

STAGE 5 – UTILITY INSPECTION and TESTING SUMMARY

Stage 5 occurs prior to final paving or surface restoration and when all subsurface infrastructure is complete. The checklist identifies the specific submittal information required by the City for each type of subsurface infrastructure.

It is the responsibility of the Developer's Engineer of Record to submit the required documentation, inspection, passing test results, survey points, and **draft as-built plans** that sufficiently document the constructed infrastructure. Review of the required documentation, test results, inspection, survey points, and draft as-built plans are to ensure quality control procedures apply to all utility construction projects. Testing must be completed as per the Missoula Public Works specifications. The required sanitary sewer and stormwater main test sheet (as applicable) is provided in the checklist for submitting specified test results.

Once the Stage 5 packet has been received and reviewed by City, the City shall schedule an inspection/walk through with Engineer of Record and others as appropriate. All identified outstanding punch list items identified during this stage shall be completed to City satisfaction prior to progressing to Stage 6.

AMENDMENTS TO IMPROVEMENT AGREEMENTS

If portions of the public infrastructure are deemed substantially complete by the assigned City Engineer, then an existing Improvements Agreement and security may be amended. An email request to amend the existing security and Improvements Agreement shall be submitted to the Engineering Coordinator with an amended Estimate of Probable Cost (EPC) of outstanding improvements (not complete and/or not substantially complete) before the expiration of the existing Improvements Agreement or security.

- Substantially complete is defined as installed, passing tests, and backfilled (if required). A maximum 90% of the total item cost can be deducted from the original EPC. A retainage of 10% will be held until the project is fully accepted by the City.

CONDITIONAL ACCEPTANCE

The City acknowledges that only in exceptional conditions (winter weather), a conditional (partial) acceptance may be needed in order to accept sub-surface infrastructure prior to completion of surface infrastructure. The conditional acceptance will be discussed with City staff at time of scheduled walk through. The warranty period for the infrastructure that is deemed conditionally accepted will not commence until final project acceptance is granted for **all infrastructure** (water, sewer, stormwater, surface and other).

SERVICE CONNECTIONS

Extension of water or sewer services from the main to the house will not occur at the time that mains are being constructed by the public infrastructure contractor. The public infrastructure contractor may pull service stub permits, but the extensions/connections (from the stub to the structure) will not occur until the City has conditionally accepted the mains (Stage 6). The extensions/connections will be completed by the building contractor (not public infrastructure contractor) and the extensions/connections will require a connection permit.



STAGE 5 – UTILITY INSPECTION and TESTING CHECKLIST

This checklist is a guide to meet *Missoula City Public Works Standards and Specifications Manual*, specific regulations (Titles 12 & 17, Articles 3, 5, and 9), and other minimum requirements that will enable City Staff to adequately review and approve submitted documents required for this stage. (This checklist is not all inclusive, so other information may also be required.)

Project Name: _____

City PWI Project # (MUST be provided): _____

Developer's Representative Name/Contact Info: _____

Developer's/Owner Name/email/Contact Info: _____

Date Submitted and version (year) of Manual: _____

Plans Submitted ("x" as applicable): _____ Sewer _____ Water _____ Storm

Request for Conditional Acceptance. If developer is requesting a piece of infrastructure be conditional accepted, state the components and areas ready for conditional acceptance and the justification for this request below:

Infrastructure: _____

Area: _____

Justification: _____

STAGE NUMBER	STAGE PROCESS
1	Project Development/Initiation
2	Conceptual Design Review
3	Preliminary Construction Plan Review
4	Release for Construction (RFC) Plan
5	Utility Inspection and Testing
6	Final Inspection and Acceptance
7	Warranty Inspection

REQUIRED SUBMITTAL DOCUMENTATION

Do not leave boxes blank; ALL BOXES MUST BE EITHER CHECKED (X or ✓) or N/A

All documents shall be submitted through the PWI record process using the Accela Citizen Portal with multiple bookmarked, page referenced pdf files, using the formatting and file-naming conventions described below. Any submittals that have not been properly organized will be returned for re-submittal. The following is a list of required documents for Stage 5:

- Completed Stage 5 Checklist signed by Developer's Representative (this document)
- Draft As-Builts (Final as-builts will be required at Stage 6 and shall reflect any punch-list generated changes)
- Engineer/Inspector's daily logs and construction reports
- Service ditchcards
- Preconstruction Meeting Notes
- Information from suppliers for materials used, recommended installation practices and operation manuals

REQUIRED SANITARY SEWER AND STORMWATER TESTING AND DOCUMENTATION

- Service ditchcard record drawing named with the permit number, each an individual .dwg & .pdf file, including address, size, permit number, date etc. as per City template, for each sewer service
- Testing Results
 - Sanitary Sewer Test Sheet ([Use this form](#)):
 - TV Video Results
 - Air Testing Results of Piping
 - Sanitary Manhole Vacuum/Hydro Testing Results
 - Light/Lamping Test Results
 - Mandrel/Deflection Test Results
 - Compaction
- Invert Elevations
 - Manhole inlet and outlet pipe invert (or crown) elevations
 - Catch basin inlet and outlet pipe invert (or crown) elevations
- Pertinent construction photos of all manhole, service and tank connections, couplings, service tees, taps, thrust-blocks with whiteboard w/date, station and fitting description
- Engineer's letter to DEQ certification the improvements
- Signed and Notarized Private Stormwater Facility Maintenance Covenant and Access Easement
- Final Stormwater Operation & Maintenance Manual

REQUIRED WATER TESTING and DOCUMENTATION

- Service ditchcard record drawing named with the permit number, each an individual .dwg & .pdf file, including address, size, permit number, date etc. as per City template, for each water service
- Testing results – Compaction, Bacti, Pressure



- Pertinent construction photos of all connections, valves, bends, hydrants, etc., before and after polywrap, after thrustblock with whiteboard w/date, station and fitting description
- Service Representative Sample Log (for all main replacement projects)
- DEQ Certification Letter

REQUIRED SURVEY DOCUMENTATION

- Survey Points
 - Manhole rim elevation and horizontal coordinates
 - Valve box horizontal coordinates
 - Curb box horizontal coordinates
 - Fire hydrant horizontal coordinates
 - Dry well rim elevation and horizontal coordinates
 - Catch basin rim elevation and horizontal coordinates

DIGITAL DATA REQUIREMENTS

File Formats Include:

- Multiple bookmarked, page-referenced pdf files

AND One (1) copy of:

- Autodesk® AutoCAD™ *.DWG format
- Or ESRI® ArcMap™-compatible format file

File Names:

File names should contain the prefix associated with the utility type followed by the suffix containing the city file number. **Utility Prefix + Project Number = Filename**

1. Lot/Parcel Layout/Easements and Streets: "surface-city file number"
2. Sanitary Sewer: "ss-2020-036"
3. Water Utilities: "w-2020-036"
4. Storm Drainage or Stormwater: "sw-2020-036" or "sd-2020-036"
5. Ditchcards need separate .pdf file named as the permit: 2023-MSS-<type>-#####.pdf
6. Combined Overview: "combined-2020-036"

Coordinate System

AutoCAD® and ArcMapTM files shall be georeferenced and projected. Horizontal (X/Y):

- NAD 1983 (2011) State Plane Montana FIPS 2500 (Intl Feet)
 - Digital files are not required to be projected vertically. However, inverts and other vertical information conveyed must be reported using NAVD88 (ft.).
- Submission must use and note the geoid model used. Valid models for our areas include:
 - GEOID18
 - GEOID12A
 - GEOID12B
- Un-projected files or files with incorrectly applied projections will be rejected.
- Note: The City requires that digital data be submitted in state plane grid.

All submissions must be referenced to the National Spatial Reference System (NSRS) and comply with Montana Code Annotated, Title 70, Chapter 22, Part 2

Accuracy Requirements:

Please note that Stage 5 accuracy requirements are the same as those in Stage 6 and are as follows:

- Submission must be horizontally accurate to **1/10th of a foot** Submission must be vertically accurate to **1/10th of a foot**. These items include all utilities and property corners within the project area or effected in the project. As-built drawings, including pipe slopes, should be updated to reflect survey data.
- All submissions must be referenced to the National Spatial Reference System (NSRS) and comply with Montana Code Annotated, Title 70, Chapter 22, Part 2. For local control points tied to the NSRS contact the Missoula County Surveyors Office.

1) Lot / Parcel Layout / Easements and Streets

- Lot / Parcel Lines
- Lot Numbers
- Street Centerlines (New & Existing)
- Street Names (New & Existing)
- Sidewalks
- Curbs
- All easements related to the project, new and existing. Book and page number required.

2) Sanitary Sewer Utilities

- Sanitary Sewer Utilities (New and existing)
- Lot lines;
- Lot numbers;
- Street names on new and existing streets;
- All utility easements related to the project, new and existing. Book and page number required.

3) Water Utilities

- Water Utilities (New and existing)
- Lot lines;
- Lot numbers;
- Street names on new and existing streets;
- All utility easements related to the project, new and existing. Book and page number required.

4) Stormwater Utilities

- Stormwater Utilities (New and existing)
- Lot lines;
- Lot numbers;
- Street names on new and existing streets;
- Signed and Notarized Private Stormwater Facility Maintenance Covenant and Access Easement
- Stormwater Operation & Maintenance Manual
- All utility easements related to the project, new and existing. Book and page number required.

5) Project Overview

- Sanitary Sewer



- Water Utilities
- Stormwater Utilities
- Lot / Parcel Lines
- Lot Numbers
- Street Centerlines (New & Existing)
- Street Names (New & Existing)
- Sidewalks
- Curbs
- All easements related to the project, new and existing. Book and page number required.

PREPARERS CERTIFICATION:

I have reviewed all information included in this checklist and the submitted requirements. To the best of my knowledge, all information is true, complete, and accurate.

Signature

Date