

ANSWER KEY

School Name _____

SCHEDULING QUESTIONS

1. Based upon the information and constraints of the staging and site logistics, which building area will be accepted by the Owner first? List the three most important reasons in order by importance as to why your team decided to make this building area first?

Building (circle one): 2PT 1PT 2PT 2.5PT 3PT
 One Two Three Four Five

List Reasons: 1. OWNER RECEIVED MORE UNITS SOONER
2. TEMP. POWER LOCATE
3. TEMP. PHONE LOCATE
4. GC TRAILER LOCATION
5. BUDGET CONSTRAINT - CAN START BUILDING 2 & WORK AS 2 DIFF. PROJECTS.
6. ANY OTHER REASONS AS LONG AS THEY MAKE SENSE.

2. During the rough framing of the 1st Floor of the first building area to start (as selected by your team), the Owner notifies you that there will be changes to the framing. After all framing changes are completed you notify the Owner these framing changes have delayed the rough framing of the first Building area (as selected by your team) by twenty working days. This framing delay has also impacted the start of the First Floor Interior Finishes and the start of the next building area rough framing activity by twenty work days. The Owner has requested that the Contractor review the impact of the framing delay to each building turnover. List by building area the revised Owner Acceptance date and the number of work days impacted.

Building Area One	<u>REVISED DATE BY 20 DAYS / 20 WORK DAYS</u>
Building Area Two	<u>" " " " " / 20 WORK DAYS</u>
Building Area Three	<u>" " " " " / 20 WORK DAYS</u>
Building Area Four	<u>" " " " " / 20 WORK DAYS</u>
Building Area Five	<u>" " " " " / 20 WORK DAYS</u>

The Owner wants your team to describe below how you will show this delay on the plot schedule. (EITHER ANSWER IS CORRECT)

① ADJUST DURATION TO ROUGH FRAMING ACTIVITY & ADJUST LAGS/LOGIC TIES TO "SUCCESSORS" ACTIVITIES

② DELAY ACTIVITY ADDED & TIED TO AFFECTED ACTIVITIES

ANSWER KEY

3. All fountain permits are to be secured by the Contractor's fountain subcontractor. Ten days into the Motor Court Site Work the fountain subcontractor is to install the underground utilities for the Motor Court fountains. On the tenth day, the fountain subcontractor informs the Contractor that the fountain permits are still not secured and will take eight (8) weeks to secure from the City. The permit is required for inspection of the underground utilities. The fountain subcontractor can complete his work including the underground utilities within twenty days. The Contractor has two options: (1) Continue with the installation of the hardscape and spend \$25,000 to remove and replace hardscape areas later to install the underground utilities once the permits are secured or (2) wait until the permits are secured, install the underground utilities, and then complete the hardscape work. Assume \$2,000 per calendar day will be assessed if Building Two is impacted. The removal and replacement of the hardscape will be performed within the twenty days concurrently with the fountain subcontractor's work.

a. How will your team proceed and why?

- INSTALL HARDSCAPE & SPEND \$25,000 TO REMOVE & REPLACE
HARDSCAPE AREAS LATER.
- DELAYS THE ACCEPTANCE DATE OF BUILDING TWO BY TWENTY DAYS.
L.P. COST - \$60,000 VS \$25,000 HARDSCAPE COST.

b. Will this impact the Building Two Owner Acceptance date? YES

c. If so, by how many working days? 20 DAYS

4. The Leasing Area is the only location on the entire project for which the Owner has hired an interior designer to select finishes. The interior design plans show some custom cabinets in the Leasing Area to be supplied by the Contractor and some by the Owner. All cabinets in the Leasing Area are to match. The Contractor's cabinet subcontractor hired to fabricate the cabinets for the units has reviewed the interior design plans and has determined they are not capable of producing these custom cabinets. To make the cabinets all match, the interior designer suggested to the Contractor to use the same cabinet supplier that the Owner is using. This custom cabinet maker will require an additional thirty work days to fabricate and an additional ten work days to install the custom cabinets.

a. Will this affect the Building Two Owner Acceptance date? No

b. If so, by how many working days? 0

Give a brief explanation CABINETS CAN BE INSTALLED PRIOR TO
SUBSTANTIAL COMPLETION.

Bohob Name

EXHIBIT 3C-1
ESTIMATE SUMMARY
Archstone Playa Del Rey Apartments
Playa Del Rey, California

UCI TRADE DESCRIPTION	COST	SUBCONTRACTORS
6101 Rough Carpentry	\$ _____	5 Points for \$4,202,178 by Pacific Coast Framing
6200 Finish Carpentry	\$ _____	5 Points for \$928,500 by combination of Wood Trim and Carpentry Masters
10000 Fireplaces - Gas	\$ _____	5 Points for \$72,030 by Fire Places & More
13153 Swimming Pool, Spas & Fountains	\$ _____	5 Points for \$282,150 by Pacific Waterscapes

2 Points for any other Subcontractors (Truss Framers, Master Framers, Wood & Nail, 2x Stud Framers)

2 Points for following Subcontractors (Door Sash & More @\$50,000 or M&M Hardware @\$45,000)

2 Points for following Subcontractors (Fireplace Masters or D&D Fireplaces)

2 Points for following Subcontractors (Pro Pool @\$293,500 or Culver Pools & More)

**EXHIBIT 3C-3
SELF PERFORMED CONCRETE WORK ESTIMATE**

Archstone Playa Del Rey Apartments
Playa Del Rey, California

UCI TRADE DESCRIPTION	QTY	UNIT	UNIT PRICE	ADJUSTMENT				SUBTOTAL	
				5%	-5%	+5%	10%		
3300 CONCRETE WORK									
- Column and Wall Foundations	2,556	CY	\$146.44	\$18,715	\$355,583 2PT within above range	\$393,013	\$37,430	\$336,868 1PT within above range	\$411,728
- Slab on Grade	165,763	SF	\$2.32	\$19,253	\$365,810 2PT within above range	\$404,316	\$38,506	\$346,557 1PT within above range	\$423,570
- Suspended Slabs Including Beams or Drop Heads	276,564	SF	\$7.55	\$104,381	\$1,983,236 2PT within above range	\$2,191,998	\$208,762	\$1,878,855 1PT within above range	\$2,296,379
- Columns	316	EA	\$366.28	\$5,787	\$109,956 2PT within above range	\$121,530	\$11,574	\$104,169 1PT within above range	\$127,318
3350 CONCRETE MIX									
- Foundations	2,556	CY	\$56.00	\$7,157	\$135,979 2PT within above range	\$150,293	\$14,314	\$128,822 1PT within above range	\$157,450
- Slab on Grade	3,021	CY	\$56.00	\$8,459	\$160,717 2PT within above range	\$177,635	\$16,918	\$152,258 1PT within above range	\$186,094
- Suspended Slabs Including Beams or Drop Heads	11,041	CY	\$56.00	\$30,915	\$587,381 2PT within above range	\$649,211	\$61,830	\$556,466 1PT within above range	\$680,126
- Columns	211	CY	\$56.00	\$591	\$11,225 2PT within above range	\$12,407	\$1,182	\$10,634 1PT within above range	\$12,998
			Concrete Subtotal						
3361 SHOTCRETE WORK									
- Backforming for Shotcrete Walls	4,562	SF	\$11.63	\$2,652	\$50,386 2PT within above range	\$55,690	\$5,304	\$47,734 1PT within above range	\$58,342
3350 SHOTCRETE CONCRETE MIX									
- Shotcrete Walls	145	CY	\$56.00	\$406	\$7,714 2PT within above range	\$8,526	\$812	\$7,308 1PT within above range	\$8,932
			Shotcrete Subtotal						
						168.962963			
									TOTAL

EXHIBIT 3C-4

ALLOWANCE ESTIMATE

Archstone Playa Del Rey Apartments
Playa Del Rey, California

UCI	TRADE DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL
4465	Laminate COUNTERTOPS				
	- Laminate Tops at Unit Kitchens	8,093	SF	\$7.25	
	- Laminate Tops at Unit Bathroom Vanities	3,623	SF	\$7.25	
	- Laminate Tops at Unit Computer Niches	2,303	SF	\$7.25	
	Laminate COUNTERTOPS SUBTOTAL =				\$101,634
9310	CERAMIC TILE				
	- Tile at Unit Entries	4,235	SF	\$15.00	
	CERAMIC TILE SUBTOTAL =				\$63,530
9655	RESILIENT FLOORING				
	- Resilient Flooring at Kitchens, Baths, and Laundry	39,835	SF	\$2.00	
	RESILIENT FLOORING SUBTOTAL =				\$79,671
9680	CARPET				
	- Carpet at Unit Interiors	21,223	SY	\$15.00	
	- Carpet at Public Areas / Corridors	3,656	SY	\$17.50	
	CARPET SUBTOTAL =				\$385,827

10%	809	10%	8,902
		-10%	7,284
			1PT within above range
362			3,985
			1PT within above range
230			2,533
			1PT within above range

5%	405	+5%	6,497
		-5%	7,688
			2PT within above range
181			3,804
			2PT within above range
115			2,418
			2PT within above range

424	3,812	4,659
		1PT within above range

212	4,024	4,447
		2PT within above range

3,984	35,852	43,819
		1PT within above range

1,992	37,843	41,827
		2PT within above range

2,122	19,101	23,345
		1PT within above range
386	3,470	4,242
		1PT within above range

1,061	20,182	22,284
		2PT within above range
193	3,663	4,049
		2PT within above range

GENERAL CONDITIONS ESTIMATE

**Archstone Playa Del Rey Apartments
Playa Del Rey, California**

UCI	TRADE DESCRIPTION	Points Possible
1000 GENERAL CONDITIONS		
	- Tool Rental and Maintenance	1pt
	- Two way communication (walkie-talkie)	1pt
	- Forklift	1pt
	- Tower Crane Rental	1pt
	- Man Hoist Rental	-1pt
	- Survey and Layout	1pt
	- As-Builts & Job Site Printing	1pt
	- Job Photos and Signage	1pt
	- Job Site Perimeter Fence (Chain Link)	1pt
	- Street Use Permit	1pt
	- Job Site Drinking Water & Ice	1pt
	- Temporary Power	1pt
	- Temporary Water	1pt
	- Temporary Toilets	1pt
	- Temporary Job Office (Trailer)	1pt
	- Jobsite Office Build-out	1pt
	- Job Site Telephone	1pt
	- Safety Personnel	1pt
	- Project Manager	1pt
	- General Superintendent	1pt
	- Job Site Superintendent	1pt
	- Job Site Assistant Superintendent	1pt
	- Project Engineer(s)	1pt
	- Timekeeper / Secretary	1pt
	- Misc. Office Supplies	1pt
	- Job Site Office Computers & Maintenance	1pt
	- Project Final Clean-Up	1pt
	- Job Site Daily Clean-Up	1pt
	- Haul Daily Clean-Up Trash	1pt
	- Watchman / Security	1pt
SUBTOTAL GENERAL CONDITIONS COST		MAX 20 Points

ANSWER KEY

EXHIBIT 3C – 6 CONTRACT QUESTIONS

Archstone Playa del Rey Apartments Playa del Rey, California

SCHOOL NAME _____

1. Your Project Manager has evaluated the signage bid package and is ready to make an award to the low qualified bidder at \$90,000. Per the Owner Contract, the signage line item is an allowance of \$96,000. The Owner has reviewed the subcontractors' bids and has issued a Construction Directive to use their regular signage subcontractor to perform the work. The Owner's signage subcontractor's bid is \$105,000. Per the Contract, what change order value is your team entitled to and why. Show your work.

$\$105,000 - \$96,000 = \$9,000$ SINCE THE AGGREGATE ACTUAL COST TO PROVIDE THE PROJECT SIGNAGE EXCEEDS THE ESTABLISHED ALLOWANCE, THE CONTRACT SUM SHALL BE INCREASED BY \$9,000. + FEE

3 PTS

2. Two months after accepting Building Two and the Pool and Motor Court common areas, the Owner notifies you that the Motor Court fountain spray height is too low and must be adjusted. Upon further investigation, it is determined that the fountain pump design does not allow for a higher spray pattern. The landscape contract documents diagrammatically show a higher spray than the (current) field conditions. These same plans specify the type and size of pumps and fountain heads to be installed. What, if any, obligation do you have to correct the spray pattern of the Motor Court fountains?

NO OBLIGATION. SINCE THE WORK WAS INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS & ACCEPTED BY THE OWNER.

CONTRACTOR CAN REPLACE THE PUMPS IF A CHANGE ORDER IS APPROVED.

3 PTS

3. You have not yet completed the Project, but your project manager is very worried that you will incur liquidated damages. Based on the current schedule, the project manager believes the Project will not be completed until 9 days after the Scheduled Completion Date. In order to avoid liquidated damages, she wants to spend \$20,000 to assure the Scheduled Completion Date is met. Based purely on economics, is this a good decision? Explain why or why not. Show all your work.

$9 \text{ DAYS} \times \$1,762 = \$17,658$
YES, THE \$20,000 PREMIUM TO MEET THE SCHEDULE

COMPLETION DATE IS LESS THAN THE LIQUIDATED DAMAGES &

GENERAL CONDITION COSTS.

4 PTS

SECTION 3D PLAN READING AND PROJECT ENGINEERING

Archstone Apartments Playa Del Rey, California – ANSWERS

School Name: _____

How to Complete this Section

Read the questions carefully and write the answers in the space provided. All of the answers will be obtained by using the construction documents, the cut sheets, product data and information provided in this section.

- All answers requiring dimensions will be listed in feet and inches using fractions not decimals (i.e., 15'-2").
- All dimensions and quantities shall be calculated without the use of any waste or overage factors.

Exhibits Included in this Section

- Exhibit 3D-1 Additional Conduit Reinforcing Detail (1 page)
- Exhibit 3D-2 ASTM Standard Reinforcing Bars Table (1 page)
- Exhibit 3D-3 Common Area Tie Clarification (3 pages)
- Exhibit 3D-4 Typical Podium Slab Depression (1 page)
- Exhibit 3D-5 Fixture Type SJ Cut Sheet (1 page)
- Exhibit 3D-6 Fiberglass Tub/Shower Cut Sheet (1 page)
- Exhibit 3D-7 Exhaust Fan - Light Combination Cut Sheet (2 pages)
- Exhibit 3D-8 Pool Heater Direct Vent Cut Sheet (1 page)
- Exhibit 3D-9 Pool Heater Sleeve Layout Sketch (1 page)
- Exhibit 3D-10 Pool Heater Sleeve Blow Up Sketch (1 page)
- Exhibit 3D-11 Uniform Plumbing Code (1 page)
- Exhibit 3D-12 Fixture Type 6 Cut Sheet (1 page)
- Exhibit 3D-13 Light Pole Footing Detail (1 page)
- Exhibit 3D-14 Light Pole Attachment on Structure Detail (1 page)
- Exhibit 3D-15 Fixture Type 1 Cut Sheet (1 page)
- Exhibit 3D-16 California Building Code Sections 3118B.1 and 3118B.2 (2 pages)

75 POINTS TOTAL for Section 3-D

Items to be turned in: Section 3-D

Questions: *(Note, bold italicized sheet references listed below each question in parenthesis will not be shown to students.)*

1. Electrical drawings do not indicate any conduit in the Podium (1st Floor) Level concrete deck for telephone/data wiring. A conduit pathway consisting of two (2) 1-1/2" I.D. (interior diameter) conduits must be provided from the MPOE room in the P1 level Garage below to each building's tel/data closets on the 1st floor. What is the total, most efficient lineal footage of conduit required in the Building 2 Podium deck. Include additional conduit required due to storage closet 2-128 changing to a tel/data closet. In addition, the structural plans prohibit conduit from being any closer than 3' from the center of a column. Figure conduit runs in plan view from center of MPOE room to center of tel/ data closet(s) only. **(A0.14, A0.16, A0.18, A2.1, students will have to overlay MPOE room shown on A0.16 onto A2.1) – 3 points if within 5%**

436 L.F.

414 to 458 L.F. = 5%
Range

2. The structural engineer will not allow conduits larger than 1-1/2" O.D. (outside diameter) in the Podium deck unless additional reinforcing is provided. Additional reinforcing will consist of #5's at 14" o.c. x 4' long top and bottom per Exhibit 3D-1. Based on the conduit runs from question 1, indicate pounds of reinforcing steel added using information provided in Exhibit 3D-2. **(A2.1, ASTM standard reinforcing bars table) – 2 points if within 5%**

$$(80 + 138)' \times 12''/L.F = 2,616''/14'' = 187 \times 4 \times 2 = 1,560\#$$

1482# to 1638# = 5%
Range

3. You have been assigned to review steel trellis shop drawings. The steel (misc. iron) subcontractor has submitted shop drawings for 1st floor exterior trellises at Building 2 along H line between gridlines 22 & 18. Compare Structural details with Architectural details and describe any discrepancies found if any. Please list all details and sheets used. **(A2.1, A9.6, 2S-1) – 3 points**

Curved Trellis Beam at Bldg 2 Portico is 1'-0" deep per 4/A9.6 and 18" deep per sheet 2S-1.

4. Landscape, Architectural, and Schick Design Group drawings indicate painted (pale terra cotta) floor tile pavers for common areas. This particular tile must be imported from Italy, and the lead time is ten (10) weeks. To ensure that the correct amount of tile is delivered to the jobsite on time, please indicate the total square footage of painted (pale terra cotta) floor tile pavers required to complete the project. Refer to Exhibit 3D-3 for clarifications. **(A0.07, A0.16, A2.1, A2.2, A2.3, FL-1, FL-2, L1.2, L1.1A, RFI 501) – 4 points if within 2.5%, 3 points if within 5%, 2 points if within 10%**

6,128 S.F.

2.5% = 5,975 to 6,281
5% = 5,822 to 5,974 and 6,233 to 6,434
10% = 5,515 to 5,823 and 6,435 to 6,741

5. Reference note V on sheet A0.06A and review plan sheet A6.3.
 - a.) Are there ramps on sheet A6.3 that require handrails even though none are specifically called out? If so, please list the areas (proximity to gridlines, rooms, etc.). **1½ points**

b.) Describe any conflicts, if any, which arise if handrails are added. **1½ points**
(A0.06A, A6.3) – 3 points total

- a.) NO
- b.) N/A

6. See Exhibit 3D-4 relating to typical podium (1st floor) concrete slab depressions. Review the Architectural and Structural drawings and provide the missing information for a typical depressed area at Building 5.
- a.) Slab depression depth **1 point**
 - b.) Slab thickness **½ point**
 - c.) Top of interior slab elevation **½ point**
 - d.) Bottom of slab elevation below depression **1 point**
 - e.) Distance between top and bottom depression **1 point**
- (A0.25, S1.6, 5S-5, depression sketch) – 4 points total**

- a.) 5-1/2"
- b.) 12"
- c.) 90'-6"
- d.) 89'-1/2"
- e.) 2'-6"

7. The Electrical plans call for type SJ lights to be recessed into podium level CMU planter walls.
- a.) Please indicate the total number of type SJ lights required to complete the CMU planter walls on the podium level only. **2 points**
 - b.) Review Exhibit 3D-5. Does the type SJ light work in this application? If not, please explain. **2 points**
- (E2.01, L1.1A, 7L1.3, type SJ cut sheet) – 4 points total**

- a.) 32
- b.) No. 6" deep light housing conflicts with 6" deep CMU block, see 7/L1.3 note 19.

8. Architectural and Electrical drawings indicate combination light /exhaust fans in bathrooms. Some bathrooms only require a light without an exhaust fan when an operable window (Type E) exists.
- a.) Please review Exhibit 3D-6, Exhibit 3D-7, the window schedule, Architectural, and Electrical plans. Describe conflicts, if any, found in the Building 2 unit bathrooms with type E windows. The top of window E is 82" A.F.F. (above finish floor). **2 points**
 - b.) If there is a conflict, what units are affected (for example unit 2-107), and what is a possible solution? **2 points (1 point if no solution)**
- (RFI 301 shows answer A0.08 A2.1, A2.2, A2.3, E1.1, E3.0, E3.1) – 4 points total**

- a.) Top of tub/shower is 73-1/4" A.F.F, bot. of window is 48" A.F.F. Window encroaches into tub/shower by 25-1/4".
- b.) 2-103, 2-203, 2-303, 2-116, 2-216, 2-316

9. Review the areaway drain outside of Fan Room No. P234 at the P2 and P1 levels of the Garage for Building 2 and 3 (also called southwest Garage and Building 3 Garage.) Compare Architectural, Plumbing, and Mechanical plans, and describe discrepancies found if any. **(MG-6, MG-7, A0.17, A0.18, A9.1, P2.11, P2.12) – 3 points**

3" AD-1 is incorrectly shown on P1 level (P2.12). It should be shown on P2 level (P2.11) since this is an areaway and open to the sky.

10. a.) The pool subcontractor informed you that the pool heaters do not have to be vented to the roof through the 5'-8" x 2'-8" flue vent shaft shown on the drawings. Each heater can be vented directly outside of the wall per Exhibit 3D-8. The architect confirmed that the vent shaft could be eliminated. List the five major trades affected by this change. **1 point**

c.) Your superintendent has asked you to provide layout information for the mason to set sleeves in the CMU wall for the direct vents. Please review Exhibit 3D-9 and Exhibit 3D-10, and indicate the finish floor elevation (F.F.) of the Pool Equipment room, the measurement from F.F. to the bottom of sleeve (invert elevation or i.e.), and the i.e. of the sleeve. **3 points**

(A0.24, A5.1, A5.2, A5.3, 5S-2, 5S-5, 2/A5.5, MG-11, answer on RFI 134, SK134.1B, SK134.1D, SK134.1C) – 4 points total

a.) HVAC, Concrete, Masonry, Rebar, Framing (will also accept plaster, insulation, pool sub)
b.) F.F. = 80'-0", Measurement = 8'-5-5/16", i.e. = 88'-5-1/4"

11. Review the Building 3 garage Mechanical drawings only for concrete floor and CMU wall penetrations on the P1 and P2 levels. The concrete and masonry subcontractors have requested a list of block out sizes for concrete deck floors and CMU walls. The mechanical subcontractor informed you that floor / ceiling openings must be 4" greater in width and length than the ductwork sizes indicated, and wall openings must be 1" greater in width and length, or diameter than the equipment / louver sizes indicated on the mechanical drawings. Provide a list of floor and wall blockout sizes for concrete floors and CMU walls required along with the room or gridline associated with each block out. Note, do not list the ceiling blockout for the trash room shaft in room P132, wall intake louvers in Emergency Generator Room P136, and the ceiling blockout for diesel engine exhaust in Meter Room P135 south of gridlines N/22.

(MG-7, MG-6, answers on RO-1 and RO-2) – 3 points (.3 points ea. blockout)

**P234 – Fan Room near J/39 – 3'-1" x 6'-1" wall louver
6'-1" x 6'-1" wall louver
27" dia. duct**

**P232 – Elevator Machine Room – 13" x 13" wall blockout for TF/1
25" x 37" wall intake louver**

**P130 – Fan Room near N/40 – 40" x 172" floor blockout
88" x 40" clg. Blockout**

**P132 – Trash Room near K/35 – 25" x 19" wall intake louver
11" x 11" wall louver**

P136 – Emergency Generator Room near M/22 – 7" dia. Exhaust pipe blockout

12. Review Exhibit 3D-11. Do the Men's and Women's Toilet Rooms meet the UPC code requirements? If not, what is required to comply with UPC code. **(A2.1, P2.7, UPC Code Sheet pg. 28 from RFI 570) – 2 points**

No. Must add floor drains to both Men's and Women's Toilet Rooms per UPC 412.2

13. The precast stone supplier has requested information on the stone column caps at the BBQ area. The architect confirmed the color is natural grey. What detail(s) pertain(s) to the stone caps at the BBQ area? Is there enough information to fabricate the stone? If not, what is missing? **(13/A9.9, A012a) – 2 points**

No, need dimensions for stone cap. 13/A9.9, A012a

14. In order to supply power from a building's electric room to an apartment units electric panel, sub feeder conduits will be run in the podium level concrete decks and stub up through the concrete deck and into the wood framed walls to the panels. Since the apartment unit types are stacked from the 1st floor to the 3rd floor, the electric panels in each unit will be located in the same location from the 1st to the 3rd floor. The Structural plans require that any conduits penetrating through the concrete deck be located a minimum of 3' away from the center of the garage concrete columns. Before sub feeder conduits are installed in the Building 1 podium deck, you must verify that locations where the conduits stub up from the podium deck to the electric panels meet the above structural requirement. Please list all 1st floor apartment room numbers in Building 1, which do not meet this structural requirement. **(E3.0, E3.1, E4.1, E5.0, E5.1, E5.2, A0.14) – 4 points**

Units 1-114 and 1-115

15. The OWNER is concerned about light fixture layout in the Leasing Building and Fitness Center. Please review Electrical Lighting plans and Schick Design Group Supplementary Electrical plans in these areas. Provide a list where layout conflicts occur between the electrical plans and the Schick Design Group Supplementary Electrical plans. In this list, use the room numbers shown on sheets A0.16 and A2.1, include the fixture type, fixture quantity, and a brief description of the conflict. **(E2.1, E2.2, EL-1, EL-2, A0.16, A2.1) – 3 points (.375 points for each correct conflict listed)**

2-014 – One type LC light oriented differently – E2.1

2-013 – Two type LC lights oriented differently and in different locations – E2.1

2-012 – Same as 2-013

2-125 – Missing one type LD on E2.2

– EL-2 shows two wall sconces from “LBL Lighting”, E2-2 shows one type LH wall sconce from “Floss USA” - E2.2

2-124 – Same as 2-125

2-121 – Two type LC lights oriented differently

– E2.2 shows three type LE lights, EL-2 shows four type LE lights in different locations – E2.2

16. A subcontractor wants to use a different product than specified in the drawings and/or specifications. Describe the procedures that must be taken. *(Div. 1 of specs) – 2 points*

Subcontractor must fill out the substitution request form contained in specification section 01630. Owners rep must approve the substituted product.

17. It is critical to the OWNER that elevator wall sconces in the garage are located as shown on the Electrical drawings. The electrical engineer confirmed that type 6 light fixtures will be mounted at 6'-8" A.F.F. to the bottom of the fixture.

- a.) Using the information provided in Exhibit 3D-12, what distance A.F.F. should the electrician mount the center of the junction box for the type 6 fixture. Note that the center of the j-box will also be the center of the fixture. **1.5 points**
- b.) Compare the Architectural and Electrical plans for the southeast garage. Are there any discrepancies, which would affect the location of the type 6 light? If so, Please explain. **1.5 points**

(A0.07a, A0.13, A0.14, Type 6 Cut sheet, E4.0, E4.1) – 3 points total

- a.) $6'-8" + (11-1/2")/2 = 7'-1-3/4" \text{ A.F.F.}$
- b.) **Yes, elevator slam door opens into the light (door is 7'-0" tall)**

18. Site concrete work is ready to be procured. Your project team has determined that the site concrete subcontractor will excavate, supply and install reinforcing, set anchor bolt templates, and pour the footings for all the site light poles. The anchor bolt templates will be supplied by others. Before the contract is let, the number of site light pole footings to be excavated and poured must be determined.

- a.) Indicate the fixture types for all site light poles. **1/2 point**
- b.) What is the fixture type for 8' tall light poles? **1/2 point**
- c.) What is the fixture type for 10' tall light poles? **1/2 point**
- d.) The structural engineer has provided a footing detail for light poles (see Exhibit 3D-13), and confirmed that this detail could be used for both 8' tall and 10' tall pole lights. How many site light poles meet this condition? **1.75 points**
- e.) After carefully studying the plans, you have determined that not all site light poles are on grade. Some of the light poles are located on top of the podium level concrete deck (on structure). See Exhibit 3D-14 and provide the quantity of light poles on structure. **1.75 points**



(E1.1, E2.0, A0.10, A0.11, 1/A5.7, 4/A0.12C, 2/A5.7, 5/A2.6, 3/A0.12c, 2/A0.12b, 6/A0.12b, 3/A012.b, 1/A4.7, 2/A4.7, 3/A4.7) – 5 points total

- a.) **Types SR and SU**
- b.) **Type SU**
- c.) **Type SR**
- d.) $43-4 = 39$
- e.) **4**

19.) The reinforcing steel subcontractor has submitted shop drawings for you to review and submit to the structural engineer for approval. Please indicate the bar sizes and list the appropriate structural details for all of the elements listed below:

- a.) Typical garage type A columns. **¾ point**
- b.) Typical drop panels at the 1st floor concrete deck. Show a diagram of the bar shapes. **¾ point**
- c.) Bottom, top, top center of support, and stirrup reinforcing for beam mark CB-4. **¾ point**
- d.) E-W running add bars at the 1st floor southwest deck at columns N/35 to K/35. **¾ point**
- e.) Wall reinforcing for the firelane perimeter wall located north of the pool area. **1 point**

– **4 points total**

- a.) 3/S3.1 – 12 #10
vert., #4 ties at 6"
o.c.
- b.) 3/S3.2 –
5#5 E.W  Top
#4@18" E.W  Bot
- c.) S-3.3 - 5#9 Bot.,
2#6 Top, 2#9 top
center of support,
#4 ties @ 10" o.c.
- d.) S-1.6, S-2.15 -
ADD 14 - #6 @ 12"
- e.) L1.2, 11/L1.3 - #5
@16" o.c. vert., #4
@24" o.c. horiz.,
#2 ties @32" o.c.,
#6 @16" o.c. vert.,
#4 @16 horiz.

20. The mechanical subcontractor is ready to fabricate garage ductwork in the northwest garage below Bldg 4. To ensure that the ductwork is installed correctly and on time, your project manager has asked you to verify that the head height clearance below the ductwork complies with general note 1 on the Mechanical garage plans. The architect and mechanical engineer have confirmed that the south edge of ductwork should be located 2'-6" north of G line per Architectural plans in lieu of as shown on Mechanical plans.

- a.) Assuming that the bottom of the ductwork will be installed at a constant elevation based on the lowest ceiling height such as slab depressions, what is the elevation for the bottom of ductwork? Note, when calculating the depth of the ductwork, add 4" to the size shown on the Mechanical plan (for example, using a 48" x 12" duct, the bottom of ductwork will be 16" below the ceiling). **3 points**
- b.) Does the ductwork comply with gen. note 1 on the Mechanical garage plans? **1 point**

(8/S1.6, 4S-5, A0.21, A0.22, MG-9, MG-8) – 4 points total

- a.) Ext. depr. slab = 92'-1/2"
Deck = 12"
Ductwork depth = 24"
Add 4" to duct. Depth = 4"
Bot. of ductwork = 88'-8-1/2"
- b.) 88'-8-1/2" - 82'-0" F.F.
in garage = 6'-8-1/2" head
height. **No, need 7' min
in car stalls, and 8'-2"
min for Handicap vans
and drive aisles.**

21. Review the Structural drawings and provide the following information relating to wood framing:

- a.) 3rd floor corridor ceiling joist size and spacing at Building 1. **½ point**

- a.) 2 x 8 @ 16" o.c.
- b.) 2 x 10 @ 12" o.c.
- c.) 2 x 10 @ 16" o.c.
- d.) ½", STRUCT 1

- b.) 1st floor corridor ceiling joist size and spacing at Building 1. ½ point
- c.) Typical unit 2nd floor joist size and spacing at Building 1. ½ point
- d.) Shear wall mark 2 plywood thickness, nail size and spacing. ½ point

(1S-3, 1S-1, 4/S-1.4) – 2 points total

22. Per your subcontract agreement with the electrician, the CONTRACTOR, will supply all light fixtures. Recessed “can light” boxes must be installed after rough framing completes and before production drywall begins. It is time for you to order type 1 corridor light fixtures for Building 1. Please review Exhibit 3D-15. Do you see any problems with ordering the Building 1 type 1 “can light”? If so, please explain why. **(E1.1, E5.0, E5.1, E5.2, 1S-1, 1S-2, 1S-3, type 1 cut sheet) – 3 points**

Pan size for type 1 can lights are 12” x 16.25”. Since ceiling joists at 1st and 2nd floors are spaced at 12” o.c., the joist bays are only 10-1/2” wide. Therefore, there is a problem. Pan size won’t fit in the ceiling joist bays.

23. Review Exhibit 3D-16 and the Landscape Drawings. Do the fence and gates at the south end of the pool meet all the requirements of sections 3118B.1 and 3118B.2? If not please, describe any code violations. **(Code section, L1.2, 2/L1.3, 6 and 8/L1.4, 1/L1.3, 9/L1.4) – 4 points**

No, the distance from the top of gates (5'-6" A.F.F) to the top of precast caps on the ramp wall and curb (1'-9" A.F.F. per detail 1/L1.3) is only 3'-9". Code requires 5'-0" minimum so that small children cannot readily climb over the pool enclosure.