STAGE 7 – WARRANTY INSPECTION SUMMARY

Chapter 3 Link

The trigger for Stage 7 commences approximately 90 days before the project warranty expires, which is defined in the Stage 6 Project Infrastructure Acceptance notice. The City will make best efforts to send a 90-day reminder warranty notice, however it is the Engineer of Record responsibility to:

- Monitor the project infrastructure warranty beginning and expiration date;
- Perform an independent inspection of the project's infrastructure within the 90-day warranty expiration and generate items of deficiency
    - If inspection includes sanitary sewer warranty, you will need to contact City Utility staff to open manholes and be present to perform the inspection
- Complete Stage 7 Warranty Inspection Checklist and note all defects or deficiencies that will be a combined list from independent inspection and deficiencies observed with City Inspectors
- Notify city inspectors via email as to date that deficiency items will be corrected and completed.
    - Once defects or deficiencies are corrected, submit in writing to City Engineering and state that the contractor has completed all items of deficiencies or defects on the combined list.
- If additional warranty work is not needed, staff will contact you to confirm that the applicable portion or the entire project is complete and closed out.

This warranty inspection shall be completed by the warranty expiration date. Failure to submit the Stage 7 Warranty Inspection Checklist within thirty (30) days of being notified by City Engineering staff may result in the initiation of legal action by the City to enforce the warranty unless, in writing, the City is notified of your intention to extend the warranty period.

ACCEPTANCE or DENIAL of STAGE

If the warranty inspection results in no discrepancies, a formal Project Acceptance Closeout notice is issued and the project is deemed closed.

If discrepancies are observed during the warranty inspection, the city inspector will discuss with the engineer of record and other attendees at the time of the inspection. An action plan of identified correction action to mitigate and rectify issues, with a given timeframe, will be discussed and formally documented and sent to the engineer of record and developer.

WARRANTY INSPECTION CHECKLIST
STAGE 7

This checklist shall be completed by Preparer's / Developer's Representative prior to City Staff conducting a warranty inspection. This completed checklist shall be submitted prior to warranty inspection expiration. *(This list is not all inclusive, other information may also be required)*

Project Name: _____

City Project # *(MUST be provided):* _____

Developer's Representative Name/Contact Info: _____

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

Date Submitted: _____

Plans Submitted ("x" as applicable) _____Surface_____Sewer_____Water___Storm

Other (specify) _____

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

PREPARER'S/DEVELOPER REPRESENTATIVE'S WARRANTY INSPECTION RESULTS

Preparer's / Developer Representative's Warranty Inspection Date:

Warranty Items: _____

_____

_____

_____

_____

_____If discrepancy items were identified, date, notified City Inspector of date of completion

_____

Mitigation/Corrective Action needed by Contractor and result:

_____

_____

_____

_____

_____

_____

_____

(Attach Deficiency List and/or Relative Documentation, email, etc.)

SURFACE INFRASTRUCTURE

STREETS & ALLEYS – Paving (including Private Roads, Short Courts, and Cul-de-sacs)

Refer to Article 3 of the City Subdivision Regulations or the Missoula City Public Works Standard Specifications for other projects

_____Public Street/roadway
_____Private Street/roadway/drive – shall be curbed
_____Public/Private Street/roadway names – county verified and/or approved
_____Cul-de-sac (length, turn-around) – 600 feet maximum length
_____Short court (length, number of units served)
_____Allow Overflow parking (length, width, number of spaces) Maintenance/ Encroachment
_____Street/roadway/driveway layout/design cross-section – private/public short courts
_____Width/construction cross-section specifications and design (pavement thickness, base thickness, mix design, testing, type and location of pedestrian facilities/sidewalks)
_____Grades (preliminary grading plan, profiles, include vertical curve data, intersection grading is ADA compliant)
_____Provide "non-compressed" profile drawings
_____All sidewalks and ADA ramps to have both running slope and cross slope labeled
_____Cuts and fills: include topsoil and re-vegetation
_____Sight obstruction/visibility triangles: NO structures permitted in visibility triangle
_____Maintenance agreements for private street/roadway/drive, short courts (see easements)
_____Bridges/culverts
_____Temporary turn-around(s), required at phase break(s)
_____Infrastructure improvements to be constructed within the public right-of-way
_____Clearly show tick marks for each items, e.g., gutter profile, intersection –to-intersection, road x-sections curb-to-curb, etc.
_____Bike lane(s): location, design, connected, functional, ADA compliance
_____Other

Comments

TRAFFIC MANAGEMENT (must fully conform to MUTCD, FHWA, MDOT, UVC)

Must satisfy all requirements for; location, design criteria, minimum radii, landscaping and irrigation, signing and striping, pedestrian facilities and maintenance agreements

_____Roundabout(s): location, design, functional; ADA compliant
_____Traffic circle(s): location, design, functional; ADA compliant
_____Bulb-out(s): location, design, functional; ADA compliance
_____Mid-block pedestrian crossing(s): location, design, functional; ADA compliance
_____Chicane(s): location, design, functional compliance
_____Medians/island(s): location, design, functional compliance; ADA compliance
_____Raised crosswalk(s): location, design, functional; ADA compliance
_____Speed table(s): location, design, functional; ADA compliance
_____Construction cross-section specifications and design (curb/pavement/sidewalk, asphalt/concrete thickness, base thickness, mix design, testing, type and location of pedestrian facilities/sidewalks)
_____Infrastructure improvements to be constructed within the public right-of-way
Construction quantities reported in the following units (no exceptions):
_____lineal feet for curb
_____sq. ft. for asphalt, sidewalk and aprons
_____Pedestrian Warning Lights
_____Signal type, location, material, application, etc.
_____Modification, retiming
_____Electrical Plans
_____Other

Comments

_____

TRAFFIC SIGNALS – TRAFFIC CONTROL DEVICES

_____Sight obstruction/visibility triangles: NO structures permitted in visibility triangle
_____Maintenance agreements for private street/roadway/drive, short courts (see easements)
_____Bridges/culverts
_____Temporary turn-around, required at phase break(s)
_____Infrastructure improvements to be constructed within the public right-of-way
_____Clearly show tick marks for each item (i.e., gutter profile, intersection-to-intersection, road x-sections, curb-to-curb, etc.)
_____Bike lane(s), location, design, connected, functional, ADA compliance
_____Other

Comments

_____

DRIVEWAYS – Access / Approaches

Refer to Article 3 of the City Subdivision Regulations or the Missoula City Public Works Standard Specifications for projects that are not subdivision related

_____Location (multiple/shared, public/private street/road/drive/alley, etc.)
_____Distance from intersection; dimension minimum distance from intersection or crosswalk (must comply with MMC 12.12.170D and E)
_____Width of approach(es), curb cut, must be constructed perpendicular (90°) to the adjacent street
_____Grades: 8% maximum
_____Cross-section: as applicable to driveways, drainage cuts/fills, base/asphalt/concrete depth
_____Construction cross-section specifications and design (curb thickness, base thickness, mix design, testing, type and location of pedestrian facilities/sidewalks)
_____Construction quantities; lineal feet and/or square feet of asphalt and/or concrete infrastructure improvements to be constructed within the public right-of-way
_____Other

Comments

_____

PEDESTRIAN ACCESS – Non-Motorized Facilities;: Sidewalks, Trails, Bicycles

Non-motorized facilities, including sidewalks, shared use paths, bike lanes, and crossings, shall adhere to AASHTO and/or NACTO guidelines and meet ADA standards

_____Existing facilities within 300 feet of the project limits shall be shown on the plans
_____Location: both or one side(s) of street, other/additional location(s)
_____Sidewalk design
_____Width, cross-section, material, etc. – standard drawings
_____Label widths, x-section slope, running slope (not combined)
_____Sidewalk and boulevard width per approved construction plans
_____Construction cross-section specifications and design (concrete sidewalk thickness, base thickness, jointing, mix design, testing, type and location of pedestrian facilities/sidewalks)
_____Backfilling boulevard and adjacent to sidewalk
_____ADA compliance: location, width, ramps/grades, landings, cross-slope, detectible warning/truncated domes, etc.
_____provide ramp grade as a percentage (vector) down center of proposed ramp
_____Label width, length, slope, and cross slope; dimensions of detectable warning plates
_____Trail (width, location)
_____Connections: between on-site pedestrian facilities, parks, common area(s), with adjacent property(ies)/subdivision(s), etc.
_____Street-crossing (mid-block, bulb-out, etc.)
_____Bike lanes (width, location)
_____Bridges, non-motorized access: pedestrians, bicycles, trails, etc.
_____Other

Comments

PARKING – Overflow

_____Location: label: distance from intersections, access, and type; parallel, head in/back in, angled: 90°, 60°, 45°
_____Dimensions: length, width
_____Grading and drainage
_____Parking Signage
_____Pedestrian access: connection to sidewalks, trails, etc.
_____ADA compliance: width, ramps/grades, landings, cross-slope, etc.
_____Railroad crossing with truncated domes
_____Other

Comments

BUS STOPS

_____Location: distance from intersections, signing, configuration, standard drawings
_____Pedestrian access: connection to sidewalk, trails, etc.
_____ADA compliance: width, ramps/grades, landings, cross-slope, etc.
_____Bus stop pull out
_____Mountain Line approval
_____Other

Comments

SURFACE DRAINAGE

_____Natural drainage: existing *both* on-site and adjacent off-site
_____Storm drainage: calculations, location on-site/off-site, collection/retention/ detention, and source areas, City Standards Manual
(See also "STORM WATER" section below in "UTILITY INFRASTRUCTURE" review)
_____Surface drainage – existing/proposed; calculations, cross-sections, overflow, crossings: culvert/bridge sizing, vegetation, etc.
_____ Surface drainage – individual lots
_____Swales: between lots and through development/subdivision
_____Covenants
_____Building permit specific conditions/requirements
_____Other
_____Foundation drains (separate collection system for foundation drainage on hillside development)

_____Maintenance: public/private, homeowner's association, agreement(s)
_____Structures: inlets, sumps, manholes; location, design, capacity, etc.
_____Construction quantities: structure inventory, type and lineal feet to be constructed within the public right-of-way
_____Other

Comments

EROSION CONTROL (must fully conform to EPA and MT DEQ)

_____Montana DEQ Notice of Termination (NOT): one copy required – *if/when applicable (not previously submitted to City Engineering)*
_____Montana DEQ Permit Transfer Notice (PTN); one copy required – *if/when applicable (not previously submitted to City Engineering)*

Comments

OTHER INFRASTRUCTURE REQUIREMENTS - (if applicable)

If applicable, documentation (letter, email, photographs, etc.) is attached/included, that the following additional City of Missoula agencies and related interested parties have approved the pertinent requirements, including but NOT limited to:

_____City Parks and Recreation Department (*boulevard trees, sprinkler systems, parks, open spaces, etc.*)

_____City Fire Department (*fire protection/combustible construction, hydrants, equipment/fire truck access, etc.*)

_____City Police Department (*life safety issues, emergency services access, property and structure(s) visibility, etc.*)

_____City Building Division (*structure/construction, code requirements, etc.*)

_____City Planning (*zoning, subdivision regulations, conditions of approval, boulevard improvements, floodplain administrator, etc.*)

_____City-County Health Department (*air quality, water quality, food service, etc.)*

_____Missoula Parking Commission (*Central Business District (CBD), University Parking District)*

_____Missoula County Public Works Department (*overlapping projects, generally dry-laid sanitary sewer*)

_____Mountain Line (*bus structures and access*)

_____Missoula Redevelopment Agency (MRA)

_____Montana Department of Transportation (MDT) *(federal and state motor vehicle/transportation routes)*

_____University of Montana (UM) *(University-related projects)*

_____Montana Rail Link (MRL)

_____Irrigation/Ditch Company District

_____Other

UTILITY INFRASTRUCTURE

SANITARY SEWER

_____Ownership: Public or Private
_____Type (Gravity, Dry lay, Siphon)
_____County review for additional county rules and regulations
_____Conformance to City, county, and state specifications and requirements; thrust restraint on mains over 20% grade, etc.
_____Structures: location, access,
_____Manholes: location, access, type, hole schematic
_____Gravity mains: location, sizing, profile, separation, specifications, calculations, etc.
_____Lift stations: location, sizing, access both to site and internal, security, specifications, etc.
_____Force mains: location, sizing, profile, ports, valves, etc.
_____Easement locations
_____S.T.E.P. systems and appurtenances designed and engineered for commercial use
_____S.T.E.P. mains: location, sizing, profiles, ports, valves, etc.
_____S.T.E.P. Tanks and appurtenances: residential, commercial, and community
_____Floodplain requirements
_____Stub-outs: location, property marked
_____Shallow groundwater requirements
_____Specifications: pipe type(s), sizing, sumps, bedding, gradations, frost protection, marking, and compaction
_____Number and location (by lot) of stub-outs for auditing and permitting purposes
_____Construction quantities; lineal feet of pipe by size and inventory of appurtenances to be constructed within the public right-of-way
_____Plans show all utilities in corridor
_____Other

Comments

STORM SEWER

_____Ownership: public or private
_____Type (gravity, STEP, force, dry lay)
_____Conformance with current EPA and state (MT DEQ) rules, regulations, practices, and State DEQ approval letter
_____Mains: location, sizing, profile, separation, specifications, calculations, etc.
_____Appurtenances: manholes, inlets, grates, outfalls, manhole schematic, diffusers, beehives, etc.
_____Access: appurtenances, collection/retention/detention systems, etc.
_____Specifications: pipe type(s), sizing, bedding, gradations, marking and compaction
_____Shallow groundwater requirements
_____Construction quantities: lineal feet of pipe by size and inventory of appurtenances to be constructed within the public right-of-way
_____Plans show all utilities in corridor
_____Other

Comments

WATER

_____State DEQ letter attached
_____Plans clearly show size, class, and type of main
_____Orientation of valves shall be indicated on as-builts (i.e., acuator north of main)
_____Water mains should not be placed in curb line
_____Water mains should be in roadways unless approved otherwise
_____Plans and profiles show all other utilities (including service lines and dry utilities) to be crossed
_____Dead ends longer than 500 feet are not allowed unless approved in writing by the Public Works Director or his/her designee
_____Plans include an acceptable means for testing and removing air (including BO, valves, etc.)
_____Avoid testing of main against existing valves
_____Blow offs are adequately sized based on 2.5 fps flushing velocity (3 inches for 8- through 12-inch mains, etc.)
_____Easements provided where necessary to extend mains in the future
_____Valve configurations meet minimum spacing requirements of 500 feet in commercial areas, 800 feet in residential areas
_____Valves placed such that only one hydrant shut down at a time
_____At least two valves shall be installed at every mainline tee and at least three valves at every mainline cross
_____On mains planned for extension in the near future, add valves near dead ends such that tie-ins can be made without putting customers out of water
_____Orientation of butterfly valve actuator compared to mainline shall be indicated on as-builts (e.g., “actuator north of main”)
_____Hydrant lead pipes should be 8 inches in diameter w/reducer at the hydrant for lead

pipes longer than 40 feet

_____Approval letter from Fire Department for:

- Fire hydrant locations
- Fire flow requirements

_____Fire hydrants to be provided by Storz adapters

_____Plans provide for fire hydrant design to ensure proper bury depth

_____Fire flow requirement provided in writing from Fire Marshal

_____Service line locations are clearly marked

_____Separate fire and domestic service lines shall be provided. Any fire line, including residential, should be separated from the domestic line

_____All curb boxes and shutoff valves shall be in the right-of-way

_____Curb boxes and meter boxes shall not be placed in concrete sidewalks or driveways unless approved in writing the City Engineer or by his designee

_____Necessary meter pits have been addressed including location outside of, but within 2-5ft of the right-of-way

_____For multiple phased projects, consider adding a fill station for construction water

_____All Missoula Water Standards and Specifications have been met. If no, explain_____

_____Conformance with current state (MT DEQ) rules, regulations, and practices

_____Mains: size, location, valves, separation, etc.

_____Stub-outs: location, property marked

_____Fire protection: mains to structures: commercial, industrial, and residential

_____Construction quantities: lineal feet of pipe by size and inventory of appurtenances that will be constructed within the public right-of-way

_____Other

Comments

_____

UTILITIES

_____Master Plan

_____Gas: location, placement of related appurtenances, etc.

_____Electric: location, placement of related appurtenances, streetlights, etc.

_____Communications – telephone, television, etc.: placement of related appurtenances

_____Construction quantities: lineal feet of each utility and inventory of appurtenances to be constructed within the public right-of-way

_____Plans must show right-of-way limits, existing utilities and proposed utilities

_____Other

Comments

_____

_____

APPLICANT'S CERTIFICATION:

I have reviewed all information and this submittal is true and accurate. To the best of my knowledge, all requirements as specified in Titles 12 and 17, Articles 3, 5 and 9 of Subdivision Regulations have been satisfied.

Preparer's / Developer Representative's Signature Date