



State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

Department of Administrative Services

KIMBERLY K. HOOD
Executive Director

Division of Facilities Construction and Management

DAVID G. BUXTON
Director

ADDENDUM #2

Date: June 6, 2008

To: Contractors

From: Wayne Smith, Project Manager, DFCM

Reference: Building 5100 – Camp Williams
Utah National Guard – Riverton, Utah
DFCM Project No. 07332480

Subject: **Addendum No. 2**

Pages	Addendum Cover Sheet	1 page
	Revised Bid Form	2 pages
	<u>Architects Addendum</u>	<u>14 pages</u>
	Total	17 pages

Note: *This Addendum shall be included as part of the Contract Documents. Items in this Addendum apply to all drawings and specification sections whether referenced or not involving the portion of the work added, deleted, modified, or otherwise addressed in the Addendum. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to Disqualification.*

While we contend that SB220 should only be potentially applicable to a contract issued after the effective date of said bill, this is to clarify that for purposes of this contract, regardless of the execution or effective dates of this contract, the status of Utah Law and remedies available to the State of Utah and DFCM, as it relates to any matter referred to or affected by said SB220, shall be the Utah law in effect at the time of the issuance of this Addendum.

1.1 **SCHEDULE CHANGES** – There are no changes to the project schedule.

1.2 **GENERAL ITEMS**

- 1.2.1 Revised Bid Form with Additive Alternate No. 2 and a Unit Price
- 1.2.2 Questions/Answers, Specifications and Drawings from AJC Architects.

Utah!
Where ideas connect



**BID FORM – REVISED
PER ADDENDUM NO. 2 DATED JUNE 6, 2008**

NAME OF BIDDER _____ DATE _____

To the Division of Facilities Construction and Management
4110 State Office Building
Salt Lake City, Utah 84114

The undersigned, responsive to the "Invitation to Bid" and in accordance with the Request for Bids for the **BUILDING 5100 REMODEL – CAMP WILLIAMS – UTAH NATIONAL GUARD – RIVERTON, UTAH** **DFCM PROJECT NO. 07332480** and having examined the Contract 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 as required for the Work in accordance with the Contract Documents as specified and within the time set forth and at the price stated below. This price is to cover all expenses incurred in performing the Work required under the Contract Documents of which this bid is a part:

I/We acknowledge receipt of the following Addenda: _____

BASE BID: For all work shown on the Drawings and described in the Specifications and Contract Documents, to remodel **Building 5100**, I/we agree to perform for the sum of:

_____ DOLLARS (\$ _____)
(In case of discrepancy, written amount shall govern)

ADDITIVE ALTERNATE NO. 1: For all work shown on the Drawings and described in the Specifications and Contract Documents to perform all work relative to **Building 5080**, I/we agree to perform for the sum of:

_____ DOLLARS (\$ _____)
(In case of discrepancy, written amount shall govern)

ADDITIVE ALTERNATE NO. 2: For all work shown on the Drawings and described in the Specifications and Contract Documents to **reroof Building 5080**, I/we agree to perform for the sum of:

_____ DOLLARS (\$ _____)
(In case of discrepancy, written amount shall govern)

UNIT PRICE: 4' x 8' x 5/8" exterior grade plywood \$ _____/sheet

I/We guarantee that the Work will be Substantially Complete by **December 1, 2008**, should I/we be the successful bidder, and agree to pay liquidated damages in the amount of **\$450.00** per day for each day after expiration of the Contract Time as stated in Article 3 of the Contractor's Agreement.

BID FORM
PAGE NO. 2

This bid shall be good for 45 days after bid opening.

Enclosed is a 5% bid bond, as required, in the sum of _____

The undersigned Contractor's License Number for Utah is _____.

Upon receipt of notice of award of this bid, the undersigned agrees to execute the contract within ten (10) days, unless a shorter time is specified in Contract Documents, and deliver acceptable Performance and Payment bonds in the prescribed form in the amount of 100% of the Contract Sum for faithful performance of the contract. The Bid Bond attached, in the amount not less than five percent (5%) of the above bid sum, shall become the property of the Division of Facilities Construction and Management as liquidated damages for delay and additional expense caused thereby in the event that the contract is not executed and/or acceptable 100% Performance and Payment bonds are not delivered within time set forth.

Type of Organization: _____
(Corporation, Partnership, Individual, etc.)

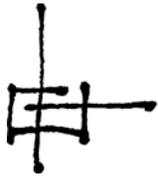
Any request and information related to Utah Preference Laws:

Respectfully submitted,

Name of Bidder

ADDRESS:

Authorized Signature



ajc architects

addendum
2

Building 5100 – Camp Williams
117800 South Redwood Road
Riverton, Utah 84065-4999

DFCM Project #:07332480
ajc architects project #: 0781

date: Thursday, June 05, 2008
time: 9:48 AM

pages: 14

The bidders on the above captioned project shall be governed by the following changes, additions, and/or deletions in the Drawings and Specifications. This Addendum shall be included as part of the Contract Documents.

Item #2.1

Contractor Bid Questions:

1. Are Davis Bacon wage rates applicable? Answer - NO.
2. Will both buildings be vacated prior to start of construction? Answer – YES.
3. Will all loose furnishings be removed by Owner prior to start of construction? Answer – YES.
4. Please state an allowance amount per building for stucco repair. Answer – ALLOWANCE FOR STUCCO REPAIR NOT ACCEPTABLE TO OWNER.
5. What is the size, type and depth of the existing water main pipe in the street? Answer – 8" D. ASSUMED, APPROXIMATELY 4 FEET DEEP, TYPE UNKNOWN, FIELD VERIFY EXISTING UTILITY CONDITIONS, POT HOLE FOR DEPTH VERIFICATION.
6. Clarify new fire line size and fire riser location. Answer – NEW FIRE LINE SIZE IS 6" D., REFER TO NEW CONSTRUCTION FLOOR PLAN, SHEET AE101, KITCHEN STORAGE ROOM 101.
7. Existing VCT flooring is not called out to be removed on Demolition Plan. Answer – SEE ADDENDUM ITEM #2.3.
8. Clarify if dimensions are from centerline of wall or surface. Answer – DIMENSIONS SHOWN ARE FROM FACE OF STUD OR EXISTING SURFACE.
9. Sheet GI002, General Notes, Item 0.6, clarify required permits and fees. Answer – BUILDING PERMIT NOT REQUIRED, CONTACT SOUTH VALLEY WATER FOR ALL REQUIRED CONNECTION, IMPACT AND INSPECTION FEES.
10. Clarify existing asbestos abatement. Answer – THE OWNER WILL COMPLETE A HAZARDOUS MATERIAL SURVEY AND COMPLETE ALL REQUIRED ABATEMENT PRIOR TO THE START OF CONSTRUCTION.

- Item #2.2 Substitution Requests: Specification Section 08710 – DOOR HARDWARE. Hager Companies has been added as an acceptable manufacturer to bid hinges, trim, stops, gasketing, thresholds, locks, closers and exit devices, subject to compliance with specification requirements.
- Item #2.3 Drawing Sheet AD101, DEMOLITION FLOOR PLAN AD/101, Keyed Notes, Add: Keyed Note #26. "All existing VCT flooring and adhesive to be removed prior to floor prep for new flooring installation. Refer to ROOM FINISH SCHEDULE, Sheet AE601 for required flooring finishes.
- Item #2.4 Construction Schedule Clarification: Building 5100 and 5080 sites will be available for contractor mobilization on July 1, 2008. Buildings 5100 and 5080 will be available for contractor occupancy on July 7, 2008.
- Item #2.5 Refer to Mechanical Addendum #1, attached herewith in its entirety, for Mechanical Addendum items.
- Item #2.6 Refer to Electrical Addendum #1, attached herewith in its entirety, for Electrical Addendum Items.
- END OF ARCHITECTURAL ADDENDUM #2.
- Issued by: Kent Rigby, AIA
- attachments: Mechanical Addendum #1.
Electrical Addendum #1.

ajc architects

703 east 1700 south
salt lake city, utah 84105
ph: 801.466.8818
fx: 801.466.4411
ajc@ajcarchitects.com
2 of 2 pages

ADDENDUM

Project Name: Camp Williams 5080 and 5100

Addendum No.:

WHW Project # 07063

Date: 6-4-08

From: WHW Engineering Inc
8619 Sandy Parkway Suite 101
Sandy, Utah 84070
Phone (801) 466-4021 Fax (801) 466-8536

To: Kent Rigby

This Addendum forms and becomes a part of the Contract Documents and modifies the original Bidding Documents dated Nov 2007 as noted below. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of (2) pages and (1) 8.5x11 drawing.

I - CHANGES TO PRIOR ADDENDA:

II - CHANGES TO BIDDING REQUIREMENTS:

III - CHANGES TO AGREEMENT & OTHER CONTRACT FORMS:

IV – CHANGES/CLARIFICATIONS TO CONDITIONS OF THE CONTRACT:

V - CHANGES/CLARIFICATIONS TO SPECIFICATIONS:

- Item V-1.** Section 15532 A. 11 Furnace fan shall be constant volume. Approved manufactures & models – a) Carrier 58mxa or equal by manufacturers in specs and prior approvals in this addendum.

VI - CHANGES/CLARIFICATIONS TO DRAWINGS:

- Item VI-1.** The furnaces will need to be constant speed motors. See attached for revised furnace schedules.
- Item VI-2.** Sheet PE101: Existing gas pressure regulator will not be re-used. Provide new gas meter at each building. Meter shall be sized for 1075 CFH at 4 ounce pressure, and longest length of run at 125'. This contractor shall be responsible to provide and install gas meter.

PRIOR APPROVALS

THE FOLLOWING ITEMS, AS SUBMITTED, ARE CONSIDERED, IN GENERAL AND IN NAME ONLY, AS EQUAL TO THOSE ITEMS SPECIFIED. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR OR SUPPLIER OF THE RESPONSIBILITY OF CONFORMING TO THE DRAWINGS AND SPECIFICATIONS, NOR DOES IT RELIEVE THE CONTRACTOR OF THE REQUIREMENTS OF THE SPECIFICATIONS FOR COORDINATION WITH OTHER TRADES. ALL DIMENSIONS SHALL BE CONFIRMED AND CORRELATED AT THE JOBSITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AND THE SUITABILITY OF "EQUAL" PRODUCTS FOR THE SPECIFIED APPLICATION.

Description

Manufacturer

Fire Dampers	Nailor, Air Balance, Cesco
Flexible Ducts	Anco
Ceiling exhaust fans, Penthouses	Acme
Grilles, Registers and Diffusers	Anemostat
Furnances, cooling coils and Condensing units	Tempstar
Ceiling fans and roof exhaust fans	ILG (American coolair)
Penthouse	Western Vents and Curbs
Access doors	Nailor, Greenheck
Service sink	Eljer, Delta,
Service sink faucet	chicago
Water closet, Urinal, Lavatory, hand sink	Crane
Water heater	PVI
Stops / supplies , p-trap, insulation kit	EBC
High efficiency take offs	Air-rite, Hercules, Clifco
Makeup air unit	Greenheck
Flexible duct	Hart &Cooley
Motorized outside air dampers	Greenheck

FURNACE SCHEDULE									
SYMBOL	MIN. REQUIRED INPUT BTU/HR 1ST STAGE	COOLING C.F.M.	HEATING C.F.M.	EXT. STATIC PRESSURE IN W.G.	MOTOR			MANUF. & MODEL #	SCHEDULE NOTES
					V - Ø - Hz	MIN. HP	SPEEDS		
⊖ 1	80,000	1200	1200	.8	115-1-60	1/3	4	CARRIER 58MXXA80-12	1,2,3,4,5
⊖ 2	120,000	1995	1885	.8	115-1-60	3/4	4	CARRIER 58MXXA120-20	1,2,3,4,5,6
⊖ 3	120,000	1995	1885	.8	115-1-60	3/4	4	CARRIER 58MXXA120-20	1,2,3,4,5,6

1. SEA LEVEL RATING.
2. FURNACE SYMBOLS CORRESPOND WITH CONDENSING UNIT AND COOLING COIL SYMBOLS.
3. SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.
4. PROVIDE CONCENTRIC VENT KIT.
5. MAY VARY ACCORDING TO MANUFACTURER.
6. PROVIDE TWINING KIT.

MECHANICAL REVISION -CONSTANT SPEED FURNACES

graphic scale = NONE



WHW
ENGINEERING INC.
 PROFESSIONAL MECHANICAL ENGINEERING
 8619 Sandy Parkway Suite 101
 SANDY, UTAH 84070
 (801)466-4021, FAX 466-6536
 EMAIL: excellence@whw-engineering.com

CAMP WILLIAMS
BUILDINGS
5080 AND 5100

BUILDING 5100 REMODEL
CAMP WILLIAMS
UTAH NATIONAL GUARD
Riverton, Utah

DFCM Project No. 07332480

June 6, 2008

ELECTRICAL ADDENDUM ITEMS

1. Specification Section 16740 - Telephone/Data System. Replace Section 16740 - Telephone/Data System with new Specification Section 16740 - Telecommunications System. Contractor to provide all telecommunication system cables, terminations, equipment, testing, etc., using a CommScope Systimax Certified Subcontractor.
2. Electrical Site Plan A5/ES101. Refer to partial revised electrical site plan on Supplemental Electrical Drawing SE1.1 for cable requirements from the Main Distribution Frame in Building 6170 to new Intermediate Distribution Frames in Buildings 5080 and 5100. Include cables for Building 5080 in Alternate No. 1.
3. Telephone/Data Riser Diagram A2/E-601, Sheet E-601. Change minimum telephone/data outlet conduit size from 3/4" to 1" for Category 6 applications. Change telephone terminal board from 4 ft high to 8 ft high with bottom installed at floor.
4. SUBMITTALS FOR PRIOR APPROVAL
 - A. Listing herein of the following equipment submitted for prior approval indicates that the brand name and general characteristics are acceptable, but does not relieve the Contractor of the responsibility of providing equipment and accessories as specified in the Contract Documents unless specific mention of the departure was made in the submittal and acknowledged in writing by the Architect and/or Engineer.

<u>ITEM</u>	<u>MANUFACTURER</u>	<u>CAT. NO.</u>
Fixture F-6	Alumilite	YRW-1-70MH-120-1F-BZ
Fixture F-8	Evenlite Isolite McPhilben	S4E100-0-SD-TD120 ELS-12-100-0-XX-SD-TD120 ES12L-100W-SD-TDX
Fixture F-9	Isolite McPhilben	LRH-1-H12W CCHR1W12G (12V 12W)

Attachments: Specification Section 16740 - Telecommunications System
Supplemental Electrical Drawing SE1.1

END OF ELECTRICAL ITEMS

SECTION 16740 - TELECOMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Supplemental General Conditions, Division 1 Specification Sections and Section 16000 - General Provisions, Electrical apply to work of this section.
- B. Section 16110 - Raceways
- C. Section 16140 - Electrical Boxes

1.2 SCOPE

- A. Provide complete telecommunication service to each building including, but not limited to, telephone service cables, fiber optic service cables, cable splices, and cable terminations ready for connection to Owner furnished communication equipment as shown on the drawings and as specified herein.
- B. Provide each building with Telephone/Data outlets, cables, terminations and equipment ready for connection to Owner furnished equipment as shown on the drawings and as specified herein.
- C. Install all telecommunication system cables in approved raceway systems.
- D. All telecommunication system work, exclusive of raceway system and outlet boxes, shall be provided by a single qualified installer (company) to establish a single source of responsibility for all telecommunications system work.

1.3 STANDARDS

- A. TIA/EIA-568 - Commercial Building Wiring Standard.
- B. TIA/EIA-569 - Commercial Building Standard for Telecommunication Pathways and Spaces.
- C. TIA/EIA-606 - Administrative Standard for the Telecommunications Infrastructure of Commercial Buildings.
- D. NFPA 70-2005 - National Electrical Code

1.4 TELECOMMUNICATION CONTRACTOR QUALIFICATIONS

- A. All telecommunication system work will be performed by a company regularly engaged in telecommunications systems installation and service with a documented work experience of not less than five years and with the following qualifications:
 - 1. Personnel trained and certified in the design of the CommScope Systimax Cabling Solution.
 - 2. Personnel trained and certified to install the CommScope Systimax Cabling Solution.
 - 3. The Designer and Installer shall show proof of current certification of the CommScope Systimax Cabling Solution via an updated card given after attending the 5- day course or a re-certification class given every two years.

4. Provide references of the type of installation provided in this specification.
 5. Personnel trained and certified in fiber optic cabling, splicing, termination and testing techniques. Personnel must have experience using a light meter and OTDR.
 6. Personnel trained in the installation of pathways and support for housing horizontal and backbone cabling.
 7. Personnel trained and experienced in telecommunication systems using industry standard TIA/568B.
- B. Certified CommScope Systimax companies in the state of Utah are:
1. **Americom Technology** Contact: Mark Monsen
5123 South Commerce Drive
Murray, UT 84107
Tel: 801-892-0529
FAX: 801-892-0585
 2. **Cache Valley Electric** Contact: Tim Hadden
2345 South John Henry Dr
Salt Lake City, UT 84119
Tel: 801-908-2680
FAX: 801-908-7041
 3. **Federal Communication** Contact: Justin Thomas
1990 South Milestone Drive, Suite D
Salt Lake City, UT 84104-4853
Tel: 801-972-2262
FAX: 801-972-9095
 4. **Wasatch Electric** Contact: Ryan Wallwork
1574 South West Temple
Salt Lake City, UT 84155
Tel: 801-487-4511
FAX: 801-487-5032
- C. Submit telecommunication system contractor, qualifications and CommScope Systimax Certification with required shop drawing submittals.

1.5 SUBMITTALS

- A. Provide telecommunication system shop drawing submittals in accordance with Division 1 Specifications and Section 16000 - General Provision, Electrical to verify compliance with the Contract Documents and the above referenced standards.
 1. Provide 1 additional set of Telecommunication submittals to be reviewed by the Utah National Guard State Telecommunications.
- B. Provide descriptive literature to verify the Telecommunication Contractor Qualifications including, but not limited to the following:
 1. Experience of communications system contractor including verifiable experience for

- successful completion of projects using Industry Standard TIA/586B.
2. Qualifications of installing technician(s) including CommScope Systimax Certification.
 3. Ability to provide The CommScope Systimax Warranty.
- C. Telecommunication system drawings necessary to supplement telecommunication system work shown on the electrical drawings.
1. Include Building IDF backboard layout and typical wiring diagrams as required.
- D. Provide manufacturers' catalogue and/or descriptive literature indicating specific model and/or catalog numbers, options, accessories and modifications for each of the following items:
1. Outside feed fiber optic cable.
 2. Fiber optic termination cabinet.
 3. Outside feed telephone cables
 4. Telephone surge protection modules and fuses.
 5. Telephone termination patch panel.
 6. Inside wiring station cable.
 7. Inside wiring station cable patch panel.
 8. Telephone/Data outlet couplers and coverplates.
- E. Above list is considered minimum. Additional items may be required to be submitted for review.
- F. Incomplete submittals will be considered non-responsive and returned to the contractor for inclusion of missing items.

1.6 WARRANTY

- A. Provide 1 Year warranty for the entire telecommunication system in accordance with the General Conditions and Division 1 Specification Sections.
- B. Provide a twenty (20) year warranty available for the structured cabling system for an end-to-end channel model installation which covers applications assurance, cable, connecting hardware and the labor cost for the repair or replacement thereof. Submit the CommScope warranty registration form upon completion of the installation. This will include all testing results.
1. Notify the Architect in writing of any changes or modifications to the contract documents required for the CommScope Systimax warranty prior to installation of the telecommunication system.
 2. Submit copy of CommScope warranty registration form to the Architect prior to Substantial Completion.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Telecommunication system material and products specified by name of manufacturer, brand or trade name or catalogue reference is intended to establish the type, quality, and performance characteristics required for this project and will be the basis of the bid and furnished under the contract unless changed in writing by the Architect. Where two or more materials are named, the choice of these will be optional with the Contractor.
- B. Submit requests for substitution in writing to the Architect, with copy to the Engineer, in

accordance with the General Conditions.

1. Substitution of telecommunication system material and products will be limited to manufacturers and products acceptable to CommScope to provide the 20 year Warranty described above.

2.2 OUTSIDE FEED FIBER OPTIC CABLES

- A. Provide multi-mode outside feed fiber optic cables consisting of 50 micron optical fibers with 125 micron cladding in a 3.0 mm filled buffer tube, a dielectric central member, water swellable yarn, and filler tubes as required, surrounded by a water swellable tape and strength members, with an overall medium density polyethylene jacket with ripcord.
- B. Leave minimum 20 foot maintenance loop of cable in each manhole.

2.3 FIBER OPTIC CABLE TERMINATION CABINETS

- A. Terminate MDF fiber optic cables in a Secor (Corning Cable Systems) CCH-03U wall mounted interconnect center. Provide type CCH panels with SC compatible adapters and other accessories as required for the fiber optic cables to be terminated.
- B. Terminate IDF fiber optic cables in a CommScope Systimax 600G2-1U-MOD-SD modular cassette shelf to accept 4 cassettes.
- C. Provide CommScope Systimax MODG2-6SC-MM modular cassettes as required for termination of quantity of fiber optic strands installed.
- D. Terminate each fiber optic strand with CommScope P6201B-Z-125 Type SC connectors.

2.4 OUTSIDE FEED TELEPHONE CABLES

- A. Provide outside feed telephone cables suitable for direct burial and underground duct installation conforming to the requirements of REA PE89.
 1. Assembled cable shall consist of #24 AWG solid annealed copper conductors with color coded polyolefin insulation. Pairs shall be arranged into groups not exceeding 25 pairs with each group having a color coded unit binder.
 2. The core assembly shall be completely filled to minimize water entry and flow. The filling compound shall be compatible with all other cable components and shall not drip from an exposed end of the cable.
 3. A non-hygroscopic dielectric tape shall be applied longitudinally with overlap over the core assembly.
 4. A corrugated, copolymer coated, 0.008" thick aluminum tape shall be applied with overlap over the dielectric. The sheath interfaces shall be flooding with an adhesive water blocking compound.
 5. A black low density polyethylene jacket shall be applied over the completed cable assembly.
- B. Do not splice telephone cables except where specifically indicated on the drawings. Additional splices must be approved in writing by the Owner.

- C. Leave minimum 20 foot maintenance loop of cable in each manhole.

2.5 TELEPHONE SURGE PROTECTION MODULES

- A. Terminate MDF outside feed telephone cables at each Building 6170 in Avaya 107894966 100 pair surge protection module with 110 style terminations.
- B. Terminate IDF outside feed telephone cables at each classroom building terminal backboard in a Marconi type R66P25QC 25 pair surge protection module with quick-connect clips, and connect to the building telephone termination patch panel.
- C. Provide 104 410 147 gas protection fuses as required to protect all outside feed cable pairs.
- D. Connect surge protection module to building electrical system ground with minimum #6 AWG insulated copper conductor.

2.6 TELEPHONE/DATA TERMINATION PATCH PANEL

- A. Provide CommScope Systimax 110UB1-112FT patch panel kit with 4 pair connection blocks and 110U2R distribution rings as required for quantity of tele/data cables to be terminated, 110UTC trough cover, and 110 UHD-S8 horizontal duct mounted to the bottom of patch panel.
- B. Provide CommScope CPC5512-03FOXX and CPC5312-03FOXX stranded Cat 6, T586B patch cords of quantity and lengths required for the installation.

2.7 TELEPHONE/DATA INSIDE WIRING STATION CABLE

- A. Provide CommScope UltraMedia Category 6, Type 75N4, inside station wiring cables consisting of #23 AWG solid copper conductors individually insulated with minimum .008" (.20 mm) polyethylene, formed into twisted pairs, with pairs isolated by separator to form the cable core, and covered with a flame retardant PVC jacket with ripcord.
 - 1. Provide telephone cables with yellow jacket and data cables with blue jacket and provide one of each cable color from each telephone/data outlet to the building terminal board.
- B. Provide Cables which comply with National Electrical Code Article 800 for type CMR riser cables.
- C. Provide cables which are UL Listed Category 6 in accordance with ANSI/EIA/TIA 568B.2-1.
- D. Provide cables with band marked color coding for each twisted pair as follows:
 - 1. Pair No. 1: Blue/White with blue tracer stripe
 - 2. Pair No. 2: Orange/White with orange tracer stripe
 - 3. Pair No. 3: Green/White with green tracer stripe
 - 4. Pair No. 4: Brown/White with brown tracer stripe

2.8 TELEPHONE/DATA OUTLETS

- A. Provide CommScope MGS400-262 GigaSpeed XL modular jacks with T568A/B wiring, and white finish mounted in a CommScope M12L-262 two port single gang faceplate with white finish at each telephone/data outlet.
- B. All jacks shall be suitable for ANSI/EIA/TIA 568 Category 6 applications.

2.9 TERMINAL BOARDS

- A. Provide 3/4" thick, by 8 ft high CDX grade plywood terminal boards in as indicated on the drawings. Coat plywood terminal board with two coats of white fire retardant paint prior to installation of equipment and backboards.

2.10 RACEWAY SYSTEM

- A. Provide a complete telephone/data raceway system as specified in Section 16110 - Raceways, except minimum raceway size will be 1" for Category 6 applications.
- B. Provide an outlet box at each telephone/data outlet location as specified in Section 16130 - Electrical Boxes, except that minimum outlet box size will be 4" Square x 2-1/8" deep.

2.11 GROUNDING

- A. Provide a #6 AWG insulated green ground conductor from the building to electrical service disconnect to the building terminal board and terminate in a ground terminal suitable for connection of not less than four #6 AWG copper conductors.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install all communications systems equipments, cables, outlets, etc., in accordance with the applicable ANSI/TIA/EIA Standards, National Electrical Code, and in accordance with the manufacturer's written installation instruction and recommendations.

3.2 PULL STRING

- A. Provide a nylon or polypropylene pull string with not less than 200 lb tensile strength in all communication conduits. Leave 18 inches slack string coiled at each end of all raceways. Provide a hard cardboard tag for each raceway at all terminal boards, terminal cabinets, etc. to indicate location to which the raceway is connected.

3.3 COORDINATION

- A. Coordinate installation of telecommunication system with the Utah National Guard (UTNG) prior to beginning work. Contact Mike Hansen (801) 523-4118.
- B. Coordinate installation of raceway system with electrical contractor to provide required bending radius for cables, ample space for terminations, etc..

3.4 LABELING

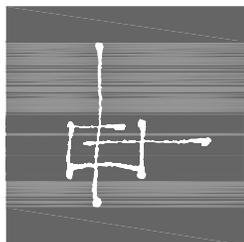
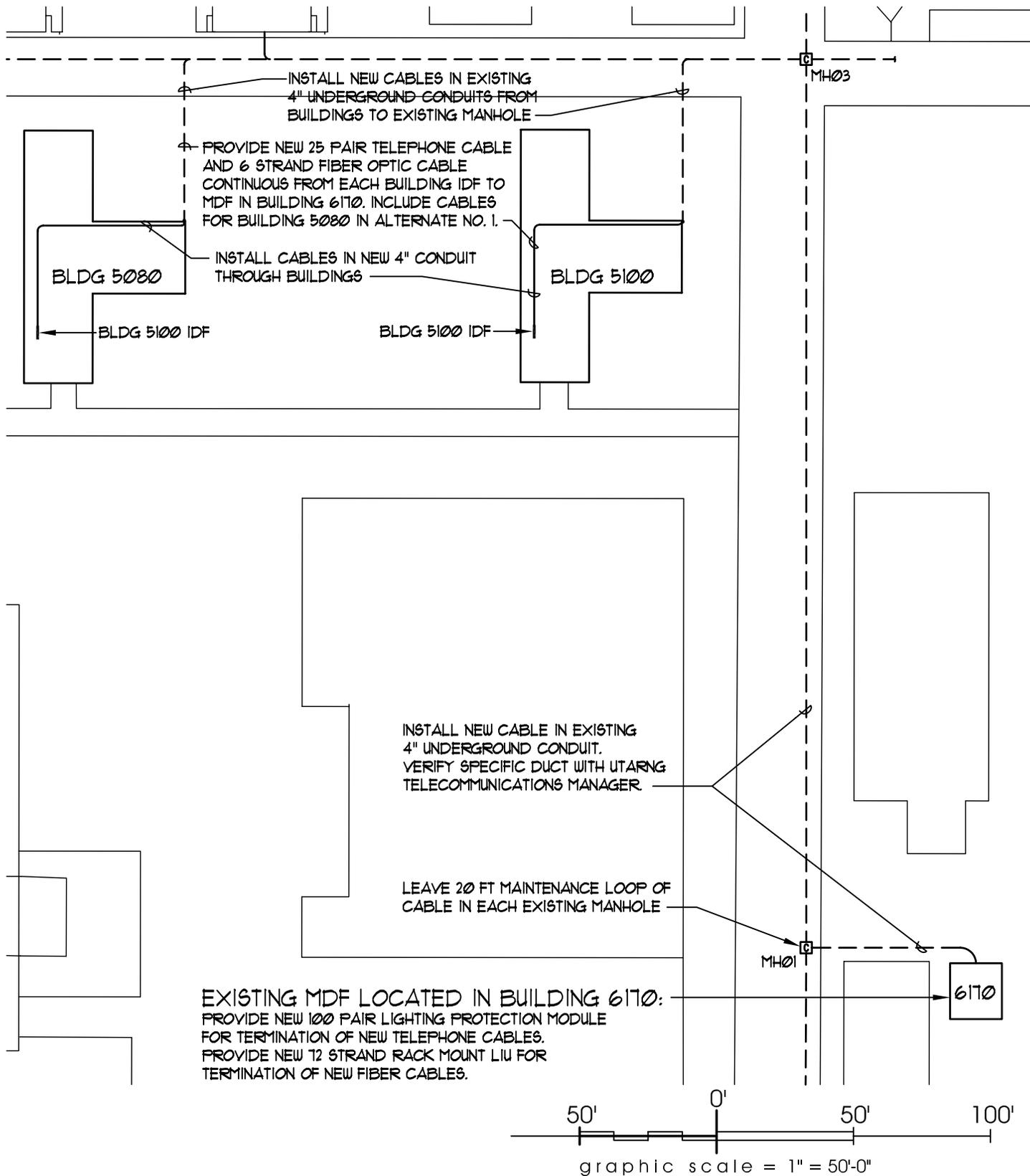
- A. Label each telephone/data outlet port, each cable at terminal board, and each port of modular patch panels with numbering system as designated by UTNG. Labels shall be printed self-adhesive labels as approved by the UTNG.
- B. Label each outside feed communication cable in each manhole and at each termination with identification of the location of the opposite end of the cable or cable designation as designated by owner. Labels shall be embossed aluminum or stainless steel tags attached to cable with cable tie wrap as approved by the UTNG

- C. Provide additional labeling of communication equipment, cables, splices, etc., as recommended by TIA/EIA 606 Standards.

3.5 TESTING

- A. The CommScope Systimax Certified telecommunication system technician shall provide testing of each communication cable after installation, terminations, and splices are completed to verify ability of the completed cable assembly to meet the applicable ANSI/TIA/EIA standards for the type of cable, meet the performance parameters published by the cable manufacturer, and verify eligibility for the CommScope 20 year warranty.
 - 1. Individually test each pair of conductors for multi-conductor cables.
 - 2. Individually test each fiber of fiber optic cables.
 - 3. Test equipment shall be approved by CommScope for the 20 year warranty.
- B. For cables which fail initial testing, replace cable terminations and/or splices and retest the cable. If more than two subsequent test failures occur, the cable shall be replaced without additional cost to the owner.
- C. Provide a written test report for each tested cable and submit to UTNG and/or Engineer prior to Substantial Completion. Include copies of all test reports in the Operation and Maintenance Manuals.

* END OF SECTION 16740 *



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ajc architects

ph: 801.466.8818
 fx: 801.466.4411

CAMP WILLIAMS 5080 & 5100

TELE/DATA CABLE FROM

MDF TO BUILDINGS

SUPPLEMENTAL ELECTRICAL DRAWING

0781
 JUNE 6, 2008

SE1.1