

**REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM- PHASE #7
SOLICITATION NND12418431E**

ANSWERS TO SUBMITTED QUESTIONS

- 1Q. Picture 4/E20 shows 6 pole mounted light fixtures surrounding the existing substation 10 equipment. It would appear that at least 3, and as many as 5, of these poles are in areas being demolished. They are not shown on the electrical demo partial site plan (detail 10/E20), nor on the remodel drawing (1/E27). What is to be done with these items?
- 1A. Install four (4EA) new LED fixtures, one in each corner. Need 50A 208 Volt single phase receptacle for recreational vehicle.
- 2Q. Partial site plan, detail 10/E20, shows a piece of equipment to the left of the existing 112.5kVA transformer. It could be a junction can based on picture 1/E20. This item is shown to be changed per the remodel plan, but it is not shown on the Sub Station 10 remodel plan, 1/E27. What is to be done, if anything, to this item?
- 2A. The piece of equipment in question is a high voltage junction box with cables running through it and must remain in place.
- 3Q. The single line diagram for substation 10 shows a note 7 between the 4-way switch and the 15kV switchgear, which calls for 600V cable between two 15kV terminations, also shown is a note 10 between the relocated 112.5kVA transformer and relocated 208V panel, which calls for 15kV cable for the 208V circuit. Are these two notes switched? Should note 10 be between the 4-way switch and 15kV switchgear, and note 7 be between the 112.5 transformer and 208V panel?
- 3A. Note 7 and Note 10 need to be reversed.
- 4Q. We will be removing oil filled switches and transformers from various locations during this project. Who will be responsible for testing the oil for PCB's and for the disposal of any PCB laden oil?
- 4A. A PCB retrofit program was enacted years ago and all PCB containing equipment was either removed or retrofitted to a non-PCB level.

- 5Q. Detail 11 on E15 shows removal of the junction can located on the fence behind the substation. Are we to remove the wire from the conduit leaving the can in the underground conduit? If so, what is the approximate length of the underground run? Do we cap the stub up, or remove the stub up in its entirety?
- 5A. The communication junction box can located on the fence will be removed and the conduit will be extended into the metering section of the new switchgear. The communications cable will be removed and installed by others.
- 6Q. According to the job walk, the conduit from substation 12, routes through the manhole in the sidewalk across from the existing 4-way switch and then to the manhole outside the 4-way switch, then we would use the existing conduit from the 4-way manhole to the 4-way switch for our new cable. However the drawing shows routing the conduit directly from substation 12 to the 4-way switch, which is the route that we are to utilize?
- 6A. The route should be from manhole E13B to E13, to manhole E7B, then into the switch. Substation 12 is "T" tapped in manhole 13B. Manhole E13B is located in front of Building 4830C.
- 7Q. First, the sheet notes on the drawings which refer to Option 3 also describe a Short Circuit Coordination study. Are we to include the Short Circuit Coordination Study as part of Option 3?

Secondly, the single line drawings for substation 9 (Option 1), Substation 2 (Option 2) and Substation 10 (Option 5) call for the Option 3 Arc Flash Study. As these are Options which may or may not be selected, how do we address them in our bid?

- 7A. 1) No, just include what's necessary to accomplish the arc flash study.
2) Bid arc flash study in base bid and all options.
- 8Q. Drawing C-7 shows that the pad for the sectionalizing switch needs to be enlarged to accept the new 5-way switch. Do any of the existing guard posts need to be relocated because of the extended pad?
- 8A. There is no way to know how the physical dimensions of the new switch until it is spec'd out. Only then will we know if any bollards will need to be moved.

9Q. Drawing E-21 shows an exterior light located on the cmu wall, that is being removed, to be relocated based on drawing E-28. However, there is an interior light and a light switch / receptacle on the opposite side of the wall, are these to be relocated also? If so, to where? There is also what appears to be a junction box located next to the existing 15kV oil switch, that is not shown on the drawings, and is on the wall that is being removed. What happens to this box?

9A. All existing lights and receptacles/switches are to remain. If needed to be removed during construction they will be replaced in their original locations. Replace existing lighting fixtures with LED.

The communication junction can located on the fence will be removed and the existing conduit extended into the metering section in the new switchgear section. The communication cable will be removed and re-installed by others.

10Q. There is an existing light fixture attached to one of the fence posts being removed during the demolition phase of this project. Does this fixture get relocated to the new fence, or will it be abandoned?

10A. No, replace lights with LED.

11Q. Drawing E26 shows the feeder from Panel P to the new transformer for Panel L, being routed across the slab between the two pieces of equipment. As this pad is existing, are we to saw-cut and demo the slab to install the conduit underground (as the dashed lines would indicate), or is running the conduit across the slab the intended method of installation?

11A. You will have to saw cut the concrete to install the new conduit and repair any damage to existing ground system.

12Q. Drawing E30 shows the two new 4" conduits being installed between manhole E21 and E20A crossing Swann Ave. How long will we be able to have Swann Ave closed in order to make the road crossing?

12A. We are now going to install two (2EA) new conduits from E20 to E20A, remove Sub#28 "T" tap, install new cable from Sub#28 through E21A – E21 – E20 – E20A to Sub#24 5-Way switch.

- 13Q. Drawing E27 shows the existing transformer and panel being relocated, and the existing conduit and wire being extended. As the existing conduit feeding the equipment is EMT, is it acceptable to extend the run in EMT, or do we need to replace the entire run with rigid steel as specified?
- 13A. Use rigid steel as specified.
- 14Q. There are existing receptacles along the fence line being removed during the demolition part of the project. As these are not shown on either the demo or remodel electrical drawings, are they to be relocated to the new fence line, or removed with the fence?
- 14A. Relocate to the new fence line.
- 15Q. Drawing E25 explains the new remodel work for Substation 12, but does not address what the existing conditions are. Please provide a post remodel single line for Substation 12 and the Sectionalizing switch. Also, which manhole is the t-tap shown on drawing E11, between Sub 12 and Sub 16, located?
- 15A. E-13B is where the "T" tap is located. (See attached Sketch)
- 16Q. Drawing E18 shows removing the concrete pads that all of the existing equipment sits on. Do the guard posts that surround the existing equipment get removed as well? Are the voids that are left from the removal of the pads, and if required the guard posts, to be replaced to match the surrounding asphalt paving?
- 16A. The guard posts get removed and all voids filled in and patched with new asphalt paving.
- 17Q. Drawing E29 shows (1) 5" conduit between MH-13A and the new 5-way Sectionalizing Switch. Is this a new conduit, or is it existing?
- 17A. Existing.
- 18Q. There are several locations where the 15kV terminations (load break elbows, etc.) are being disconnected from existing equipment and then reconnected to the new equipment being installed. Is it acceptable to reuse the existing terminations, or will we be required to replace all existing 15kV terminations with new?
- 18A. The approach for now, will to be evaluate the condition of the cable and terminations at each substation to determine what will be reused or replaced. The terminations at substation 4 will not be reused.

19Q. SUB 12 - During the Job walk it was questioned that the buildings supported by Sub 12 may need Generator support. If so, what criteria should be considered?

19A. As it stands right now, we should be able to power down the substation to complete the work. If not, the transformer size is 500 KVA @ 12.47 to 208/120, 3 Phase.

20Q. 1. SUB 10 - During the Job walk it was questioned of the grounding for the SUB and Equipment, if so, what criteria should be considered? 2. What consideration for general convenience outlets and Lighting in the Sub Area?

20A. The existing grounding system is using split-bolt connectors. These will have to be replaced with Cadweld connections. The new ground conductors that are installed will all be Cadweld connections, and comply with NFPA National Electrical Code Section 250.

Lighting: - Install four (4EA) new LED fixtures one (1EA) at each corner of the substation and install one (1EA) convenience receptacle at each new light fixture. Need to install one (1EA) 50 amp 240 volt single phase RV (Recreation Vehicle) receptacle.

21Q. 1. SUB 13 - What is the extent of the DEMO, is the elevated concrete pads to be removed and disturb the dirt? 2. What consideration for Turn equipment over to the Govt. What is the Quantity and how far is the transport to NASA destination?

21A. DEMO: All concrete, bollards, cable tray supports will be removed and the excavations filled and patched to match existing.

The transformers, transfer switch, cable tray will be disposed by the Contractor. The Contractor will disconnect the generator and move it adjacent to Building 4876, Shipping & Receiving Facility. Moving distance is approximately ½ - 1 mile away.

HAZARDS: The Contractor will continually monitor air samples while working in this area and if any hazardous odors are detected then work must stop. NASA will provide the monitoring equipment and train Contractor personnel on its use.

HAZARDOUS MATERIAL: Excavated material dirt can be placed back into its originating hole. Concrete must be re-cycled.

- 22Q. 1. SUB 2 - What is the duration this Sub can be down and offline, will a Temp Generator be required? 2. What is the extent of Pot Holing and Location for all areas with Asphalt or concrete demo and New Concrete? 3. Note 4 shows a New 2" conduit from the New Panel to the 150KVA XFMR, is this supposed to be underground? 4. Any consideration for convenience outlets or lights within the Sub?
- 22A. 1. Outage planning will occur during construction. We cannot predict generator requirements or outage durations for any substation. Bid project as is and additional contingency requirements will be dealt with via change orders.
2. Any excavation deeper than 6" requires a NASA digging permit, which means all utilities will be located before excavation can start.
3. The new 2" conduit is required to be underground. If the Contractor saw cuts the concrete to install the conduit, then any damage to the ground system must be repaired using Cadweld.
4. Install two (2EA) LED flood lights, with a convenience outlet at each light. Each NEW substation light fixture will have its own photocell and a switch at each entrance to the substation.
- 23Q. 1. SUB 4 - What is the duration this Sub can be down and offline, will a Temp Generator be required? 2. The Drawing on C 3 shows an Existing conduit to the new location of the Pad and Switch, SHT E24 shows 5 New Conduits. Is the New Duct bank required? 3. In this Parking lot location what is the underground locating and Pot Holing Requirements? 4. How long can the parking lot be closed down? 5. Grounding requirements at the pad?
- 23A. 1. The maximum time substations#4 can be down is twenty-four (24EA) hours. Plan outages lasting no longer than twenty-four (24EA) hours, any time over that will require a generator.
2. There are no existing duct banks for the new 5-Way switch. It will require a new duct bank.
3. Any excavations deeper than 6" will require a NASA digging permit which means that all utilities must be located before excavation starts.
4. Parking Lot #3 can be closed for as long as needed.
5. Grounding for pad will comply with NFPA National Electrical Code Section 250.

- 24Q. 1. SUB 15 - show just replace the Pad mounted 300KVA XFMR, on the Job walk it was said to replace the entire SUB. 2. How long can the Sub be down & will TEMP Generator be needed. Please Clarify.
- 24A. 1. The drawings are correct. Both the Sub #15 demo plan and the Sub #15 remodel plan clearly state that only the transformer is to be replaced. All other equipment remains. If it was stated otherwise during the job walk, it was incorrect.
2. A generator may be required after 24 to 48 hours depending on weather or equipment stored in the buildings. Outages should be planned as weekend work. Preparations that does not require an outage should be done during the week.
- 25Q. 1. SUB23 - Cable terminations - Please clarify the type of T-tap terminations that will be acceptable.
- 25A. There is no requirement for a "T" tap at Sub#23.
- 26Q. 1. SUB9 - Is there any additional grounding required at the New concrete pad location? 2. Will there need to be any convenience receptacles or Lighting in this area with the addition of a new pad and CMU wall? Please clarify.
- 26A. 1. Because of the expansion of Sub#9, must comply with NEC Section 250 on grounding.
2. Refer to Answer 9A.
- 27Q. 1. SUB2 (E-31). 1. Single Line Shows Circuit #1 Switchboard "L" with 6-1000KMCL existing going to 400A/F with 300 amp trip. Cannot furnish lugs that large for this breaker.
- 2) Single Line Shows Circuit #7 Switchboard "P" with a 3-1000 KMCL existing going to a 600a/F with a 300a/3 pole trip. Cannot furnish lugs that large for this breaker.
- 27A. In both cases, size cable appropriate to load based on NEC requirements.
- 28Q. Sub Station #23 partial site plan Remodel shows a 5way SF6 switch (NEW) Page E-29. Single Line does NOT show this switch on Page E33.
- Job walk notes show replace 6 way switch please confirm.
- 28A. Existing is a 4-Way. Sheet E29 calls for replacing with a 5-Way.

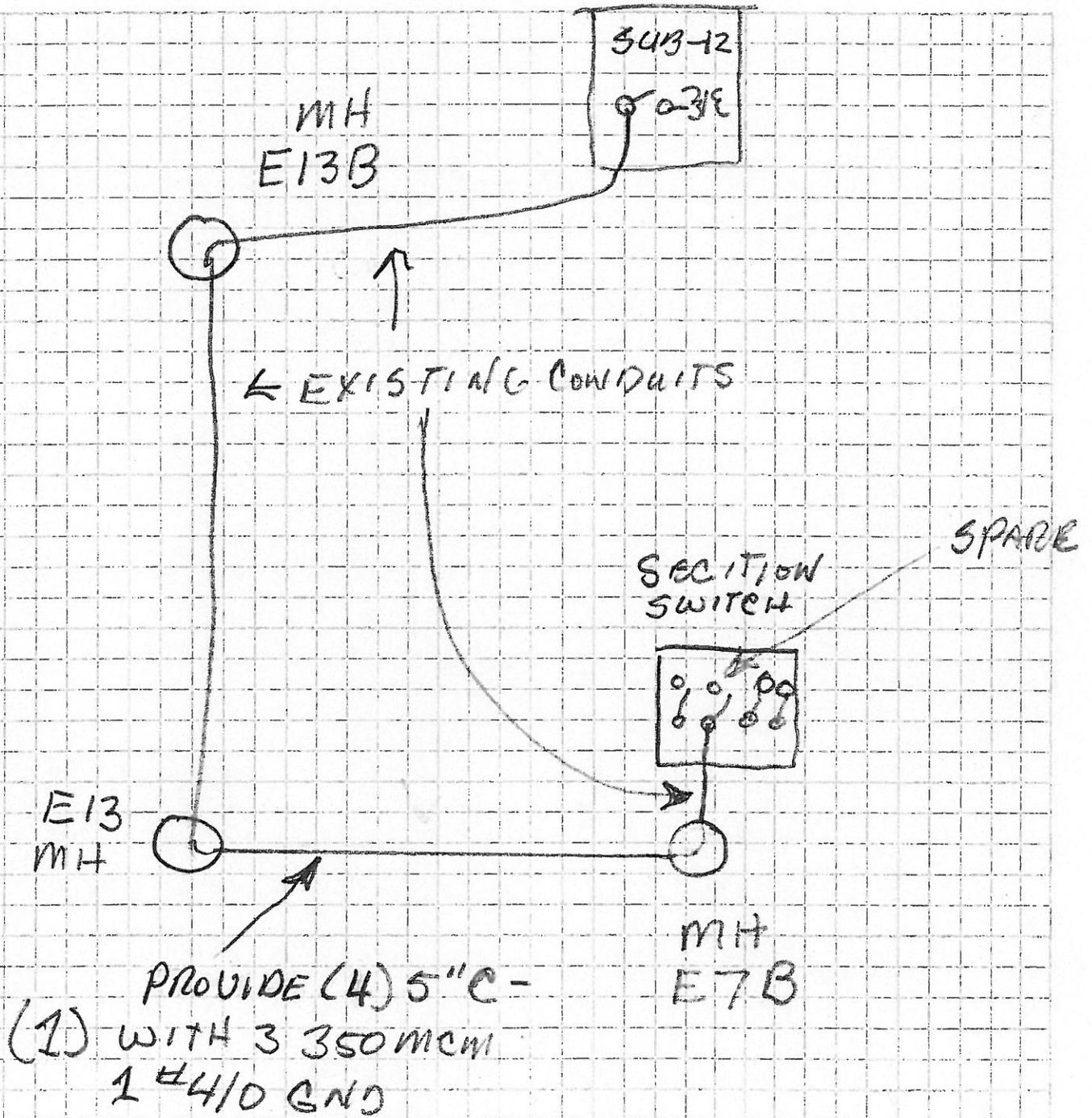
29Q. 1. What criteria for all locations with Saw cut and remove asphalt/concrete. Install new concrete and Bollards? 2. Any New conduit/ground rods or duct banks to be installed?

29A. See specifications.

30Q. Note 2 on drawing E11 says that I need to contact you to get a color copy of the sheet so that I can cipher the feeder legend. Can you send it to me over the email?

30A. Drawing E11 in color is attached.

END OF QUESTIONS & ANSWERS



PROVIDE NEW 3 350 MCM 1 #4/0 GND FROM SUBSTATION 12 TERMINATIONS TO THE EXISTING SECTION SWITCH