

"AS-BUILT" DRAWINGS - PROCEDURES AND REOUIREMENTS

GENERAL

"As-built" drawings shall be submitted to the engineer for review and approval:

1. In the case of a subdivision, before granting of the first building permit, exclusive of models;
2. In the case of a plan, before the granting of a final certificate of occupancy. No public utility, roadway or other improvement shall be accepted prior to the approval of "as-built" drawings.

SUBMISSION TO CITY

Two (2-) sets of prints of "as-built" drawings shall be initially submitted for review and comment. Upon the approval of the "as-built" drawings by the City engineer, one (1) complete set of reproducible mylar drawings, a minimum of three (3) mils thick together with four (4) complete sets of paper prints, shall be submitted to the City.

"As-built" information must be provided in electronic format or as directed by the City.

ALTERNATIVE PREPARATION OF "AS-BUILT" DRAWINGS

In lieu of the submission of "as-built" drawings by the developer pursuant to the above sections, the developer may pay the City an amount, as set by resolution of the City Council, for the preparation of such "as-built" drawings by the City. The decision to pay such amount in lieu of submission of "as-built" drawings shall be communicated to the City and such amounts paid prior to final plat approval or final site plan approval.

PLAN CRITERIA

"As-built" drawings shall contain all the information shown on the approved construction drawings with the addition of but not limited to the following information.

1. Sanitary sewers and storm sewers
 - a. Plan location of all sewers with respect to Property and right-of-way lines.
 - b. A minimum of three (3) witnesses (dimensions) to all force main bends.
 - c. Length of sewer as measured from center of manhole to center of manhole (this information should be shown on both plan and profile).
 - d. Location of each service lead as measured from the nearest downstream manhole and noted as such.

- e. Length of stubs out of manholes.
 - f. The following "as-built" elevations on a U.S.G.S datum:
 - 1. Manhole, inlet, and catch basin covers;
 - 2. Invert elevations of pipes within each manhole;
 - 3. Invert elevations for the ends of sanitary and sump service leads.
 - 4. Changes in percents between manholes.
 - g. List of material used for construction. (Example)

Manholes: Precast, concrete specialties, press wedge flex-joint,

Pipe: Eight inch V.C.P. Clow, No Bell six inch V.C.P. Logan, 0-ring
 - h. Any changes in pipe and manhole locations of more than five (5) feet shall be redrawn on the plan and profile. The original plan locations of these facilities should be x-ed out on the plans.
 - i. Any changes to the total quantities shall be lined out and the correct "as-built" quantity indicated.
 - j. The following "as-built" information for all sanitary service leads:
 - 1. Station of wye;
 - 2. Length of lead;
 - 3. Length of riser;
 - 4. Tie from nearest manhole to end of lead,
2. Retention and detention ponds
- a. "As-built" of pond;
 - b. The following "as-built" elevations on a U.S.G.S datum:
 - 1. Overflow spillway;
 - 2. Inlet and outlet pipe inverts;
 - 3. Outlet structure cover;

4. Outlet and inlet ditch elevations
 5. Bottom and top of bank slopes.
 - c. A statement of final computed volume of the pond as measured from high water elevation to the invert of the outlet pipe.
3. Roadways
- a. Top of curb elevations (U.S.G.S. datum) at high and low points, edge of pavement elevations shall be provided in the case of open ditch road designs.
 - b. "As-built" profiles for any changes in road design.
4. Water mains
- a. Plan location of all water mains with respect to property lines.
 - b. Rim (cover) elevations on gatewells (U.S.G.S. datum).
 - c. Fire hydrant bury line elevations (U.S.G.S. datum)
 - d. Distances between gatewells, fittings, and fire hydrants.
 - e. Type of materials used in construction.
 - f. Any changes in pipe and structure locations exceeding five (5) feet shall be redrawn on the plan. The original plan locations of these facilities shall be "x-ed" out on the plan.
 - g. Any changes to the total quantities shall be lined out and the correct "as-built" quantity indicated.
5. Floodways
- "As-built" ground elevations of all areas located within a floodway.
6. Utility Quantity Table
- a. Total "as-built" lineal footage and material type shall be specified for water main, sanitary sewer, sanitary force main and storm sewer.
 - b. Total "as-built" quantities for all appurtenances (including but not limited to hydrants, manholes, etc.).

CERTIFICATION

All "as-built" plans shall bear the seal of a registered professional engineer or land surveyor, who is currently registered in the State of Michigan, certifying the drawings to be "as-built". All plans must also contain the seal and signature of such registered engineer or surveyor.