Emlight Design
ON TARGET

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"PROGRESSIVE ALTERNATIVES IN LIGHTING CONTROL"

DOUG FLEENOR DESIGN
PRODUCTS FOR DMX512
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Job Name	
Authorization #	
Sales Order #	

▆▆▆▆▆▆▆▆▆▆▆▆▆▆ Racks
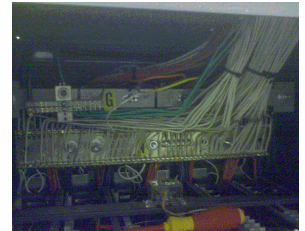
Overview
Arrived on job site and found all equipment installed except for the ▆▆ processors for the ▆▆▆▆ racks. A bit of Q and A with the EC resulted in finding out that the analog to DMX encoder and the DMX merger were not on the job site and would never arrive while I was on the job site. More investigation revealed that only ▆▆ processors were shipped, not ▆▆▆▆ retrofit kits. ▆▆▆▆▆▆▆ was notified to find out what had been shipped and advice from field service resulted in the correct parts being sent out overnight via Fed EX; the adaptor cables and the thermal brackets would not arrive until the last hour of the last day I was on the job.
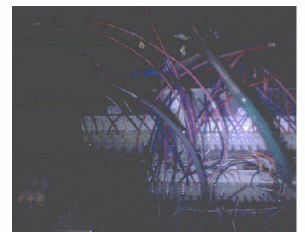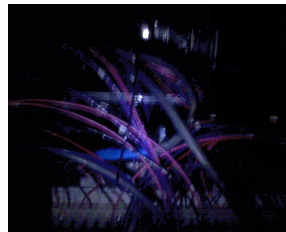
Open Issues
It was indicated to me that the analog solution for the ▆▆ processors were being sent as bare boards. Where and how would these boards be mounted? The ▆▆ thermal brackets could not be mounted in the racks. A phone call to field service indicated that they mounted on the existing over temp bracket; this did not prove to be so with the ground and neutral wires obstructing all access. The EC finally hacksawed the brackets and I tie wrapped them to the existing bracket after removing the original thermostats. Only one rack was done and it was only powered up in panic mode as the building was closing. The 2nd rack needs to be retrofitted still and both racks need to be programmed. The racks need to have their DMX and ▆▆▆▆ jumpered together using the wire from the DMX cable that ▆▆▆▆▆▆▆ sent. The racks need an Ethernet cable to jumper between them. The first rack _does_ have the built in Ethernet switch.

Stage Managers Panel (SMP)

Overview
With the racks and their wiring not being able to be completed, I switched to the SMP. The wiring in the panel was extremely messy and could not be followed; after shortening several cables and tie wrapping them, it became obvious that the ▆▆▆▆▆ processor in the SMP had no output cables coming from it. A quick look at the prints confirmed this. At this point I was on the phone with ▆▆▆▆▆ who had called to get a final parts order for the Fed Ex delivery. A DMX cable was requested to be sent; it would be used for parts – the XLR to mate to the SMP mounted ▆▆▆▆▆▆ processor and the cable portion to jumper the racks between each other (▆▆▆▆ and DMX). The SMP has both a DMX and an Ethernet run coming from its front panel. These runs are for the main ▆▆ series processor to plug in when used in the stage position. The connections are redundant as both send DMX to the racks. With the main ▆▆ series processor using Ethernet in the booth location it was decided that the front panel DMX connection would be removed and given to the SMP mounted ▆▆ series processor.

Open Issues
The SMP mounted ▆▆ series processor needs to be hooked up the DMX run using the connector on the DMX cable ▆▆▆▆▆▆▆▆ sent. The unused DMX connection on the front of the SMP should be removed and covered up to avoid data collision. On a side note, the drawings show the silk screening of REMOTE as ROMOTE; I do not remember what the panel was actually printed as.

▆▆▆▆▆▆ Stations

Overview
The house light entry stations are all located behind locking covers. My standard K123 key would not open the covers (this key had opened all covers for me provided by ▆▆▆▆▆▆▆ for over 5 years). The EC tracked down the keys and I found out that ▆▆▆▆▆▆▆ was using a K060 series key and lock set on this job site. The wiring of the ▆▆▆▆ stations was sub par with exposed shields and exposed conductors on the termination block connectors where four wiring were shoved into one connector. All problem connectors were redone using splicing connectors to a mini tee connection and all exposed shields were sleeved with heat shrink tubing. I could not tape the ends where the Belden 9773 exited the conduit and entered the single gang back boxes because (1) the Belden 9773 cable had been stripped all the way back to where it entered the back box, (2) there was no slack in the line, and (3) my hands do not fit in a single gang box. The stations were all set for address 1 and the back box frames marked so. The runs were tested for shorts except at the rack position where the cable lay bundled on the buss bars. The SMP mounted ▆▆▆▆ station wiring was checked for shorts. The 2nd 8 preset ▆▆▆▆ station was not installed by the EC per the electrical blue prints.

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Open Issues
If the entry stations are used to power on house lights and you then go to the booth, there is no way to turn them off again without going to an entry station again or using the Outlook station in the SMP. I presumed this is the case because the 2nd 8 preset ▇▇▇▇ station was not installed in the booth.

Micro Control Stations

Overview
The wiring was verified between the SMP ▇▇▇▇ station and the booth ▇▇▇▇ station. It was not checked at the rack side where it laid bundled on the rack buss bars.

Open Issues
None except the analog wiring needs a place to land.

Work Light Panels

Overview
The wiring was checked and the work light panels' relay enclosure energized after the EC hunted down the correct circuit breaker (I marked the circuit breaker in its door schedule). Upon energizing these panels it became apparent that there was a mistake in the wiring. Not knowing where it had been miswired it was decided that it would be corrected at the SMP as both stations terminated there before landing in the relay enclosure. With the wiring corrected, the functioning of the relays was confirmed through the action of the ON indicators as they are actuated by the relays in the relay enclosure.
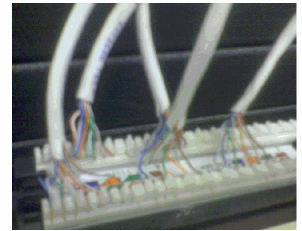
Open Issues
None except the analog wiring needs a place to land.

Network

Overview
The network wiring had not been certified and the EC was unaware what that entailed. Suspicious of what that meant I removed the patch panel. The wiring was again sub par; the Ethernet ends were untwisted close to two inches, the individual wires were nicked from being stripped with improper tools, and a small screwdriver had been used by the EC to punch down the cables to the patch panel resulting in the wires lifting off their blocks with any slight motion of the cable. A quick check of the Ethernet wiring in the SMP confirmed that all the network wiring should be redone. Having the network certified was impressed upon the EC (for warranty purposes and to verify the cable runs for kinks and other such Ethernet aberrations). The switch was powered on after the EC tracked down the circuit breaker (I again noted the circuit breaker in its door schedule).
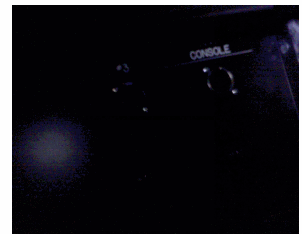
Open Issues
I spoke with a telecom subcontractor that the EC was hiring to re-do the Ethernet terminations and certify the wiring with print out. The work was to occur on or by ▇▇▇▇▇▇.

Hand Held Remote (HHR)

Overview
Not wanting to bring the main ▇▇ series processor down to the SMP to connect to the HHR Console In jack, the HHR extension cable was hooked up to the SMP ▇▇ series processor and routed to the front of the SMP panel. The HHR was plugged in and it powered up and operated correctly. The HHR was then taken to the director's panel in the mid-house position where it was discovered that the mating connector was the wrong sex.

Open Issues
The director's location needs a female 6 pin XLR connector for the HHR.

Emergency Transfer Cabinet

Overview
Not installed.

Open Issues
The egress and emergency exit lights are also on the ▇▇▇▇ racks. If power fails there will not be any light for people to neither see nor know where the exits are.

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Main ▮ Series Processor

Overview
The console powered up fine but it cannot be plugged into the Ethernet wall jack. The wall jack uses an XLR barrel surround and the jack on the console uses a standard RJ45 connector. The cables provided by ▮▮▮▮ are RJ45 XLR cables that will physically not plug into the back of the ▮ series processor.

Open Issues
Need regular Ethernet jumper cable to plug in the ▮ series processor. On a side note, it would be useful to know what the relationship control wise will be between the main console and the SMP console.

Other Stuff

Overview
The EC's drawing show two 3COM POEs and two ▮▮▮▮ POE nodes. The nodes and POEs were eliminated in my revised drawing set but the EC still was in possession of two POE ▮▮▮ nodes. The EC took me aside to show me two single gang back boxes with four #18 wires. The electrical blue prints call for two ▮▮▮▮▮ entry stations to control some back stage lighting (step lights?).

Open Issues
With the elimination of the ▮▮▮ nodes, the question becomes: what is the use of the Ethernet connection on the first catwalk? I assume it was meant for a ▮▮▮ node to distribute DMX.

Conclusion

The location of ▮▮▮ creates a logistics challenge regarding travel to the job site, timely delivery of parts, the loss of 1 hour in relationship to the rest of Arizona, and a source of parts from retailers (3 hour drive one way to Flagstaff, AZ or Gallup, NM). The closest hotel is in Chinle, a one-hour drive via rough road and unpaved dirt roads. The drive itself to ▮▮▮ requires a 12-20 miles drive over dirt roads depending on the route chosen that become hazardous during rain or snowstorms. The Navaho Nation itself sits at roughly 7000 feet in elevation making snow a very real problem as is Flagstaff with its very small airport that is subject to delays and closures. I would recommend a four wheel drive vehicle and travel within the Navaho and Hopi reservations during daylight only because the roads are for the most part unmarked with signs and maps and GPS units do not quite match the road system.

The system itself appears to have not been checked by engineering and also appears to have been under constant revision. I recommend 4-5 days for this job to be completed: 1 day in, 1-2 days to finish everything, 1 day for training, 1 day out.

Maurice Garcia

![signature of Maurice Garcia]

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