STANDARD PRACTICE FOR PRECONSTRUCTION REVIEW AND SURVEYS

1. Advise Planning and Communication and AEC Civil of the project.
2. Design and Project Managers should contact Real Estate Office (REO) at 763-2302 or 615-8774 before ordering a survey or beginning a construction project with site impacts. REO will check the real estate files for information pertaining to the parcel. REO can provide parcel numbers and legal descriptions of the property.
3. EHS can be contacted for existing environmental information or soil boring results. Contact John Kosco (jkosco@umich.edu) at 615-6153.
4. Project Lead will order the title search (if needed for the survey) and the survey. Completed title search information should be sent to REO (duchman@umich.edu) for the real estate records.
5. Use the Minimum Survey Requirements list on the following page to assist you in ordering a survey.
6. Electronic copies of the final survey should be delivered (in both PDF and CAD form) to Facilities Information Center (fo-is-fic@umich.edu) and to REO (duchman@umich.edu).

MINIMUM SURVEY REQUIREMENTS

Proposals for boundary/topographic surveys shall include the following format and information for the defined project limits:

1. **Spatial Reference System and Geodetic Control**

   Base coordinate system: Michigan State Plane, South Zone

Map Units:	International Feet
Horizontal Datum:	North American Datum 1983
Vertical Datum:	North American Datum 1988

   Bench Marks and Control Points:

   - Minimum two (2) Bench Marks with elevations and coordinate locations.
   - Mark the BM in the field with permanent paint of a contrasting color.
   - Note if the BM location is outside of the survey boundary and confirm/verify location and elevation.
   - Minimum three (3) Control Points with two at opposite diagonal corners of the survey site.

   Include a Bench Mark and Control Point schedule that provides the BM and CP number and detailed description (e.g. spike location, top nut arrow of fire hydrant, etc.)

2. **Property Boundaries – Ownership, Encumbrances, and Restrictions**
   a. Locate and label street right-of-way, property line, easements and other encumbrances.
   b. Define the property line(s) within the survey site with found and set corners.
   c. Show all encroachments either affecting U-M property, or caused by U-M property.
   d. Show floodplain including 100-year and 500-year flood zones within the project limits based on information provided in the FEMA Flood Map Service Center.

   For Title Search information regarding deeds and easements, unrecorded agreements, deed restrictions, and related questions contact Real Estate Office (734) 763-2302.

3. **Topographic**
   a. Ground elevations at an interval sufficient to define drainage patterns, but at a minimum of a 50' grid.
   b. Contours at one foot intervals, unless the slope exceeds 3:1
   c. Centerline, top of curb, and gutter elevations at a 50' minimum interval for roadways.
   d. Ground spot elevation directly below BM.

4. **Planimetric**
   a. Location of all hard surface areas and type, curbs, walls, crosswalks markings, steps, ramps, handrails, monuments, plaques, signs, benches, lights, fences and other physical barriers.
   b. Building lines, door locations and floor elevations. Include light and window wells and any building protrusion less than 15’ in height (e.g. canopies and overhangs).
      - ☐ **If checked**, provide a spot elevation of finished floor for all building floors. ***Do not provide floor elevation obtained from any existing source.*** Include a spot elevation schedule that provides the spot elevation, building floor, and detailed description (e.g. at west wall of room 124, in doorway to room 6254, etc.) of the spot elevation location.
   c. Tree location, size, type, identified by tree symbol representing size of canopy. Include Tree Tag # (found at base of north side of tree). Identify Memorial Trees/Plaques, if applicable.
   d. Landscaping limits by type; lawn area and planting bed lines

5. **Utilities**
   a. Locate and label all public and private utility features, including utility tunnels, based on actual field locations by utility type, including but not limited to: electric, gas, sanitary sewer, storm sewer, water, telephone/communications, chilled water, and steam. Labels shall include utility type, utility owner, rim elevations, pipe sizes and field measured depths of utility structures & pipe inverts, include service leads.
   b. Label existing utilities with a lowercase letter denoting utility type (e.g. existing storm sewer as 12" r and existing water main as 12" w).
   c. Label each water service lead as “DOMESTIC” or “FIRE” or “DOMESTIC/FIRE.”
   d. Locate and show all fire department connections (FDC’s) for buildings within the survey area.

- ***To request drawings or records for U-M utility systems, please submit a Design Ticket through MISS DIG.***
- ***For access to U-M utility tunnels and electrical vaults, please contact Deborah Olejniczak at 734-647-2521 (tunnels) and Steve Pringle at (517) 740-2402 (electrical vaults) at least 3 days prior to survey date.***

6. **Deliverables**
   a. Provide an electronic copy of the survey in PDF and CAD; MicroStation (dgn) format preferred, AutoCAD (dwg) acceptable. The PDF and CAD file is dated and signed by a Michigan Registered Land Surveyor.
   b. Provide a hard paper copy (24” x 36” page size) of the Certified Survey that is sealed, dated and signed by a Michigan Registered Land Surveyor.

i. Title block shall include Survey Company Name, Address, Date of Survey, Revised Date of survey (if applicable), Drawing Scale, and general description if not obvious
ii. Spatial reference system and geodetic control metadata shall be provided in the survey legend.
iii. Survey drawing shall be oriented with North to the top or left of the page.

Submit Proposals to: **Todd Coon**
Procurement Services - Facilities
1000 Victors Way
Ann Arbor, MI 48108

PROJECT: _____

PROPOSAL DUE DATE: _____

SURVEY DUE DATE: _____