CATOR, RUMA & ASSOCIATES

ADDENDUM NO. 2

For
Owner: University of Colorado Boulder
Project Name: Tunnel #6 Phase 2
CRA#: 2011-260
Date: March 28, 2012

ENGINEER:
Cator, Ruma & Associates
896 Tabor Street
Lakewood, CO 80401
(303) 232-6200

<table>
<thead>
<tr>
<th>CONTACT</th>
<th>COMPANY</th>
<th>PHONE</th>
<th>E-MAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andy Jordan</td>
<td>University of Colorado Boulder</td>
<td>303-735-5410</td>
<td></td>
</tr>
</tbody>
</table>

General Information:

2.1 Landscape base bid: Refer to added sheet L1.2. Include restoration of 2500 sf of planting bed to include:
2500 sf planting mix 6" deep
2500 sf weed barrier
2500 sf western red cedar mulch
120 lf 6" poly board edger
80 #1 Perennials
7 #5 Dec shrubs

2.2 Landscape alternate: Refer to added sheets L1.1 & L1.2. Provide for the following:
1050 sf turf removed
1050 sf bed prep for perennials - plant mix 6" deep 1050 sf bed drip irrigation
(6) 5' multi stem Cornus alternifolia
(2) 2" Ulmus americana 'Liberty'
(88) #5 dec shrubs
(520) #1 Perennials

Sheet: G1.0- Refer to revised sheet.

2.3 Delete temporary ADA sidewalk to front entrance. And revise temporary ADA path to direct traffic to the south ADA entrance of Libby Hall.

2.4 Various revisions to plan notes clouded on revised drawing.
Specifications

Section 05500
2.5 Add specification 05500- Metal Fabrications to the project specifications for handrails.

Civil Drawings

Sheet: C1
2.6 The plan notes directing the contractor to protect and brace the existing electrical poles have been replaced with a note stating: “RE: MEP plans and details for construction requirements regarding the existing light poles (typ.).”

Sheet: C1.2
2.7 A plan note has been added at the location of the existing electrical manhole within the current asphalt bicycle path stating: “Contractor shall set and adjust manhole rings and cover parallel to finish grade by use of concrete rings, as required.”

2.8 The title section A-A has been changed to read “BID ALT. 2 Typical Pavement Section A-A”

Sheets: C1, & C2
2.9 A temporary accessible sidewalk west of the tunnel at the Libby Hall entrance is not required to be constructed for this project. References to this path have been removed from each sheet listed above.

Mechanical/Electrical Drawings

Sheet: ME1.0: Refer to revised sheet.
2.10 Added notes for removal and replacement of pedestrian light poles.

Sheet: ME2.03: Refer to revised sheet.
2.11 Added mechanical and electrical work for tunnel section T6-AD.

Structural Drawings

Sheets: S1, S1.2, S2 & S3
2.12 Add boxed plan note on each sheet listed above stating: “Active electric conduit for the tunnel lighting is embedded in the existing tunnel lids to be demolished. Contractor to remove the existing conduit to accommodate the structural scope and install new conduit and lights under the new lid according to the MEP plans and details”.

Sheets: S1 & 1/S4.2
2.13 A new irrigation pipe shall be installed running east-west within the soil space over the top of the new buried tunnel lid near the entrance to Libby Hall. A note has been added on each sheet listed above stating: “New irrigation line to be installed above the new buried tunnel lid. Contractor to coordinate exact position and tie in locations with CU
Facilities Maintenance. For bidding purposes, assume 60 linear feet of piping will need to be installed and connect to the existing pipe on each end."

Sheet: S1
2.14 A temporary accessible sidewalk west of the tunnel at the Libby Hall entrance is not required to be constructed for this project. References to this path have been removed from each sheet listed above.

The preceding addendum shall be made a portion of the contract Documents. Each bidder shall acknowledge receipt of the same in submitting bids. All other conditions and requirements of the Contract Documents will remain unchanged.

END OF ADDENDUM
PART 1 - GENERAL

1.1 REFERENCES:
   A. Campus Open Space Development Plan, University of Colorado (COSDP).
   D. All railings, stairs, and ladders shall meet requirements of OSHA, UBC, and UFAS.

1.2 DEFINITIONS:
   A. Metal Fabrications:
      1. Synonymous with miscellaneous metals.
      2. Metal fabrications for items fabricated from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not a part of structural steel or other metal systems specified elsewhere.
   B. Architecturally Exposed Structural Steel: As used under this section, includes all metal fabrications exposed to view.

1.3 SUBMITTALS:
   A. Shop Drawings:
      1. Submit shop drawings for custom fabricated items, including:
         a. Profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners and accessories.
         b. Erection drawings, elevations and details.
         c. Welded connections using standard AWS welding symbols.
   B. Product Data: Submit product data for manufacturer's stock items.
   C. Certifications:
      1. Submit current welder's certification qualified in accordance with AWS D1.1.
      2. Submit certification by fabricators that handrails and stairs have been designed by a structural engineer licensed in the State of Colorado.

1.4 QUALITY ASSURANCE:
   A. Fabricator Qualifications: Experienced in fabrication of miscellaneous steel.
B. Welder Qualifications: Welding shall be done only by certified welding operators currently qualified according to AWS D1.1.

C. Engineer Qualifications:
   1. Professional engineer licensed to practice in the State of Colorado and experienced in providing engineering services of the kind indicated that have resulted in the successful installation of metal fabrications similar in material, design, and extent to that indicated for this project.

D. Design Criteria:
   1. Refer to University’s campus standard details, following this section.
      a. Exterior railings.
   2. Handrails:
      b. Minimum Concentrated Load: 200 lb at any point.
      c. Engineer of Record shall approve/design connections.

PART 2 - PRODUCTS

2.1 MANUFACTURED ITEMS:
A. Tubular Steel Railings:

   VERIFY STEEL RAILING DESIGN ALTERNATIVES WITH THE CAMPUS ARCHITECT.

   1. Size: Fabricated from 1-1/4" NPS round steel pipes with steel balusters.
   2. Railings:
      a. Balusters Set in Concrete: Pipe sleeves 6" long and 1/4 inch clear of balusters.
      b. Set balusters in sleeves, pack with non-shrink, non-metallic grout.

B. Weld balusters to steel stringers.
   1. Brackets:
      a. Secure to walls with malleable iron wall brackets and end fittings.
      b. Brackets with 1-1/2" wall clearance. Installed railing shall conform to UFAS requirements.
      c. Space brackets 5 feet o.c., maximum, or as required to support design loads.
2.2 FABRICATION:

A. General: Fabricate in accordance with details and reviewed shop drawings, all miscellaneous items of metal work indicated or as necessary to complete the work. Verify dimensions on site prior to shop fabrication.

B. Welding: Comply with latest American Welding Society standards. Miter and cope intersections and weld all around. Remove spatter, grind exposed welds to blend, and contour surfaces to match those adjacent.

2.3 SHOP PAINTING:

A. Clean ferrous metal of scale, rust, oil, moisture, and dirt before applying paint.

1. Paint all metal black unless otherwise noted.

   EPOXY AND URETHANE FINISHES MAY BE APPROPRIATE IN SOME LOCATIONS AT DESIGNER’S DISCRETION.

B. Apply one shop coat of Tnemec 10-99 long-oil alkyd primer or approved substitute to ferrous metals after fabrication. Apply two shop coats to ferrous metals that will be inaccessible after erection.

C. Painting specified here does not count as a coat for finish painting.

D. Omit shop painting on surfaces embedded in concrete or requiring field welding.

PART 3 - EXECUTION

3.1 SCHEDULE:

A. This section includes, but is not specifically limited to metal fabrications and components listed in the following schedule:

1. Miscellaneous anchor slots, sleeves, bolts, brackets, clips, inserts, imbeds, gratings, tubing, bar stock, plates and other items not distinctly specified under other sections.

2. Handrail brackets, handrails, and guard rails.

END OF SECTION 05500
NOTE: AT ENDS 2.0’ MIN. TO 4.0’ MAX SPACING.

STAIR/BARRIER RAIL

SCALE IN FEET

MINIMUM

University of Colorado at Boulder

Proposed
Campus Railing Standard

Department of Facilities Management

Drawn by: Greg Cechlew
Date: 1 DEC. 1994
THE DESIGN TEAM AND UNIVERSITY ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE SIZE, MATERIAL, HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

CALL 811 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR MARKING OF UNDERGROUND MEMBER UTILITIES.

TUNNEL 6 SITE PLAN

1" = 60'-0"

FLAG NOTES:

REMOVAL AND RE-INSTALL EXISTING PEDESTRIAN LIGHT POLES TO ALLOW FOR SITE WORK CONSTRUCTION. RE-USE EXISTING LUMINAIRES AND PROVIDE NEW CONDUCTORS AS REQUIRED.

VERIFY OPERATION OF LUMINAIRES BEFORE AND AFTER WORK IS PERFORMED.
EX TREES
MULCH/W/B

(4) #5 SYRINGA VULGARIS 'PRIMROSE'

(2) 8' ULMUS AMERICANA 'LIBERTY'

(5) 8' MULTISTEM CORNUS ALTERNIFOLIA

C. PERENNIALS
(200) #1 MAHONIA REPENS
(100) #1 ASTILBE A. KONDENSII

LIBBY HALL

ALTARNEATE
GENERAL NOTES

1. The contractor shall become familiar with the existing site conditions prior to commencing work. Concerns, discrepancies and unusual findings are to be communicated in writing to the Owner and Engineer.

2. The contractor shall locate all underground utilities prior to commencing any work. Notify Engineer of any conflict.

3. Minimize disturbance outside limit of work.

4. Contractor shall repair any damage incurred during construction outside limit of work to original condition.

5. All connections to existing walls, curbs, drives and other site features shall be clean and smooth and match elevation of adjacent surfaces.

6. All existing trees to remain shall be protected and preserved per current UCB standards during construction.

7. Contractor to coordinate final location of site furnishings with CU Landscape Architect prior to installation.

8. Plant placement to be approved by CU Landscape Architect prior to installation.

9. All work to be done per current UCB Standards.

10. Existing irrigation to be repaired, extended.

Diagram:
- Backfill with blend of existing soil mixed with 20% (by volume) organic material.
- Prune out dead or injured branches and suckers, do not heavily prune, if shape is compromised, replace prior to planting.
- Diameter of pit to be at least twice the spread of root ball, scantily sides of pit.
- Plant root ball 1" above finish grade. Cut and remove burlap or container along with all other materials supporting ball. Score sides to loosen roots.

Typical Shrub Planting:
- Not to scale

Typical Tree Planting:
- Not to scale
- Straps. Double strand galvanized wire or approved equal.
- Lodgepole stakes or approved metal stakes, placed next to root ball.
- Plant root ball at grade at which tree originally grew.
- Soil saucer for water & mulch.
- Cut & remove burlap from top 1/3 of ball.
- Existing undisturbed soil.
GENERAL NOTES:

1. This traffic control plan is only schematic. Not all required signage is shown. Contractor to submit detailed traffic and pedestrian control and safety plans to the university for review. Include detailed schedule of all construction activities. Coordinate excavation work, barricades, fencing, temporary closures, signage, etc. with campus events schedules.

2. Pedestrian traffic signs shall be orange background with minimum 4" high black lettering. Refer to example photo. Locate signs as required for safe routing of pedestrian traffic. Provide signage as required to clearly indicate ADA travel path and access to Libby Hall. Vehicle parking is not allowed outside of construction fence area.

EXAMPLE PEDESTRIAN TRAFFIC SIGN

ALTERNATE ROUTE ADVISED

TRAFFIC CONTROL PLAN

HORIZONTAL SCALE: 1" = 40'-0"

VERTICAL SCALE: NONE