March 1, 2013

Andy Jordan
CU Facilities Management
UCB 453
Boulder, CO 80309

RE: University of Colorado at Boulder Chilled Water Line from 18th and Colorado to Norlin

Dear Andy,

The following is a summary of responses to Contractor Questions.

DRAWINGS

SHEET C1.0 THE CHW RETURN PROFILE SHOWS AN EXISTING TELEPHONE UTILITY CROSSING, BUT IF YOU LOOK CLOSELY AT THE PLAN VIEW, THIS CROSSING IS ACTUALLY A TELECOM MANHOLE. IF YOU THEN REFER TO SHEET M1.0, IT APPEARS THAT THIS TELECOM MANHOLE IS LOCATED ON A TELECOM DUCT BANK, WHICH IN TURN IS IN DIRECT CONFLICT WITH THE CURRENT ALIGNMENT OF THE PROPOSED CHILLED WATER. THIS IS MOST LIKELY A CONCRETE ENCASED DUCT BANK THAT WILL NOT BE RELOCATED, SO PLEASE ADVISE.

- The alignment has already been modified to avoid this conflict and is reflected in the Addendum.

SHEET C2.1 CAN WE ASSUME THAT ANY VERTICAL DEFLECTIONS SHOWN WITHIN THE PROFILE VIEW ON THIS SHEET AND/OR ANY OTHER SHEET, BUT NOT IDENTIFIED AS AN ACTUAL VERTICAL BEND, WILL BE A SIMPLE PIPE DEFLECTION AT A JOINT? IF NOT, CAN THE ENGINEER LABEL THE DEGREE OF DEFLECTION AT ALL VERTICAL DEFLECTIONS TO ELIMINATE THE GUESS WORK? SIMILARLY, SHOULD THE CONTRACTOR CARRY A CONTINGENCY OF EXTRA TR FLEX FITTINGS? IF SO, HOW MUCH?

- All anticipated vertical bends are noted on plans. If in the course of the pothole investigation, the Contractor discovers that the minimum vertical separation between utilities cannot be achieved, the Contractor shall coordinate with the Design Team on mitigation of this issue. Where vertical deflection is necessary using the allowable deflection at pipe joints, if a vertical bend is not indicated, the contractor is responsible for identification of this deflection(s) angle. If additional bends are required due to existing utility conflicts, the information is to be provided to the Engineer for review appropriate modification will be made.

DO WE INCLUDE RELOCATION OF THE EXISTING WATERLINE SHOWN DIRECTLY OVER AND PARALLEL TO THE NEW CHW LINES FROM STA 20+00 TO APPROXIMATELY STA 20+37? IF THIS RELOCATION IS REQUIRED, WOULD IT MAKE SENSE TO DESIGN THIS RELOCATION ACCORDINGLY BEFOREHAND?

- The alignment has been modified to avoid this conflict.
SHEET C2.2  THERE IS A GAP SHOWN WITHIN THE PROFILE VIEW FROM STA 24+27.57 TO STA 24+95.53. PLEASE PROVIDE/CLARIFY ANY MISSING INFORMATION.

- There was a plotting issue with the first set of plans that were sent out, and updated plans in which the profiles were plotted correctly were provided at the time of the pre-bid meeting on 2/12/2013. The addendum drawings are also updated.

PLEASE PROVIDE MORE INFORMATION FOR THE LATERAL ASSOCIATED WITH THE EXTENSION TO THE CHEMISTRY BUILDING (I.E. LENGTH, ONE REDUCTION OR TWO, VERTICAL BENDS, ETC.)?

- A note to the drawings has been added to address adequate information for length and requirements of the laterals:

SHEET C2.5  SIMILAR TO SHEET C2.2 THERE IS A GAP SHOWN WITHIN THE PROFILE VIEW FROM STA 24+30.90 TO STA 24+96.53. PLEASE PROVIDE/CLARIFY ANY MISSING INFORMATION.

- See above response for C2.2.

PLEASE PROVIDE MORE INFORMATION FOR THE LATERAL ASSOCIATED WITH THE EXTENSION TO THE CHEMISTRY BUILDING (I.E. LENGTH, ONE REDUCTION OR TWO, VERTICAL BENDS, ETC.)?

- See above response for C2.2.

SHEET M1.1  PLEASE PROVIDE MORE INFORMATION REGARDING THE CONNECTIONS IDENTIFIED WITH KEY NOTE 6 OR ASSUMPTIONS TO MAKE.

- Keynote #6 is referencing piping to existing condensing units located within the area well at the Norlin building. The routing of this existing piping is unknown. Coordinate the new piping and trench with the piping to the condensing units.

THIS SHEET CALLS FOR 6" STUB OUTS FOR A FUTURE CONNECTION TO KETCHUM, BUT THIS IS NOT REFLECTED ON SHEETS C2.1 OR C2.4. PLEASE VERIFY THESE STUB OUTS WILL BE PART OF THIS PROJECT.

- Yes, this is part of the project and is indicated by addendum.

SHEET M2.0  WHERE EXACTLY IS THE MECHANICAL ROOM LOCATED WITHIN THE NORLIN LIBRARY? THE NORTH ARROW ON THIS SHEET SEEMS TO INDICATE THE NORLIN MECHANICAL ROOM IS ON THE NORTH SIDE OF THE BUILDING. WHERE IS OUR ACCESS, AND WHAT ARE THE RESTRICTIONS?

- The mechanical room is in the basement on the north side of Norlin. Refer to attached PDF for room location. Coordinate access through the University Project Manager.
 DETAILS SHOW THE CHILLED WATER PIPING BEING INSTALLED WITH 1 FOOT OF CLEARANCE FROM THE BUILDING AND/OR FOUNDATION OF NORLIN. IS THERE A PERIMETER/FOUNDATION DRAIN, AND IF SO, CAN YOU PROVIDE A DETAIL FOR WHAT THIS EXISTING DRAIN LOOKS LIKE (I.E. GRAVEL, MIRAFI, ETC.)?

- The existing building drawings that were available during design do not indicate a perimeter drain. For bidding purposes, assume there is no perimeter drain to be removed and/or replaced.

DRAWINGS – GENERAL QUESTIONS

FOR ALL BRANCHES FROM THE 16" CHW, IS IT ACCEPTABLE TO FIGURE A PROPER SIZED TEE (I.E. 16" X 10", 16" X 8", ETC.) RATHER THAN A FULL SIZE 16" TEE AND THEN A REDUCER(S)?

- No, use 16" x 16" tees in order to provide for possible future expansion.

PLEASE PROVIDE A DETAIL FOR THE CONNECTIONS WITH THE EKELEY SCIENCES BUILDING.

- The ductile iron pipe will enter the Ekeley mechanical room and transition to steel with a ductile iron pipe system flange adapter fitting (TR Flex or MegaLug or approved equal system).

IS COLORADO AVENUE AND 18TH STREET CONSIDERED CITY OF BOULDER ROW?

- No.

WHAT IS THE PAVEMENT THICKNESS IN COLORADO AVENUE/18TH STREET? IF UNKNOWN, DO WE ASSUME 6 INCHES PER UCB STANDARD SECTION 02513, PARAGRAPH 3.5.C?

- Assume that existing pavement thickness is in accordance with UCB Standards. As per notes on Civil Drawings and Project specifications, asphalt paving will be replaced to condition better than existing. Please be aware that it is a section that includes Asphalt paving as well as base course.

PER UCB STANDARD SECTION 02520, PARAGRAPH 3.2.C, THE REPLACEMENT THICKNESS OF CONCRETE SIDEWALK IS 6 INCHES. IS THE SIDEWALK TO BE REMOVED/REPLACED FOR THE PROJECT SUBJECT TO VEHICLE TRAFFIC THUS REQUIRING REINFORCEMENT?

- Yes, as the drawing sheets and specifications indicate, the concrete paving shall be replaced to UCB standards. All concrete work for the project falls within traffic areas and thus will require reinforcement.
CAN THE OWNER POST COPIES OF THE AS-BUILT IRRIGATION PLAN FOR THE AREA TO BE DISTURBED BY THIS PROJECT, SO THE CONTRACTOR CAN ACCURATELY ESTIMATE ANY IRRIGATION REPAIRS?

- Irrigation mainlines are shown on plan and profile sheets; however, secondary sprinkler lines are the contractors responsibility to identify and remove/replace, move, or otherwise modify as necessary.

WITH REGARDS TO CLEARANCES WITH EXISTING UTILITIES SHOWN ON THE DRAWINGS, IT APPEARS THERE WILL BE NO CONCRETE ENCASEMENTS REQUIRED. CAN THE CONTRACTOR ASSUME THIS TO BE TRUE, OR SHOULD THE CONTRACTOR INCLUDE AN ALLOWANCE FOR CONCRETE ENCASEMENTS? IF SO, HOW MUCH?

- All existing utilities crossings are assumed based on typical elevations and it will be necessary for the Contractor to determine the actual inverts before construction through pot-hole investigation. If it is found through this investigation that the minimum vertical distances cannot be maintained, then either concrete encasement of one or both utilities or a lowering maybe required. A lowering will negotiated if a conflict arises that can not be addressed otherwise.

IS FLOWFILL REQUIRED FOR ALL TRENCHES PER NOTE 10 ON ALL THE CIVIL SHEETS, OR JUST WITHIN 18TH STREET AND COLORADO AVENUE PER SECTION 312333, PARAGRAPH 3.10.A?

- This project includes installation of chilled water utilities below high traffic asphalt paving, close proximity to existing parallel utilities (including storm sewer, sanitary sewer, and domestic water), several utility crossings, and close proximity to critical structural footings for existing buildings. In light of all this, flowable fill is required for all trench backfilling; the addendum reflects this clarification. Please be aware that certain utility crossings will not allow flowable fill around that utility. In these cases, the flowable fill is to be placed to within 6" of the utility and compacted bedding placed per UCB standards to subgrade.

SPECIFICATIONS – GENERAL REQUIREMENTS

SECTION 01010 PARAGRAPH 1.09 – INFORMATION REFERENCING KOBEL AND TUNNEL 7 DOES NOT SEEM TO BE RELEVANT. PLEASE UPDATE/CLARIFY.

- Delete Section 01010 paragraph 1.09.A.2 and 1.09.A.3 and replace with the following;

1.09.A.2. This work will coordinate access and sequencing of work with the General Contractor for adjacent project CP136647- CAMP - 18TH & COLORADO IMPROVEMENTS. See the Open Submittals website for those contract drawings for coordination purposes.

1.09.A.3. See Alternates on sheets C4.0 and C4.1.
PLEASE PROVIDE SPECIFICATION INFORMATION ON REQUIREMENTS FOR THE OWNER DESIRED STAINLESS STEEL VALVE STEM EXTENSIONS AND SNAKE PIT MAGNETIZED BOXES.

- See CU Standards 02665, paragraph 3.2.B
  [http://www.colorado.edu/facilitiesmanagement/pdc/construction/standards/civil.html](http://www.colorado.edu/facilitiesmanagement/pdc/construction/standards/civil.html)

SPECIFICATIONS FOR CHW FROM 18TH TO NORLIN

SECTION 230512 PARAGRAPH 2.1.C.1 – IS THERE AN APPROVED EQUAL FOR U.S. PIPE – TR FLEX? IF SO, WHO?

- A list of alternate manufacturers will not be provided; however, the Contractor may submit an alternate fully restrained joint ductile iron piping system for review and approval.

IN ADDITION TO OUR QUESTIONS ABOVE, IT WOULD BE OUR RECOMMENDATION TO THE OWNER TO PERFORM SOME INVESTIGATIVE WORK (I.E. POTHOLING COORDINATED WITH SURVEY) TO ADDRESS AS MANY POTENTIAL CONFLICTS AS POSSIBLE BEFORE THE PROJECT GETS UNDERWAY. THIS WOULD CERTAINLY HELP MINIMIZE CHANGE ORDERS AND POTENTIAL DELAYS. AT THIS TIME, THE MOST OBVIOUS CONFLICT APPEARS TO BE THE CURRENT ALIGNMENT AND THE TELECOM DUCT BANK WITHIN 18TH STREET AND COLORADO AVENUE. WE BELIEVE THIS REQUIRES IMMEDIATE ATTENTION, AS IT MAY ALSO REQUIRE REVISION TO THE CONNECTION WITHIN TUNNEL 1.

- As stated throughout drawing notes and project specifications, the Contractor shall be responsible for locating prior to commencement of construction, all utility crossings and coordinating with the Design Team, CU Project Manager, and Utility Provider should conflicts arise from this investigation.

END OF RESPONSE