Olsson Associates
1111 Lincoln Mall Ste 111
Lincoln, NE 68508
May 2, 2014

ADDENDUM NO. 2
LPS Security & Technology Ready Facilities Project "B"
Lincoln, Nebraska 2014
OA Project No. 014-0452

TO ALL WHO HAVE RECEIVED PLANS AND SPECIFICATIONS FOR THE REFERENCED PROJECT.

FRONT-END DOCUMENTS:

1. Refer to the BID FORM, three (3) Pages

   Delete the Bid Form in its entirety and replace with the attached Bid Form.

   Note: New items have been added to the Bid Form.

2. Refer to the NOTICE TO BIDDERS, two (2) Pages.

   a. Paragraph one (1), Location of where the Sealed proposal has changed, Please deliver to:
      - Purchasing Agent 800 S. 24th St Lincoln, NE 68510

3. Refer to Section 013119 PROJECT MEETINGS, Pages 013119-1 to 013119-2

   a. Part 3.2 Progress Meetings, Paragraph C.
      - Add 4. RFI Review
      - Add 5. Proposal Request
      - Add 6. Allowances
      - Add 7. Action items.

4. Refer to Section 081113 HOLLOW METAL DOORS AND FRAMES, Pages 081113-1 to 081113-7

   a. Addition in its entirety

5. Refer to Section 087100 DOOR HARDWARE, Pages 087100-1 to 087100-7

   a. Addition in its entirety

6. Refer to Section 092216 NON-STRUCTURAL METAL FRAMING, Pages 092216-1 to 092216-5

   a. Addition in its entirety

7. Refer to Section 092900 GYPSUM BOARD, Pages 092900-1 to 092900-5

   a. Addition in its entirety

8. Refer to Section 095113 ACOUSTICAL PANEL CEILINGS, Pages 095113-1 to 095113-3

   a. Addition in its entirety

9. Refer to Section 096513 RESILIENT BASE AND ACCESSORIES, Pages 096513-1 to 096513-3

   a. Addition in its entirety

10. Refer to Section 099123 INTERIOR PAINTING, Pages 099123-1 to 099123-4

    a. Addition in its entirety

TECHNICAL SPECIFICATIONS:

1. Refer to Section 260505 – TRENCHING AND BORING FOR ELECTRICAL RACEWAY

   a. Addition in its entirety

2. Refer to Section 260534 – HDPE CONDUIT

   a. Addition in its entirety

3. Refer to Section 265601 – CAMERA POLES AND POLE BASES

   a. Addition in its entirety

4. Refer to Section 270501 – COMMON WORK RESULTS FOR COMMUNICATIONS IN THE PROJECT SPECIFICATIONS.

   Delete Section 270501 in its entirety and replace with the attached revised Section 270501

   Note: Changes made to:
   a. Part 1.4 Unit Prices, Add paragraph B, delete items 1-7.
   b. Part 1.12 Submittals, Add to item 3, “in addition to the components list”.
   c. Part 2.2 Materials, Add C Panduit to items 1,2,4,5,8, and D CCT to item 3.
   d. Part 3.9 Telecommunications Submittal Schedule Table, Delete Section 271313 Communications Copper Backbone Cabling and 271523 Communications Optical Horizontal Cabling.
   e. Add Attachment/Supplement Pre-Approved Components List

5. Refer to Section 271323 – COMMUNICATIONS OPTICAL BACKBONE CABLING

   a. Part 2.3 Materials, Paragraph B, Add item b.

      b. OM3 Laser Optimized Indoor/Outdoor Multimode Optical Fiber Cabling:

         1) 50/125 micron
         2) Maximum Attenuation: 3 dB/km at 850 nm; 1 dB/km at 1300 nm.
         3) Minimum Modal Bandwidth: 1500 MHz*km at 850 nm; 500 MHz*km at 1300 nm.
         4) Effective Modal Bandwidth: 2000 MHz*km at 850 nm
         5) The optical fiber must be FDDI and ATM compliant and conform to all relevant TIA standards.
         6) The fiber cable must be rated for direct buried applications.
         7) The fiber cable must be dielectric.
         8) The fiber cable must have a water-swellable strength members.
         9) Color: Black.

6. Refer to Section 271513 – COMMUNICATIONS COPPER HORIZONTAL CABLING

   a. Part 2.3, Add Paragraph B, item 1.

B. Twisted-pair Cables, Connectors, and Terminal Equipment:

1. UTP Outdoor Direct Burial Cable: Twisted Pair, polyethylene-insulated, individually twisted pairs of conductors; No. 24 AWG, color-coded; stranded around a polyolefin fluted center member, filled with flooding compound and jacketed with a black polyethylene jacket.

Drawings:

1. Refer to the Drawings, Sheet No. 000.C32

   a. Add Handhole installation detail. Reference attachment 000.C32-1.
   b. Add Pole Foundation installation detail. Reference attachment 000.C32-2.

2. Refer to the Drawings, Sheet No. 000.C34

   a. Add text to detail 7 COMMUNICATION ROUGH-IN CABLE FISHED IN WALL “On plaster or tile wall drill hole at device location and install surface mount box similar to Wiremold V5741.

3. Refer to the Drawings, Sheet No. 000.C35

   a. Add Pole installation detail. Reference attachment 000.C32-2.

4. Refer to the Drawings, Sheet No. 000.C36

   a. Add text to detail 7 INTERIOR CEILING MOUNT CAMERA ROUGH-IN “contractor to provide a communications cable from telecommunications room and terminated on a jack in a modular surface single port outlet box for connection to camera wiring.”
   b. Add text to detail 8 INTERIOR CEILING MOUNT ACCESS POINT ROUGH-IN “when contractor provides two Category 6A cable from Telecommunications Room they need to be terminated to jacks in a modular surface two port outlet box for connection to WAP.”

5. Refer to the Drawings, Sheet No. 121.T01.A

   a. All cable installed to be non-plenum rated.
   b. Reference attachment 121.T00-1 for closet cable routing
   c. In Telecom Room 180H replace TR “E” with TR “B”.
   d. In Library Room 131 relocate one WAP to North lower ceiling and the second WAP to the South lower ceiling space. Coordinate exact location with engineer.
   e. In Conference Room 100D remove note 6 and add one Category 6 cable to the TV,H wall jack.
   f. Pull 2 cables to Main Office 100 location for 2 buttons to control doors in access control. Button style and location to be coordinated with owner. Cables to be terminated at the closest Door IOU. If no input available an additional IOU will need installed, the cables are connected to the existing access control system to control ALL electrically controlled doors in an emergency situation. The connection should be terminated at the nearest door controller. If there is no room to complete termination, contractor will need to install an additional IOU module in close proximity to the exiting door IOU’s.
   g. Install a 0 Node Security NetController adjacent to the existing HVAC NetController in room 172 to control ALL electrically controlled doors. Remove the IOU Module connection from the existing HVAC NetController and connect it to the new 0 node NetController. Remove all security/door programming from the existing HVAC NetController and install it in the new 0 node NetController.

6. Refer to the Drawings, Sheet No. 121.T01.B

   a. All cable installed to be non-plenum rated.
   b. Reference attachment 121.T00-1 for closet cable routing
   c. In OT/PT Room 130 relocate note 4 from existing data outlet on East wall to the existing data outlet on the West wall.

d. In Multipurpose Room 174A relocate WAP to drop ceiling and remove note 9, relocate notes 4 and 5 from existing data outlet on West wall to the existing data outlet on the East wall.
e. In Gymnasium Room 170 relocate the WAP from the West wall into Office Room 170A and remove note 9.
f. In Cafeteria Room 174 relocate both WAP's to drop ceiling space along East wall. Coordinate exact location with Engineer.

7. Refer to the Drawings, Sheet No. 121.T01.C

a. All cable installed to be non-plenum rated.
b. Reference attachment 121.T00-1 for closet cable routing
c. In Telecom Room 186E replace TR "D" with TR "C".
d. In Telecom Room 184E replace TR "C" with TR "E".
e. In Resource Room 159 relocate WAP to West side of dividing wall. Coordinate exact location with engineer.

8. Refer to the Drawings, Sheet No. 121.T01.D

a. All cable installed to be non-plenum rated.
b. Reference attachment 121.T00-1 for closet cable routing
c. In Telecom Room 182F replace TR "B" with TR "D".

9. Refer to the Drawings, Sheet No. 146.T01.A

a. All cable installed to be non-plenum rated.
b. In Library Room 131 relocate one WAP to North lower ceiling and the second WAP to the South lower ceiling space. Coordinate exact location with engineer.
c. In Conference Room 100D remove note 6 and add one Category 6 cable to the TV,H wall jack.
d. In Health Office Room 100L add WAP symbol with two (2) Category 6A cables to center of room.
e. In Main Office Room 100 relocate WAP to the center of the open office space in front of the offices. Coordinate exact location with engineer.
f. Pull 2 cables to Main Office 100 location for 2 buttons to control doors in access control. Button style and location to be coordinated with owner. Cables to be terminated at the closest Door IOU. If no input available an additional IOU will need installed, the cables are connected to the existing access control system to control ALL electrically controlled doors in an emergency situation. The connection should be terminated at the nearest door controller. If there is no room to complete termination, contractor will need to install an additional IOU module in close proximity to the exiting door IOU's.
g. Install a 0 Node Security NetController adjacent to the existing HVAC NetController in room 172 to control ALL electrically controlled doors. Remove the IOU Module connection from the existing HVAC NetController and connect it to the new 0 node NetController. Remove all security/door programming from the existing HVAC NetController and install it in the new 0 node NetController.

10. Refer to the Drawings, Sheet No. 146.T01.B

a. All cable installed to be non-plenum rated.
b. In Multipurpose Room 174A relocate WAP to drop ceiling, relocate Gearbox from West wall to drop ceiling relocate notes 4 and 5 from existing data outlet on West wall to the existing data outlet on the East wall.
c. In Gymnasium Room 170 relocate the WAP from the West wall into Office Room 170A and remove note 9.
d. In Cafeteria Room 174 relocate both WAP's to drop ceiling space along East wall. Coordinate exact location with Engineer.
e. In Home Living Room 176 delete WAP symbol and two Category 6A cables.

f. In Library Room 131 add projection wall devices to North wall, add HDMI, one Category 6 and power receptacle extend circuit from room 130.
g. Pull 2 cables to Main Office 100 location for 2 buttons to control doors in access control. Button style and location to be coordinated with owner. Cables to be terminated at the closest Door IOU. If no input available an additional IOU will need installed, the cables are connected to the existing access control system to control ALL electrically controlled doors in an emergency situation. The connection should be terminated at the nearest door controller. If there is no room to complete termination, contractor will need to install an additional IOU module in close proximity to the exiting door IOU's.
h. Install Card Reader in Vestibule 180A. This card reader is to control the interior doors at entry 180A. The reader will connect to the existing door module. There is existing door hardware in place

11. Refer to the Drawings, Sheet No. 146.T01.C

a. All cable installed to be non-plenum rated.
b. Add room number 160 and 159. Reference attachment 146.T01.C-1

12. Refer to the Drawings, Sheet No. 146.T01.D

a. All cable installed to be non-plenum rated.

13. Refer to the Drawings, Sheet No. 146.T31

a. Detail 1/146.T31 should be labeled Data Room B.
b. Detail 2/146.T31 should be labeled Data Room A.
c. Detail 3/146.T31 should be labeled Data Room E

14. Refer to the Drawings, Sheet No. 148.T01.A

a. All cable installed to be non-plenum rated
b. In 2nd Grade Room 121 change rough in type from R6 to R4
c. In 2nd Grade Room 119 change rough in type from R6 to R4
d. In 1st Grade Room 115 change rough in type from R6 to R4.

15. Refer to the Drawings, Sheet No. 148.T01.B

a. All cable installed to be non-plenum rated.
b. In Storage Room 100J relocate WAP to the hallway where Corridor 100F and Work Room 100D intersect. Coordinate exact location with engineer.
c. In Computer Room 111 change rough in type from R6 to R4.
d. In Early Childhood Room 102 change rough in type from R6 to R4.
e. In Kindergarten Room 104 change rough in type from R6 to R4.
f. In Kindergarten Room 101 change rough in type from R6 to R4.

16. Refer to the Drawings, Sheet No. 148.T01.C

a. All cable installed to be non-plenum rated.
b. In Mechanical Room 185E delete WAP symbol and two Category 6A cables.
c. In Cafeteria Room 141 relocate both WAPs and install as wall mounted on the wall adjacent to Multipurpose room 141A. Add rough in type R4 and note 9 to both WAPs. Coordinate exact location with engineer.
d. In Gymnasium room 146 change installation type of the WAP from ceiling mounted to wall mounted add note 9, add rough in type R4. Coordinate exact location with engineer.

e. In Multipurpose Room 141A change rough in type from R6 to R4.

17. Refer to the Drawings, Sheet No. 148.T01.D

a. All cable installed to be non-plenum rated.
b. In Resource Room 154A relocate WAP to the middle near the dividing wall that separate Room 154. Coordinate exact location with engineer.
c. In 3rd Grade Room 152 change rough in type from R6 to R4.

18. Refer to the Drawings, Sheet No. 148.T31

a. All cable installed to be non-plenum.
b. In Telecom Room 141C, Rack 1, relocate new 2RU Category 6A panel to the top of the rack and 1RU below the existing fiber panels. Relocate new horizontal management to the top of the rack and directly under the new Category 6A panel. The horizontal management panel will be 2RU in size. LPS will move existing panels and equipment to make room for new panels.
c. In Telecom Room 181P, Rack 1, relocate new 2RU Category 6A panel to the top of the rack and 1RU below the existing fiber panel. Relocate new horizontal management to the top of the rack and directly under the new Category 6A panel. The horizontal management panel will be 2RU in size. LPS will move existing panels and equipment to make room for new panels.
d. In Telecom Room 182E, Rack 1, relocate new 2RU Category 6A panel to the top of the rack and 1RU below the existing fiber panels. Relocate new horizontal management to the top of the rack and directly under the new Category 6A panel. The horizontal management panel will be 2RU in size. LPS will move existing panels and equipment to make room for new panels.
e. In Telecom Room 185N, Rack 1, relocate new 2RU Category 6A panel to the top of the rack and 1RU below the existing fiber panel. Relocate new horizontal management to the top of the rack and directly under the new Category 6A panel. The horizontal management panel will be 2RU in size. LPS will move existing panels and equipment to make room for new panels.

19. Refer to the Drawings, Sheet No. 210.T01.A

a. All cable installed to be non-plenum rated.
b. Reference attachment 210.T00-1 for closet cable routing.

20. Refer to the Drawings, Sheet No. 210.T01.B

a. All cable installed to be non-plenum rated.
b. Reference attachment 210.T00-1 for closet cable routing.
c. Pull 2 cables to Main Office 100 location for 2 buttons to control doors in access control. Button style and location to be coordinated with owner. Cables to be terminated at the closest Door IOU. If no input available an additional IOU will need installed, the cables are connected to the existing access control system to control ALL electrically controlled doors in an emergency situation. The connection should be terminated at the nearest door controller. If there is no room to complete termination, contractor will need to install an additional IOU module in close proximity to the exiting door IOU's.
d. Install card reader in Vestibule 181A. This reader is to control the interior doors at entry 181A. The reader will connect to the existing door module. And there is existing door hardware in place
e. Install a 0 Node Security NetController adjacent to the existing HVAC NetController in room 149 to control ALL electrically controlled doors. Remove the IOU Module connection from the existing HVAC NetController and connect it to the new 0 node NetController. Remove all security/door programming from the existing HVAC NetController and install it in the new 0 node NetController.

21. Refer to the Drawings, Sheet No. 210.T02.D

a. Provide a new light fixture adjacent to data rack B. The light fixture shall be Lithonia AF-2-32-MVOLT-GEB10IS or equal. Switch with the existing second floor lights in this area.

22. Refer to the Drawings, Sheet No. 210.T01.C

a. Cable installed to be non-plenum rated except rooms 131H, 133, 131, 131C, 120, 121 or any cable that enters these rooms is to be plenum rated cable from device to Telecom Room.
b. Reference attachment 210.T00-1 for closet cable routing.
c. Add Gearbox two Category 6A and four Category 6 cables with power and presentation cables to Computer Room 131H. Reference attachment 210.T01.C-1.

23. Refer to the Drawings, Sheet No. 210.T01D

a. All cable installed to be non-plenum rated.
b. Reference attachment 210.T00-1 for closet cable routing.
c. In Custodial Room 149 delete WAP symbol and two Category 6A cables.

24. Refer to the Drawings, Sheet No. 210.T01.E

a. All cable installed to be non-plenum rated.
b. Reference attachment 210.T00-1 for closet cable routing.
c. In Fitness Room 161 add WAP symbol and two Category 6A cables to the center of the room.
d. In Weight Room 155 relocate WAP to the center of the room.

25. Refer to the Drawings, Sheet No. 210.T01.F

a. All cable installed to be non-plenum rated.
b. Reference attachment 210.T00-1 for closet cable routing

26. Refer to the Drawings, Sheet No. 210.T31

a. All cable installed to be non-plenum rated.
b. Refer to sheet note 2/210.T31. On new Data Room B SE Penthouse Rack, add 1 RU of space between new fiber panel and new horizontal management.
c. Refer to sheet note 3/210.T31. On new Data Rack 2, add 1 RU of space between new fiber panel and new horizontal management.
d. Refer to sheet note 4/210.T31. On existing Data Rack Room D 183 Rack 1, remove existing panel C and the horizontal cable management that is below it. Move the new Category 6 Panel E and Category 6 Panel F and their horizontal cable management to where the existing panel C was prior.

27. Refer to the Drawings, Sheet No. 222.T01.A

a. All cable installed to be non-plenum rated.
b. Remove WAP in Storage Room 103A.
c. In Multipurpose Room 103 relocate four of the wall mounted WAPs to the columns. Add rough in type R4 to all WAPs. Coordinate exact location with engineer.
d. Pull 2 cables to Main Office 100 location for 2 buttons to control doors in access control. Button style and location to be coordinated with owner. Cables to be terminated at the closest Door IOU. If no input available an additional IOU will need installed, the cables are connected to the existing access control system to control ALL electrically controlled doors in an emergency situation. The connection should be terminated at the nearest door controller. If there is no room to complete termination, contractor will need to install an additional IOU module in close proximity to the exiting door IOU's.
e. Install card reader in Vestibule 180A. This reader is to control the interior doors at entry 180A. The reader will connect to the existing door module. And there is existing door hardware in place.

f. Install a 0 Node Security NetController adjacent to the existing HVAC NetController in room 187M to control ALL electrically controlled doors. Remove the IOU Module connection from the existing HVAC NetController and connect it to the new 0 node NetController. Remove all security/door programming from the existing HVAC NetController and install it in the new 0 node NetController.

28. Refer to the Drawings, Sheet No. 222.T01.B

a. All cable installed to be non-plenum rated.
b. In Library room 120 add projector wall devices. Reference attachment 222.T01.B-1.
c. In 6th Grade Room 136 relocate WAP to center of room. Coordinate exact location with engineer.
d. In 6th Grade Room 146 relocate WAP to center of room. Coordinate exact location with engineer.
e. In Classroom 150 relocate WAP to center of room. Coordinate exact location with engineer.

29. Refer to the Drawings, Sheet No. 222.T02.C

a. All cable installed to be non-plenum rated.
b. In Science Room 216 relocate WAP to center of room. Coordinate exact location with engineer.
c. In Science Room 226 relocate WAP to center of room. Coordinate exact location with engineer.

30. Refer to the Drawings, Sheet No. 222.T03.A

a. All cable installed to be non-plenum rated

31. Refer to the Drawings, Sheet No. 222.T03.B

a. All cable installed to be non-plenum rated.
b. In Science Room 346 relocate WAP to center of room. Coordinate exact location with engineer.
c. In Science Room 336 relocate WAP to center of room. Coordinate exact location with engineer.

32. Refer to the Drawings, Sheet No. 222.T03.D

a. All cable installed to be non-plenum rated.
b. In Industrial Tech. Room 362 relocate WAP to south wall and install as wall mounted. Coordinate exact location with engineer.
c. In FCS Room 367 relocate WAP to center of room. Coordinate exact location with engineer.
d. In FCS Room 365 relocate WAP to center of room. Coordinate exact location with engineer.

33. Refer to the Drawings, Sheet No. 222.T04.D

a. All cable installed to be non-plenum rated.
b. In Telecommunications Room 483N Data, add the labels “TR” and “G”

34. Refer to the Drawings, Sheet No. 222.T31

a. All cable installed to be non-plenum rated.
b. Refer to sheet note 1/222.T31. Change the label to “Existing Data Room B 181D Rack Elevations”.
c. Refer to sheet note 2/222.T31. Change the label “Existing Data Room D 184E Rack Elevations”.
d. Refer to sheet note 3/222.T31. Change the label to “Existing Data Room C 185N Rack Elevations”.
e. Refer to sheet note 4/222.T31. Change the label to “Existing Data Room E 285N Rack Elevations”.
f. Refer to sheet note 5/222.T31. Change the label to “Existing Data Room A 323A Rack Elevations”.

35. Refer to the Drawings, Sheet No. 222.T32

a. All cable installed to be non-plenum rated.
b. Refer to sheet note 1/222.T32. Change the label to "Existing Data Room F 385N Rack Elevations"
c. Refer to sheet note 2/222.T32. Change the label to "Existing Data Room G 483N Rack Elevations". Remove the 2nd Rack. On rack 1, add (1) new 2RU horizontal cable manager, (1) new Category 6A panel, and (1) new 2RU horizontal cable manager directly below existing panel D.

36. Refer to the Drawings, Sheet No. 256.T01

a. All cable installed to be non-plenum rated.
b. In Classroom 115 remove note 5 on existing wall jack and add two Category 6 cables to the gearbox.
c. In Library Room 116 add note 5 at existing data jack along east wall.
d. In Gymnasium Room 114 add note 9 to the WAP along the south wall. Add rough in type 4 for the wall mounted WAP
e. In Multipurpose room 111 add note 9 to the 2 WAPs along the south wall. Add rough in type R4.
f. Pull 2 cables to Main Office 100 location for 2 buttons to control doors in access control. Button style and location to be coordinated with owner. Cables to be terminated at the closest Door IOU. If no input available an additional IOU will need installed, the cables are connected to the existing access control system to control ALL electrically controlled doors in an emergency situation. The connection should be terminated at the nearest door controller. If there is no room to complete termination, contractor will need to install an additional IOU module in close proximity to the exiting door IOU's.
g. Install card reader in Vestibule 180A. This reader is to control the interior doors at entry 180A. The reader will connect to the existing door module. And there is existing door hardware in place.

37. Refer to the Drawings, Sheet No. 304.T00.A

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.

38. Refer to the Drawings, Sheet No. 304.T00.C

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.

39. Refer to the Drawings, Sheet No. 304.T00.D

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.

40. Refer to the Drawings, Sheet No. 304.T00.E

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing

41. Refer to the Drawings, Sheet No. 304.T00.H

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.
c. In Office Room A006 add WAP in center of room. Coordinate exact location with engineer.

42. Refer to the Drawings, Sheet No. 304.T00.J

    a. All cable installed to be non-plenum rated.
    b. Reference attachment 304.T00-1 for closet cable routing.
    c. In Gymnasium room A050 add three wall mounted WAPs along the south wall with two Category 6A cables to each WAP, and add note 9. Add rough in type R4 for each wall mounted WAP. Coordinate exact location with engineer.

43. Refer to the Drawings, Sheet No. 304.T00.K

    a. All cable installed to be non-plenum rated.
    b. Reference attachment 304.T00-1 for closet cable routing.

44. Refer to the Drawings, Sheet No. 304.T01.A

    a. All cable installed to be non-plenum rated.
    b. Reference attachment 304.T00-1 for closet cable routing
    c. In Telecom Room "B" D119A replace the existing single door with a double door. Reference attachment 304.T01.A-1.

45. Refer to the Drawings, Sheet No. 304.T01.B

    a. All cable installed to be plenum rated.
    b. Reference attachment 304.T00-1 for closet cable routing
    c. In CAD Room C126 move WAP to center of room. Coordinate exact location with engineer.
    d. In CAD Room C130 move WAP to center of room. Coordinate exact location with engineer.

46. Refer to the Drawings, Sheet No. 304.T01.C

    a. All cable installed to be non-plenum rated except Room D106 Corridor, D106C, D106D, and D106E needs to be plenum rated.
    b. Reference attachment 304.T00-1 for closet cable routing.
    c. In Woods Shop C125 relocate WAP to east wall add note 9.

47. Refer to the Drawings, Sheet No. 304.T01.D

    a. All cable installed to be plenum rated except Room C111, C113, C115, C117, C119, and C185A needs to be non-plenum rated.
    b. Reference attachment 304.T00-1 for closet cable routing.
    c. In Teacher Plan Room C118 change the cable identification on the WAP from "2" to "2,0".
    d. In Science Room C111 move WAP to the center of the room. Coordinate exact location with engineer.
    e. In Corridor C181 move the "Future Camera" near the doorway of the Storage Room C115A.

48. Refer to the Drawings, Sheet No. 304.T01.E

    a. All cable installed to be non-plenum rated except for Room, D101, D101A, D101B, D101C, C103L, C103K, C103H, C103F, C103D, C103B, C103A, C103C, C103E, C103G, C103J, C105 needs to be plenum rated.
    b. Reference attachment 304.T00-1 for closet cable routing.
    c. In the Interment Music Room M103 add a gearbox with cable identifiers "2,4" two Category 6A cables and four Category 6 cables and power receptacle. Coordinate exact location with engineer.
    d. In Auditorium Room C102 all WAPs need to be installed in WAP box similar to wall mount box, see specifications.
    e. In Corridor C180, add a future camera in the hallway that is near the Ticket Booth Room 180E. Coordinate exact location with engineer.

f. In Corridor C180, move the future camera that is next to the Girls Restroom C181G and place it near room C103E. Coordinate exact location with engineer.
g. Pull 2 cables to Main Office 100 location for 2 buttons to control doors in access control. Button style and location to be coordinated with owner. Cables to be terminated at the closest Door IOU. If no input available an additional IOU will need installed, the cables are connected to the existing access control system to control ALL electrically controlled doors in an emergency situation. The connection should be terminated at the nearest door controller. If there is no room to complete termination, contractor will need to install an additional IOU module in close proximity to the exiting door IOU's.
h. Install a 0 Node Security NetController adjacent to the existing HVAC NetController in room to control ALL electrically controlled doors. Remove the IOU Module connection from the C144A existing HVAC NetController and connect it to the new 0 node NetController. Remove all security/door programming from the existing HVAC NetController and install it in the new 0 node NetController.

49. Refer to the Drawings, Sheet No. 304.T01.F

a. All cable installed to be non-plenum rated except in Kitchen Room B144, and Serving Room B142A needs to be plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing
c. In Cafeteria Room B142 move the 2 WAPs to center of the room. Coordinate exact location with engineer.
d. In Commons Room C187 move the 2 WAPs to the center of the room. Coordinate exact location with engineer
e. Add wall mount rack TR "L" with fiber panel and 24 port Category 6 patch panel in Ball Shed install fiber from MDF "A" bore conduit under Parking Lot 2, furnish and install a new 20' pole with pole foundation for future cameras, install conduit with two (2) Category 6 outdoor rated cables from TR "L" to top of pole. Reference attachment 304.T01.F-1.

50. Refer to the Drawings, Sheet No. 304.T01.G

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.

51. Refer to the Drawings, Sheet No. 304.T01.H

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing
c. In Vest. Room A131 add a Category 6 cable for future camera in the middle of the room. Coordinate exact location with engineer.
d. Circuit the 4-plex receptacle shown for Telecom Room E to circuit HBEA-20. Provide a new light switch and light fixture, Lithonia AF-2-32-MVOLT-GEB10IS or equal within new Telecom Room E. Circuit the light fixture to the existing lighting circuit serving this area.
e. Modify the existing fire sprinkler system to accommodate the new Telecom Room E. Add, remove, and/or relocate sprinkler heads as required by code. All work shall be done by a licensed contractor and be in accordance with NFPA 13 and local jurisdiction.

52. Refer to the Drawings, Sheet No. 304.T01.J

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.

53. Refer to the Drawings, Sheet No. 304.T01.K

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.
c. In Social Studies Room D133 add note 8 to Gearbox.
d. In FCS Room D135 add note 8 to Gearbox.
e. In Room FCS D132 add a Gearbox and a data outlet with cable identifiers “2,3”; 2 Category 6 A cables and 3 Category 6 cables. Coordinate exact location with engineer.
f. In Room FCS D134 add a Gearbox and a data outlet with cable identifiers ”2,3”; 2 Category 6 A cables and 3 Category 6 cables. Coordinate exact location with engineer.

54. Refer to the Drawings, Sheet No. 304.T02.A

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.
c. In every classroom remove note 8 at each gearbox.

55. Refer to the Drawings, Sheet No. 304.T02.C

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.
c. In every classroom remove note 8 at each gearbox.

56. Refer to the Drawings, Sheet No. 304.T02.D

a. All cable installed to be non-plenum rated except Rooms E212, E212G, E212A, E212B, E212C, E212D, E212E, E208, E206, and E207.
b. Reference attachment 304.T00-1 for closet cable routing
c. In every classroom remove note 8 at each gearbox.
d. Any cables fed from telecom room G needs to be plenum rated.

57. Refer to the Drawings, Sheet No. 304.T02.E

a. All cable installed to be non-plenum rated except Room E205 and E203 needs to be plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.
c. In Balcony Room C202 install WAP boxes same type as wall to each ceiling WAP, reference specifications.
d. In Control Room C202A add WAP with two Category 6A cables. Coordinate exact location with engineer.
e. In every classroom remove note 8 at each gearbox.

58. Refer to the Drawings, Sheet No. 304.T02.F

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.
c. In Mechanical Room B200 add one Category 6 cable on the south side of the door.

59. Refer to the Drawings, Sheet No. 304.T02.G

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.

60. Refer to the Drawings, Sheet No. 304.T02.H

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.

61. Refer to the Drawings, Sheet No. 304.T02.J

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.
c. In the Gymnasium Room A050 add two wall mounted WAP with two Category 6A cables. Add note 9 to each WAP. Add rough in type R4 to each WAP. Coordinate exact location with engineer.

62. Refer to the Drawings, Sheet No. 304.T02.K

a. All cable installed to be non-plenum rated.
b. Reference attachment 304.T00-1 for closet cable routing.
c. In Classroom F236 change the cable identifiers above the gearbox from "2,0" to "2,1"; two Category 6A cables and one Category 6 cable. Change the note on the existing data jack on the North East wall from note 4 to note 5.

63. Refer to the Drawings, Sheet No. 304.T31

a. All cable installed to be non-plenum rated.
b. Refer to sheet note 1/304.T31. Change label to Existing Data Room A C182A Rack Elevations.
c. Refer to sheet note 2/304.T31. Add note "Provide new matching rack, coordinate with LPS for relocating equipment" on Rack 1. For "Rack 2", add 1 RU of space between new fiber panel and new Category 6A panel A.
d. Refer to sheet note 3/304.T31. Add 1 RU of space between existing fiber panel and horizontal cable management.
e. Refer to sheet note 4/304.T31. Change label and data rack label to "New Data Room E M100G Rack Elevations".
f. Refer to sheet note 5/304.T31. Add 1 RU of space between existing fiber panel and horizontal cable management.
g. Refer to sheet note 6/304.T31. Add 1 RU of space between existing fiber panel and horizontal cable management.

64. Refer to the Drawings, Sheet No. 304.T32

a. All cable installed to be non-plenum rated.
b. Add New Data Room C C003 Rack Elevations. Reference attachment 304.T32-1.
c. Add 12 strand Indoor/Outdoor rated fiber to the Ball Shed and fiber panels and new rack in Ball Shed. Reference attachment 304.T32-2.
d. Refer to sheet note 2.304.T32. Add 1 RU of space between existing fiber panel and horizontal cable management.
e. Refer to sheet note 3.304.T32. Add 1 RU of space between existing fiber panel and horizontal management.

Each Bidder must acknowledge receipt of all addenda in the space provided on the Proposal Form.

OA No: 014-0452
LPS No: 7636-B

BID PROPOSAL FORM

PROPOSAL FOR CONTRACT FOR
LINCOLN PUBLIC SCHOOLS
SECURITY & TECHNOLOGY READY FACILITIES PROJECT B
LPS BID NO.: 7636-B
LINCOLN, NEBRASKA

Date: _____

Submitted To: Lincoln Public Schools

Submitted By: _____

Addendums Received: _____

The undersigned, having examined the plans, project manual and related documents, and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, including the availability of labor, hereby proposes to furnish all labor, materials and supplies to do the work in accordance with the Contract Documents and terms and condition described below:

Recognizing that time will be of the essence, the undersigned proposes, upon execution of the Agreement Between Owner and Contractor or upon receipt of notice to proceed from the Owner (whichever comes first), to immediately start the Work of the Contract. The undersigned proposes to bring the work to a state of Substantial Completion by **July 31, 2014.**

BASE BID: The undersigned proposes to perform the Work shown/described in the bidding documents, including all Allowances, for the sum of: Dollars ($_____).

Alternate 1: Provide grounding of telecommunications closets to the electrical service entrance of each school:

_____
_____ Dollars ($_____).

Unit Price 1: Cost to add or delete two Category 6A cables to any location. Unit price shall include jack, cable, installation, termination, testing and labeling.

_____
_____ Dollars ($_____).

Unit Price 2: Cost to add or delete one Category 6 cable to any location. Unit price shall include jack, cable, installation, termination, testing and labeling.

_____
_____ Dollars ($_____).

Unit Price 3: Cost to add or delete a complete new outlet configured as a standard single port outlet to any location in a classroom from a classroom Gearbox. Unit price shall include back box, conduit or surface raceway pathway, face plate, jacks, patch cable, installation, termination, testing and labeling.

_____
_____ Dollars ($_____).

Unit Price 4: Cost to add or delete a complete new Classroom AV Gearbox configured with Two (2) Category 6A, Four (4) Category 6 and Four-Plex Receptacle and circuit to any location. Unit price shall include boxes, circuits, conduit pathways, face plate, jacks, cable, installation, termination, testing and labeling.

_____
_____ Dollars ($_____).

Unit Price 5: Cost to add or delete a complete new Classroom AV Gearbox configured with Two (2) Category 6A, and Four-Plex Receptacle and circuit to any location. Unit price shall include boxes, circuits, conduit pathways, face plate, jacks, cable, installation, termination, testing and labeling.

_____
_____ Dollars ($_____).

Unit Price 6: Cost to add or delete a 120 Volt NEMA 5-20R receptacle with a dedicated 20 amp circuit from an existing electrical panel.

_____
_____ Dollars ($_____).

Unit Price 7: Cost to add or delete a 1 ¼" fire-rated sleeve.

_____
_____ Dollars ($_____).

Unit Price 8: Cost to add or delete a 2" fire-rated sleeve.

_____
_____ Dollars ($_____).

Unit Price 9: Cost to add or delete a 4" fire-rated sleeve.

_____
_____ Dollars ($_____).

Attachments:

1. Bid Security
2. Communications Contractor Certifications (per Section 270501 Common Work Results for Communications

Respectfully Submitted,

_____
(Signature)

_____
(Company)

_____ (Seal, if by a Corporation)
(Business Address)

_____
(Telephone Number)

END OF SECTION

NOTICE TO BIDDERS

SCOPE OF NOTICE

Sealed proposals will be received by the Board of Education of Lancaster County School District at the office of Purchasing Agent, 800 S. 24th St, Lincoln, Nebraska 68510, up to the hour of **2:00pm local time, on the 8th of May, 2014** for the furnishing of all labor, materials, equipment, and services for the Project, Bid No. 7636-B. Bids shall be addressed to the attention of Matt Bellamy, Director of Purchasing c/o the Purchasing Office at LPS, 800 so. 24th St. Lincoln, NE 68510. Bid Security will be required for this Bid.

At the above stated hour, the Owner will publicly open and read aloud the bids received.

The Work involves all Construction indicated on the drawings and specifications, included but not limited to the following: Construction of security and technology improvements including telecommunication cabling and accessories, card access installation, electrical work, general construction work and other work as indicated on the Bidding Documents at Adams, Culler, Don D. Sheirill, Kloefkorn, Kooser, Schoo, and Southeast Schools in Lincoln, NE.

BIDDING

Drawings and Specifications

On the 21st of April, 2014, Construction Documents may be obtained by calling A & D Technical Supply, http://www.adtechplans.com (1822 N Street, Lincoln, NE 68508 Phone 402-474-5454, Fax 402-474-5779) (4320 South 89th Street, Omaha, NE Phone 402-592-4950, Fax 402-592-9302) upon receipt of a $40.00 deposit, checks made payable to The Lincoln Public Schools. Deposits will be" refunded if all documents are returned in good condition within 14 calendar days after the date of the bid opening.

An additional non-refundable $15.00 will be required for documents to be mailed.

Construction Documents may be examined at:

Lincoln Builders Bureau, 5910 South 58th Street, Ste. C; Lincoln, NE 68516

F.W. Dodge Corporation, 11422 Miracle Hills Drive, Omaha, NE 68154

Omaha Builders Exchange, 4255 S. 94th Street, Omaha, NE 68127

ALL WORK SHALL BE FURNISHED IN STRICT ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS PREPARED BY THE OFFICES OF THE ARCHITECTS AND ENGINEERS. BIDS WILL BE RECEIVED ONLY UPON THE PRINTED PROPOSAL FORMS FURNISHED WITH THE SPECIFICATIONS.

SITE INSPECTION

Pre-Bid Conference

A mandatory pre-bid conference will be held at Lincoln Public Schools, 800 south 24th St., Lincoln, Nebraska 68510 on April 30th, 2014 at 2:00 pm local time.

Contractors may visit the following schools on April 25, 2014: Adams Elementary School from 12:30 p.m. – 1:15 p.m., Kleofkorn Elementary School from 1:45 p.m. – 2:30 p.m., DDSEC from 3:00p.m. – 3:30p.m. April 28,2014; Southeast High School from 3:30p.m. – 4:30 p.m. April 29, 2014; Culler Middle School from 2:00 p.m. – 2:45 p.m., Schoo Middle School from 3:15 p.m. – 4:00 p.m. Attendance by all interested Contractors and Subcontractors is advised. Contractors and Subcontractors should check at the main office and staff will direct them.

BONDS

Each bid proposal must be accompanied by Bid Bond payable to Lincoln Public Schools in the amount of five percent (5%) of the base bid proposal submitted as a guarantee that, if awarded the contract, the bidder will promptly enter into a contract and execute such bonds as may be required. If bid security is not received with the Proposal, the Bid will not be considered.

The successful bidder to whom a contract is to be awarded shall provide a "Performance Bond" and "Labor and Materials Payment Bond," a double form of bond issued as a standard form of the American Institute of Architects. Bond shall be in the total amount of the contract.

TAXES

The Owner will issue the successful bidder with a Sales Tax Exemption certificate and purchasing Agent appointment for materials used on this project. DO NOT INCLUDE SALES TAX IN YOUR BID.

INSURANCE

Prior to the start of work, completed copies of the CERTIFICATE OF INSURANCE, AlA Document G705, shall be submitted to the Owner. See Section 00800 Supplementary General Conditions.

LIST OF SUBCONTRACTORS

The low bidder shall submit a list of subcontractors within 3 calendar days of the bid.

COST BREAKOUT

The low bidder shall submit a cost breakout per individual school within 7 calendar days of the bid.

PRE-AWARD INTERVIEW

Prior to approval of the apparent low bid, LPS will interview the apparent low bid to confirm all specified qualifications are met. Information to be reviewed will include but is not limited to:

a. Project Manager experience
b. List of Installers that “will be working” on the project
c. List of installer certifications
d. Residence of Installers
e. Similar project experience (size and scope)
f. Ability to meet the project schedule
g. Supply and availability of product

h. Questions for LPS
i. List of all Subcontractors
j. Present workload or limitations
k. Projects completed last 5 years / references
l. Resolution of issues process
m. Prosed staffing for the project.

AWARD OF CONTRACT

The Owner reserves the right to waive informalities and to reject any or all bids.

No bidder may withdraw his bid within forty-five (45) days after the scheduled closing time to receive bids.

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes hollow-metal work.

1.2 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Product test reports.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Steel Craft

B. Republic Builders Products Company

C. Ceco Door Products

D. Curries Company

2.2 REGULATORY REQUIREMENTS

A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Smoke- and Draft-Control Assemblies: Provide an assembly with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

2.3 INTERIOR DOORS AND FRAMES

A. Heavy-Duty Doors and Frames: SDI A250.8, Level 2.

1. Physical Performance: Level B according to SDI A250.4.
2. Doors:

    a. Type: As indicated on the drawings.
    b. Thickness: 1-3/4 inches (44.5 mm).
    c. Face: [Uncoated,] [Metallic-coated,] cold-rolled steel sheet, minimum thickness of .0478 inch (1.0 mm).
    d. Edge Construction: Model 1, Full Flush.
    e. Core: Polyurethane

3. Frames:

    a. Materials: [Uncoated,steel sheet, minimum thickness of .0598 inch (1.3 mm).
    b. Construction: Full Welded unit with corner mitered, reinforced, and welded full depth and width of frame.

4. Exposed Finish: Factory.

2.4 FRAME ANCHORS

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch (1.0 mm) thick, with corrugated or perforated straps not less than 2 inches (51 mm) wide by 10 inches (254 mm) long; or wire anchors not less than 0.177 inch (4.5 mm) thick.
2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch (1.0 mm) thick.
3. Compression Type for Drywall Slip-on Frames: Adjustable compression anchors.
4. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch-(9.5-mm-) diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch (1.0 mm), and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch (51-mm) height adjustment. Terminate bottom of frames at finish floor surface.

2.5 MATERIALS

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than [25] <Insert number> percent.

B. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

C. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

D. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

E. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

F. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

G. Power-Actuated Fasteners in Concrete: From corrosion-resistant materials.

H. Grout: ASTM C 476, except with a maximum slump of 4 inches (102 mm), as measured according to ASTM C 143/C 143M.

I. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing).

J. Glazing: Section 088000 "Glazing."

K. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil (0.4-mm) dry film thickness per coat.

2.6 FABRICATION

A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Hollow-Metal Doors:

1. Exterior Doors: Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
2. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated.

C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.

    a. Masonry Type: Locate anchors not more than 16 inches (406 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c., to match coursing, and as follows:

        1) Two anchors per jamb up to 60 inches (1524 mm) high.
        2) Three anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
        3) Four anchors per jamb from 90 to 120 inches (2286 to 3048 mm) high.
        4) Four anchors per jamb plus one additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 120 inches (3048 mm) high.

    b. Stud-Wall Type: Locate anchors not more than 18 inches (457 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c. and as follows:

        1) Three anchors per jamb up to 60 inches (1524 mm) high.
        2) Four anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
        3) Five anchors per jamb from 90 to 96 inches (2286 to 2438 mm) high.
        4) Five anchors per jamb plus one additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 96 inches (2438 mm) high.

    c. Compression Type: Not less than two anchors in each frame.
    d. Postinstalled Expansion Type: Locate anchors not more than 6 inches (152 mm) from top and bottom of frame. Space anchors not more than 26 inches (660 mm) o.c.

2. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers.

    a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
    b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

D. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

2.7 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: SDI A250.10.

B. Factory Finish: SDI A250.3.

1. Color and Gloss: As selected by Owner from manufacturer's full range

PART 3 - EXECUTION

3.1 INSTALLATION

A. Hollow-Metal Frames: Install hollow-metal frames for doors, transoms, sidelites, borrowed lites, and other openings, of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

a. At fire-rated openings, install frames according to NFPA 80.
b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
c. Install frames with removable stops located on secure side of opening.
d. Install door silencers in frames before grouting.
e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
f. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
g. Field apply bituminous coating to backs of frames that will be filled with grout containing antifreezing agents.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.

a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.

3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.

4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
5. Concrete Walls: Solidly fill space between frames and concrete with mineral-fiber insulation.
6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
7. In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.
8. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

    a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
    c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

B. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Steel Doors:

    a. Between Door and Frame Jambs and Head: 1/8 inch (3.2 mm) plus or minus 1/32 inch (0.8 mm).
    b. Between Edges of Pairs of Doors: 1/8 inch (3.2 mm) to 1/4 inch (6.3 mm) plus or minus 1/32 inch (0.8 mm).
    c. At Bottom of Door: [3/4 inch (19.1 mm)] [5/8 inch (15.8 mm)] plus or minus 1/32 inch (0.8 mm).
    d. Between Door Face and Stop: 1/16 inch (1.6 mm) to 1/8 inch (3.2 mm) plus or minus 1/32 inch (0.8 mm).

2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
3. Smoke-Control Doors: Install doors and gaskets according to NFPA 105.

3.2 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow-metal work immediately after installation.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

D. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

E. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 081113

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Mechanical door hardware for the following:

a. Swinging doors.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Other Action Submittals:

1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

a. Content: Include the following information:

1) Identification number, location, hand, fire rating, size, and material of each door and frame.
2) Locations of each door hardware set, cross-referenced to Drawings on floor plans.
3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.

2. Keying Schedule: Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and an Architectural Hardware Consultant who is available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.

B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as follows:

1. For door hardware, an Architectural Hardware Consultant (AHC) who is also an Architectural Openings Consultant (AOC).

C. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C, unless otherwise indicated.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

B. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. Provide door hardware for each door as scheduled in Part 3 "Door Hardware Schedule" to comply with requirements in this Section.

1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and products equivalent in function and comparable in quality to named products.
2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.

B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Schedule" Article. Products are identified by using door hardware designations, as follows:

1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 "Door Hardware Schedule" Article.

2. References to BHMA Designations: Provide products complying with these designations and requirements for description, quality, and function.

2.2 HINGES

A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.

1. Hager
2. Ives
3. McKinney
4. Stanley FBB – 179 – Butts
5. Stanley FBB -173 - Butts

2.3 MECHANICAL LOCKS AND LATCHES

A. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.
4. Rabbet Front and Strike: Provide on locksets for rabbeted meeting stiles.

B. Bored Locks: BHMA A156.2; Grade 2; Series 4000.

1. Schlage ND Series & ND 90 Series
2. Schlage Rhodes Vandeldard-Safeschool

2.4 LOCK CYLINDERS

A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.

1. Manufacturer: Same manufacturer as for locking devices.

2.5 KEYING

A. Keying in house by Lincoln Public Schools. Lincoln Public Schools shall receive adequate number and type of cylinders and key blanks to successfully complete the project. (Recommend two (2) key blanks per cylinder to nearest one hundred (100) count.) Lincoln Public Schools will establish pinning schedules, pin all locks and cut all keys.

2.6 OPERATING TRIM

A. Operating Trim: BHMA A156.6; [aluminum] [brass] [bronze] [stainless steel], unless otherwise indicated.

1. <Double click here to find, evaluate, and insert list of manufacturers and products.>

2.7 ACCESSORIES FOR PAIRS OF DOORS

A. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release and with internal override.

B. Carry-Open Bars: BHMA A156.3; prevent the inactive leaf from opening before the active leaf; provide polished brass or bronze carry-open bars with strike plate for inactive leaves of pairs of doors unless automatic or self-latching bolts are used.

C. Astragals: BHMA A156.22.

2.8 MECHANICAL STOPS AND HOLDERS

A. Wall- and Floor-Mounted Stops: BHMA A156.16; aluminum base metal.

1. Ives
2. Quality

2.9 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
2. Fire-Rated Applications:

a. Wood or Machine Screws: For the following:

1) Hinges mortised to doors or frames.
2) Strike plates to frames.

3) Closers to doors and frames.

b. Steel Through Bolts: For the following unless door blocking is provided:

1) Surface hinges to doors.
2) Closers to doors and frames.
3) Surface-mounted exit devices.

3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
4. Fasteners for Wood Doors: Comply with requirements in DHI WDHS.2, "Recommended Fasteners for Wood Doors."
5. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.10 FINISHES

A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

B. Wood Doors: Comply with DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."

C. Mounting Heights: Mount door hardware units at heights [indicated on Drawings] [to comply with the following] unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

D. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

E. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

F. Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches (750 mm) of door height greater than 90 inches (2286 mm).

G. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as [indicated in keying schedule] [directed by Owner].
2. Furnish permanent cores to Owner for installation.

H. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

I. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

J. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

K. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

L. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

M. Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.2 DOOR HARDWARE SCHEDULE

A. Single Door

1.	3 Hinges TA2314 4 ½ x 4 ½	32D McKinney
2.	1 Storeroom Lockset ND90 Series	Schlage
3.	Wall Stop	Ives

B. Double Door

1.	Hinges TA2314 4 ½ x 4 ½	32D McKinney
2.	1 Storeroom Lockset ND Series	Schlage
3.	2Flush Bolts FB458	Ives

END OF SECTION 087100

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior partitions.
2. Suspension systems for interior ceilings and soffits.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 FRAMING SYSTEMS

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25percent.

B. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
2. Protective Coating: ASTM A 653/A 653M, G40 (Z120)

C. Studs and Runners: ASTM C 645.

1. Steel Studs and Runners:

a. Minimum Base-Metal Thickness: [As required by performance requirements for horizontal deflection 0.0296 inch (0.752 mm)
b. Depth: 3-5/8 inches (92 mm).

D. Slip-Type Head Joints: Where indicated, provide[one of] the following:

1. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to runners while allowing 1-1/2-inch (38-mm) minimum vertical movement.
2. Single Long-Leg Runner System: ASTM C 645 top runner with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within 12 inches (305 mm) of the top of studs to provide lateral bracing.
3. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
4. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754.

1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C 841 that apply to framing installation.
2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C 1063 that apply to framing installation.
3. Gypsum Veneer Plaster Assemblies: Also comply with requirements in ASTM C 844 that apply to framing installation.
4. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.

C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

D. Install bracing at terminations in assemblies.

E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.2 INSTALLING FRAMED ASSEMBLIES

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

C. Install studs so flanges within framing system point in same direction.

D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

    a. Install two studs at each jamb unless otherwise indicated.
    b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (13-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.
    c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.

3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.

    a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.

5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.

E. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

3.3 INSTALLING SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.

2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.

    a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards <Insert deflection limit>.

3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
5. Do not attach hangers to steel roof deck.
6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
8. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet (3 mm in 3.6 m) measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

A. Recycled Content of Gypsum Panel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less 25 percent.

B. Regional Materials: Gypsum panel products shall be manufactured within 500 miles (800 km) of Project site.

C. Regional Materials: Gypsum panel products shall be manufactured within 500 miles (800 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles (800 km) of Project site.

D. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

A. Gypsum Board, Type X: ASTM C 1396/C 1396M.

1. Thickness: 5/8 inch (15.9 mm).
2. Long Edges: Tapered.

2.4 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.
2. Shapes:

    a. Cornerbead.
    b. Bullnose bead.
    c. LC-Bead: J-shaped; exposed long flange receives joint compound.
    d. L-Bead: L-shaped; exposed long flange receives joint compound.
    e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
    f. Expansion (control) joint.
    g. Curved-Edge Cornerbead: With notched or flexible flanges.

2.5 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.

    a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use setting-type, sandable toppingcompound.
4. Finish Coat: For third coat, use setting-type, sandable toppingcompound.

D. Joint Compound for Exterior Applications:

1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
2. Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.

E. Joint Compound for Tile Backing Panels:

1. Glass-Mat, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.
2. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.6 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING PANELS

A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

B. Comply with ASTM C 840.

C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

D. For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

E. Prefill open joints rounded or beveled edges and damaged surface areas.

F. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

3.2 PROTECTION

A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 092900

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes acoustical panels and exposed suspension systems for ceilings.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Evaluation reports.

C. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to NVLAP.

B. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup of typical ceiling area as shown on Drawings.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

2.2 ACOUSTICAL PANEL CEILINGS, GENERAL

A. Low-Emitting Materials: Acoustical panel ceilings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

B. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

C. Glass-Fiber-Based Panels: Made with binder containing no urea formaldehyde.

D. Acoustical Panel Standard: Comply with ASTM E 1264.

E. Metal Suspension System Standard: Comply with ASTM C 635.

F. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

2.3 ACOUSTICAL PANELS <Insert drawing designation>

A. Certain Teed Vantage 10 performace series VAN 157 USG-Radar 2110

B. Color: White

C. NRC: .55 Type E-400 mounting according to ASTM E 795.

D. Edge/Joint Detail: Square

E. Thickness 5/8 inch (15 mm) 3/4 inch (19 mm)

F. Modular Size: 24 by 24 inches (610 by 610 mm)

2.4 METAL SUSPENSION SYSTEM

A. <Double click here to find, evaluate, and insert list of manufacturers and products.>

B. Narrow-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 (Z90) coating designation; with prefinished 9/16-inch- (15-mm-) wide metal caps on flanges.

1. Structural Classification: Intermediate duty system.
2. End Condition of Cross Runners: butt-edge type.
3. Face Design: Flat, flush
4. Cap Material: aluminum cold-rolled sheet.
5. Cap Finish: Painted white

C. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

B. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

1. Arrange directionally patterned acoustical panels as indicated on reflected ceiling plans.

END OF SECTION 095113

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Resilient base.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified, not less than 12 inches (300 mm) long.

PART 2 - PRODUCTS

2.1 VINYL BASE <Insert drawing designation>

A. Johnsonite

B. Product Standard: ASTM F 1861, Type TV (vinyl, thermoplastic).

1. Group: I (solid, homogeneous)
2. Style and Location:

a. Style B, Cove: [Provide in areas with resilient flooring] <Insert requirements>.

C. Minimum Thickness: 0.125 inch (3.2 mm).

D. Height: 4 inches (102 mm).

E. Lengths: Coils in manufacturer's standard length Coordinate "Outside Corners" and "Inside Corners" paragraphs below with "Resilient Base Installation" Article.

F. Outside Corners: Preformed

G. Inside Corners: Preformed.

H. Colors and Patterns: As selected by Owner from full range of industry colors.

2.2 INSTALLATION MATERIALS

A. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

1. Adhesives shall have a VOC content of 50 g/L or less.
2. Adhesives shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Do not install resilient products until they are the same temperature as the space where they are to be installed.

C. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.2 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G. Preformed Corners: Install preformed corners before installing straight pieces.

H. Job-Formed Corners:

1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than [3 inches (76 mm)] <Insert dimension> in length.

    a. Form without producing discoloration (whitening) at bends.

2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than [3 inches (76 mm).

    a. Miter or cope corners to minimize open joints.

3.3 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.

END OF SECTION 096513

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on interior substrates. the following interior substrates:

1. Steel and iron.
2. Galvanized metal.
3. Gypsum board.

1.2 DEFINITIONS

A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Diamond Vogel

B. ICI Paints

C. Pittsburg Paint Co.

D. Pratt & lambert

E. Sherwin-Williams

F. Products: Subject to compliance with requirements, provide one of the products listed in the Interior Painting Schedule for the paint category indicated.

2.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Dry-Fog Coatings: 400 g/L.
4. Primers, Sealers, and Undercoaters: 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: 340 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Floor Coatings: 100 g/L.
9. Shellacs, Clear: 730 g/L.
10. Shellacs, Pigmented: 550 g/L.

D. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

E. Colors: As selected by Owner from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Fiber-Cement Board: 12 percent.
3. Masonry (Clay and CMUs): 12 percent.
4. Wood: 15 percent.
5. Gypsum Board: 12 percent.
6. Plaster: 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."

B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 INTERIOR PAINTING SCHEDULE

A. Metal-Hollow Metal Doors & Frames

1. Primer: B66W00310 – Pro Industrial Pro-Cryl Universal Acrylic Primer Off White
2. First Coast: B31W01151 – ProClassic Waterborne Interior Acrylic Semi-Gloss Enamel Extra White
3. Second Coast: B31W01151 – ProClassic Waterborne Interior Acrylic Semi-Gloss Enamel Extra White.

B. Drywall- Wall

1. Primer: B28W02600- - ProMar 200 Zero VOC Interior Latex Primer White
2. Primer Option: B28WF0162 – Contractors Primer interior Latex Primer White
3. First Coast: B31W02651 – ProMar 200 Zero VOC Interior Latex Semi-Gloss Extra White
4. Second Coast: B31W02651 – ProMar 200 Zero VOC Interior Latex Semi-Gloss Extra White

END OF SECTION 099123

SECTION 260505 – TRENCHING AND BORING FOR ELECTRICAL RACEWAYS

PART 1 - CONSTRUCTION

1.1 CONSTRUCTION

A. General

1. Follow all general guidelines covering the construction of buried conduit.
2. Install conduit by plowing, jacking, pushing, boring, structure attachment or other approved methods and in a manner that minimizes atypical damage from construction operations.
3. The minimum bending radius of HDPE conduit shall be the larger of 20 times the outside diameter or the HDPE manufacturer's recommendations for minimum bending radius.
4. At the discretion of the Engineer, verify the integrity of the conduit structure in a manner acceptable to the Engineer.
5. Tunneling under the pavement or water jetting shall not be permitted.
6. No excavations are permitted to cross any roadways or any other paved or other similarly improved areas. At these locations, install conduits by boring method unless otherwise directed or approved in writing by the Engineer. Install conduit sections with external protection as specified herein.
7. No direct-buried cable is allowed.
8. Unless otherwise indicated in the Contract Documents, installation of Schedule 40 PVC conduit or approved alternative is allowed only in open trench runs or when approved by the Engineer.
9. Seal all conduit openings using an approved sealing compound (duct seal) at all conduit openings at the junction boxes handholes, poles, cabinets, and building entrances.

B. Installation Clearances

1. Depth of all bores shall be a minimum of 36 inches unless otherwise specified in the plans.
2. Maintain the minimum depth throughout the length of all conduit installations.
3. Maintain a minimum of two (2) feet of separation when underground conduits parallel an existing facility.

C. Conduit Splicing

1. All mechanically joined conduit splices shall use compression couplings designed for underground placement and blown-in fiber installation.
2. Electrofusion joining of HDPE conduit will be allowed provided that method used does not create a ridge on the inside of the conduit that may impact future fiber installation.

3. Butt fusion welding and solvent welding of conduits will not be allowed.
4. All conduit splices shall be watertight to 200 psi.
5. Conduit splicing is incidental to the connected items of work.
5. All conduit shall have a THHN #12 AWG orange tracer wire and pull tape installed after installation is complete.

D. Exposed Installations

1. Use hot-dipped galvanized rigid steel conduit (GRS) for all exposed or above ground areas along the project. Water tight flexible steel conduit and fittings will be allowed for cabinet connections when approved by the Engineer.
2. Support exposed conduit and place steel conduit hangers at intervals indicated in the Contract Documents, NEC, and as directed by the Engineer.

E. Backfilling

1. Backfill trenches and other excavations in lifts of six (6) inches or less in compacted depth. Compact each layer thoroughly before placing subsequent layers.
2. Remove all cinders, broken concrete, or other hard or abrasive materials in the backfill material before commencing backfilling operations.
3. Remove and dispose of surplus and unsuitable materials upon completion of the backfilling operations in the area.
4. Place and carefully hand tamp backfill under and around the structures in lifts not to exceed 4 inches in loose thickness. Use a suitably sized mechanical tamper for all areas inaccessible to rollers. Operate pneumatic or other mechanical tampers in accordance with the manufacturer's recommendations.
5. Perform operations in a manner that minimizes soil erosion and employs appropriate storm water pollution prevention measures during all construction operations.
6. Maintain work areas in a neat, clean, and orderly condition at all times.
7. Upon completion of conduit/cable placing operations and any other work in an area, remove all debris, materials, tools, and equipment from the area and restore the disturbed area(s) to original or better condition within 24 hours or as soon as practicable as determined by the Engineer. Backfill all excavations and grade all disturbed areas during the restoration process.
8. Remove and dispose of rock and debris excavated and remaining after backfilling as directed by the Engineer.
9. Immediately repair or replace any unauthorized disturbance or damage. Replace improved landscaping, lawns, scrubs, and hedge removed or damaged during construction in a manner acceptable to the Engineer. Re-sod damaged lawns using like grasses.

F. Conduit In Trench

1. Use equipment and construction methods subject to the approval of the Engineer that cause minimal displacement of the soil.
2. Excavate open trench straight as practicable. Shape the trench to be smooth, free from any sharp edges, and clear of debris and loose rock. Excavate only gradual grade changes.
3. Do not leave trenches unattended at any time or open during non-working hours unless approved in writing by the Engineer. Install barriers or other protective measures to prevent livestock or persons from falling into an open trench when appropriate.

G. Bored Crossings

1. Use equipment and construction methods subject to the approval of the Engineer that cause minimal displacement of the soil.
2. Bore all crossings beneath roadways, streets, other paved surfaces, or other structure as directed in the Contract Documents
3. Limit bore hole sizes to the outside diameter of the conduit being placed.

END OF SECTION 260505

SECTION 260534 – HDPE CONDUIT

PART 1 - GENERAL

1.1 MATERIALS

A. High Density Polyethylene (HDPE) Conduit

1. High Density Polyethylene (HDPE) conduit shall be smooth wall ORANGE
2. HDPE shall be SDR 13.5 minimum and meet or exceed ASTM D3035/F2160/NEMA TC-7 EPEC-B standards.
3. HDPE shall be manufactured from thermoplastic polymer conforming to the minimum standard of PE334470E/C as defined in ASTM D3350.
4. Sequential foot markings should be printed on HDPE.
5. A custom message of stated material specifications that product meets shall be printed a minimum of every 10 feet on conduit.
6. Conduit shall be UL 651 listed.

PART 2 - PRODUCTS

NONE

PART 3 - EXECUTION

NONE

END OF SECTION 260534

SECTION 265601 – CAMERA POLES AND POLE BASES

PART 1 - CAMERA POLES

1.1 POLES

Furnish all work, apparatus, and materials to construct and install the device poles designed to mount future Camera equipment.

A. Materials

1. General

a. 20 feet steel poles will be non-breakaway and shall be mounted on the power installed foundation using standard mounting practices

c. The 20 feet steel poles shall utilize sway-reducing pole stiffeners acceptable to the Engineer and compatible with the pole supplied.

e. All poles shall be designed to support the specified camera and any other identified attachments and shall be stiffened or otherwise manufactured to meet allowable deflection criteria contained herein. Designated poles shall also support the lowering device and accessories.

Pole loading calculations should be conducted assuming a camera mounting height of 18 feet. The camera with mounting bracket and traffic sensor specified below should be utilized in the calculations.

Camera
Model: AXIS Q1765-LE
Casing: OUTDOOR IP66-RATED,
Zoom: 18X Optical Zoom
Video: H.264
Operating Conditions: -40 °C to 50°C
Power: High Power over Ethernet
Weight: 4.0 pounds (1.8 kg)

Camera Pole Mount Bracket
Model: AXIS T91A47 Pole Mount Bracket
Material: Aluminum
Weight: 0.7 pounds (0.3 kg)

f. The pole top deflection shall not exceed one inch in a 30-mph (non-gust) wind. Close consideration must be given to the effective projected area of the complete camera

equipment to be mounted on the pole along with the weight when designing the pole to meet the specified deflection performance criteria. The calculations shall include a pole, base plate, and anchor bolt analysis. The pole calculations shall be analyzed at the pole base, at 5-ft. pole intervals/segments and at any other critical pole section. At each of these locations, the following information shall be given:

- The pole's diameter, thickness, section modulus, moment of inertia, and cross sectional area.
- The centroid, weight, projected area, drag coefficient, velocity pressure, and wind force of each pole segment.
- The axial force, shear force, primary moment, total moment, axial stress, bending stress, allowable axial stress, allowable bending stress, and combined stress ratio (CSR).
- The pole's angular and linear deflection.

g. All pole shafts shall conform to ASTM A595 Grade A with a minimum yield strength of 55 ksi or ASTM A572 with a minimum yield strength of 65 ksi. The shaft shall be round, 12-sided or 16 sided with a four inch corner radius, have a constant linear taper of 0.14 in/ft, and contain only one longitudinal seam weld. Circumferential welded tube butt splices and laminated tubes are not permitted. Longitudinal seam welds within 6 inches of complete penetration pole to base plate welds shall be complete penetration welds. The shaft shall be hot dip galvanized per the requirements of the contract documents.

h. Base plates shall conform to ASTM A36 or A572 Grade 42. Plates shall be integrally welded to the tubes with a telescopic welded joint or a full penetration butt weld with backup bar. Plates shall be hot dip galvanized per the requirements of the contract documents.

i. Anchor bolts shall conform to the requirements of ASTM F1554 Grade 55. The upper 12 inches of the bolts shall be hot dip galvanized per ASTM A153. Each anchor bolt shall be supplied with two hex nuts and two flat washers. The strength of the nuts shall equal or exceed the proof load of the bolts.

j. The hand hole opening shall be reinforced with a minimum 0.432-inch wide hot rolled steel rim. The minimum outside dimension shall be 7.31 inches x 5.63 inches. Unless otherwise required, the bottom lip of this handhole shall be 18 inches from the pole base.

B. Construction

1. General
   Repair any surface damage to galvanized components using a zinc rich paint acceptable to the Engineer.

2. Pole Erection

   a. Erect poles (including camera mounting system and poles) and securely bolt to the power installed foundation base plate such that the pole is vertical to the centerline of the nearest adjacent major roadway.
   b. Use leveling nuts on each anchor bolt installed below the pole flange. Adjust the pole's vertical position by adjusting both the upper and lower nuts.

PART 2 - POLE BASES

2.1 POWER INSTALLED FOUNDATION

A. Materials

1. All pole footings shall be power installed foundations.
2. All materials shall meet the requirements listed in the design details of the plans sheets.

B. Construction

1. General

a. Install the power installed foundations in accordance with the Contract Documents and the manufacturer's recommendations.
b. Contact the Engineer a minimum of one (1) week in advance to arrange a field review prior to placing the power installed foundation.
c. Notify the Engineer immediately if an obstruction conflicts with a proposed power installed foundation location. The Engineer is responsible for relocating or determining another effective means of supporting the structure to eliminate the conflict. Payment shall not be made for re-work or extra work as the result of an unauthorized relocation of a power installed foundation.

2. Installation Details

a. Construct all power installed foundations as located by the Engineer and set level and to the proper elevation.
b. Hand dig with shovel after power installed foundation is in place in order to install conduits into the provided conduit entrances.
c. Install a sufficient number of conduits sized as indicated in the Contract Documents. All conduits shall be located as indicated in the Contract Documents.
d. Modification of a footing after construction is not allowed.

3. Improper Construction

a. Remove and reconstruct, at no additional cost to the Engineer, all power installed foundations improperly constructed or with improperly installed anchor bolts, conduit, or any other foundations components as determined by the Engineer.

END OF SECTION 265601

SECTION 270501 - COMMON WORK RESULTS FOR COMMUNICATIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. This Section describes the general telecommunications infrastructure requirements of these specifications and applies to all phases of the work specified, indicated on the drawings, or required to provide for the complete installation of telecommunications infrastructure for this project.

1.2 ALTERNATES

A. Alternates, if required, shall be as described in the “Alternates” section of this Project Manual, as described on the proposal form, or as indicated on the drawings.

1.3 ALLOWANCES

A. Allowances, if required, shall be as described in the “Allowances” section of this Project Manual, as described on the proposal form, or as indicated on the drawings.

1.4 UNIT PRICES

A. Provide unit pricing for the following work situations. Keep unit pricing in effect until the Owner has final acceptance for the building. Submit unit pricing on bid form documents.

B. Unit Prices shall be as described on the bid form.

1.5 QUESTIONS OF INTERPRETATION DURING BIDDING PHASE

A. If questions arise during the bidding process regarding the meaning of any portion of the contract documents, the prospective bidder shall submit the questions to the Architect for clarification.

B. Any definitive interpretation or clarification of the contract documents will be published by addenda, properly issued to each person holding documents, prior to the bid date. Questions shall be made in writing 7 calendar days prior to bid date.

C. Verbal interpretation or explanation not issued in the form of an addendum shall not be considered part of the bidding documents.

D. When submitting questions for clarification, adequate time for issuance and delivery of addenda must be allowed.

E. The Architect shall be the sole judge regarding interpretations of conflicts within contract documents.

1.6 CONTRACT DOCUMENT DISCREPANCIES

A. If any ambiguities should appear in the contract documents, request clarification from the Architect before proceeding with the work.

B. If the Contractor fails to make such request, no excuse will thereafter be entertained for failure to carry out the work in a manner satisfactory to the Architect.

C. Should a conflict occur within the contract documents, the Contractor is deemed to have estimated the more expensive way of doing the work unless a written clarification from the Architect was requested and obtained before submission of proposed methods or materials.

D. The Architect shall be the sole judge regarding interpretations of conflicts within contract documents.

1.7 DEFINITIONS

A. Inside Plant Cable (ISP): That part of the Information Transport System running within a building. This definition does apply to Inside Cable Plant elements passing through any element of the outside plant pathway. Inside plant includes the work area outlet assembly (WAO), backbone and horizontal cabling, network racks, network equipment and all termination hardware not terminating Outside Plant (OSP) cables.

B. Outside Plant Cable (OSP): That part of the Information Transport System running between buildings, from a building to a definable exterior point, between definable exterior points or from another outside source to the building or exterior definable point. It includes termination hardware, transition splices and any other device into which the cable attaches. The Outside Plant includes underground and overhead cabling.

C. Pathways: A cable distribution system consisting of raceways, cable trays, racks, and ladders; conduits; distribution rings and mechanical cable supporting devices.

D. Telecommunications Cables: Term includes horizontal and backbone copper, fiber optic, and coaxial cabling; copper and optical outside plant cables; copper audio/visual (AV) cables; CATV cables, CCTV cables; building environmental, automation, and security cabling systems.

E. Work Area Outlet (WAO): A connecting device for termination of horizontal media.

F. Telecommunications Closets or Spaces: Rooms and areas where telecommunications cabling systems are terminated and telecommunications equipment is installed.

G. Telecommunications Enclosure (TE): A case or housing for telecommunications equipment, cable terminations and cross-connect cabling.

H. Telecommunications Room (TR): An enclosed architectural space for housing telecommunications equipment, cable termination and cross-connect cabling.

1.8 SYMBOLS

A. Items of equipment and materials are indicated on the drawings in accordance with the symbols on the plans.

1.9 ABBREVIATIONS

A. The following abbreviations apply throughout the contract documents:

1. ACR: Attenuation-to-Crosstalk Ratio
2. ADA: Americans with Disabilities Act
3. AFF: Above finished floor
4. ANSI: American National Standards Institute
5. ASME: American Society of Mechanical Engineers
6. ASTM Specification: Standard specifications of the American Society for Testing Materials
7. AWG: American wire gauge
8. BICSI: Building Industry Consulting Service International
9. CATV: Community Antenna Television (cable television)
10. CCTV: Closed Circuit Television (security)
11. CSA: Canadian Standards Association
12. EF: Entrance Facility
13. ELFEXT: Equal level far-end crosstalk
14. EMC: Electromagnetic Compatibility
15. EMI: Electromagnetic interference
16. ER: Equipment Room
17. ETL: Electrical Testing Laboratories
18. FCC: Federal Communications Commission
19. FDDI: Fiber distribution data interface
20. FEXT: Far-end-crosstalk
21. FM or Factory Mutual: Factory Mutual Engineering Corporation
22. FO: Fiber optic
23. GND: Ground
24. HH: Handhole
25. Hz: Hertz
26. IC: Intermediate cross-connect
27. IDC: Insulation displacement connector
28. IDF: Intermediate Distribution Frame
29. ISP: Inside Plant Cable System
30. IEEE: Institute of Electrical and Electronics Engineers
31. LAN: Local area network
32. Mbps: Megabits per second

33. MC: Main Cross-Connect
34. MDF: Main Distribution Frame
35. MH: Manhole
36. MM: Multimode
37. NEC: National Electrical Code, latest edition
38. NEMA: National Electrical Manufacturers Association
39. NFPA: National Fire Protection Association
40. OFL: Overfilled launch condition
41. OSHA: Occupational Safety and Health Administration
42. OSP: Outside Plant Cable System
43. Pr: Pair
44. PVC: Polyvinyl chloride
45. RCDD: Registered Communications Distribution Designer
46. RFI: Radio Frequency Interference
47. SCS: Structured cabling system
48. ScTP: Screened twisted pair
49. SM: Single mode
50. STP: Shielded twisted pair
51. TBB: Telecommunications bonding backbone
52. TGB: Telecommunications grounding bus bar
53. TMGB: Telecommunications main grounding bus bar
54. TR: Telecommunications Room
55. UL or Underwriters: Underwriters Laboratories, Inc.
56. UPS: Interruptible Power Supply
57. UTP: Unshielded twisted pair
58. WAO: Work Area Outlet

1.10 CODES AND STANDARDS

A. The work shall be performed by competent craftsmen skilled in the trade involved and shall be done in a manner consistent with normal industry standards. All work shall conform to all applicable sections of currently adopted editions of the codes and standards listed below or the codes, standards, and specifications published by the organizations listed below:

1. Safety and Health Regulations for Construction.
2. Occupational Safety and Health Standards (OSHA), National Consensus Standards and Established Federal Standards.
3. National Electrical Code (NEC), latest edition.
4. American National Standards Institute (ANSI).
5. National Electrical Manufacturer s Association (NEMA).
6. Institute of Electrical and Electronics Engineers (IEEE).
7. National Fire Protection Association (NFPA).
8. Insulated Power Cable Engineers Association (IPCEA).

9. American Society for Testing Materials (ASTM).
10. Life Safety Code (NFPA 101).
11. Underwriters Laboratories, Inc., Standards (UL).
12. Independent Testing Laboratories (ITL).
13. Electrical Testing Laboratories (ETL).
14. National Electrical Safety Code (NESC).
15. Factory Mutual Engineering Corporation or other recognized national laboratories.
16. Uniform Building Code (UBC).
17. Building Officials and Code Administrators International, Inc. (BOCA).
18. Building Industry Consulting Service International (BICSI).
19. Telecommunications Industry Association (TIA).
20. State and Local Codes.

B. Where there is a conflict between the code or referenced standards and the contract documents, the code or standard shall have precedence only when it is more stringent than the contract documents. Items that are allowed by the code but are less stringent than those specified shall not be substituted.

C. Follow Owner installation standards LPS Design Guidelines and Supplements Issued for this Project unless otherwise shown on the drawings or stated herein. Where requirements of Installation Standards conflict with Performance Standards or manufacturer's recommendations, refer to Owner for a decision before proceeding.

1.11 MATERIALS AND EQUIPMENT MANUFACTURERS

A. Options in selecting materials and equipment are limited by requirements of the contract documents and governing regulations. They are not controlled by industry traditions or procedures experienced on previous construction projects.

B. Materials and equipment shall be provided in accordance with the following:

1. Primary Design Products: Primary design products are those products around which the project was designed in terms of capacity, performance, physical size and quality.

   a. Primary design products are indicated by use of a single manufacturer's name, model number or similar data on drawings or schedules or within the specifications.
   b. Provide primary design products unless substitutions are made in accordance with the following paragraphs.

2. Acceptable Equivalent Substitutions: Acceptable equivalent substitutions are products of manufacturers other than those listed for the primary design products. Equivalent acceptable substitutions shall meet each of the following requirements:

a. The product shall be manufactured by one of the acceptable manufacturers listed in the Project Manual, drawings, or addenda.
b. The product shall meet or exceed the requirements of the contract documents in terms of quality, performance, suitability, appearance, and physical characteristics.
c. The Contractor providing the substitution shall bear the total cost of changes due to substitutions. These costs may include additional compensation to the Architect for redesign and evaluation services, increased cost of work by the Owner or other Contractors, and similar considerations.
d. Performance Requirements: Where the contract documents list performance requirements or describe a product or assembly generically, provide products that comply with the specific requirements indicated and that are recommended by the manufacturer for the respective application.
e. Compliance with Standards, Codes and Regulations: Where the specifications require only compliance with an imposed standard, code or regulation, the Contractor has the option of selecting a product that complies with specification requirements, including the standards, codes and regulations.

3. Proposed substitutions will be judged on the basis of quality, performance, appearance and on the governing space limitations. The reputation of the manufacturer, delivery time requirements, and the availability of repair or replacement parts may also be considered.
4. The Architect shall be the sole and final judge as to the suitability of substitution items.

1.12 SUBMITTALS

A. Bid Submittals

1. Qualification Data: For Installer.

a. A resumes of qualification shall be submitted with the Contractor's proposal indicating the following:

1) A list of five recently completed projects of similar type and size with contact names and telephone numbers for each.
2) Installer Qualifications

B. Pre-Approved Components Submittals

1. A Pre-Approved Components List has been provided to expedite the Shop Drawing Assembly and Review Process. Where these components are proposed by the contractor Submittal information can be simplified.
2. Include the Pre-Approved Components List indicating items selected to be provided in the project.

3. Provide equipment cuts for each item in addition to the components lists.

C. Shop Drawings, Product Data and Samples:

1. Other section in the Project Manual shall be adhered to if more stringent than the following paragraphs.
2. When required by other sections of this Project Manual, submit shop drawings, product data or samples to the Architect for review.
3. Submittals deemed unnecessary by the Architect shall be returned indicating "No Action Taken".
4. A completed copy of the transmittal form included with the Project Manual shall accompany each submittal.
5. Submittals shall be numbered consecutively.
6. Unless otherwise noted, submit one copy electronically of shop drawings and product data for review. Review comments will be returned electronically. A hard copy of the electronic submittal will be returned if requested.
7. Where samples are required, submit one (1) sample of each required item.
8. Shop drawings are drawings, diagrams, schedules and other data specifically prepared for this project by the Contractor, Manufacturer, Supplier, or Distributor to illustrate some portion of the work. Shop Drawings shall also detail fabrication and installation for metal and wood supports and anchorage for mechanical materials and equipment.

    a. Shop drawings shall be drawn to accurate scale and of adequate size to illustrate required details.
    b. Maximum sheet size shall be 30 inches by 42 inches. For each hard copy shop drawing sheet larger than 11 inches by 17 inches, submit one drawing on reproducible media.
    c. The Architect's action shall be indicated on the reproducible drawing and the drawing shall be returned to the Contractor.

9. Product data are illustrations, standard schedules, performance charts, instruction brochures, diagrams and other information furnished by the Contractor, Manufacturer, Supplier, or Distributor to illustrate a material, product or system for some portion of the work.
10. Samples are physical examples furnished by the Contractor, Manufacturer, Supplier, or Distributor to illustrate materials, equipment or workmanship and to establish the standards by which the work will be performed.
11. Each submittal shall clearly indicate proposed items, capacities, characteristics and details in conformance with contract documents. Equipment items shall be marked with the same item number as used on drawings or schedules. Capacities, dimensions and special features required shall be certified by the manufacturer.
12. Submittals shall indicate manufacturer's delivery time for the item after review by the Architect.
13. When required by other sections of this Project Manual, the Contractor shall submit a Specification Compliance Review consisting of a paragraph-by-paragraph review of the specifications and addenda with the following marked

for each paragraph. Markings may be made in the margins of the original specification or addenda. Unless a deviation or exception is specifically noted in the Specification Compliance Review, it is assumed that the equipment, product, or material is in complete compliance with the contract documents. Submit Specification Compliance Review with shop drawings and product data.

a. "C": Comply with no exceptions.
b. "D": Comply with minor deviations. For each deviation, provide the reasons for the deviation and how the intent of the specification can be satisfied.
c. "E": Exception. Equipment, product, or material does not comply. For each exception, provide reasons for the exception, and suggest possible alternatives for the Owner's consideration.
d. "N/A": The paragraph does not apply to the proposed equipment, product, or material.

14. The Architect shall review or take other appropriate action upon the Contractor's submittals such as shop drawings, product data and samples, but only to determine conformance with the design concept of the work and the information given in the contract documents.
15. Contractor shall not be relieved of responsibility for any deviation from the requirements of the contract documents by the Architect's review of shop drawings, product data or samples.
16. Contractor shall not be relieved from responsibility for errors or omissions in the shop drawings, product data or samples by the Architect's review of those drawings.
17. No portion of the work requiring submission of a shop drawing, product data or sample shall be commenced until the submittal has been reviewed by the Architect. Such portions of the work shall be in accordance with reviewed submittals.
18. The successful Contractor/Supplier may, at their option, obtain DXF or AutoCad DWG electronic drawing files on CD-ROM for use in preparation of shop drawings.

    a. This information is available from The Clark Enersen Partners subject to provisions of this specificaiton upon written request.
    b. The use of these drawing files is intended solely for the preparation of drawings as required by these contract documents.
    c. Any other use is strictly prohibited by copyright laws.
    d. The user of these electronic drawing files assumes full responsibility for their accuracy and scale.

D. Post-Construction Submittals

1. Field quality-control test reports.
2. Construction Record Drawings including station outlet numbers.

3. When required by specification sections, submit manufacturer's printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, in quantities specified for shop drawings and equipment brochures.

1.13 QUALITY ASSURANCE

A. Match the wiring system installed in any existing facility and maintain the exisiting warranty. Provide the following warranties:

1. Systimax SCS, 20-year warranty.
2. CommScope Uniprise warranty.
3. Panduit Solutions warranty (Kooser Elementary ONLY).

B. The Contractor shall prepare and submit all required manufacturers performance warranty paperwork to the manufacturer and shall deliver all complete and final warranty information to the owner prior to project close-out.

C. The Contractor shall have an existing quality assurance and quality control plan for the installation. Upon request the Contractor shall submit a quality assurance and control plan for the project.

D. The Contractor shall have extensive experience (5+ years) with the specified manufacturers, hardware and cabling.

E. Installer Project Lead Qualifications: Shall be an experienced lead installer supervising the project and who is a Registered Communications Distribution Designer (RCDD) certified by the Building Industry Consulting Service International (BICSI) or alternatively substantiate a minimum of ten (10) years' experience with similar projects installing and commissioning telecommunications infrastructure solutions.

1. Only installers trained and certified by the manufacturer shall be allowed to terminate and test the products.
   Others may pull/place cable and product only if under the direct supervision of the lead installer.
2. Installer shall be experienced in all aspects of this work. Installer shall have the manufacturer s recommended number of employees on the job site to satisfy the warranty requirements of the specified end-to-end solutions. Projects of this size will require a minimum two (2) to a preferred quantity of Three (3) installers be trained to insure familiarity with the material installation requirements and the overall work quality effort.
3. Installer shall be certified by the system manufacturer for the project location to install and warranty product specified herein.

F. Installers seeking the opportunity to pursue Uniprise certification for the purpose of this project shall, prior to the bid date, notify LPS and in addition contact local CommScope representatives to arrange the appropriate product training. Training will include a combination of hands-on and on-line training to be completed prior to the bid date.

G. Requests for training shall be received in writing or by email to CommScope and LPS (Gordon Hardle: ghardle@lps.org) on or before 9:00 A.M., Friday May 2, 2014. It shall be the responsibility of the installer requesting training to confirm receipt, approval and payment. Requests shall be sent to Jerry Lampe – CommScope contact info: (jlampe@systimax.com , Cell: 402-203-6828, Office: 402-691-3010)

H. A Hands on training session will be held on Monday May 5 at Lincoln Public Schools at location to be determined) and time to be determined based on the requests for training. Online Training can begin in advance of the hands on however both online and hands on training shall be completed with CommScope prior 10:00 AM Wednesday May 7, 2014 in order to receive approval of the installers bid.

I. Training costs payable to CommScope in advance are estimated to be $895 per company with an additional charge of $500 per technician. Verify all training costs and requirements with CommScope

J. The Contractor must provide proof of installer qualifications, experience and certifications as an attachment to the Bid Proposal Form.

K. Installer project experience resumes and experience of the installers who will be assigned to the project will also be reviewed after the bid date but prior to approval of the bid to confirm all qualifications are met.

L. Installer Demonstration: After the bid is awarded and prior to the commencement of cable installation, installers may be requested to provide installation session to demonstrate installer qualifications. Demonstrations shall be arranged at a time acceptable and scheduled with LPS and the project consultants. As a minimum this demonstration work will include a patch panel installation, cable installation, wire management and field termination of up to twenty four (24) category 6 and/or 6A cables along with the installation of up to six (6) ST fiber optic connections to specified fiber optic cable. A copper and fiber optic testing demonstration of the above along with test report examples shall be included. All materials and equipment required for the demonstrations shall be per the specifications and shall be provided by the contractor. Installers performing the demonstrations shall be those assigned to the project installation

1.14 WARRANTIES

A. The Contractor shall warrant all materials, workmanship, and equipment against defects for a period of one year after the date of substantial completion. Certain equipment shall be warranted beginning at the time of final acceptance or for longer periods of time as specified in those sections of the Project Manual. The Contractor shall repair or replace, at no additional cost to the Owner, any item which may become defective within the warranty period. Any manufacturers warranties concerning any item installed will run to the benefit of the Owner. The Contractor agrees not to void or impair, or to allow Sub-Contractors to void or impair, any warranties regarding products or items installed as part of this project. The repair of faulty workmanship shall be considered to be included in the contract.

1.15 REFERENCE STANDARDS

A. The Contractors performance of work shall comply with applicable federal, state and local laws, rules and regulations. The Contractor shall give required notices, shall procure necessary governmental licenses, permits and inspections and shall pay without burden to the owner all fees and charges in connection therewith unless specifically provided otherwise. In the event of violation, the contractor shall pay all fines and penalties including attorney's fees and other defense costs and expenses in connection therewith.

B. Federal Communications Commission (FCC) registration or approval for any equipment requiring such approval shall be appropriately identified and obtained by the Contractor.

C. Comply with NFPA 70.

D. Design, manufacture, test and install communications cabling networks per manufacturer’s requirements, state codes, local codes, requirements of authorities having jurisdiction and particularly the following standards:

1. Comply with ANSI/TIA/EIA-568-B.1 Commercial Building Telecommunications Cabling Standard Part 1 General Requirements.
2. Comply with ANSI/TIA/EIA-568-B.2 Commercial Building Telecommunications Cabling Standard Part 2 Balanced Twisted-Pair Cabling Components.
3. Comply with ANSI/TIA/EIA-568-B.3 Optical Fiber Cabling Components Standard.
4. Comply with ANSI/TIA/EIA 569-A Commercial Building Standard for Telecommunications Pathways and Spaces.
5. Comply with ANSI/TIA/EIA 606(A) the Administration standard for the Telecommunications Infrastructure of Commercial Buildings.
6. Comply with ANSI/TIA/EIA 607(A) Commercial Building Grounding and Bonding Requirements for Telecommunications.
7. Comply with ANSI/TIA/EIA 526-7 Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant.
8. Comply with ANSI/TIA/EIA 526-14A Measurement of Optical Power Loss of Installed Multimode Fiber Cable Plant.
9. Comply with ANSI/TIA/EIA-758(A) Customer-Owned Outside Plant Telecommunications Standard.
10. TIA/EIA TSB 67 Transmission Performance Specifications for Field Testing of Twisted-Pair Cabling Systems.

E. Install cabling in accordance with the most recent addition of BICSI publications:

1. BICSI Telecommunications Distribution Methods Manual (TDMM)
2. BICSI Customer-Owned Outside Plant Design Manual (OSP)
3. BICSI Network Design Reference Manual (NDRM)
4. BICSI Wireless Design Reference Manual (WDRM)
5. BICSI Electronic Safety and Security Design Reference Manual (ESSDRM)

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

G. Federal, state, and local rules, regulations and ordnances governing the work as fully a part of the specifications as if herein attached. Where requirements of the drawings or specifications are more stringent than the applicable codes, rules, regulations and ordinances the specifications shall apply.

1. American Society for Testing and Materials (ASTM): ASTN E.814 - Fire Tests of Through-Penetration Firestops.
2. Underwriters Laboratories, Inc. (UL): U.L. 1479 - Fire Tests of Through-Penetrations Firestops.
3. National Fire Protection Association (NFPA): NFPA 70 - National Electrical Code.
4. Americans with Disabilities Accessibility Guidelines (ADA)
5. Code of Federal Regulations, Title 29, Chapter XVII, part 1910 (OSHA).
6. Uniform Building Code (UBC).
7. International Building Code (IBC).

1.16 COORDINATION

A. Coordinate and schedule all construction work with the General Contractor prior to beginning work. Do not interrupt building activities without strict coordination with the General Contractor. Unscheduled appearance to work in the spaces without prior scheduling with the General Contractor is not allowed.

B. The Contractor shall attend all meetings as required by the General Contractor.

C. Convene a meeting one week prior to commencing the work of this section.

1. Agenda:

a. Tour, inspect and discuss building conditions related to the structured cabling system.
b. Review submittals both completed and yet to be completed.
c. Review plans, specifications and proposed equipment.
d. Review construction schedule, availability of materials, personnel, equipment and facilities needed to proceed without delay.
e. Review required inspections and testing.
f. Review cable routing, cable support, primary pathways and communications spaces location and environmental conditions.

D. The Contractors Project Manager must be available on-site when needed and readily available.

E. Coordinate layout and installation of voice and data communication cabling with Owner's telephone switch, telephone instrument, workstation, telecommunications and LAN

equipment suppliers. Coordinate service entrance arrangement with local exchange carrier where new services are necessary (new construction).

F. Meet jointly with the design engineers, telecommunications and LAN equipment suppliers, local exchange carrier representatives, LPS Facilities and LPS Computing Services to exchange information and agree on details of equipment arrangements and installation interfaces.

G. Record agreements reached in meetings and distribute to other participants.

H. Adjust arrangements and locations of distribution frames, cross-connect blocks, and patch panels in equipment rooms and telecommunications rooms to accommodate and optimize arrangement and space requirements of telephone switch and LAN equipment.

I. Coordinate chases, slots, inserts, sleeves, and openings with general construction work and arrange in building structure during progress of construction to facilitate the electrical installations that follow.

J. Fully examine the drawings and specifications for other trades and coordinate the installation of telecommunications work with the work of the other trades. Consult and cooperate with the other trades for determining space requirements and for determining that adequate clearance is allowed with respect to his equipment, other equipment, and the building.

K. Coordinate installation of telecommunications cabling with the raceway installer. Verify raceways are installed according to current EIA/TIA standards before installing cable.

L. Environmental Conditions: Do not deliver or install cables and connecting materials to the installation location until areas are complete and dry and temporary HVAC systems are operating and maintaining acceptable ambient temperature and humidity conditions for the remainder of the project.

M. Provide offsets and elevation changes in cable trays, conduit and devices as required to complete the Layout and Coordination Process. Offsets and elevation change information shall be indicated in the coordination process documentation and must be submitted for review.

1.17 STRUCTURAL COORDINATION

A. In cases where the Contractor determines that superimposed loads such as suspended or floor mounted mechanical, electrical, plumbing system or equipment exist which exceed design loads indicated on structural contract documents, Contractor shall submit load data to Design Professionals for review prior to proceeding with work.

B. Distribute the maximum load hung from any structural member for mechanical, electrical, plumbing, ductwork, piping, etc. over the member’s tributary area in a way that the design superimposed dead loads listed in structural contract documents are not exceeded. The Contractor shall coordinate the loads and provide additional support or distribution framing as required achieving the allowable load distribution.

C. Connections of systems designed by Contractor's engineer such as, but not limited to mechanical, electrical, plumbing loads are assumed to impose vertical and/or horizontal loads on the base building structural members without generating torsion in the supporting structural members. Contractor is responsible for furnishing and installing all supplementary bracing members as required to prevent torsion on the base building structure.

1.18 OPERATING TRAINING [NOTE: COORDINATE TRAINING NEEDS WITH LPS]

A. Complete operating instructions for each system and item of equipment shall be provided to the Owner s designated personnel. Operation and maintenance manuals must be reviewed and accepted by the Architect/Engineer and provided to the Owner prior to operating training. Training shall be scheduled at the convenience of the Owner. A minimum of 2 hours of training shall be provided.

B. In addition to the instructions required above, wherever possible the Contractor shall perform the operations being described in order to fully illustrate system operation.

C. At the completion of training, the Contractor shall turn over to the Owner all required keys and special tools for installed equipment. Each key or tool shall be labeled with its use.

D. Train Owners maintenance personnel in cable-plant management operations including, but not limited to, rerouting signals in failed cables.

PART 2 PRODUCTS

2.1 PERFORMANCE, CAPACITIES AND CHARACTERISTICS

A. See Drawings for Equipment Schedules for Equipment Performance Requirements when capacities and characteristics are not indicated in the specifications.

2.2 MATERIALS

A. Unless otherwise specified, all materials and equipment shall be new, unused, and undamaged. Materials and equipment shall be the current and standard designs of manufacturers regularly engaged in their production and shall bear the UL listing, or listing by other recognized testing laboratory when such listings are available. Materials shall be free of damage or corrosion and shall be of the best quality obtainable for the purpose intended.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following pre-approved manufacturers. All cabling and connectivity components shall be coordinated in a coordinated solution to provide the specified solution warranties:

1. Copper Horizontal Cable and Patch Cords:

a. CommScope

b. Systimax Connectivity Solutions
c. Panduit

2. Fiber Optic Cable:

a. CommScope.
b. Systimax Connectivity Solutions.
c. Panduit

3. Broadband Coaxial Cable:

a. Belden.
b. CommScope.
c. Mohawk.
d. CCT

4. Copper Termination Equipment:

a. CommScope.
b. Systimax Connectivity Solutions.6.
c. Panduit

5. Fiber Termination Equipment:

    a. Commscoope
    b. Systimax Connectivity Solutions.
    c. Panduit

6. Copper Splice Equipment:

    a. Commscope.
    b. Raychem.
    c. Systimax Connectivity Solutions.
    d. 3M.

7. Fiber Optic Splice Equipment:

    a. Commscope
    b. Systimax Connectivity Solutions.
    c. 3M.

8. Telecommunications Racks:

    a. B-Line.
    b. Chatsworth.
    c. Commscope
    d. Homaco.
    e. Systimax Connectivity Solutions.
    f. Panduit

9. Cable Trays for Telecommunications Rooms and Entrance Facilities:

    a. [B-Line.]
    b. Cabofil.
    c. GS Metals.

10. Firestopping Materials:

    a. Metacaulk.
    b. Nelson Fire Stop.
    c. Specified Technologies, Inc.
    d. 3M Fire Protection Products.
    e. Tremco Sealants and Coatings.
    f. Hilti
    g. EZ Path

11. Innerduct:

    a. Arnco.
    b. Carlon.
    c. Endot.
    d. Maxcell Fabric Innerduct.
    e. Pyramid.

12. Mounting Elements:
    a. B-Line.
    b. Chatsworth.
    c. Erico.
    d. Homaco.
    e. Senior Industries.

13. Metallic Surface Raceway:

    a. Hubbell.
    b. Panduit.
    c. Wiremold.

14. Cable Management and Support:

    a. B-Line.
    b. Cabofil.
    c. Chatsworth Products.
    d. Erico/Caddy.
    e. Great Lakes Case and Cabinet.
    f. GS Metals.
    g. Homaco.
    h. Panduit.
    i. Senior Industries.
    j. Tyton.
    k. Velcro Brand.

15. Access Doors

    a. J.L. Industries
    b. Karp Associates
    c. Larsons Manufacturing
    d. Micor, Inc.
    e. Miller Limited
    f. Nystrom Inc.

16. Audiovisual (AV) Gear Box

    a. Premier Mounts

17. HDMI Cables
    a. Monoprice

2.3 COMPLETENESS OF WORK

A. The contract documents depict low voltage systems which are intended to be complete and functioning systems. All products, labor and programming necessary to render a full and functional system to fulfill the design intent shown on the documents shall be provided by the Contractor.

B. Catalog numbers referenced throughout the drawings and specifications are intended to convey the understanding of the type and quality of the product required. Where written descriptions differ from information conveyed by a catalog number the written description shall govern. No extra charge will be allowed because a catalog number is found to be incomplete or obsolete.

2.4 MATERIALS AND EQUIPMENT FURNISHED BY OTHERS

A. Where materials and equipment are indicated as furnished by others and installed or connected under this contract, it shall be the Contractor's responsibility to verify installation details and requirements.

2.5 QUANTITY OF SPECIFIED ITEMS REQUIRED

A. Wherever in these specifications an article, device or piece of equipment is referred to in the singular number; such reference shall apply to as many such articles as are shown on the drawings or required to complete the installation.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine pathway elements intended for cables. Check raceways, cable trays, and other elements for compliance with space allocations, installation tolerances, hazards to cable installation, and other conditions affecting installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Wiring Method: Provide wiring in conduit, raceway and cable tray except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Conceal raceway and cables except in unfinished spaces.

B. Use UL-listed plenum cable in environmental air spaces, including plenum ceilings.

C. Existing Buildings:

1. Relocation of any existing telecommunications equipment within a closet shall be provided by the Owner and shall be coordinated with the Owner.
2. Arrange for moving of furniture to access outlet in the work area.
3. Protect the existing electronics, cables, and enclosures from possible damage as there are active circuits and equipment in the building.

D. Install cables using techniques, practices, and methods that are consistent with Category rating of components and that ensure Category performance of completed and linked signal paths, end to end.

E. Install cables without damaging conductors, shield, or jacket.

F. Furnish tools and test equipment. Provide all specified materials, installation hardware, and labor required to complete work shown on drawings and specified in this Section.

This shall include work and miscellaneous items not specified but necessary to build a complete telecommunications installation including test equipment accessories and appurtenances required for testing the system. All systems shall be complete and ready for operation.

G. Use cable bundling hardware rated for the environment and application in which used. Applications include, but are not limited to, general purpose, outdoor, chemical resistant, flame retardant, high temperature, and vibration.

H. Provide reusable cable management straps for bundling and securing cables. Do not use nylon cable ties.

I. Do not bend cables, in handling or in installing, to smaller radii than minimums recommended by manufacturer.

J. Pull cables without exceeding cable manufacturer's recommended pulling tensions.

K. Install exposed cables parallel and perpendicular to surfaces or exposed structural members and follow surface contours where possible.

L. Secure and support cables at intervals not exceeding 48 inches and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.

M. Wiring within Wiring Closets and Enclosures: Provide conductors of adequate length.

N. Train conductors to terminal points with no excess.

O. Separation of Wires: Comply with TIA/EIA-569-A rules for separating unshielded copper voice and data communication cabling from potential EMI sources, including electrical power lines and equipment.

P. Make splices and terminations only at indicated outlets, terminals, cross-connects, patch panels, and splices.

Q. Use splice connectors compatible with media types.

3.3 FIRESTOPPING

A. Firestop all smoke and fire rated walls, partitions and openings after the installation of communications cabling in sleeves and pathways. Firestop material shall be approved for use with the communications cables and jackets being installed.

3.4 RECORD DRAWINGS

A. Maintain current documents at the construction site.

B. Record drawings shall include all information required for shop drawings and, in addition, shall indicate the following:

1. Routing of cables between communications rooms and from communications rooms to entrance facilities.
2. Revisions to construction documents (addenda and field changes).
3. Record drawings shall include all construction changes posted to all portions of the documents including but not limited to communications floor plans, expanded plans, wall and rack elevations, schematics, labeling and installation details. Record documents shall include and clearly show final cable labeling designations down to the individual outlet and port.
4. Record drawings shall be complete and organized to be suitable for use as disaster recovery and cable infrastructure administration documents.

C. Post a complete set of record documents in the MDF serving the project. In each MDF/IDF post a final floor plan of the outlets served by each IDF on the wall behind a protective plexi-glass wall frame.

3.5 TRENCHING, EXCAVATION, BACKFILLING AND REPAIRS

A. Trenching, excavation, backfilling and repairs are the responsibility of the Contractor. Coordinate the extent of all work wit the General Contractor where applicable and coordinate related work with all trades. Failure to properly coordinate this effort resulting in additional trenching, excavation, backfilling or repairs shall be performed at no additional cost by the contractor.

3.6 OBSERVATIONS

A. Specifications and drawings represent work to be done in view of the total project requirements. Final locations of all conduits, jacks, outlets, racks, components etc. to eliminate possible conflict with other trades is the responsibility of this contractor. Contractor to provide all project management and supervision required for his personnel to insure installation is made in accordance with the plans and specifications and that all codes, safety rules and regulations are observed. In the event of conflicts with other trades, this Contractor is to make every reasonable effort to resolve the conflict with other trades involved, by preparation of drawings or sketches or by other appropriate action. Only after this on-site coordination has taken place, and a resolution cannot be found, is the Contractor to request assistance. Assistance shall be requested in adherence with the RFI process defined for this project.

3.7 DEMONSTRATION

A. Participate in project site observations, walk-throughs and punch lists as requested by the owner or the Architect/Engineer.

B. Demonstrate completeness of work relative to completion percentages submitted for payment.

3.8 CLEANING

A. After completing system installation, including outlet fittings and devices, inspect exposed finish.

B. Remove burrs, dirt, and construction debris and repair damaged finish, including chips, scratches, and abrasions.

3.9 TELECOMMUNICATIONS SUBMITTAL SCHEDULE

Section Number	Section Name	Product Data	Shop Drawings	Maintenance Data	Qualifications	Warranty	Test Reports
27 05 01	Common Work Results for Communications					X	
27 05 27	Grounding and Bonding for Communications Systems	X	X	X	X		X
27 05 28	Pathways for Communications Systems						
27 05 53	Identification for Communications Systems	X	X	X			
27 11 01	Communications Room Fittings	X	X	X			
27 13 23	Communications Optical Backbone Cabling	X	X	X	X		X
27 13 43	Communications Services Cabling	X	X	X			X
27 15 13	Communications Copper Horizontal Cabling	X	X	X	X		X
27 15 43	Communications Faceplates and Connectors	X	X	X			

END OF SECTION 270501

Pre-Approved Primary Components - Bid Package B

Lincoln Public Schools - Security Technology Ready Classroom Facilities Projects

Schools: _____

Submittal Date: _____

General Contractor: _____

Communications Sub-Contractor: _____

Bid Package No.: _____

Submittal No.: _____

Last Updated: 5/1/2014

	27 05 01	**COMMON WORK RESULTS**					
		Warranties	Systimax	SCS - 20 Year		http://www.commscope.com/Product-Catalog/#market-enterprise	Match existing facility warranty(s) or as otherwise specified to match each facility
			Commscope Uniprise	CommScope Uniprise Warranty		http://www.commscope.com/Product-Catalog/#market-enterprise	Match existing facility warranty(s) or as otherwise specified to match each facility
		Panduit Solution allowed for Kooser Elementary only	Panduit	Panduit Solutions		http://www.panduit.com/wcs/Satellite?pagename=PG_Wrapper&friendlyurl=/en/solutions/industrial-solutions/topics/cabling-infrastructure	Match existing facility warranty(s) or as otherwise specified to match each facility
	27 05 27	**GROUNDING AND BONDING**					
		Telecommunications Main Ground Bar (TMGB)	Eritech	TMGB-A20L27PT		https://www.erico.com/products/GroundBusbars.asp	Harger,Chatsworth
			Hubbell	HBBB14420JTP		http://ecatalog.hubbell-premise.com/LiteraturePDFs/Original_PLBM002R1.pdf	Hubbell Page 7 TMGB Tinned (TP)
			PANDUIT	GB4B0612TPI-1		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DGB4B0612TPI-1%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		Telecommunications IDF Ground Bar (TGB)	Eritech	TGB-A18L10PT		https://www.erico.com/products/GroundBusbars.asp	Harger, Chatsworth
			Hubbell	HBBB14224BTP		http://ecatalog.hubbell-premise.com/LiteraturePDFs/Original_PLBM002R1.pdf	Hubbell Page 7 TMGB Tinned (TP)
			PANDUIT	GB2B0304TPI-1		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DGB2B0304TPI-1%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		Telecommunications Rack Ground Bar (TGB)	Panduit	RGRB19Y		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&locale=en_us&pagename=PG_Wrapper&item_id=RGRB19Y	Harger, Chatsworth
			Hubbell	HGRKTHT*		http://ecatalog.hubbell-premise.com/LiteraturePDFs/Original_PLBM002R1.pdf	Hubbell page 4 19in tinned RGB
			PANDUIT	RGRB19Y		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DRGRB19Y%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
	27 05 28	**PATHWAYS**					
		1 5/16" J-Hooks	Erico	CAT21		http://www.erico.com/part.asp?part=CAT21	
			PANDUIT	JP131W-L20		http://www.panduit.com/wcs/Satellite?q=JP131W-L20&c=Page&childpagename=Panduit_Global%2FPage%2FSearch_Layout&cid=1345565623132&packedargs=locale%3Den_us&pagename=Search_Wrapper	
		2" J-Hooks	Erico	CAT32		http://www.erico.com/part.asp?part=CAT32	
			PANDUIT	JP2W-L20		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DJP2W-L20%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		4" J-Hooks	Erico	CAT64		http://www.erico.com/part.asp?part=CAT64	

Pre-Approved Primary Components - Bid Package B

Lincoln Public Schools - Security Technology Ready Classroom Facilities Projects

Schools: _____

Submittal Date: _____

General Contractor: _____

Communications Sub-Contractor: _____

Bid Package No.: _____

Submittal No.: _____

Last Updated: 5/1/2014

			PANDUIT	JP4W-X20		http://www.panduit.com/wcs/Satellite?q=JP4W-X20&c=Page&childpagename=Panduit_Global%2FPage%2FSearch_Layout&cid=1345565623132&packedargs=locale%3Den_us&pagename=Search_Wrapper	
		Beam Clamp	Erico	BC		http://www.erico.com/part.asp?part=bc	
			PANDUIT	WRY-GRID		http://www.panduit.com/heiler/SpecificationSheets/WW-FRSP12%20(Wry-Grid%20Overhead%20Cable%20Tray)%20WEB%208-12-11.pdf	
		Cable Tray (Basket)	Cablofil	CF Series in sizes and mounting per detail drawings		http://www.cablofilproducts.com/catalog/dept_id_407.htm?sid=E83A891D806CAC5D7A18D8CB4DBE15F0&pid=1231	GS Metals, B-Line
		Cable Basket Tray	BASORFIL E-BFR	E-BFR series in sizes and mounting per detail drawings		http://www.basor.com/es-ES/descargar.php?doc=BASORFIL_E-BFR_EN.pdf	Basor Electric - www.basor.com
		Pre-Manufactured Sleeve Kit (2")	Hilti	CFS-SL SK 2		https://www.us.hilti.com/firestop-%26-fire-protection-systems/firestop-cast-in-%26-sleeve-devices/r41351	EZ Path
		Pre-Manufactured Sleeve Kit (4")	Hilti	CFS-SL SK 4		https://www.us.hilti.com/firestop-%26-fire-protection-systems/firestop-cast-in-%26-sleeve-devices/r41351	EZ Path
		Pre-Manufactured Sleeve Kit Gang Plate	Hilti	CFS-SL GP		https://www.us.hilti.com/firestop-%26-fire-protection-systems/firestop-cast-in-%26-sleeve-devices/r41324	EZ Path
		Inner Duct Non-Plenum, White, 1 1/4"	Carlon	Riser-Guard		http://www.carlonsales.com/techinfo/specifications/Spec-FLEXREF.pdf	Pyramid, Endot, Arnco
		Inner Duct Non-Plenum, White, 1 1/4"	Eastern Wire (Atkore/tyco)	PDRU1250F1000R		http://easternwire.com/product/riser-innerduct-fittings/	
		Inner Duct Plenum, White, 1 1/4"	Carlon	Plenum-Guard		http://www.carlonsales.com/techinfo/specifications/Spec-FLEXREF.pdf	Pyramid, Endot, Arnco
		Inner Duct Plenum, White, 1 1/4"	Eastern Wire (Atkore/tyco)	PDPU1250F1000R		http://easternwire.com/product/plenum-innerduct-fittings/	
		Surface Metal Raceway, Ivory (Single Communication Drop)	Wiremold	2000 Series		https://www.anixter.com/north-america/us/en/product-detail.V2000BC-WIREMOLD.232536.html	
		Surface Metal Raceway, Ivory (Single Communication Drop)	Hubbell	HBL 2000		http://ecatalog.hubbell-premise.com/ProductInformation/ViewCatalog.aspx?Dest=hubbell-premise.com/literature/ecatalog/r.pdf&Page=7	
		Surface Metal Raceway, Ivory (AV or Multiple Communications Drops)	Wiremold	2400 Series		https://www.anixter.com/north-america/us/en/product-detail.V2400BC-WIREMOLD.PG-Cable%2BManagement.258106.html	2400 divided where noted
		Surface Metal Raceway, Ivory (AV or Multiple Communications Drops)	Hubbell	HBL 2400		http://ecatalog.hubbell-premise.com/ProductInformation/ViewCatalog.aspx?Dest=hubbell-premise.com/literature/ecatalog/r.pdf&Page=8	2400 D divided where noted.
		Surface Racxeay Boxes, Extra Deep, Ivory	Wiremold	V2444		https://objects.eanixter.com/PD328247.PDF	
		Surface Racxeway Boxes, Extra Deep, Ivory	Hubbell	HBL2048		http://ecatalog.hubbell-premise.com/ProductInformation/ViewCatalog.aspx?Dest=hubbell-premise.com/literature/ecatalog/r.pdf&Page=7	
		Access Doors, Flush, Steel, White	Milcor	M-Series	Refer to Detail Drawings	http://www.milcorinc.com/files/assets/files/1368734235_M-ACCESSSUB2.pdf	Miller , Nystrom

Pre-Approved Primary Components - Bid Package B

Lincoln Public Schools - Security Technology Ready Classroom Facilities Projects

Schools: ______________________________________

Submittal Date: ___________

General Contractor: ____________________

Communications Sub-Contractor: ____________________

Bid Package No.: ____________________

Submittal No.: ____________________

Last Updated: 5/1/2014

	27 11 01	**COMMUNICATIONS EQUIPMENT ROOMS**					
		7' Rack, Black	Uniprise	RK3-45A	760082479	http://www.commscope.com/catalog/enterprise/2147486193/product_details.aspx?id=26468	
			PANDUIT	R2P		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DR2P%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		Vertical cable management, Font and Back - 6" W (Allowed only where Matching Existing or per Detail Drawings)	Uniprise	VCM-DS-84-6	760072785	https://www.anixter.com/north-america/us/en/product-detail.VCM-DS-84-6-COMMSCOPE-UNIPRISE-SOLUTIONS.365813.html	
			PANDUIT	WMPV22E		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DWMPV22E%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		Vertical cable management, Font and Back - 8" (Preferred LPS Standard unless specifically required otherwise)	Uniprise	VCM-DS-84-8	760072793	https://www.anixter.com/north-america/us/en/product-detail.VCM-DS-84-8-COMMSCOPE-UNIPRISE-SOLUTIONS.365815.html	
			PANDUIT	NRV6		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DNRV6%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		horizontal cable management, 2RU	Uniprise	HTK-19-SS-2U	760072959	http://www.commscope.com/catalog/enterprise/2147486211/product_details.aspx?id=26576	
			PANDUIT	NM2		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DNM2%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		48 port patch panels - Cat 6 Flat	Uniprise	UNP-U-610-2U-48	760180059	http://www.commscope.com/catalog/enterprise/2147486166/product_details.aspx?id=33911	
			PANDUIT	DP48688TGY		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DDP48688TGY%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		48 port patch panels - Cat 6A Flat	Uniprise	UNP-U-10G-2U-48	760162818	http://www.commscope.com/catalog/enterprise/2147486166/product_details.aspx?id=42	
			PANDUIT	DP486X88TGY		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DDP486X88TGY%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
	27 13 23	**OPTICAL BACKBONE CABLING**					
		12 Strand Multimode Fiber Optic Cable, Aqua OM3 Lazerspeed 300 Non-Plenum	Uniprise	R-012-DS-5L.FSUAQ	700208150	http://www.commscope.com/catalog/wireless/4294967850/product_details.aspx?id=19470	

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			PANDUIT	FODRX12Y		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DFODRX12Y%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		12 Strand Single Mode Fiber Optic Cable, Yellow Non-Plenum	Uniprise	R-012-DS-8W-FSUYL	760004440	http://www.commscope.com/catalog/enterprise/2147486252/product_details.aspx?id=19466	
			PANDUIT	FSDR912Y		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DFSDR912Y%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		12 Strand Multimode Fiber Optic Cable, Aqua Lazerspeed 300 Plenum	Uniprise	P-012-DS-5L.FSUAQ	700009731	http://www.commscope.com/catalog/enterprise/2147486252/product_details.aspx?id=19592	
			PANDUIT	FSDR912Y		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DFSDR912Y%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		12 Strand Single Mode Fiber Optic Cable, Yellow Plenum	Uniprise	P-012-DS-5L.FSUAQ	760004358	http://www.commscope.com/catalog/enterprise/2147486252/product_details.aspx?id=19588	
			PANDUIT	FODPX12Y		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DFODPX12Y%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		P-012-OD-5K-FSUBK Indoor/Outdoor Plenum Distribution Cable, 12 fiber single-unit	CommScope	P-012-OD-5K-FSUBK	760037432	http://www.commscope.com/catalog/enterprise/2147486253/product_details.aspx?id=19284	Only for special situations as noted on the detail drawings
		Fiber Optic Shelf 2U - Sliding	Uniprise	RFE-SLC-IS-EMT-BK/1U-PNL	760147439	http://www.commscope.com/catalog/enterprise/2147486268/product_details.aspx?id=32886	
			PANDUIT	FRME2U		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DFRME2U%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		Fiber Optic Shelf 1U - Sliding	Uniprise	RFE-SLC-IS-EMT-BK/2U-PNL	7601447447	http://www.commscope.com/catalog/enterprise/2147486268/product_details.aspx?id=32879	
			PANDUIT	FRME1U		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DFRME1U%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		Wall-Mount Fiber Optic Shelf	Uniprise	WBE-EMT-BK-4P-PNL	760147504	http://www.commscope.com/catalog/enterprise/2147486287/product_details.aspx?id=33135	
		Ganged Adapter w/6 SC 50um Ports SM	Uniprise	PNL-BK-012-MFA-SC02-BL	760027714	http://www.commscope.com/catalog/enterprise/2147486274/product_details.aspx?id=45687	
			PANDUIT	FAP6WBUSCZ		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DFAP6WBUSCZ%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	

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		SC MM Fiber Connector	Uniprise	MFC-SCR-09-BG	760007070	http://www.commscope.com/catalog/enterprise/2147486284/product.aspx?id=130&sort=null&nrp=null&ShowObsolete=false&filter=1140|3||0|||1142|2||0|||1119|1||0||	
			PANDUIT	FAP6WAQDSCZ		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DFAP6WAQDSCZ%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		SC SM Fiber Connector	Uniprise	SFC-SCR-09-BL	760007112	http://www.commscope.com/catalog/enterprise/2147486274/product_details.aspx?id=21122	
			PANDUIT	FSCSCBU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DFSCSCBU%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
	27 15 13	**HORIZONTAL CABLING**					
		Catergory 6A Cable, Blue, Non-Plenum	Uniprise	10GN4-BL	8441604/10	http://www.commscope.com/catalog/enterprise/2147486112/product_details.aspx?id=6088	
			PANDUIT	PUP6XC04BU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345564328987&packedargs=locale%3Den_us%26prod_cat_id%3D796%26prod_id%3D796&pagename=PG_Wrapper	
		Catergory 6A Cable, Blue, Plenum	Uniprise	10G4-BL	8765404/10	http://www.commscope.com/catalog/enterprise/2147486112/product_details.aspx?id=6087	
			PANDUIT	PUR6XC04BU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345564328987&packedargs=locale%3Den_us%26prod_cat_id%3D796%26prod_id%3D796&pagename=PG_Wrapper	
		Catergory 6 cable, Blue, Non-Plenum	Uniprise	65N4+-BL	874801410	http://www.commscope.com/catalog/enterprise/2147486112/product_details.aspx?id=37412	
			PANDUIT	PUR 6004 BU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345564328987&packedargs=locale%3Den_us%26prod_cat_id%3D789%26prod_id%3D789&pagename=PG_Wrapper	
		Catergory 6 cable, Blue, Plenum	Uniprise	6504+-BL	874801410	http://www.commscope.com/catalog/enterprise/2147486112/product_details.aspx?id=37388	
			PANDUIT	PUP 6004 BU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345564328987&packedargs=locale%3Den_us%26prod_cat_id%3D789%26prod_id%3D789&pagename=PG_Wrapper	
		Category 6 U/UTP filled Cable, outdoor direct burial, black jacket, 4 pair count	CommScope	6NF4+ BLACK	4665904/10	http://www.commscope.com/catalog/enterprise/2147486112/product_details.aspx?id=34214	Only for special situations as noted on the detail drawings
		Category 6 jacks, Gray	Uniprise	UNJ600-GY	CC00208911	http://www.commscope.com/catalog/enterprise/2147486179/product_details.aspx?id=2957	

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			PANDUIT	CJ688TGIG		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DCJ688TGIG%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		Category 6A jacks, Blue	Uniprise	UNJ10G-BL	76010011	http://www.commscope.com/catalog/enterprise/2147486179/product_details.aspx?id=32946	
			PANDUIT	CJ6X88TGBU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DCJ6X88TGBU%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		HDMI, Black with RedMere Technology, 15 Ft., Ultra-Slim Series	Monoprice	9891		http://www.monoprice.com/Product?c_id=102&cp_id=10255&cs_id=1025503&p_id=9891&seq=1&format=2	
		HDMI, Black with RedMere Technology, 30 Ft., Slim Series	Monoprice	9170		http://www.monoprice.com/Product?c_id=102&cp_id=10255&cs_id=1025507&p_id=9170&seq=1&format=2	
		HDMI, Black with RedMere Technology, 40 Ft., Slim Series	Monoprice	9171		http://www.monoprice.com/Product?c_id=102&cp_id=10255&cs_id=1025507&p_id=9171&seq=1&format=2	
		Classroom Drop Patch Cord - Cat 6 - Non Plenum, Blue, RJ45 to UNJ600GY (Teachers Desk)	Uniprise	UNC6-S-L-RJ45-UNJ600(GY)-BL-FTxx	UC1B682-1C	http://www.commscope.com/catalog/enterprise/2147486112/product_details.aspx?id=23292	
			PANDUIT	UTP28SP**BU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DUTP28SP1%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	
		Classroom Drop Patch Cord - Cat 6 - Plenum, Blue, RJ45 to UNJ600GY (Teachers Desk)	Uniprise	UNC6-P-RJ45-UNJ600(GY)-BL-FTxx	UC1B682-1C	http://www.commscope.com/catalog/enterprise/2147486112/product_details.aspx?id=23292	Provide 10, 15, 25, 35 and special lengths as needed.
			PANDUIT	UTP28SP**BU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DUTP28SP1%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	Provide 10, 15, 25, 35 and special lengths as needed.
		Classroom Drop Patch Cord - Cat 6 - Plenum, Blue, RJ45 to RJ45 (Projector)	Uniprise	UNC6-P-BL-FTxx	UC1BBC2-0Z	http://www.commscope.com/catalog/enterprise/2147486155/product_details.aspx?id=44912	Provide 10, 15, 25, 35 and special lengths as needed.
			PANDUIT	UTP28SP**BU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DUTP28SP1%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	Provide 10, 15, 25, 35 and special lengths as needed.
		Classroom Drop Patch Cord - Cat 6 - Non-Plenum, Blue, RJ45 to RJ45 (Projector)	Uniprise	UNC6-BL-FTxx	UC1BBB2-0Z	http://www.commscope.com/catalog/enterprise/2147486155/product_details.aspx?id=44903	Provide 10, 15, 25, 35 and special lengths as needed.
			PANDUIT	UTP28SP**BU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DUTP28SP1%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	Provide 10, 15, 25, 35 and special lengths as needed.

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		Classroom WAP Patch Cord - Cat 6A - Non Plenum, Blue, RJ45 to RJ45	Uniprise	UNC10G-BL-FTxx	UC1AAA2-0Z	http://www.commscope.com/catalog/enterprise/2147486155/product.aspx?id=82&searchCopperCords=true	Provide 10, 15, 25, 35 and special lengths as needed.
			PANDUIT	UTP28SP**BU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DUTP28SP1%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	Provide 10, 15, 25, 35 and special lengths as needed.
		Classroom WAP Patch Cord - Cat 6A - Plenum, Blue, RJ45 to RJ45	Uniprise	UNC10G-P-BL-FTxx	UC1AAA2-0Z	http://www.commscope.com/catalog/enterprise/2147486155/product_details.aspx?id=44878	Provide 10, 15, 25, 35 and special lengths as needed.
			PANDUIT	UTP28SP**BU		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DUTP28SP1%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%2B%26locale%3Den_us&pagename=PG_Wrapper	Provide 10, 15, 25, 35 and special lengths as needed.
		AV Gear Box - 2' x 2' x 6.5" Deep, flush ventilated door, recessed grid, plenum rated, white finish, lockable door.	Premier Mounts	GB-AVSTOR3		http://www.mounts.com/GB-AVSTOR3	With Cable Suspension accessories and configured as indicated on the detail drawings
			Wiremold Legrand	ECB		http://www.legrand.us/wiremold/wall-ceiling-boxes/evolution-series-ceiling-box/ecb-evolution-ceiling-box.aspx#.U2ENa_ldWqU	With Cable Suspension accessories and configured as indicated on the detail drawings
			Chief	CMS490		http://www.chiefmfg.com/Products/CMS490	With Cable Suspension accessories and configured as indicated on the detail drawings
			Oberon	1074-06-VFLUSH		http://www.oberonwireless.com/WebDocs/Model1074-04-ANT7_Spec_Sheet.pdf	With Cable Suspension accessories and configured as indicated on the
		WAP Enclosure - Non-metalic, lockable white finish.	Oberon	1015-00		http://www.oberonwireless.com/WebDocs/Model1015-00_Spec_Sheet.pdf	
		Coaxial Cable RG 6 - Quad Shield - Plenum	Uniprise	2227V BKRL RG6 QD	4100104/10	http://www.commscope.com/catalog/enterprise/2147486141/product_details.aspx?id=25197	Beldon. Mohawk.
		Coaxial Cable RG 6 - Quad Shield Riser	CCT	5214		http://cctcable.com/product-catalog.php?type=25&cat=32&subcat=62&product=64	www.cctcable.com
		Coaxial Cable RG 6 - Quad Shield Plenum	CCT	P5218		http://cctcable.com/product-catalog.php?type=25&cat=32&subcat=33&product=57	www.cctcable.com
		Coaxial Cable RG6 - Riser	Uniprise	5781 BRKL RG6 QD	4220004/10	http://www.commscope.com/catalog/enterprise/2147486140/product_details.aspx?id=34370	Beldon. Mohawk.
		Coaxial Cable RG6 Riser	CCT	5203		http://cctcable.com/product-catalog.php?type=25&cat=32&subcat=62&product=59	www.cctcable.com
		Coaxial Cable RG6 Plenum	CCT	P5203		http://cctcable.com/product-catalog.php?type=25&cat=32&subcat=33&product=56	www.cctcable.com
		Coaxial Cable RG11 - Riser	Uniprise	5916	8203603/10	https://www.anixter.com/content/anixter/north-america/us/en/product-detail.5916-BKRL-RG11-60-1000-COMMSCOPE-UNIPRISE-SOLUTIONS.PG-Coaxial%2BCabling%2BInfrastructure.CS5916.html	Beldon. Mohawk.
		Coaxial Cable RG11 Riser	CCT	5400		http://cctcable.com/product-catalog.php?type=25&cat=63&subcat=65&product=73	www.cctcable.com
		Coaxial Cable RG11 - Plenum	Uniprise	2287V WTRL RG11 QD	4101204	https://www.anixter.com/north-america/us/en/product-detail.2287V-WTRL-RG11-QD-1000-COMMSCOPE-UNIPRISE-SOLUTIONS.PG-Coaxial%2BCabling%2BInfrastructure.CS2287V.html	Beldon. Mohawk.
		Coaxial Cable RG11 Plenum	CCT	P5405		http://cctcable.com/product-catalog.php?type=25&cat=63&subcat=64&product=71	www.cctcable.com

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		Coaxial Cable RG6 - F Connector	Belden	SNS1 P6QS	340511	https://www.anixter.com/content/anixter/asia-pacific/asp/en/product-detail.SNS1P6QS-BELDEN.PG-Coaxial%2BCabling%2BInfrastructure.340511.html	Uniprise, Mohawk
		Coaxial Cable RG11 - F Connector	Belden	SNS11AS	523856	https://www.anixter.com/asia-pacific/asp/en/product-detail.SNS11AS-BELDEN.PG-Coaxial%2BCabling%2BInfrastructure.523856.html	Uniprise, Mohawk
		F Connector / Coupler	Uniprise	M81C	108009432	http://www.commscope.com/catalog/enterprise/2147486210/product_details.aspx?id=18790	
	27 15 43	**FACEPLATES AND CONNECTORS**					
		Wall phone plates, stainless steel, 3.25" Mounting Stud Spacing	Uniprise	M10LWSP	760117572	http://www.commscope.com/catalog/enterprise/2147486206/product_details.aspx?id=34861	
		1 port stainless steel faceplates	Uniprise	M11SP	760100867	http://www.commscope.com/catalog/enterprise/2147486206/product_details.aspx?id=32194	
			PANDUIT	CSP 2SY		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DCFP2SY%26locale%3Den_us&pagename=PG_Wrapper	
		2 port stainless steel faceplates	Uniprise	M12SP	108615188	http://www.commscope.com/catalog/enterprise/2147486206/product_details.aspx?id=32213	
			PANDUIT	CFP 2SY		http://www.panduit.com/wcs/Satellite?c=Page&childpagename=Panduit_Global%2FPG_Layout&cid=1345565612156&packedargs=item_id%3DCFP2SY%26locale%3Den_us&pagename=PG_Wrapper	
		4 port stainless steel faceplates	Uniprise	M14SP	108615204	http://www.commscope.com/catalog/enterprise/2147486206/product_details.aspx?id=32213	Systimax, Panduit, Hubbell

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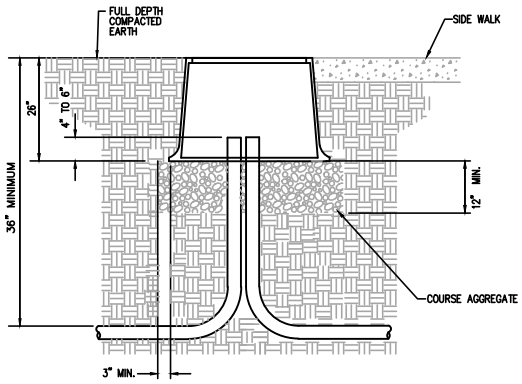
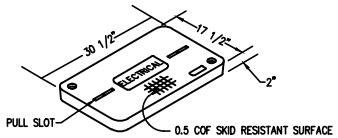
DWG: F:\Projects\014-0452_MPEL\1-LPS Technology Security Project B\Constructs\General\000.C32.dwg USER: eklein
DATE: May 02, 2014 9:50am XREFS:

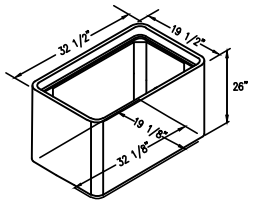
(Sheet Number) 000.C32
(Project Number) 014-0452
(Drawing Number)
(Date) 04.17.2014

TELECOMMUNICATIONS RACK DETAILS
LINCOLN PUBLIC SCHOOLS

1 Attachment No. 000.C32-1 to Addendum No. 2 Dated: May 02, 2014







GENERAL NOTES

1. HANDHOLES SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND AS INDICATED HEREIN.
2. ALL HANDHOLE COVERS SHALL HAVE AN APPROVED ANTI-SKID PATTERN.
3. HANDHOLES SHALL REST FIRMLY ON A BED OF 3/4" WASHED CRUSHED LIMESTONE ROCK WITH A MINIMUM DEPTH OF 12" BELOW THE BOTTOM OF THE HANDHOLE, EXTENDING AT LEAST 3" BEYOND THE OUTSIDE EDGES OF THE PULL BOX.
4. DO NOT INSTALL LID BOLTS.
5. AFTER TRACER WIRE IS INSTALLED, ALL DUCT TERMINALS ENDS IN HANDHOLES SHALL BE SEALED AGAINST ENTRY OF MOISTURE BY METHODS STATED IN SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.
6. ALL LIDS SHALL BE LABELED. ALL TYPE I HANDHOLE LIDS SHALL BE LABELED 'ELECTRICAL'.
7. NO CONDUIT CAN ENTER THROUGH SIDE WALL OF HANDHOLES, THEY MUST ENTER FROM THE BOTTOM.

HANDHOLE DETAIL

NO SCALE

7
000.C32

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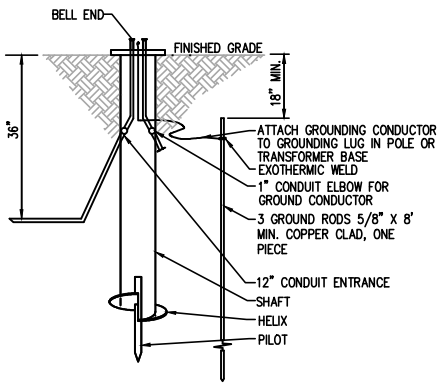
DATE: May 02, 2014 9:50am XREFS:

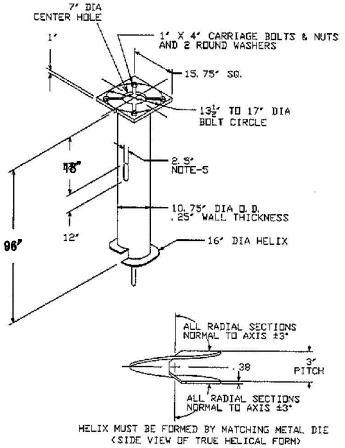
(Sheet Number) 000.C32
(Project Number) 014-0452
(Drawing Number)
(Date) 04.17.2014

TELECOMMUNICATIONS RACK DETAILS
LINCOLN PUBLIC SCHOOLS

1 Attachment No. 000.C32-2 to Addendum No. 2 Dated: May 02, 2014

1





NOTES

1. FINISH: HOT DIP GALVANIZE PER ASTM-A153 (LATEST REVISION).
2. BASEPLATE TO BE PERPENDICULAR TO SHAFT AXIS (+/- 1°) AND HOLE CENTERLINE CONCENTRIC (+/- 188) TO SHAFT AXIS.
3. STENCIL MIN. 1/2 IN. LETTERS MANUFACTURER'S NUMBER AFTER GALVANIZING.
4. PILOT POINT AND SHAFT AXES TO BE CONCENTRIC (125 FIM) AND IN LINE (+/- 2°)
5. FLAME CUT TWO SLOTS IN SHAFT PERPENDICULAR TO THE BASEPLATE.
6. PREHEAT, TUMBLEBLAST, HANDGRIND, AND CLEAN BASEPLATE, HELIX, AND PILOT POINT ON ALL WELDED AREAS.
7. FLAMECUT IRREGULARITIES PERMISSIBLE: (1) VALLEYS NOT TO EXCEED 3/32" BELOW NOMINAL SURFACE LEVEL, (2) PEAKS OR POSITIVE IRREGULATIES NOT TO EXCEED 1/32 IN. ABOVE NOMINAL SURFACE LEVEL OR INTERSECTIONS OF NOMINAL SURFACES.
8. MANUFACTURER TO HAVE IN EFFECT INDUSTRY RECOGNIZED WRITTEN QUALITY CONTROL FOR ALL MATERIALS AND MANUFACTURING PROCESSES.
9. ALL MATERIAL IS TO BE NEW, UNUSED AND MILL TRACEABLE MEETING THE FOLLOWING SPECIFICATIONS:

   BASEPLATE: ASTM A36 – (LATEST REVISION) STRUCTURAL STEEL (CONFORM TO AASHTO TECH. BUL. #270)

   SHAFT: ASTM A252 – (LATEST REVISION) GRADE 2, STEEL PIPE PILES. ALTERNATE MATERIAL: ASTM A53 – (LATEST REVISION) TYPE E OR S, GRADE B, STEEL PIPE OR ASTM A500 – (LATEST REVISION) GRADE B, STRUCTURAL STEEL TUBING.

   HELIX: ASTM A635 – (LATEST REVISION) 1/2" THICK HOT ROLLED STEEL PLATE OR COIL.

   PILOT POINT: ASTM A575 – (LATEST REVISION) 1-1/4" DIAMETER HOT ROLLED STEEL BAR.

   BOLTS: CARRIAGE BOLT, 1-8UNC-2A PER ANSI B-18.5, SAE J429 GRADE-5.

   NUTS: HEAVY HEX NUTS PER ASTM A194 GRADE 2H OR ASTM A563 GRADE DH, MEETING THE SUPPLEMENTARY REQUIREMENTS OF ASTM A563; 1-8UNC-2B PER ANSI B18.2.2.
10. BASEPLATE IS PERMANENTLY STAMPED WITH MANUFACTURER'S IDENTIFICATION "ABC" IN 1/2" LETTERS AND DATE CODE IN 1/4" LETTERS.
11. BASEPLATE PERMANENTLY MARKED TO INDICATE CABLEWAY OPENING IN SHAFT.

POWER INSTALLED FOUNDATION

8
000.C32

NO SCALE

DWG: F:\Projects\014-0452_MPEL\1-LPS Technology Security Project B\Constructs\General\000.C35.dwg USER: eklein
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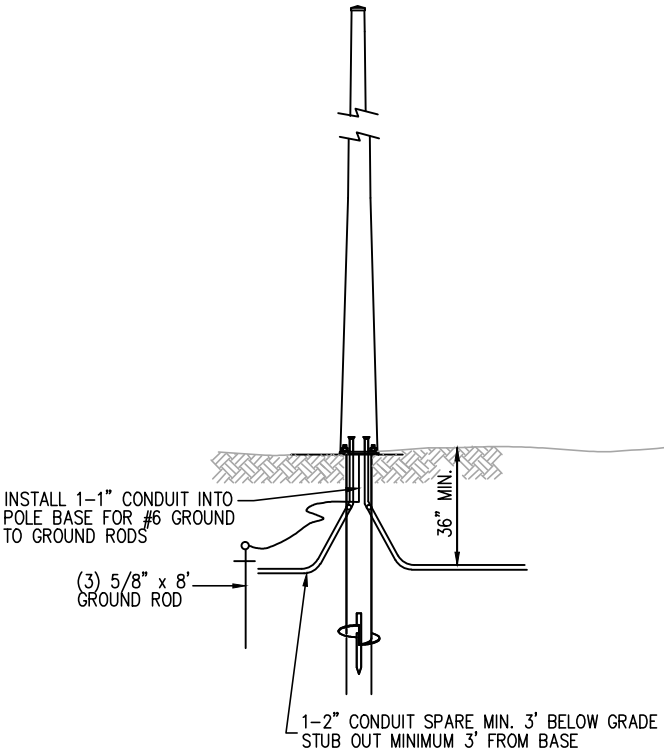

POLE DETAIL

NO SCALE

10
000.C35

1

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(Project Number)
014-0452
(Drawing Number)
(Date)
04.17.2014

TELECOMMUNICATIONS PATHWAY DETAILS
LINCOLN PUBLIC SCHOOLS

1 Attachment No. 000.C35-1 to Addendum No. 2
Dated: May 02, 2014

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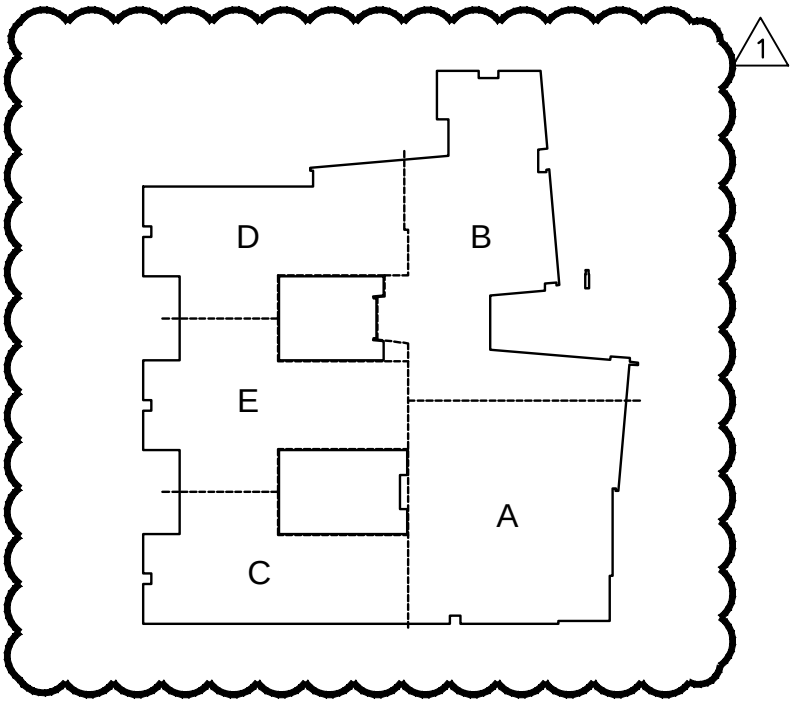
DATE: May 01, 2014 9:57am XREFS: xref - 1210_FP01 Schools Electrical Notes xref - 121RC_FP01 xref - title



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(Sheet Number)
121.T00
(Project Number)
014-0452
(Drawing Number)
(Date)
04.17.2014

TELECOMMUNICATIONS RACK PLAN
LINCOLN PUBLIC SCHOOLS
ADAMS ELEMENTARY SCHOOL

1 Attachment No. 121.T00-1 to Addendum No. 2 Dated: May 02, 2014

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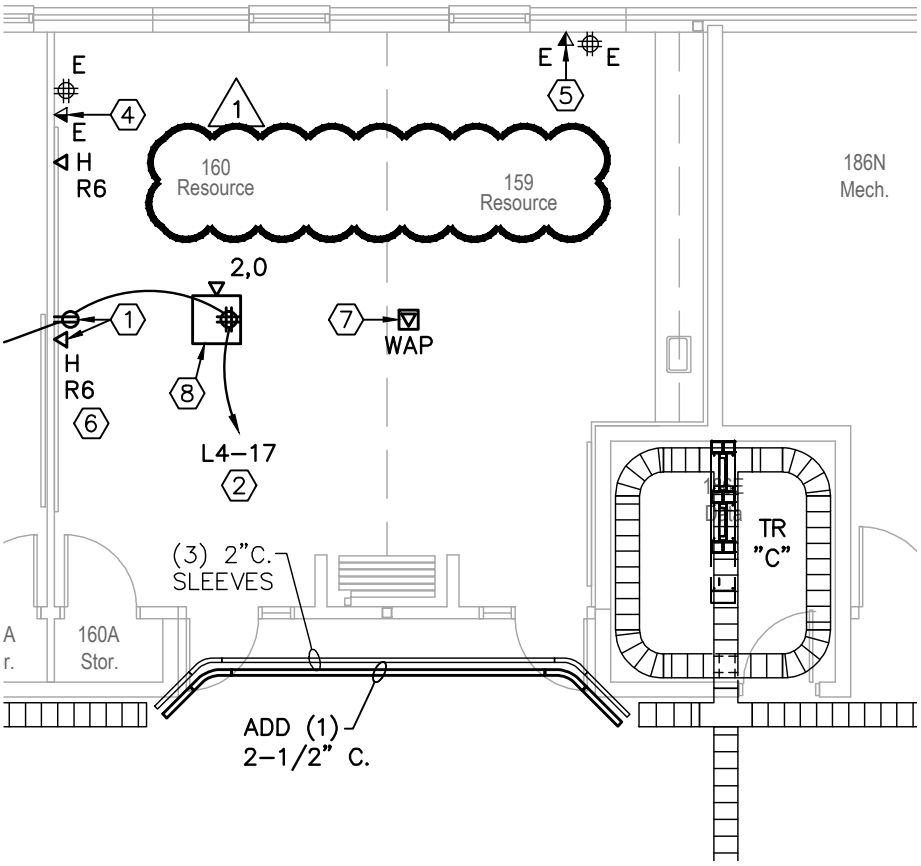
DATE: May 01, 2014 10:19am XREFS: xref - 146O_FP01 xref - 146RC_FP01 xref - title Schools Electrical Notes



AREA C - FIRST FLOOR PLAN TELECOMMUNICATIONS

1
146.T01.C

SCALE: 1/8" = 1'-0"

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(Sheet Number)
146.T01.C
(Project Number)
014-0452
(Drawing Number)
(Date)
04.17.2014

AREA C - FIRST FLOOR PLAN TELECOMMUNICATIONS
LINCOLN PUBLIC SCHOOLS
KOOSER ELEMENTARY

1 Attachment No. 146.T01.C-1
to Addendum No. 2
Dated: May 02, 2014

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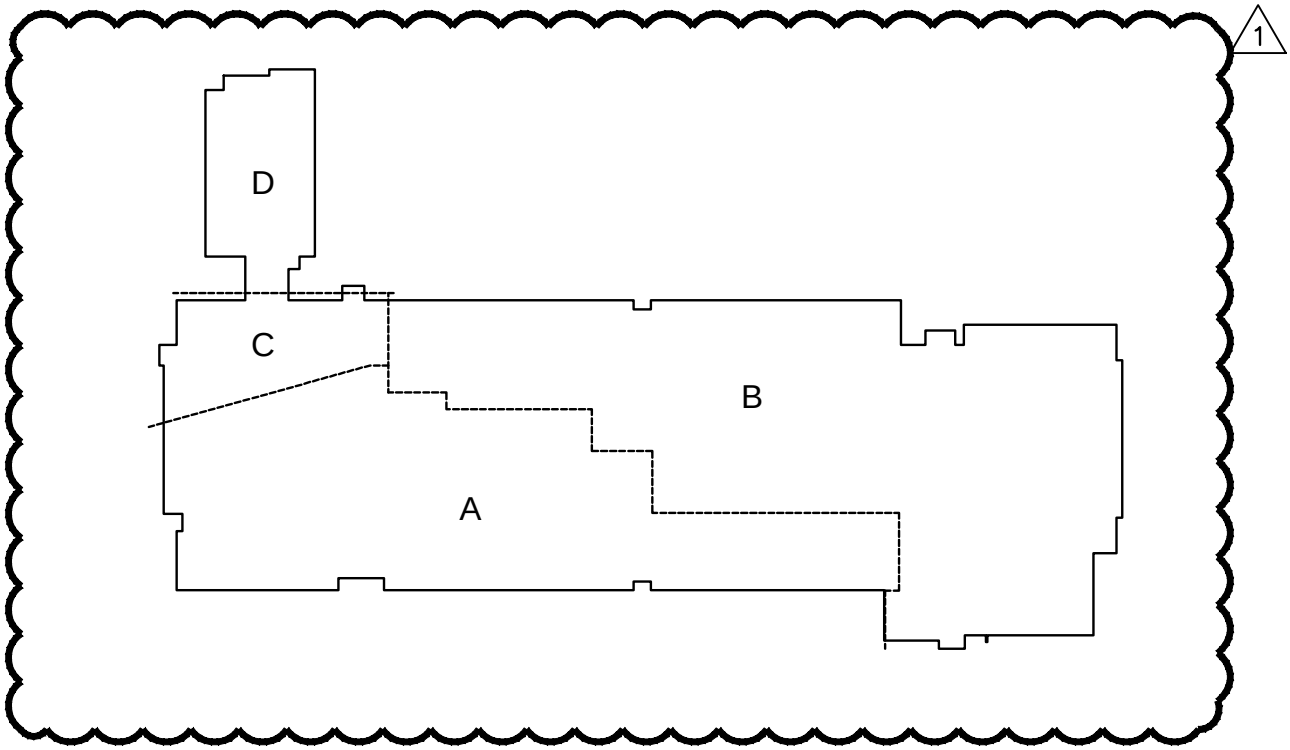

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(Sheet Number)
210.T00

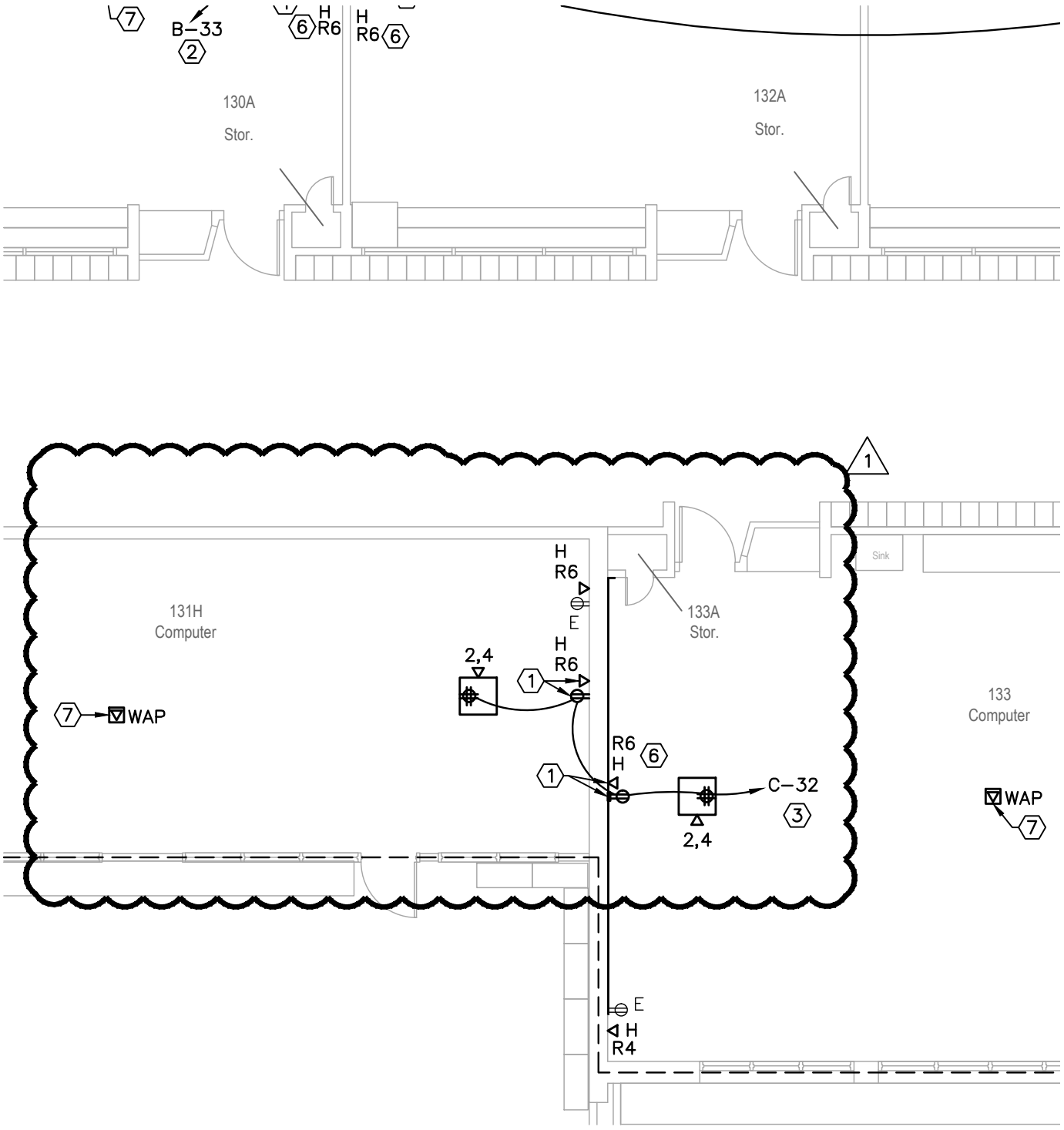
(Project Number)
014-0452

(Drawing Number)

(Date)
04.17.2014

TELECOMMUNICATIONS RACK PLAN
LINCOLN PUBLIC SCHOOLS
CULLER MIDDLE SCHOOL

1 Attachment No. 210.T00-1 to Addendum No. 2
Dated: May 02, 2014



AREA C - FIRST FLOOR PLAN TELECOMMUNICATIONS

1 / 210.T01.C SCALE: 1/8" = 1'-0"

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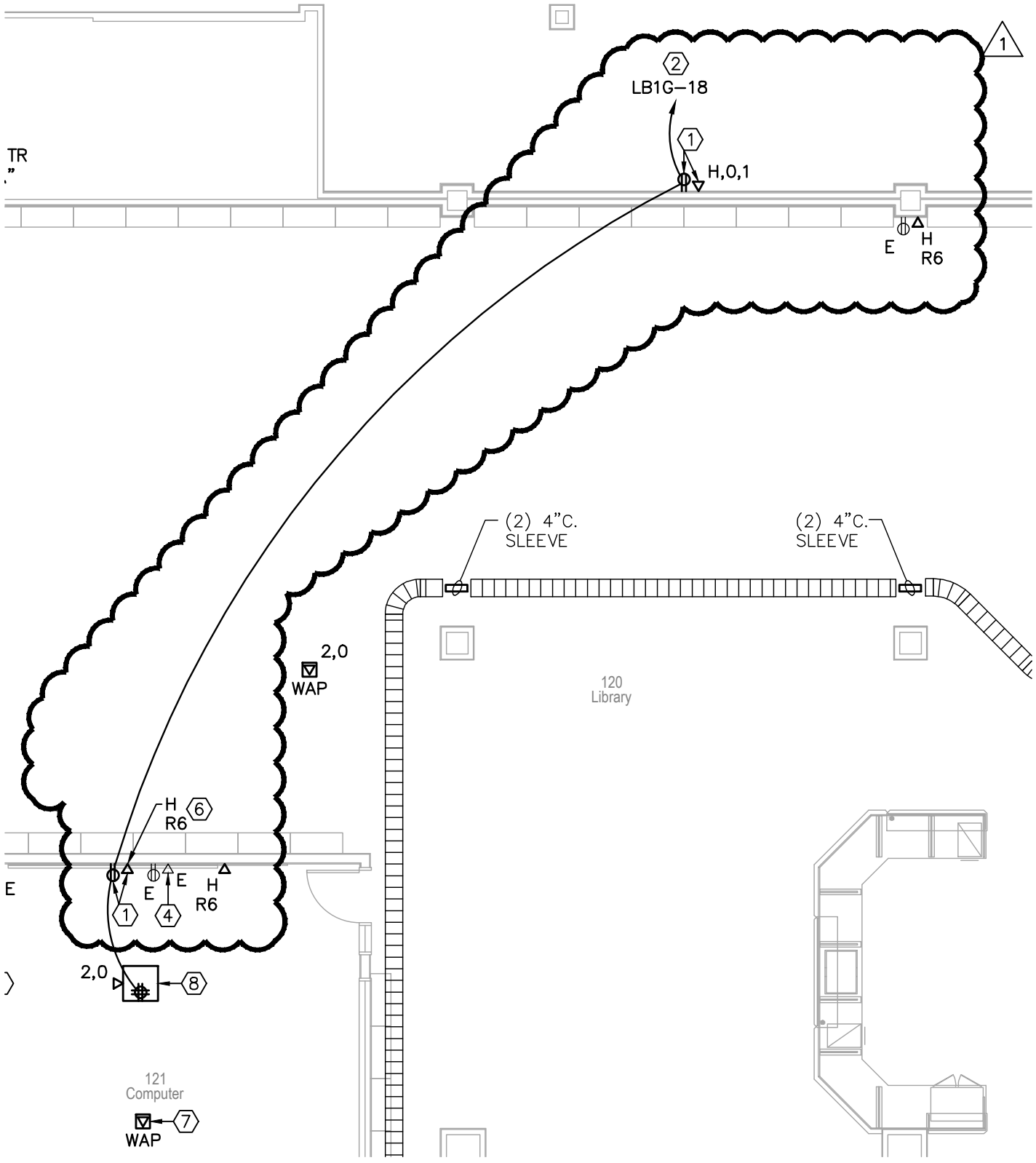
(Sheet Number) 210.T01.C
(Project Number) 014-0452
(Drawing Number)
(Date) 04.17.2014

AREA C - FIRST FLOOR PLAN TELECOMMUNICATIONS
LINCOLN PUBLIC SCHOOLS
CULLER MIDDLE SCHOOL

1 Attachment No. 210.T01.C-1 to Addendum No. 2 Dated: May 02, 2014



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DATE: May 02, 2014 9:36am XREFS: xref - 222O_FP01 xref - 222RC_FP01 xref - title Schools Electrical Notes

AREA B - FIRST FLOOR PLAN
TELECOMMUNICATIONS

1
222.T01.B
SCALE: 1/8" = 1'–0"

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(Sheet Number)
222.T01.B
(Project Number)
014-0452
(Drawing Number)
(Date)
04.17.2014

TELECOMMUNICATIONS RACK PLAN
LINCOLN PUBLIC SCHOOLS
SCHOO MIDDLE SCHOOL

1 Attachment No. 222.T01.B-1
to Addendum No. 2
Dated: May 02, 2014

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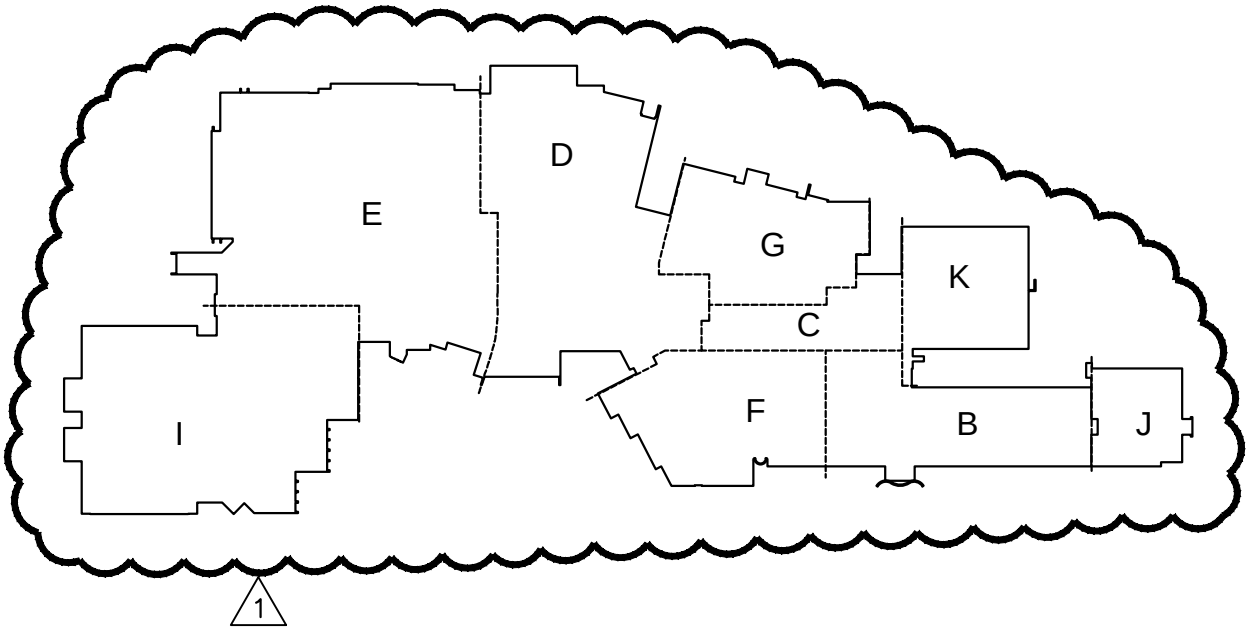

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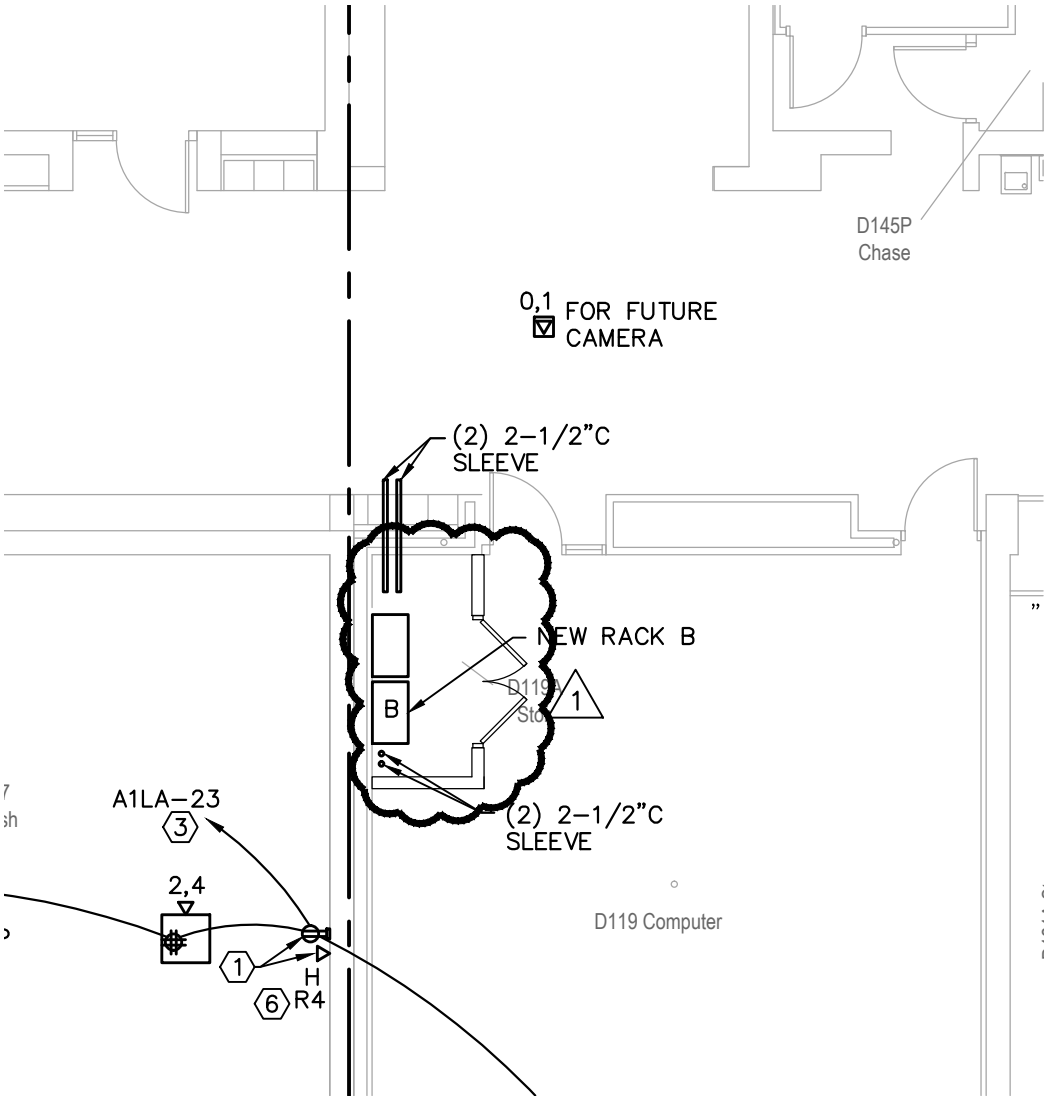
304.T00
(Project Number)
014-0452
(Drawing Number)
(Date)
04.17.2014

TELECOMMUNICATIONS RACK PLAN
LINCOLN PUBLIC SCHOOLS
SOUTHEAST HIGH SCHOOL

1 Attachment No. 304.T00-1 to Addendum No. 2
Dated: May 02, 2014



AREA A - FIRST FLOOR PLAN TELECOMMUNICATIONS

1
304.T01.A SCALE: 1/8" = 1'-0"

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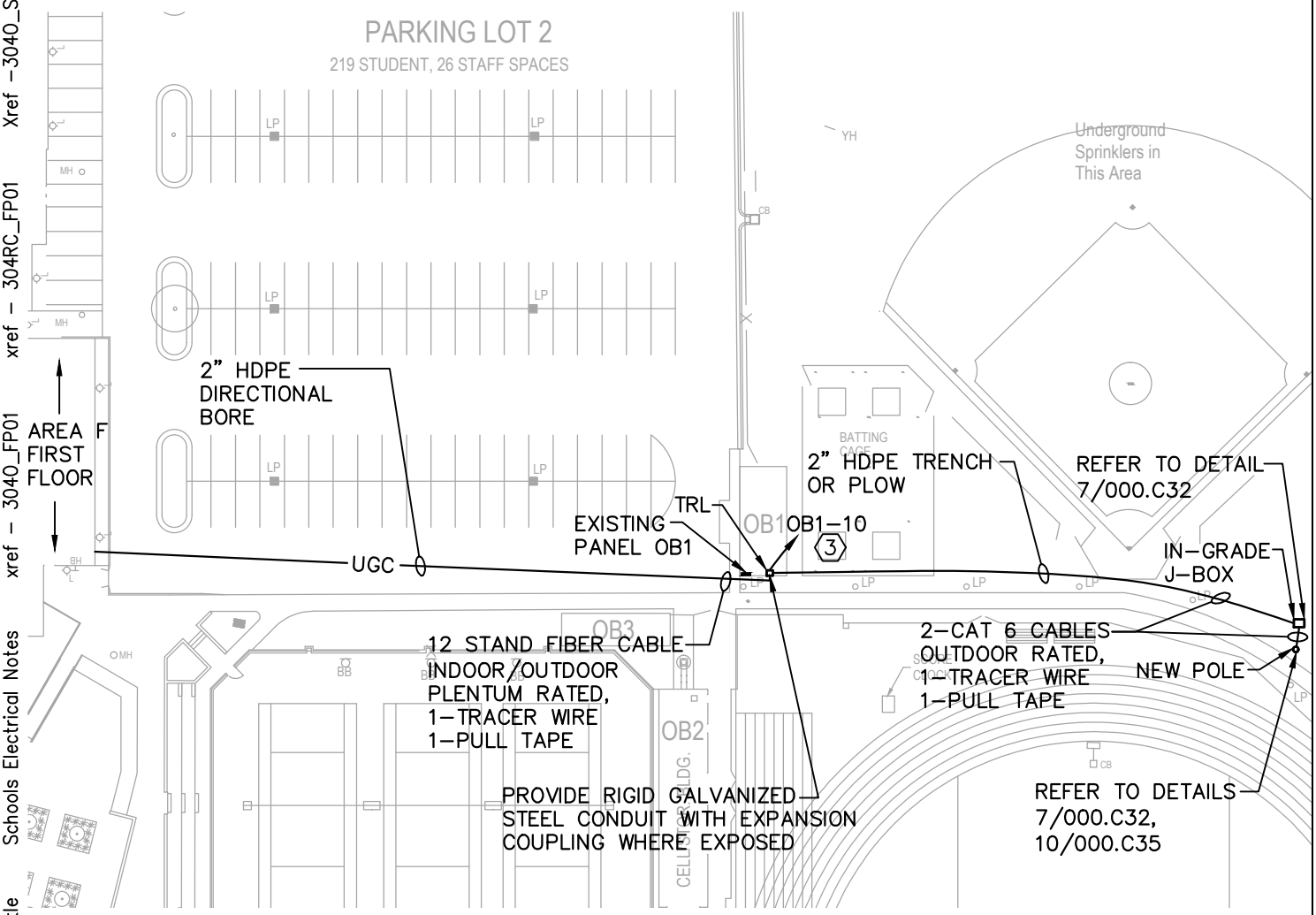
304.T01.A
(Project Number)
014-0452
(Drawing Number)
(Date)
04.17.2014

AREA A - FIRST FLOOR PLAN TELECOMMUNICATIONS
LINCOLN PUBLIC SCHOOLS
SOUTHEAST HIGH SCHOOL

1 Attachment No. 304.T01.A-1
to Addendum No. 2
Dated: May 02, 2014



AREA F - SITE PLAN
TELECOMMUNICATIONS

2 / 304.T01.F SCALE: 1" = 750'-0"

1

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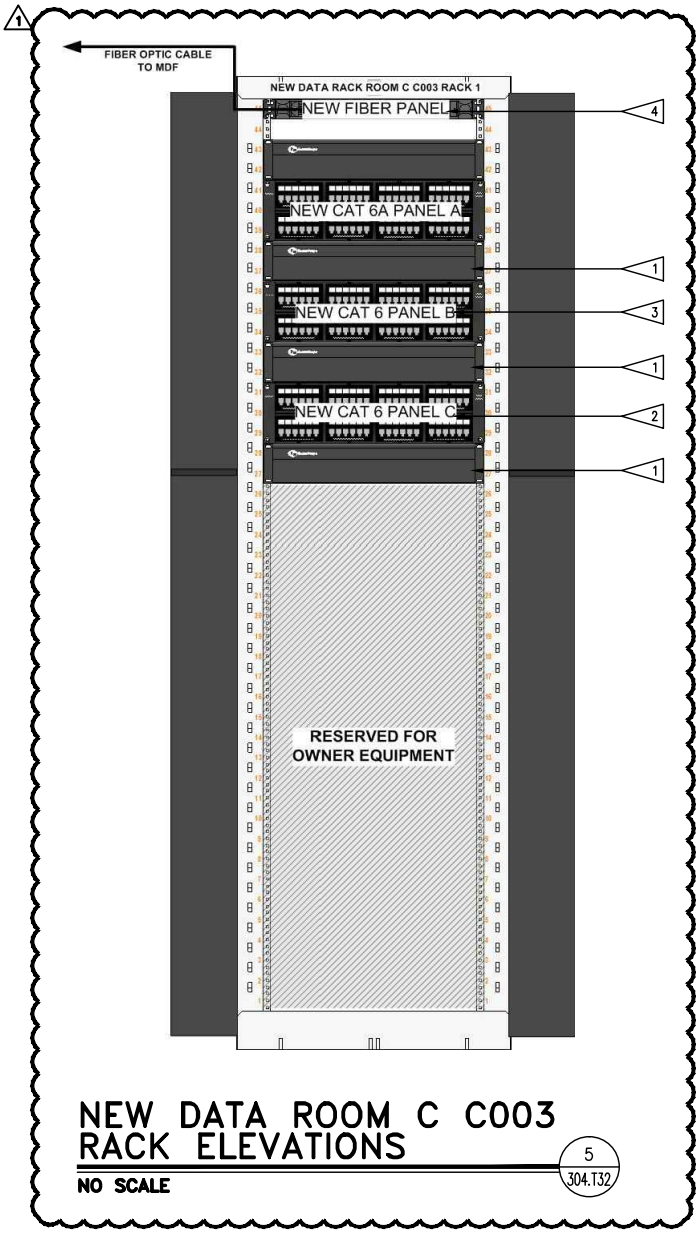
(Sheet Number) **304.T01.F**
(Project Number) 014-0452
(Drawing Number)
(Date) 04.17.2014

AREA F - FIRST FLOOR PLAN TELECOMMUNICATIONS
LINCOLN PUBLIC SCHOOLS
SOUTHEAST HIGH SCHOOL

1 Attachment No. 304.T01.F-1 to Addendum No. 2
Dated: May 02, 2014



NEW DATA ROOM C C003 RACK ELEVATIONS

5
304.T32

NO SCALE

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TELECOMMUNICATIONS RACK DETAILS
LINCOLN PUBLIC SCHOOLS
SOUTHEAST HIGH SCHOOL

1 Attachment No. 304.T32-1 to Addendum No. 2 Dated: May 02, 2014

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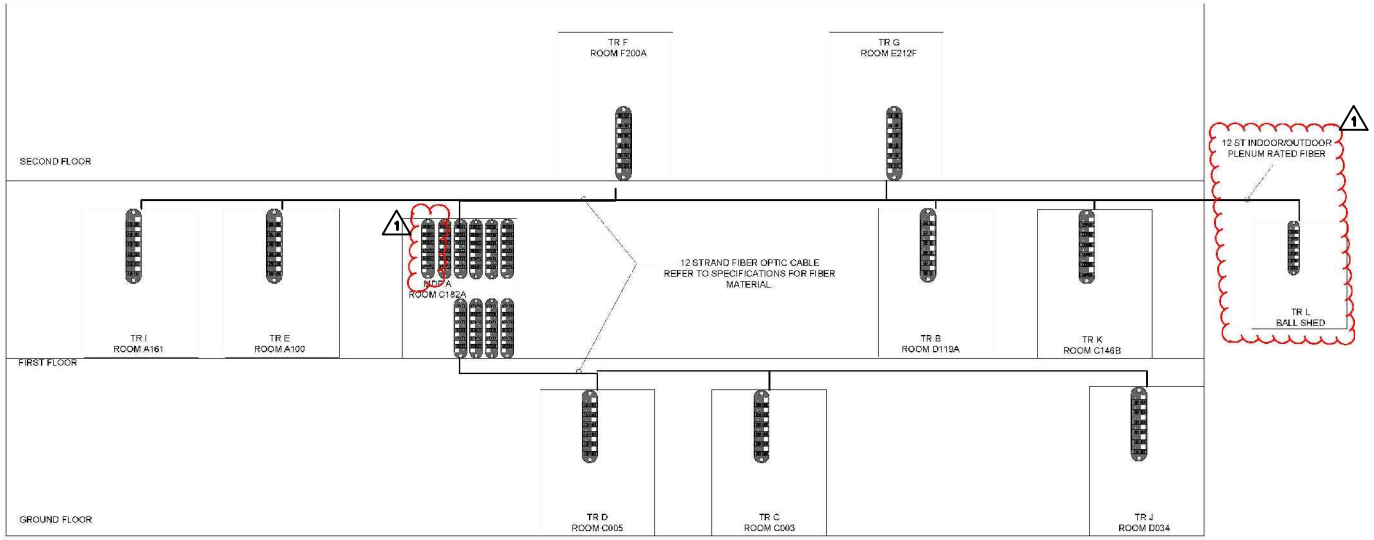

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304.T32 (Sheet Number)
(Project Number) 014-0452
(Drawing Number)
(Date) 04.17.2014

TELECOMMUNICATIONS RACK DETAILS
LINCOLN PUBLIC SCHOOLS
SOUTHEAST HIGH SCHOOL

1
Attachment No. 304.T32-2
to Addendum No. 2
Dated: May 02, 2014