR ADOPTION COURTYARD

SCALE: 1 1/2" = 1'-0"

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	Scale NTS	Project Name and Number PALM SPRINGS ANIMAL CARE FACILITY		Sketch Number A3-A3
	By TH	Drawing Reference	File Name 0903	

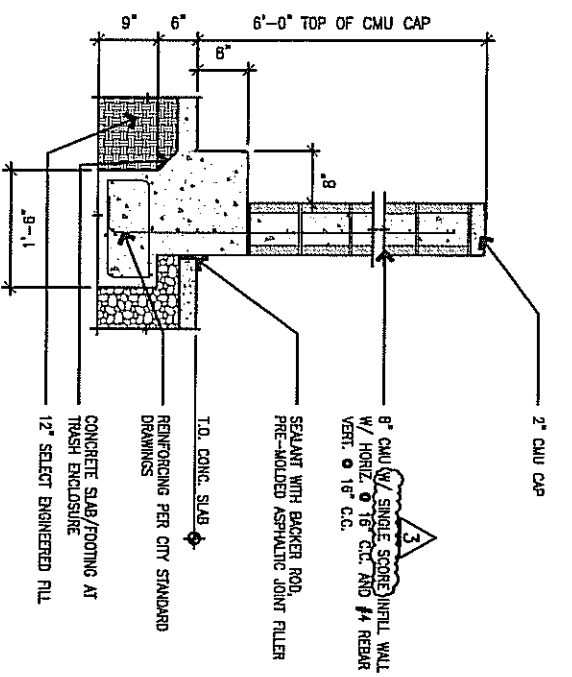
25 CMU BLOCK SITE WALL - 6'-0" HIGH TYP. UON
 EXPOSED CMU BLOCK WALL

3/4"-1'-0"



20 SITE WALL - 6'-0" HIGH TRASH ENCLOSURE WITH
 EXPOSED CMU BLOCK WALL

3/4"-1'-0"

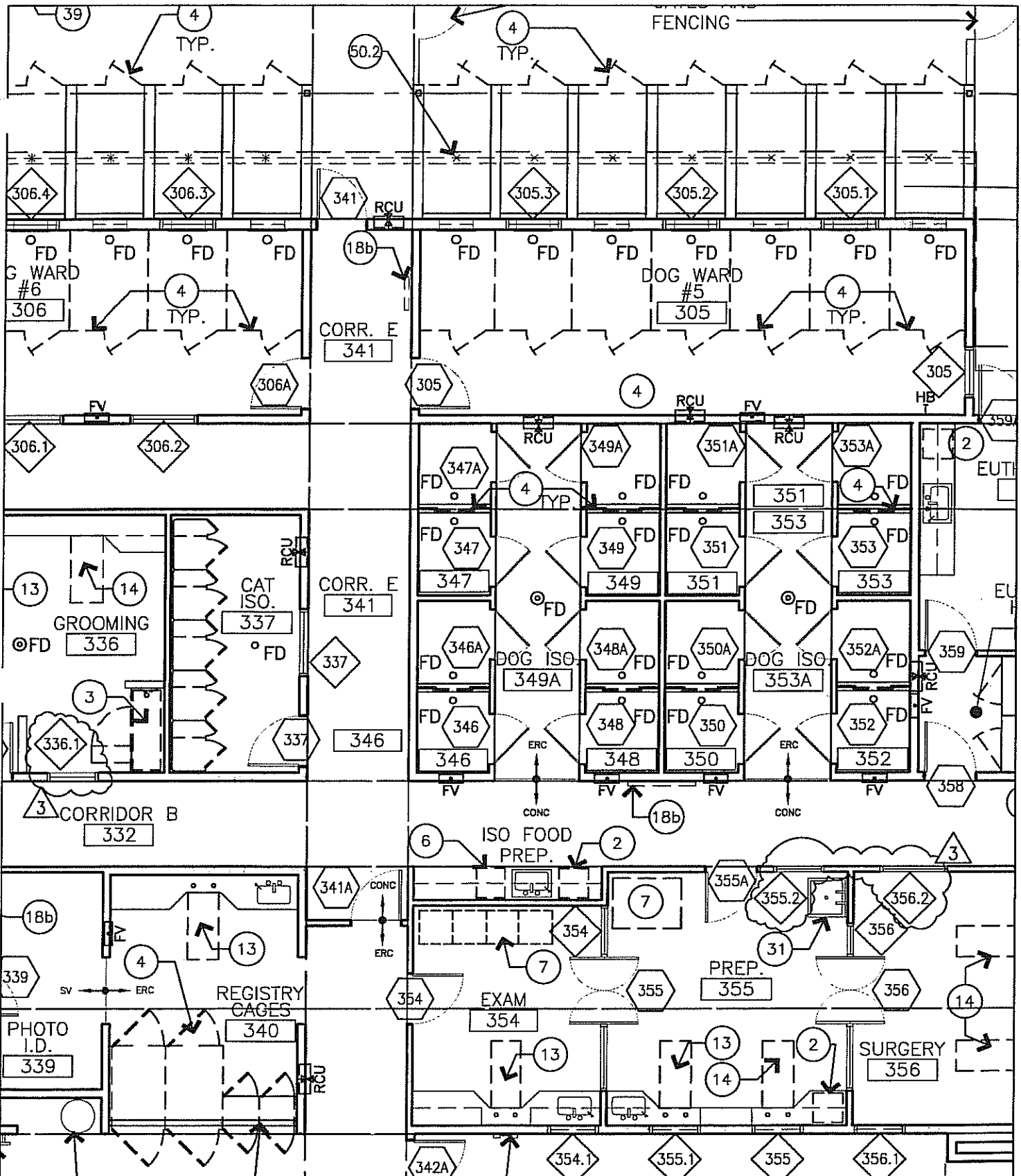


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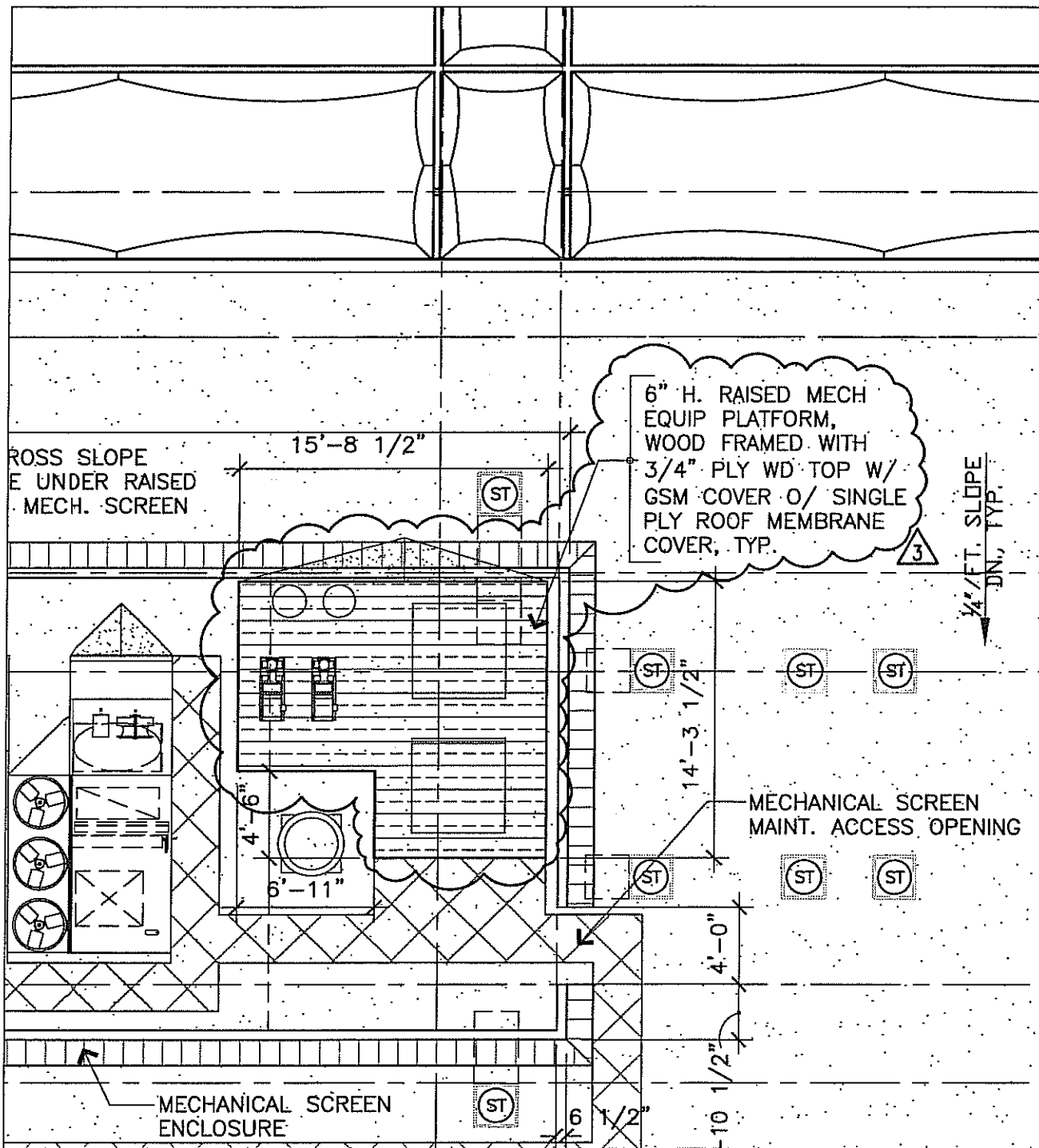
Date
 02/10/10
 Scale
 NTS
 By
 TH

Subject
 REVISED CMU EXTERIOR BLOCK WALLS
 Project Name and Number
 PALM SPRINGS ANIMAL CARE FACILITY
 Drawing Reference
 AI.12
 File Name
 0903_AI.12

Reference Number
 ADDENDUM #3
 Sketch Number
A3-A4



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	Scale 1/8" = 1'-0"	Project Name and Number PALM SPRINGS ANIMAL CARE FACILITY		Sketch Number A3-A5
	By TH	Drawing Reference A2.02	File Name 0903_A2-02	



6" H. RAISED MECH EQUIP PLATFORM, WOOD FRAMED WITH 3/4" PLY WD TOP W/ GSM COVER O/ SINGLE PLY ROOF MEMBRANE COVER, TYP.

CROSS SLOPE UNDER RAISED MECH. SCREEN

1/4" / FT. SLOPE DN., TYP.

MECHANICAL SCREEN MAINT. ACCESS OPENING

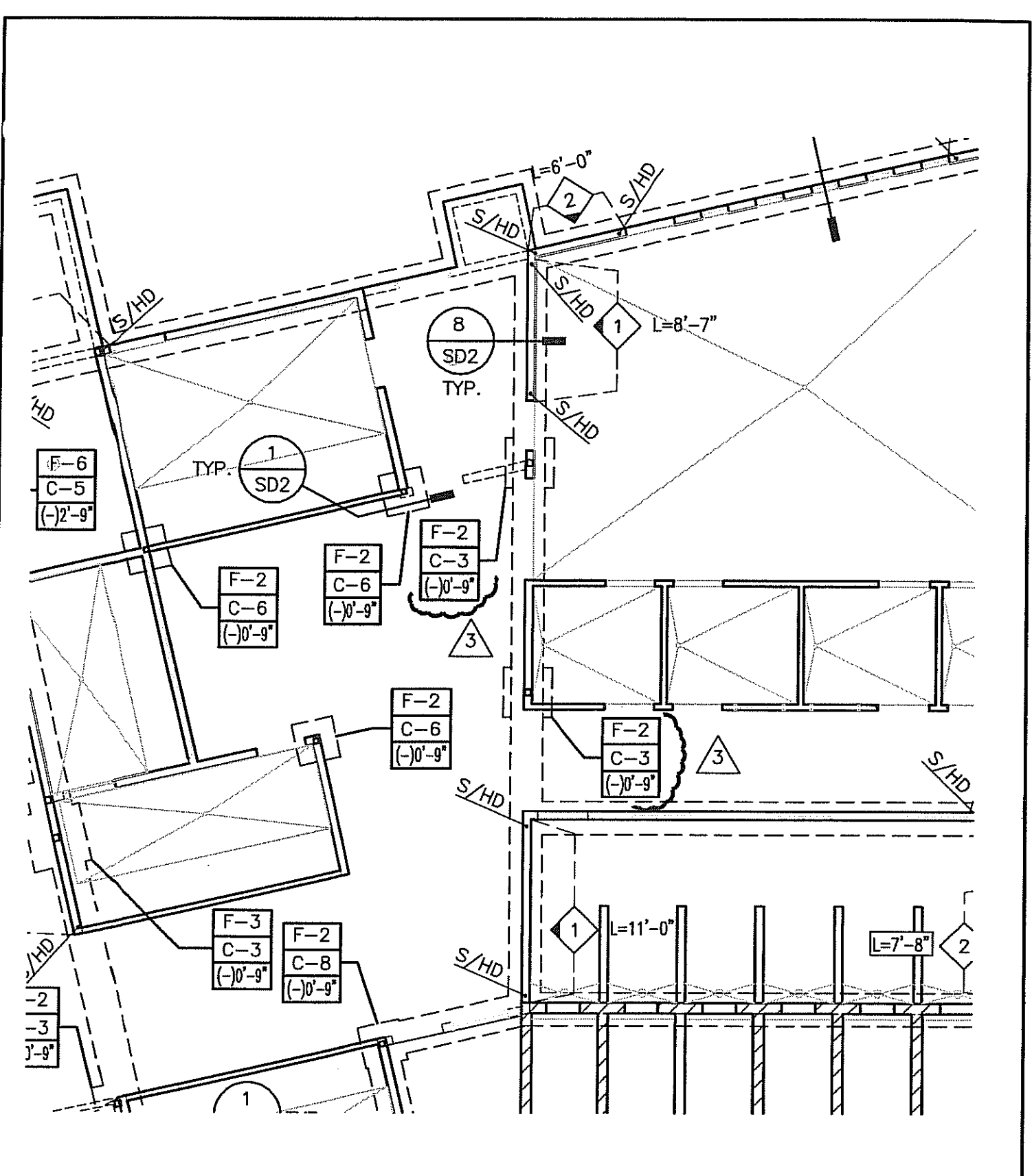
MECHANICAL SCREEN ENCLOSURE


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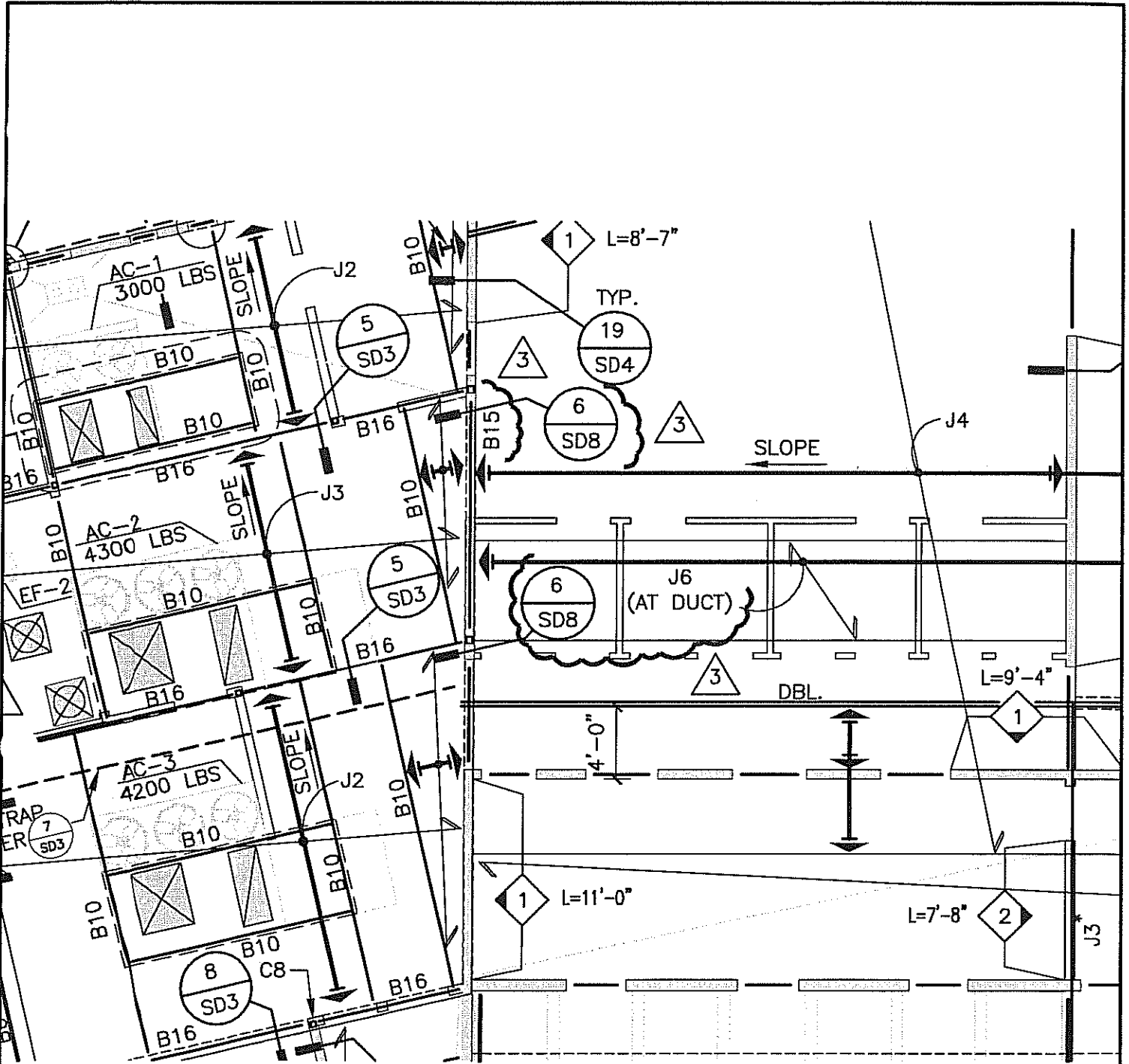
Date
02/10/10
 Scale
1/8" = 1'-0"
 By
TH


Subject
NEW ROOF TOP GSM MECHANICAL PLATFORM
 Project Name and Number
PALM SPRINGS ANIMAL CARE FACILITY
 Drawing Reference
A2.21
 File Name
0903_A2-21

Reference Number
ADDENDUM #3
 Sketch Number
A3-A6



	Date 02/10/10	Subject ADDENDUM - NO. 3		Sketch Number A3-S1
	Scale N.T.S.	Project Name and Number PALM SPRINGS ANIMAL CARE FACILITY		
	By JH/EA	Drawing Reference S2A	File Name	



	Date 02/10/10	Subject ADDENDUM - NO. 3		Sketch Number A3-S2
	Scale N.T.S.	Project Name and Number PALM SPRINGS ANIMAL CARE FACILITY		
	By JH/EA	Drawing Reference S4A	File Name	

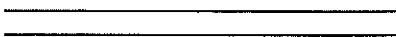
BR1

HSS5x5x⁹/₁₆

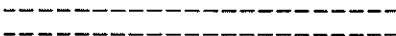
ROOF JOIST SCHEDULE

MARK	TRUSS JOIST/RED BUILT	REMARKS
J1	11 ⁷ / ₈ " TJI/L65 @ 24"O.C.	
J2	14" TJI/L65 @ 32"O.C.	
J3	14" TJI/L65 @ 24"O.C.	
J3*	1 ³ / ₄ "x14" SCL (CONT.)	ALIGN W/WALL OR BM., E.N. ROOF SHTG. TO MEMBER
J4	20" TJI/H90 @ 24"O.C.	
J5	16" TJI/L65 @ 24"O.C.	
J6	20" TJI/HS90 @ 24"O.C.	

LEGEND


BEARING WALL BELOW PER 11
SD7


NON-BEARING WALL BELOW



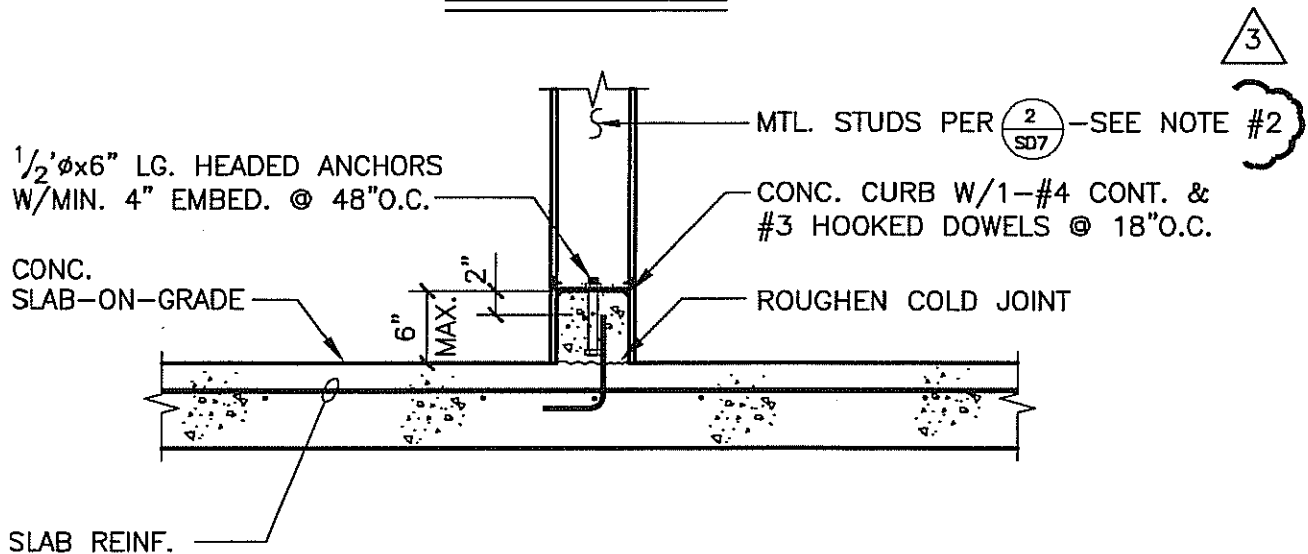
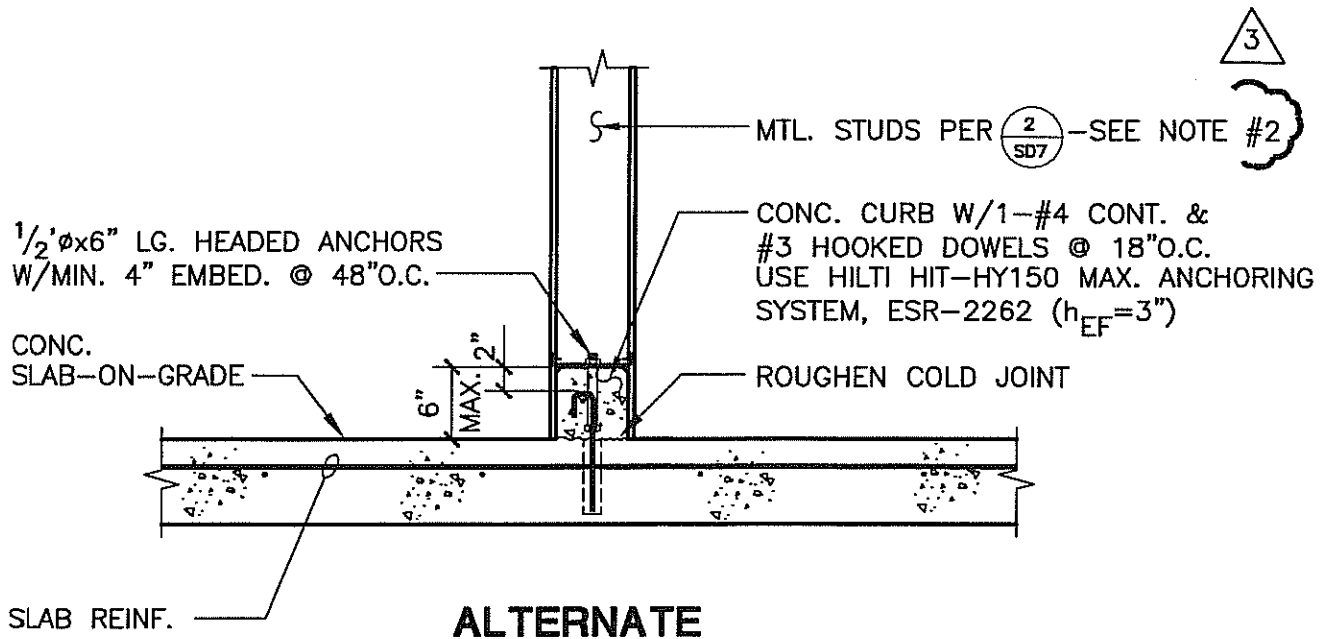
WALL ABOVE

Date
02/10/10Subject
ADDENDUM - NO. 3Scale
N.T.S.Project Name and Number
PALM SPRINGS ANIMAL CARE FACILITYBy
JH/EADrawing Reference
S4A

File Name

Sketch Number

A3-S3



- 3 NOTE:
1. SEE ARCH. DWGS. FOR LOCATION & DIMENSION.
 2. OMIT STUD WALL WHERE NOT REQUIRED BY ARCHITECT.

28574_D118C

TYP. CONC. CURB DETAIL

SCALE
3/4" = 1'-0"

8



Date
02/10/10

Subject
ADDENDUM - NO. 3

Scale
N.T.S.

Project Name and Number
PALM SPRINGS ANIMAL CARE FACILITY

By
JH/EA

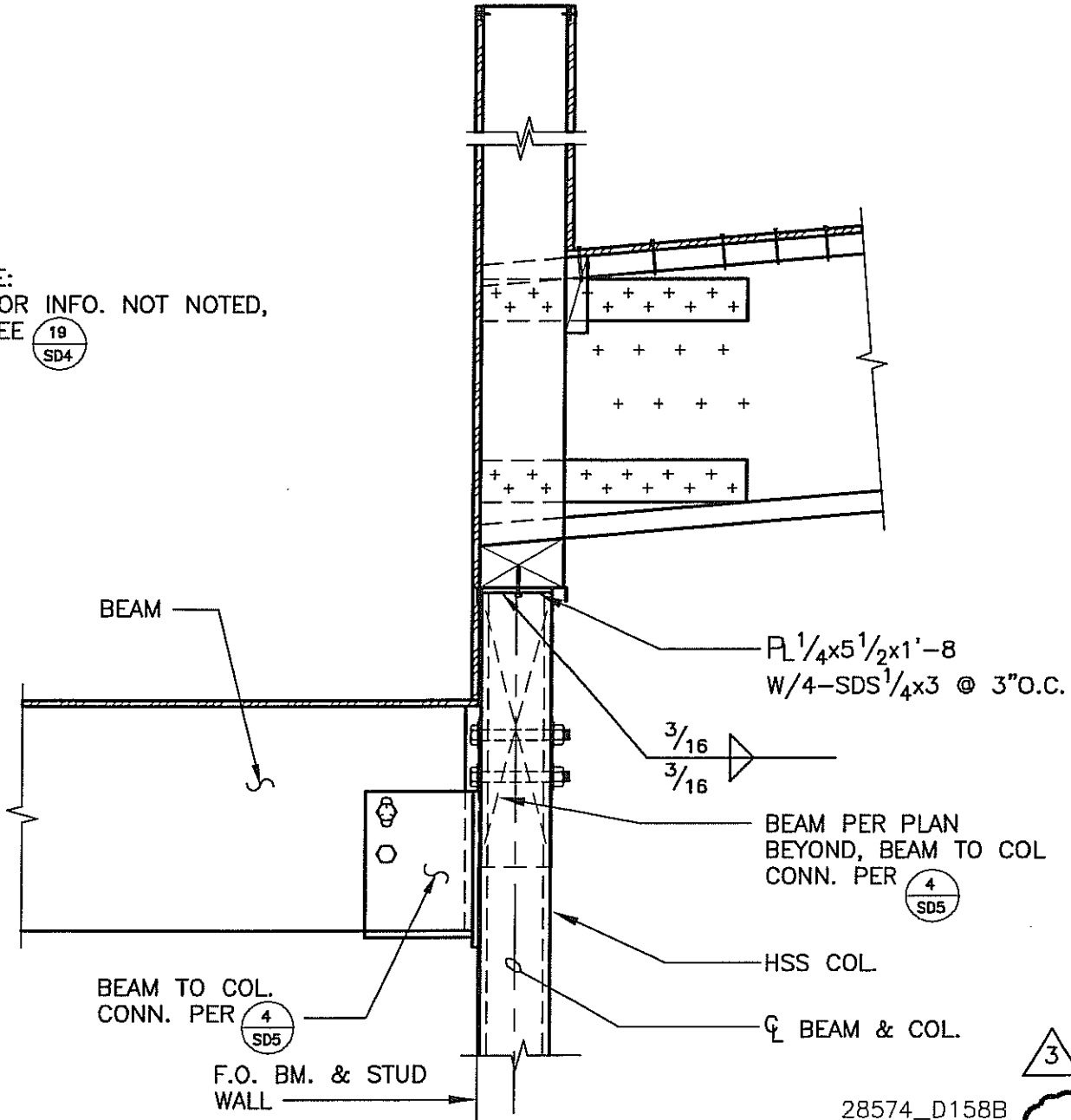
Drawing Reference
8/SDI

File Name

Sketch Number

A3-S4

NOTE:
1. FOR INFO. NOT NOTED,
SEE $\textcircled{\frac{19}{SD4}}$



28574_D158B

SECTION

SCALE
1"=1'-0"

$\triangle 3$
6



Date
02/10/10

Subject
ADDENDUM - NO. 3

Scale
N.T.S.

Project Name and Number
PALM SPRINGS ANIMAL CARE FACILITY

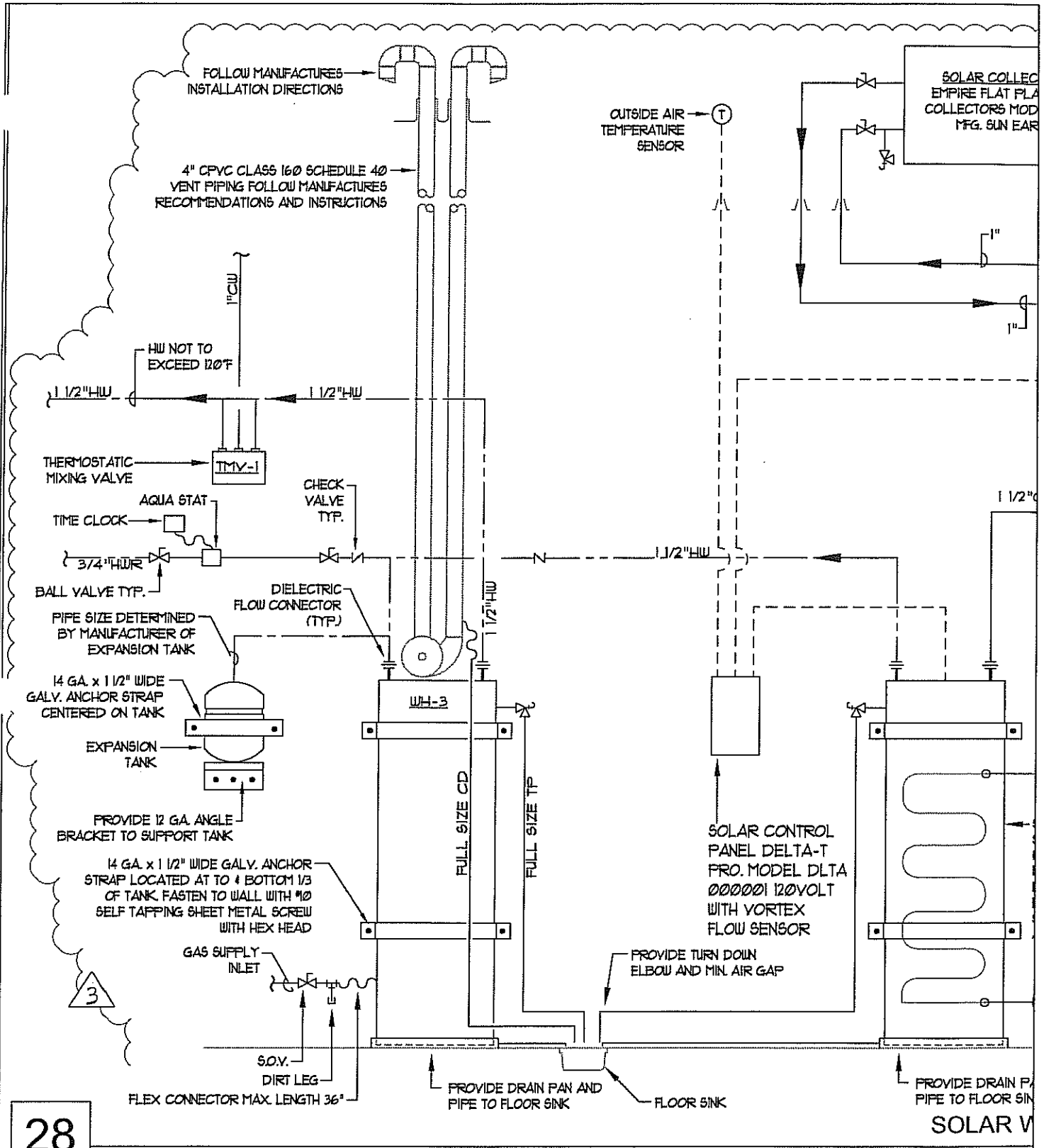
By
JH/EA

Drawing Reference
6/SD8

File Name

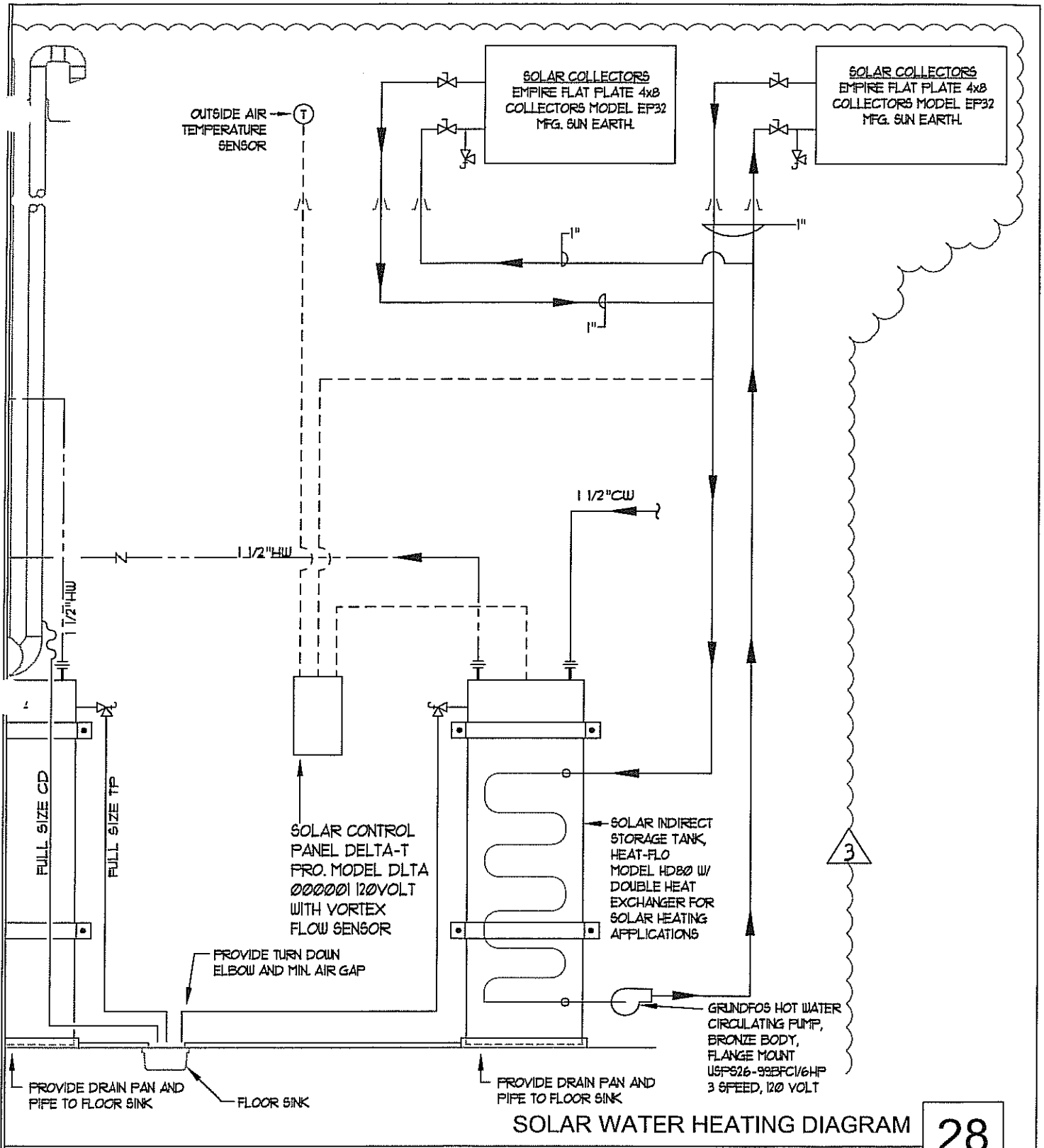
Sketch Number

A3-S5



28

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	02/10/10	ADDENDUM - NO. 3		
	Scale	Project Name and Number		Sketch Number
	NTS	PALM SPRINGS ACF - CITY PROJECT NO. 07-24		
By	Drawing Reference	File Name	A3-P1	
X	PI.2			



28

NTS

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	02/10/10	ADDENDUM - NO. 3		Sketch Number
	Scale	Project Name and Number		A3-P2
	NTS	PALM SPRINGS ACF - CITY PROJECT NO. 07-24		
By	Drawing Reference	File Name		
X	PI.2			