Devens Enterprise Commission
As-Built Record Drawings Policy

As per 974 CMR 3.03(4), the Devens Enterprise Commission (DEC) requires as-built plans be submitted to verify completed construction in accordance with the approved plans. To aid Applicants in meeting this requirement, the DEC has established an "As-Built" procedure. As-Built information shall be provided to the DEC, prior to the issuance of a final Certificate of Occupancy.

All As-Built information shall be obtained by a Professional Land Surveyor based on an on-the-ground survey and completed in accordance with the standards established in 250 CMR 6.00.

As-Built Record Drawings shall consist of:

1. Certification from a registered land surveyor, professional land surveyor, or professional engineer that all construction has been completed in accordance with the approved Development Plan; and
2. A stamped As-Built Plan (Record Drawing) showing the following information:
   - _ Project title/development name
   - _ Date of Plan, site address and parcel number
   - _ Owner's name, address, and telephone number
   - _ Developer's name, address, fax and telephone number
   - _ Date(s) of as-built survey
   - _ North arrow and Scale
   - _ Engineer's and Surveyor's names, address, fax and telephone number
   - _ Engineer's and Surveyor's Stamp and signature
   - _ Surveyors certification stating the following: I hereby certify that the information shown on this/these plan(s) accurately depicts field conditions based on an as-built survey by (*name of as-built surveyor*) performed on (*date of as-built survey*)
   - _ Engineer's certification stating the following: I hereby certify that the as-built information shown on this plan is in conformance with the approved site plans dated (date of latest approved site plan)
   - _ Plan survey datum shall reference Massachusetts State Plane (NAD 83) and National Geodetic Vertical Datum of 1929 (NGVD 1929). This reference shall be shown on the plans.
   - _ Zoning "required vs. actual" table showing zone, all as-built site, building, parking, impervious coverage, setbacks and landscaping requirements
   - _ Property line information-bearings, distances, bounds, etc…
   - _ Label building and provide building information (number of stories, square footage, proposed use, etc…)
   - _ Dimension building setbacks per zoning
   - _ First floor elevation/Sill elevations
   - _ Label all as-built improvements including but not limited to building footprint, curb, sidewalks, ramps, parking lot, retaining walls, fences, guard rail, lighting fixtures, signage, crosswalks, landscaping, etc…
   - _ Provide critical dimensions (lane widths, parking stall widths and depths (typical), curb radius, entrance width, width of sidewalk, etc…)
   - _ Provide driveway spot grades
   - _ Existing topography
   - _ 2' contours clearly labeled
   - _ Label critical slopes
   - _ The survey shall be tied into at least two points on the Devens Survey Control Network. Show location and coordinates of all control points used or set for the project.
   - _ Retaining wall elevations
   - _ Show all utilities including but not limited to water, sewer, drainage, gas, electric, telephone, hydrants, detention basins, etc…
   - _ Label all utility structures including but not limited to manholes, catch basins, gates, valves, shutoffs, detention basin inlet and outlet structures (including elevations of weirs/spillways and extent of rip rap and any other materials)
   - _ Rim elevations
   - _ Invert elevations
   - _ Bottom of sump elevations
   - _ Pipe type, length, diameter, slope
   - _ Show ties to all utility structures including but not limited to manholes, catch basins, gates, valves, shutoffs, etc…

Prior to the issuance of the occupancy permit, one (1) As-Built Plan will be provided to the DEC Director who will compare the As-Built Plans with the approved plans during a site inspection and note any discrepancies or changes. All deficiencies and errors noted by the Director shall be corrected prior to submittal of the final stamped As-Built plans.

Once the Director is satisfied that the project has been constructed according to the approved plan two (2) copies of the stamped As-Built Plan and As-Built Certificate will be provided to the DEC along with two (2) electronic copies in both AutoCAD and PDF format.

DEVENS
MASSACHUSETTS

DEVENS ENGINEERING STANDARDS:

General Survey Requirements:

1. All survey information shall be obtained by a Professional Land Surveyor based on an on-the-ground survey and completed in accordance with the standards established in 250 CMR 6.00 and 974 CMR 1.00.

2. All surveys shall be tied into at least two (2) points on the Devens Survey Control Network. Show locations/tie lines and coordinates of all control points held for the Project.

3. Survey shall be shown on the Massachusetts State Plane (NAD '83) and NGVD 1929 horizontal and vertical datum respectively.

4. Any deficiencies, errors or discrepancies noted by the Surveyor shall be investigated and promptly reported to the Devens Engineering Department with a recommended resolution for further review. If requested, the surveyor shall share all relevant data with the MassDevelopment consulting Surveyor and shall work in harmony to resolve the matter.

Parcel Survey Requirements:

1. Devens Parcels are defined by their coordinate location rather than the physical location of monuments. Unless an error can be identified, bearings and distances for previously recorded abutting property lines shall be held for the new parcel.

2. Coordinates will be shown on the final plan for at least two (2) property corners. If a new parcel abuts a previously established parcel any points on common lines with previously published coordinates can be used.

3. Details will be shown for any existing monuments shown on previously recorded plans with ties from the published location of the point to the on-the-ground location of the monument.

4. Chords with bearing and distance shall be shown for all curves in addition to curve data. Non-tangent curves should be avoided. If necessary they will be clearly identified on the plans.

5. Ties, with bearing and distance, shall be shown from at least one (1) parcel corner to a point on the Devens control network.

As-Built Submittal Requirements:

A. The following information shall be obtained as part of the as-built survey:

1. All physical surface features within the limits of work

2. For storm drain and sewer lines: the rims, inverts, pipe sizes and pipe material, at all structures; horizontal and vertical locations of any bend between structures; bottom of sump elevation for catch basins; inverts, pipe sizes, and pipe material. Also provide the coordinates of the center of the structure itself and coordinates of the cover or grate. See paragraph h. below for headwalls.

a) For water quality swales, micro-basins and detention basins, show 1-foot contours of the as-built grading, all inlet and outlet structures, elevations of spillways and weirs, extent of riprap and other features indicated on the Drawings.

b) For non-round structures, locate all corners of the structures (e.g., junction chambers, headwalls, etc).

3. For water lines: horizontal and vertical locations every 50 feet on pipes, at all changes in grade or direction, at all fittings, at all valves, and at hydrants. Provide location and elevation of all valve boxes with depth to nut.

4. For electrical/Tel/Data utilities: horizontal and vertical locations every 50 feet on conduits and ductbanks, at all changes in grade or direction, at all duct bank flares or splits, at all handholes, pullboxes, manholes, pole foundations, cabinets, equipment pads, bollards, and other appurtenances. Identify number, size and configuration of conduits within ductbanks for all segments. For manholes, provide coordinates at the four exterior corners of the box plus coordinates and rim elevation of manhole cover, as well as elevation of the top of the box. Provide rim elevations on all handholes and pullboxes. Provide top of slab elevations on all equipment pads. Show the as-built footprint of the equipment on all equipment pads. Include coordinates of all utility pole risers installed under this Contract.

5. The location of new or existing underground utilities shall be obtained prior to backfilling the trench.

6. For headwalls/retaining walls: indicate the top and bottom (top of footing) of wall elevation at every change in wall elevation (step or angle point). Indicate the finish grade on either side of the wall at each end of the headwall, at all changes in grade and at the centerline of all pipes that pass through the headwall..

B. Indicate the following on the Final As-Built Plans:

1. Include all requirements of paragraph B above.

2. Contours at 2-foot vertical intervals, except: show 1-foot contours for water quality swales, micro-basins and detention basins. For “flat” sites (generally less than 1% grade, 1’ contours will be provided for the entire site. Spot grades shall be shown at a rate of not less than 1 per 4,000 sf and at all high and low points.

3. Rim elevations at all surface structures (catch basins, manholes, valve boxes, headwalls, etc).

4. Invert elevations on all drain/sewer pipes at all structures and headwalls.

5. Top of pipe/duct elevations every 50 feet along water and gas pipes, sewer force mains, electric and communications ducts, etc.

6. Show size and material for all utilities found or installed. For duct banks include number and size of conduits within duct banks, configuration of conduits and actual dimensions of concrete placed in field.

7. Ground elevations every 50 feet along roadway crown, gutters, top of curb, front/back of sidewalk, toe and top of slopes, and at match to existing ground locations.

8. Location of trees, shrubs, pathways, sidewalks, traffic signs, pathfinding signs, traffic signal posts, handholes, street light poles, crosswalks, wheel chair ramps, and all other features typically collected as part of a topo survey.

9. Update all cross sections to indicate the actual limits of cutting and filling performed.

10. Include the location of any existing utility that differs from the location indicated on the Plans.

11. Include the location of any uncharted utility encountered.

C. Final Deliverables:

1. The Final Record Drawings with as-built information shall be submitted in paper copy (1 set) plus electronic copies in two formats:

    a. MicroStation (dgn) format (please contact the engineering department for current version) or compatible AutoCAD version. Cadd files shall include a file containing all raw data and a file including only the information used to prepare the final plan.
        i. Data shall be segregated on layers/in separate files by types (i.e., bldgs., drives/parking lots, individual utilities, landscaping, etc.).
        ii. Data shall be collected in such a way that the raw data (point location, shot number, description and elevation) are also segregated by point type.

    b. PDF format files. Separate Pdf's shall be provided for the final deliverable plan, project survey control plan and a print of the raw data (post processed).

2. Cadd files shall reference Massachusetts State Plane (Mainland) NAD '83 and NGVD 1929. Standard Units shall be US Survey Foot. Scale shall be 1:1.

3. Cadd files shall include breaklines and all points used to generate contours.

4. Cadd files shall include traverse and baseline data used to layout or locate the work.

5. Copies of all survey notes, sketch plans, tie-sheets, etc containing any information or calculations used to prepare the plans.