AMS

COLLEGE OF
MARIN

DDC
Dan Davis Communications

KENTFIELD CAMPUS
NETWORK INFRASTRUCTURE IMPROVEMENTS
FOR SURVALANCE SYSTEM UPGRADE

March 2, 2020

KTD 1. KENFIELD CAMPUS MARQUEE SIGN

KTD 1.1. Provide and install (1) 12-strand SM Fiber cable to the Campus Marquee Sign

KTD 1.1.1. Using the existing conduit system back pull the existing workstation location (4-Cat 6 cables) in the electrical room feeding the marquee sign back to IDF FA-203.

KTD 1.1.1.A. Install (1) 12 SM fiber optic cable from IDF FA-203 to the electrical room feeding the marquee sign.

KTD 1.1.1.B. Pull in new workstation data cables back into the electric room with the Fiber and route to and terminate the location next to the equipment being serviced in the electric room.

KTD 1.1.2. Terminate both ends with new Cat6 jacks matching the existing jack colors, re-label with existing ID, test, and re-patch the data cables into equipment being serviced.

KTD 1.1.3. Continue to use existing conduit pathway to the Marquee sign and route the new 12-strand SM fiber cable into Marquee sign using the existing cat 6 cable as a pull sting.

KTD 1.1.4. Inside the Marquee Sign

KTD 1.1.4.A. Terminate all 12-strands with LC fusion splice connectors

KTD 1.1.4.B. Snap the terminated connector into Panduit Mini-com LC duplex bulkheads and snap the bulk heads into a 12-port Panduit surface mount fiber box.

KTD 1.1.4.C. Mount and patch the new media converter into the network with a 1-meter LC/LC patch cord.

KTD 1.1.4.D. Patch Marquee sign to the media converter with a Cat 6 copper patch cord.

KTD 1.1.5. In IDF FA-203

KTD 1.1.5.A. Terminate all 12-strands with LC fusion splice connectors

KTD 1.1.5.B. House the terminated fibers in the existing fiber enclosure and snap the connectors into a new 6-dulpex LC adapter panel.

KTD 1.1.5.C. Provide bidirectional OTDR trace results verifying each strand meets current industry standards outlined in the TIA/EIA Family of Standards.

KTD 1.1.5.D. Provide (2) additional LC/LC, 1-meter patch cords

KTD 1.2. AMS provided Equipment: None

KTD 1.3. Owner provided Equipment:

KTD 1.3.1. Notes for IT/Network

KTD 1.3.1.A. Harsh environment media converter with SM LC transceiver

KTD 1.3.1.B. All copper patch cords,

KTD 1.3.2. Notes for Electrician

KTD 1.3.2.A. Need (1) duplex electrical outlet inside Marquee for transceiver.

KTD 2. CAMPUS WAYFINDING DISPLAY IN THE ACADEMIC CENTER (AC)

KTD 2.1. Outside of room AC-247 install a Campus Wayfinding Display (CWD).

KTD 2.1.1. Mount the CWD per ADA height requirements.

KTD 2.1.1.A. Relocate 2-Cat6 cables for an AV location from the above ceiling space in AC-247, down the exterior wall, to the new AV location and install a single gang cut-in behind the Outdoor touchscreen TV.

KTD 2.1.1.B. Test the relocated cables to current industry standards

KTD 2.1.1.C. Re-label the Location with the current Location ID.

KTD 2.2. <u>AMS provided equipment: None</u>

KTD 2.3. <u>Owner provided equipment:</u>

KTD 2.3.1. Notes for IT/Network

KTD 2.3.1.A. Outdoor touchscreen TV and mount

KTD 2.3.1.B. All copper patch cords

KTD 2.3.2. Notes for Electrician

KTD 2.3.2.A. Need (1) duplex electrical outlet behind the display.

KTD 3. CHILD STUDY CENTER (CSC) BUILDING – CSC_CAM-01

KTD 3.1. **Provide a workstation location and mount CSC_Cam-01.**

KTD 3.1.1. Install (1) 2-Cat 6 cable Workstation location from the CSC IDF though the drop tile ceiling space to the new camera location adjacent to the front entrance alcove.

KTD 3.1.1.A. Terminate both ends of the cables with Cat 6 jacks and snap the terminated jacks into an appropriate port white surface mount box or faceplate.

3.1.1.A.a.a. Use Orange jacks for both ends of cable one

3.1.1.A.a.b. Use Green jacks for both ends of cable two.

KTD 3.1.2. Test the cables to current industry standards and label both ends with the approved location label and cable ID.

KTD 3.1.3. Mount CSC_Cam-01 on the exterior wall adjacent to the front entrance alcove.

KTD 3.1.3.A. Behind the camera make a weatherproof penetrate though the wall and patch CSC_Cam-01 into workstation location.

KTD 3.2. <u>AMS provided equipment:</u>

KTD 3.2.1. Network Cameras

KTD 3.3. <u>Owner provided equipment</u>**:**

KTD 3.3.1. All Copper patch cords

KTD 4. PHYSICAL EDUCATION (PE) COMPLEX - FIBER BACKBONE AND SECURITY CAMERA UPGRADE

KTD 4.1. <u>LOT-12 Entrance Camera, P12_Cam-02 installation.</u>

KTD 4.1.1. Trench from the existing pull box CMN-B#57 to the existing pole at the entrance of Lot-12.

KTD 4.1.1.A. Provide and install (1) 1.5" PVC conduit from CMN-B#57 to a new 12"x12"x6" pull box with lid.

KTD 4.1.1.B. Install (1) ¾" conduit up the existing pole from the new pull box to camera location, P12_Cam-02.

KTD 4.1.1.C. Install (1) new NEMA-R3 box with cover to house the new workstation location and as the mounting location for camera, P12_Cam-02.

KTD 4.1.2. From the new workstation location in the NEMA-R3 box, install 2-Cat 6 OSP rated cables from the MDF in PE-89 to camera location P12_Cam-02.

KTD 4.1.2.A. Terminate both ends of the cable with a Cat 6 jacks and snap the terminated jacks into an appropriate port white surface mount box or faceplate.

KTD 4.1.2.A.a. Use Orange jacks for both ends of cable one

KTD 4.1.2.A.b. Use Green jacks for both ends of cable two.

KTD 4.1.2.B. Test the cables to current industry standards and label both ends with the approved location label and cable ID.

KTD 4.1.3. Mount ALPR Camera and patch into network.

KTD 4.2. <u>PV-1 (Police Portable) Ubiquity network bridge for existing camera P12_Cam-01 and P10_Cam-01.</u>

KTD 4.2.1. On the east side of PV-1 securely wall mount a 1.5" ridge galvanized conduit.

KTD 4.2.1.A. The Ridge conduit must rise 6' about the roof line of PV-1.

KTD 4.2.1.B. Install, adjacent to the Ridge conduit (1) NEMA-3R, 12"x12"x6" weatherproof box (BOX) for the network connection for Wireless Bridges.

KTD 4.2.1.C. Make a weatherproof penetration though the back of the BOX into the space above the drop tile ceiling of PV-1.

KTD 4.2.2. Install (1) 4-Cat6 cable Data location inside the BOX.

KTD 4.2.2.A. Route the workstation cables from the IDF in PV-1 to the workstation in the BOX using the existing j-hook pathway above the drop tile ceiling.

KTD 4.2.2.B. Terminate both ends with Cat6 jacks.

KTD 4.2.2.B.a. Cable one blue, cable two orange, cable three green and cable four yellow

KTD 4.2.2.C. At the Data location snap the terminated Jacks into 4-port white SMB.

KTD 4.2.2.D. In the IDF snap the jacks into the existing patch panel.

KTD 4.2.2.E. Test the cables to current industry standards and label both ends with approved labels.

KTD 4.2.3. Install the Ubiquity Network Bridges on the RM, verify mounting height with AMS and College IT dept.

KTD 4.2.3.A. Connect each wireless bridge to the BOX with a ¾" Watertight flexible conduit and route and patch each Bridge into the network with a cat 6 patch cable.

KTD 4.3. <u>New Athletic Field Camera, P10_CAM-02AF</u>

KTD 4.3.1. Replace existing Volleyball Sand Pit Fence pole being used as Radio Mast with a new 15' x.1.5" ridge galvanized conduit as a Wireless Radio Bridge Mast (RM).

KTD 4.3.2. Mount camera P10_Cam-02AF and the Ubiquity Network Bridges on the RM, verify mounting height with AMS and College IT dept.

KTD 4.4. <u>New Swimming Pool Camera, PE_Cam-01.</u>

KTD 4.4.1. Re-route an existing Cat6 data cable from the closest, accessible workstation location to New Camera Location on the east side of the Pool Deck outside the Men's Team Locker Room.

KTD 4.4.1.A. Inside the Men's team locker room re-terminate the cable with the existing jack and mount it in a1port surface mount box

KTD 4.4.1.A.a. Test the cable to current industry standards and re-label the re-terminated cable with the existing location ID

KTD 4.4.1.B. As necessary, make a weatherproof penetration though the wall from behind the new Camera into the area adjacent to the re-located workstation location.

KTD 4.4.1.C. Route cat6 patch cord from the relocated workstation cable though the weatherproof penetration and patch into the new camera.

KTD 4.5. <u>MAIN GYM - Fiber backbone and wireless network upgrade.</u>

KTD 4.5.1. From PE-49 IDF, provide and install (1) 12-strand SM Fiber cable to the AV Cabinet in Ball Closet PE-28.

KTD 4.5.1.A. Use the Campus's existing conduit infrastructure

KTD 4.5.1.B. Inside the PE-49

KTD 4.5.1.B.a. Terminate all 12-strands with LC fusion splice connectors

KTD 4.5.1.B.b. House the terminated fibers in the existing 1RU fiber tray and snap the terminated connectors into a new 6-dulpex LC adapter panel

KTD 4.5.1.C. In the existing AV Cabinet in PE-28

KTD 4.5.1.C.a. Terminate all 12-strands with LC fusion splice connectors

KTD 4.5.1.C.b. House the terminated fibers in a new 1RU fiber tray and snap the terminated connectors into a new 6-dulpex LC adapter panel.

KTD 4.5.2. Provide and install (4) 2-Cat 6 cable AP locations and (1) 4-Cat 6 cable Data location in the Main Gym.

KTD 4.5.2.A. Ceiling mount each AP Location 37.5' from the center of the Gym Floor forming a square around the perimeter of the Gym floor.

KTD 4.5.2.A.a. Mount and patch one Ruckus AP at each access point location.

KTD 4.5.2.B. Install the Data location adjacent to the power outlet feeding existing Webcast Camera on the west wall.

KTD 4.5.3. Use existing surface mount raceway or conduits where possible.

KTD 4.5.4. In locations, where existing raceways are not available use white Panduit LD-10 raceway, or equal.

KTD 4.5.4.A. Securely attached all raceway to the walls and ceiling with drywall screws or other appropriate physical fasting system.

KTD 4.5.5. Terminate both ends of each Cat6 cable with the same color Cat 6 jack.

KTD 4.5.5.A. AP Locations with Purple jacks

KTD 4.5.5.B. Data location cables: cable one Blue, cable two Orange, cable three Green and cable four Yellow.

KTD 4.5.5.C. Snap the terminated jacks into a white, appropriate port surface mount box or faceplate.

KTD 4.5.6. In the IDF snap the terminated jacks into a new 24port modular patch panel.

KTD 4.5.7. Test each cable to current industry standards and label both ends with the approved location label and cable ID.

KTD 4.6. <u>EP91 Location</u>

KTD 4.6.1. Provide and install (1) 2-Cat 6 cable Data location in PE91 from IDF PE-89.

KTD 4.6.2. Terminate both ends of each cable with a Cat 6 jacks and snap the terminated jacks into an appropriate port white surface mount box or faceplate.

KTD 4.6.2.A. Use Orange jacks for both ends of cable one

KTD 4.6.2.B. Use Green jacks for both ends of cable two.

KTD 4.6.3. Test the cables to current industry standards and label both ends with the approved location label and cable ID.

KTD 4.7. <u>AMS provided equipment</u>

KTD 4.7.1. UBIQUITY network equipment

KTD 4.7.2. All network cameras

KTD 4.8. <u>Owner provided equipment</u>

KTD 4.8.1. Notes for IT/Network

KTD 4.8.1.A. All Ruckus wireless network access points

KTD 4.8.1.B. All copper patch cords

KTD 4.8.2. Notes for College M&O Dept

KTD 4.8.2.A. M&O to replace the existing pole with the new Ridge Conduit.

KTD 4.8.3. Notes for Electrician

KTD 4.8.3.A. Provide duplex electrical power outlet for each side of the UBIQUITY antenna

KTD 5. STUDENT SERVICES BUILDING, CAMPUS GENERAL INFORMATION PHONE

KTD 5.1. <u>Campus General Information Phone</u>

KTD 5.1.1. Install (1) wall phone in old existing pay phone area on the first-floor entrance closest to MDF SS-136.

KTD 5.1.2. Mount the wall phone backbox and phone per ADA requirements.

KTD 5.1.3. Tie the wall phone backbox to the IDF with a ¾" conduit.

KTD 5.1.4. Install (2) Cat6 data cables to the IDF in the ¾" conduit and terminate both ends with a black Cat 6 jack.

KTD 5.1.5. Patch the Wall Phone into the network with Cat6 patch cords.

KTD 5.1.6. Test the cables to current industry standards and label both ends with the appropriate room number and next cable ID for that room.

KTD 5.2. <u>AMS provide equipment: None</u>

KTD 5.3. <u>Owner provided equipment</u>

KTD 5.3.1. Notes for IT/Network

KTD 5.3.1.A. Viking outdoor telephone backbox VE-5X10-PNL-SS box &

KTD 5.3.1.B. Viking outdoor VoIP Phone, K-1900-8-IP-EWP

KTD 5.3.1.C. All copper patch cords

KTD 6. CHILLER PAD - FIBER BACKBONE UPGRADE & CAMERA LOCATION, P9_CAM-01.

KTD 6.1. <u>Chiller Pad Fiber Backbone Upgrade</u>

KTD 6.1.1. Provide and install (1) 24-strand SM Fiber cable from the MDF in SS-136 to the Chiller Pad IDF.

KTD 6.1.2. Use the Campus's existing underground conduit infrastructure

KTD 6.1.3. Adjacent to the existing Chiller Pad IDF Enclosure, provide and install (1) ReBox Zone Cabling Enclosure, part number IDF24

    KTD 6.1.3.A. In the new IDF enclosure terminate all 24-strands with LC fusion splice connectors

    KTD 6.1.3.B. House the terminated fibers in a new 1RU fiber enclosure and snap the connectors into a new 12-duplex LC adapter panel

KTD 6.1.4. Inside the SS-136 MDF

    KTD 6.1.4.A. Terminate all strands with LC fusion splice connectors.

    KTD 6.1.4.B. House the terminated fibers in a new 4RU fiber enclosure

    KTD 6.1.4.C. Snap the (24) terminated connectors into a new 12-dulpex LC adapter panel.

KTD 6.1.5. Provide bidirectional OTDR trace results verifying each strand meets current industry standards outlined in the TIA/EIA Family of Standards

KTD 6.1.6. Label the new adapter panels on both ends as instructed by College IT Dept.

KTD 6.1.7. Provide an additional (8) SM LC/LC, 1m patch cords.

KTD 6.2. Ubiquity Network Bridge Location for P9_Cam-01.

KTD 6.2.1. On the back-side corner of the containment wall closest to the SMN Building, install the Ubiquity equipment in line of site of the light pole in LOT-9.

    KTD 6.2.1.A. Verify line of Site is clear of obstructions, underbrush and existing tree growth.

KTD 6.2.2. Use the existing conduit pathway to the existing AP location, install (1) Cat 6 cable to the Chiller Pad IDF.

KTD 6.2.3. Install a ¾" conduit pathway from the AP location to the Ubiquity location and mount a NEMA 3R box and cover to house the new data connection.

KTD 6.2.4. Terminate both ends of the cable with purple Cat6 jacks.

KTD 6.2.5. Test the cable to current industry standards, label both ends with approved label and patch to the Ubiquity equipment.

KTD 6.3. LOT-9 Camera Location P9_Cam-01.

KTD 6.3.1. Verify the mounting height of the new Camera location on the light pole.

KTD 6.3.2. Mount the new camera at the verified height on the light pole.

KTD 6.3.3. On the light pole, mount the Ubiquity equipment in line of site of the Ubiquity equipment located on the back wall of the chiller pad.

    KTD 6.3.3.A. Verify line of site is clear of obstructions, underbrush and existing tree growth.

    KTD 6.3.3.B. Mount a NEMA 3R box to house the power and make network connections to the camera.

KTD 6.4. AMS provide Equipment

KTD 6.4.1. Ubiquity equipment

KTD 6.5. Owner provided equipment

KTD 6.5.1. Note for IT/Network

    KTD 6.5.1.A. Network switches and SFP modules

KTD 6.5.2. Note for Electrician:

    KTD 6.5.2.A. Provide a duplex electrical power outlet for each side of the UBIQUITY antenna

KTD 7. HEALTH SERVICES CENTER FIBER BACKBONE UPGRADE AND ADDITIONAL WIRELESS ACCESS POINT LOCATION.

KTD 7.1. Provide and install (1) 24-strand SM Fiber cable from the MDF in SS-136 to the IDF in the Health Services Center.

KTD 7.1.1. Use the Campus's existing underground infrastructure

KTD 7.1.2. In the IDF

KTD 7.1.2.A. Terminate all 24-strands with LC fusion splice connectors

KTD 7.1.2.B. House the terminated fibers in a new 1RU fiber enclosure and snap the terminated connectors into a new 12-dulpex LC adapter panel

KTD 7.1.2.C. Mount the new fiber tray in the top of the existing wall mounted network cabinet.

KTD 7.1.3. In the MDF

KTD 7.1.3.A. Terminate all 24-strands with LC fusion splice connectors.

KTD 7.1.3.B. House the terminated fibers in the new 4RU fiber enclosure installed under scope of work KTD 6.1

KTD 7.1.3.C. Snap the terminated connectors into a new 12-dulpex LC adapter panel.

KTD 7.1.4. Provide bidirectional OTDR trace results verifying each strand meets current industry standards outlined in the TIA/EIA Family of Standards

KTD 7.1.5. Label the new adapter panels on both ends as instructed by College IT Dept.

KTD 7.1.6. Provide an additional (8) SM LC/LC, 1m patch cords.

KTD 7.2. Additional Access Point location

KTD 7.2.1. Mount (1) Ruckus AP T310s on the outside, southeast corner wall of the Health Center, facing the Solar Arrays.

KTD 7.2.2. Install (1) 1-Cat6 workstation cable to the new AP location.

KTD 7.2.3. Pull the cable in the space above the drop tile ceiling from the IDF to the AP location.

KTD 7.2.4. Outside and adjacent to the AP, above inside ceiling height, mount a watertight single gang surface mount box with cover.

KTD 7.2.4.A. Make a watertight penetration though the back of the backbox into the space above the drop tile ceiling.

KTD 7.2.4.B. Route the data cable though the penetration into the surface mount box and terminate both ends with a purple Cat 6 jack.

KTD 7.2.5. Test the cable to current industry standards and label both ends with approved label.

KTD 7.2.6. Extend (1) ¾" seal tight conduit from the bottom of the single gang box to the AP back box.

KTD 7.2.7. Patch the AP to the network connection though the seal tight conduit.

KTD 7.2.8. Provide (2) SM LC/LC, 1-meter patch cords

KTD 7.3. AMS provided equipment: None

KTD 7.4. Owner provided Equipment:

KTD 7.4.1. Ruckus Access point T310s

KTD 8. LOT-2 CAMERA LOCATION P2_CAM-01.

KTD 8.1. Install network connectivity and mount the Ubiquity Equipment for P2_Cam-01.

KTD 8.1.1. Locate the Ubiquity Equipment in the center of the wall above the overhang outside AC-254 in line of site of the new Lot-2 Surveillance Utility Pole.

KTD 8.1.2. Re-route an existing Cat6 data cable from the closest, accessible workstation location to a surface mount box on the inside of the wall opposite of the Ubiquity Equipment.

KTD 8.1.2.A. Test the cable to current industry standards and re-label with the existing label.

KTD 8.1.3. Mount the Ubiquity antenna in line of sight to the new pole in Lot 2

KTD 8.1.3.A. Behind the Ubiquity equipment make a weatherproof penetration though the wall into the open ceiling space in AC-254 to patch into the relocated network jack and provide power in necessary.

KTD 8.1.3.B. Verify line of site is clear of obstructions, underbrush and existing tree growth

KTD 8.2. Installation of the Ubiquity Equipment, Surveillance Camera and NEMA-3R enclosure on the utility pole.

KTD 8.2.1. Verify the location and installation heights of all equipment with the College IT dept.

KTD 8.2.2. Mount the Ubiquity equipment at the verified height.

KTD 8.2.3. Mount Camera, P2_Cam-01, using suppled mount at the verified height.

KTD 8.2.4. Install the Mini IDF, NEMA-3R, 18x16x8-inch weatherproof enclosure.

KTD 8.2.4.A.a. Use a ¾" liquid-tight flexible plastic conduit to tie the camera back box and the Ubiquity equipment backbox to the weatherproof enclosure

KTD 8.2.4.A.b. Inside the weatherproof box mount the 12-port network switch and patch the Camera and the Ubiquity equipment.

KTD 8.3. AMS provided equipment:

KTD 8.3.1. Ubiquity Equipment

KTD 8.3.2. Network Cameras

KTD 8.4. Owner provided equipment:

KTD 8.4.1.A. Notes for IT/Networking

KTD 8.4.1.A.a. Mini IDF- NEMA-3R, 18x16x8 weatherproof enclosure with cooling fans

KTD 8.4.1.A.b. All network switches and copper patch cords.

KTD 8.4.1.B. Notes for College M&O Dept

KTD 8.4.1.B.a. Installation of New Surveillance Utility Pole and supports.

KTD 8.4.1.C. Notes for Electrician

KTD 8.4.1.C.a. Dedicated electrical outlet inside the weatherproof enclosure.

KTD 9. AUSTIN BUNKER IDF BUILD OUT, FIBER BACKBONE UPGRADE

KTD 9.1. Austin Bunker (Bunker) IDF build out.

KTD 9.1.1. Provide and install (1) 7', black, 2-post network equipment rack inside the Bunker

KTD 9.1.2. Install 12" wide black ladder rack system above the rack to securely stabilize and attached the rack to the walls and to provide a cable pathway for the in/out bound campus fiber backbone.

KTD 9.1.2.A. The following quantities of Ladder rack system are included in this project:

KTD 9.1.2.A.a. (4) 10' lengths of Ladder Rack black

KTD 9.1.2.A.b. (4) Triangle Support kits black

KTD 9.1.2.A.c. (3) $^{3/8”}$ All-thread Ceiling Support kits

KTD 9.1.2.A.d. (1) Top Plate Kit black

KTD 9.1.2.A.e. (2) Adjustable Butt Splice kits black

KTD 9.1.2.A.f. (2) Adjustable Junction Splice kits black

KTD 9.1.2.B. College Verify rack placement and inside the Bunker with the College IT Dept.

KTD 9.2. Provide and install (1) 48-strand SM Fiber cable from the MDF in SS-136 to the Bunker IDF.

KTD 9.2.1. Use the Campus's existing underground infrastructure

KTD 9.2.2. In the IDF

KTD 9.2.2.A. Terminate all 48-strands with LC fusion splice connectors

KTD 9.2.2.B. House the terminated fibers in a new 4RU fiber enclosure and snap the terminated connectors into new 12-dulpex LC adapter panels

KTD 9.2.2.C. Mount the new fiber tray in the top of the 2-post rack installed under scope of work KTD 10.1.

KTD 9.2.3. In the MDF

KTD 9.2.3.A. Terminate all 48-strands with LC fusion splice connectors.

KTD 9.2.3.B. House the terminated fibers in the new 4RU fiber enclosure installed under scope of work KTD 6.1.

KTD 9.2.3.C. Snap the terminated connectors into new 12-duplex LC adapter panels.

KTD 9.2.4. Provide bidirectional OTDR trace results verifying each strand meets current industry standards outlined in the TIA/EIA Family of Standards

KTD 9.2.5. Label the new adapter panels on both ends as instructed by College IT Dept.

KTD 9.2.6. Provide an additional (8) SM LC/LC, 1m patch cords.

KTD 9.3. AMS provided equipment: None

KTD 9.4. Owner Provided equipment:

KTD 9.4.1.A. All network switches and SFP modules

KTD 9.4.1.B. All Copper patch cords

KTD 10. M&O PC-100 FIBER BACKBONE UPGRADE AND LOT-15 UBIQUITY BRIDGE AND CAMERA, P15_CAM-01.

KTD 10.1. Provide and Install (1) 12-strand SM from Austin Bunker IDF to M&O PC-100 IDF.

KTD 10.1.1. Use the existing campus underground and conduit infrastructure

KTD 10.1.2. In M&O PC-100 IDF

KTD 10.1.2.A. Terminate all 12-strands with LC fusion splice connectors

KTD 10.1.2.B. House the terminated fibers in new 1RU rack fiber enclosure and snap the connectors into a new 6-duplex LC adapter panel

KTD 10.1.2.C. Mount the new fiber trays in the top of the existing 2-post equipment rack.

KTD 10.2. <u>M&O PC-300 Ubiquity bridge location.</u>

KTD 10.2.1. Mount on the front wall of M&O PC-300 the Ubiquity bridge equipment in line of sight of the LOT-15 light pole.

KTD 10.2.1.A. Behind the Ubiquity equipment make a weatherproof penetration though the wall adjacent to the added AP Location.

KTD 10.2.1.B. Patch the Ubiquity equipment to the new AP location.

KTD 10.2.1.C. Verify line of site is clear of obstructions, underbrush and existing tree growth

KTD 10.2.2. Install (1) 2-Cat6 cable AP location to the opposite side of the wall from the Ubiquity bridge, mounted on front of PC-300 to the IDF in PC-100.

KTD 10.2.2.A. Use the existing above ceiling pathways to PC-100.

KTD 10.2.2.B. Terminate both ends of the cable with purple Cat6 jacks and snap the terminated jacks into an appropriate port white faceplate and into the existing patch panel in the IDF.

KTD 10.2.2.C. Test the cables to current industry standards and label both ends with approved label.

KTD 10.2.2.D. Patch the Ubiquity equipment into the new AP location and patch in to the existing network switch in the IDF.

KTD 10.3. <u>LOT-15 Ubiquity Antenna for Camera P15_Cam-01.</u>

KTD 10.3.1. On the existing light pole in LOT-15 mount the Ubiquity antenna equipment and network camera.

KTD 10.3.2. On the opposite side of the pole, mount a NEMA-3R 12x12x6inch enclosure to house the Ubiquity power supply and to make the network connection to the camera.

KTD 10.3.2.A. Use a ¾" liquid-tight conduit to connect the Ubiquity and the camera to the NEMA -3R enclosure.

KTD 10.3.2.B. Patch the camera into the Ubiquity equipment.

KTD 10.3.2.C. Verify the location and installation heights of the camera into the Ubiquity equipment with the College IT dept.

KTD 10.4. <u>AMS provided equipment:</u>

KTD 10.4.1. Ubiquity network equipment

KTD 10.4.2. Network cameras

KTD 10.5. <u>Owner provided equipment:</u>

KTD 10.5.1.A. Notes for IT/Networking

KTD 10.5.1.A.a. All copper patch cords.

KTD 10.5.1.B. Notes for Electrician

KTD 10.5.1.B.a. Dedicated electrical outlet inside the NEMA-3R enclosure.

KTD 11. LOT 1 SOLAR ARRAY FIBER BACKBONE; MINI IDF BUILD OUT.

KTD 11.1. <u>Install (1) 1.5" PVC Underground conduit to the LOT-1 Solar Array Canopy</u>

KTD 11.1.1. From the existing 24x24x8-inch outside rated Communications Pull Box mounted to the northeast side of the Bunker trench along the eastside of the Bunker to the inground 18x 12-inch Communications pull box.

KTD 11.1.2. Install the 1.5" PVC conduit in the trench and connect it the existing Com Pull Box and stub up inside the existing inground Solar Array Com Pull Box.

KTD 11.2. Solar Array fiber backbone

KTD 11.2.1. Install (1) 12 strand SM Fiber cable from the Austin Bunker IDF to each Mini IDF for a total of (8) 12-strand fiber cables.

KTD 11.2.2. Inside the Austin Bunker IDF

KTD 11.2.2.A. Terminate all strands with LC fusion splice connectors.

KTD 11.2.2.B. House the terminated fibers in the new 4RU fiber enclosure installed under scope of work KTD 9.1

KTD 11.2.2.C. Snap the terminated connectors into new 6-duplex LC adapter panels.

KTD 11.2.3. In each Mini IDF.

KTD 11.2.3.A. Terminate all strands with LC fusion splice connectors.

KTD 11.2.3.B. House the terminated fibers in a new small wall mt fiber enclosure

KTD 11.2.3.C. Snap the terminated connectors into new 6-duplex LC adapter panel.

KTD 11.2.3.D. Provide bidirectional OTDR trace results verifying each strand meets current industry standards outlined in the TIA/EIA Family of Standards

KTD 11.2.3.D.a. Label with College IT Approved Cable ID on both ends.

KTD 11.2.3.D.b. Provide (8) additional SM LC/LC, 1m patch cords

KTD 11.3. Solar Array Mini IDF locations

KTD 11.3.1. Mount (1) Mini IDF, a NEMA-3R, 18x16x8-inch weatherproof enclosure with cooling fans on the southernmost end of each Solar Canopy for a total of (8) enclosures.

KTD 11.3.2. Install (3) AP locations on each Solar Canopy with a Mini IDF

KTD 11.3.2.A. Home run (1) Cat6 OSP rated cable from the Mini IDF to each AP location.

KTD 11.3.2.A.a. Support the cabling every 4' with J-hooks mounted to the existing Unistrut conduit rack.

KTD 11.3.2.A.b. If necessary, for proper cable support install additional Unistrut.

KTD 11.3.2.B. Space each AP Location equal distance apart starting on the end opposite the Mini IDF.

KTD 11.3.2.C. House each AP location in a watertight single gang surface mount box with cover and proper watertight fittings.

KTD 11.3.2.D. Terminate both ends of each Cat 6 cable with purple Cat6 jacks

KTD 11.3.2.D.a. In the Mini IDF snap the terminated jacks in to a 4-port White Surface mount box (SMB) and attached the SMB inside the Mini IDF.

KTD 11.3.2.D.b. At the AP Location snap the jack into a white 1-port faceplate.

KTD 11.3.3. Test each cable to current industry standards and label with approved label.

KTD 11.3.4. At locations where an Access Point will be deployed Extend a ¾" seal tight conduit from the single gang box to the AP backbox.

KTD 11.3.5. Mount (1) 12-port network switch with SFP fiber modules in each Mini IDF.

KTD 11.3.6. Patch the switch into the network with a LC/LC 1-meter fiber patch cord

KTD 11.4. Mount Cameras and APs on the Solar Canopy.

KTD 11.4.1. Mount New Camera P1_CAM-01 in verified location on the Solar Canopy in LOT-1.

KTD 11.4.2. Mount New Camera P6_CAM-01 in verified location on the Solar Canopy in LOT-6

KTD 11.4.3. Verify the correct Solar Canopy and mount the new Access Points for proper wireless coverage of existing Cameras: P6_CAM-02, P7_CAM-01, P7_Cam-02.

KTD 11.4.4. Use a ¾" liquid-tight plastic conduit to connect the backboxes of the AP locations to the new cameras or Access Points and patch them to the network connection.

KTD 11.5. <u>AMS provided equipment:</u>

KTD 11.5.1. Ubiquity Equipment

KTD 11.5.2. Network Cameras

KTD 11.6. <u>Owner provided equipment:</u>

KTD 11.6.1.A. Notes for IT/Networking

KTD 11.6.1.A.a. Mini IDF- NEMA-3R, 18x16x8 weatherproof enclosure with cooling fans

KTD 11.6.1.A.b. All Ruckus Access points

KTD 11.6.1.A.c. All network switches and copper patch cords.

KTD 11.6.1.B. Notes for Electrician

KTD 11.6.1.B.a. Dedicated electrical outlet inside each new Mini IDF.

KTD 12. CAMPUS ALERTUS BEACON INSTALLATIONS

KTD 12.1. <u>PE - Pool Deck Area</u>

KTD 12.1.1. Locate and mount (1) Alertus Beacon outside the Women's Locker.

KTD 12.1.2. Relocate 1-Cat6 cable from the closest workstation location.

KTD 12.1.2.A. Route the cable to the Alertus location using surface mounted

KTD 12.1.2.A.a. Mount the Alertus to a single gang weatherproof box.

KTD 12.1.2.A.b. Install a ¾" EMT conduit and compression fitting to connect the box to the closest accessible ceiling space.

KTD 12.1.3. Test the relocated cable to current industry standards and label with existing label.

KTD 12.2. <u>PE – Main Gym</u>

KTD 12.2.1. Locate and mount (1) Alertus Beacon inside the main entry below the College of Marin Athletic Hall of Fame Sign, adjacent to the existing light switches.

KTD 12.2.2. Relocate 1-Cat6 cable from the closest workstation location.

KTD 12.2.3. At the Alertus location route the cable down the existing wall and provide a low-voltage cut-in

KTD 12.2.4. Test the relocated cable to current industry standards and label with existing label

KTD 12.3. <u>PV - Village Square</u>

KTD 12.3.1. Locate and mount (1) Alertus Beacon on the outside corner wall of PV-1 just before the restrooms.

KTD 12.3.2. Relocate 1-Cat6 cable from the closest workstation location.

KTD 12.3.2.A. Route the cable to the Alertus locations using surface mounted raceway.

KTD 12.3.2.A.a. Mount the Alertus to a single gang weatherproof box.

KTD 12.3.2.A.b. Install (1) ¾" EMT conduit, using compression fitting, to connect the box to the closest accessible ceiling space

KTD 12.3.3. Test the relocated cable to current industry standards and label with existing label

KTD 12.4. CSC - Child Services Center

KTD 12.4.1. Locate and mount (1) Alertus Beacon in the main entrance lobby of the CSC.

KTD 12.4.2. Relocate 1-Cat6 cable from the closest workstation location.

KTD 12.4.3. Route the cable down the existing wall to the Alertus Location and provide a low-voltage cut-in

KTD 12.4.4. Test the relocated cable to current industry standards and label with existing label

KTD 12.5. AC – Academic Center.

KTD 12.5.1. Locate and mount (3) Alertus Beacons:

KTD 12.5.1.A. 1st floor between rooms AC-103 and AC-104

KTD 12.5.1.B. 2nd floor between rooms AC-237 and AC-238

KTD 12.5.1.C. Outside room AC-255 adjacent to the bathrooms.

KTD 12.5.2. At each location, relocate 1-Cat6 cable from the closest workstation location.

KTD 12.5.2.A. Route each cable down the existing wall to the Alertus Location and provide a low-voltage cut-in

KTD 12.5.2.B. If the wall is not accessible use surface mounted raceway to route the cable to the Alertus location

KTD 12.5.2.B.a. Mount the Alertus to a single gang weatherproof box.

KTD 12.5.2.B.b. Install (1) ¾" EMT conduit, using compression fitting, to connect the box to the closest accessible ceiling space

KTD 12.5.3. Test the relocated cable to current industry standards and label with existing label

KTD 12.6. FH – Fusselman Hall

KTD 12.6.1. Locate and mount (1) Alertus Beacon in the main lobby on the narrow wall, above the Handy Cap Switch for the bathroom door.

KTD 12.6.2. Relocate 1-Cat6 cable from the closest workstation location.

KTD 12.6.2.A. Use surface mounted raceway to route the cable to the Alertus location

KTD 12.6.2.A.a. Mount the Alertus to a single gang weatherproof box.

KTD 12.6.2.A.b. Install (1) ¾" EMT conduit using compression fitting to connect the box to the closest accessible ceiling space

KTD 12.6.3. Test the relocated cable to current industry standards and label with existing label

KTD 12.7. FA – Fine Arts Building

KTD 12.7.1. Locate and mount (3) Alertus Beacons:

KTD 12.7.1.A. 3rd floor above the yellow emergency call box

KTD 12.7.1.B. 2nd floor above the yellow emergency call box

KTD 12.7.1.C. 1st floor at the base of the main stairway, above the end of the handrail adjacent to the Fireman's key Lock.

KTD 12.7.2. Relocate 1-Cat6 cable from the closest workstation location.

KTD 12.7.2.A. For the 2nd and 3rd floor locations use surface mounted conduit to route the cable to the Alertus locations

KTD 12.7.2.A.a. Mount the Alertus to a single gang weatherproof box.

KTD 12.7.2.A.b. Install (1) ¾" EMT conduit using compression fitting to connect the box to the closest accessible communications system pull box.

KTD 12.7.2.B. At the Alertus location in the 1st floor stairwell, mount a watertight single gang surface mount box.

KTD 12.7.2.B.a. Make a watertight penetrate though the back of the backbox and concrete wall into classroom FA-131

KTD 12.7.2.B.b. Inside FA-131 mount a 4square box with cover over the penetration and install (1) ¾" EMT conduit to the communication system pull box and relocate 1-Cat6 cable from the closest a workstation.

KTD 12.7.3. Test the relocated cables to current industry standards and re-label each cable.

KTD 12.8. PA – Performing Arts Building

KTD 12.8.1. Locate and mount (2) Alertus Beacon

KTD 12.8.1.A. In the main Lobby

KTD 12.8.1.B. In the hallway next to the monitor on the Wall outside the Women's Locker.

KTD 12.8.2. From the closest workstation relocate 1-Cat6 cable to each Alertus location.

KTD 12.8.3. At the Alertus location Route the cable down the existing wall to the Alertus Location and provide a low-voltage cut-in

KTD 12.8.3.A. If the wall is not accessible use surface mounted raceway to route the cable to the Alertus location

KTD 12.8.3.A.a. Mount the Alertus to a single gang weatherproof box.

KTD 12.8.3.A.b. Install a ¾" EMT conduit and compression fitting to connect the box to the closest accessible ceiling space

KTD 12.9. AMS provided equipment: None

KTD 12.10. Owner provided equipment:

KTD 12.10.1.A. Notes for IT/Networking

KTD 12.10.1.A.a. All Alertus units

KTD 12.10.1.A.b. All copper patch cords.

KTD 12.11. Owner provided: All Alertus Beacons