

## STAGE 2 – CONCEPTUAL DESIGN REVIEW

[Chapter 3 Link](#)

### When to submit Stage 2 Conceptual Design review:

- In addition to submitting the formal Sufficient Subdivision Packet, submit the Stage 2 checklist to City Engineering;
- The subdivision is outside City limits and annexation may occur;
- Complex projects for water and sewer main extensions, stormwater, or other surface infrastructure;
- The City is being requested to provide modeling of the proposed utility infrastructure;
- No separate Stage 2 process required but a Stage 2 review will be completed when a [Zoning Compliance Permit \(ZCP\)](#) for a Townhome Exemption Development (TED) has been submitted to Development Services.

At this stage, submitted information and plans would provide City Reviewers project understanding, context, and intended outcomes, and how it meets current City strategic goals and plans. Major design features, constraints, alignments, profiles, external connections, pipe sizing, lane configurations, typical section, and design alternatives are included. This is the first formal project review of the plans showing alignment and grade along with proposed infrastructure features. The design elements constitute the majority of the project footprint, including the mainline surfacing, horizontal and vertical alignments, and grading. Although Detail Sheets are not included in this stage, preliminary details for items that have significant impacts or control points as a result of design alignments may be included. Existing features and survey information are provided, with major drainages and labeled road approaches. Proposed culverts or approaches typically are not shown unless they serve as horizontal or vertical control points or have significant impacts associated with the proposed alignments. The submitted Conceptual Design Review should be approximately 30% design level for City Review. For more complex or detailed projects (subdivisions, TEDs, condominium developments, etc.), all infrastructure (surface, water, sewer, stormwater) must be submitted at same time, **in one submittal** (rather than staggered) to ensure a holistic, comprehensive review.

### ACCEPTANCE or DENIAL of STAGE 2

Acceptance of Stage 2 and approval to proceed to Stage 3 will be provided via email to Developer's Representative, Developer and Planning Division staff.

Incomplete submittals will suspend the review process, will be returned for resubmittal, and will be placed at the back of the queue. If a resubmittal is required, an email will be provided to the Developer's Representative.

**Proceed to Stage 3, Preliminary Construction Plan Review**

## CONCEPTUAL DESIGN REVIEW CHECKLIST STAGE 2

**This checklist is a guide to meet *Missoula City Public Works Standards and Specifications Manual*, specific regulations (Titles 12 and 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; other information may also be required.)**

Project Name: \_\_\_\_\_

City Project # (**MUST** be provided): \_\_\_\_\_

Developer’s Representative Name/Contact Info: \_\_\_\_\_

Developer/Owner Name/Email/Contact Info: \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Plans Submitted (“x” as applicable): \_\_\_\_\_ Surface \_\_\_\_\_ Sewer \_\_\_\_\_ Water \_\_\_\_\_ Storm \_\_\_\_\_

Other (specify) \_\_\_\_\_

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

## BASE INFORMATION

### REQUIRED INFORMATION FOR ENGINEERING REVIEW – Plat Documentation

- Subdivision Sufficiency Packet
- Completed and signed Stage 2 Checklist (this document)
- Preliminary Plat
- Transportation plan, as required (traffic study, street layout)
- Reports (geotech, stormwater, etc.)
- Review by Montana Department of Transportation (MDT), when accessing state-controlled public right-of-way
- Special Improvement District (SID) waiver(s) required (specific type, documentation on plat, etc.)
- Datum information
- Townhome Exemption Development (TED) minor/major
- Types of Boulevard Trees
- Other

**Comments**

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### DEVELOPMENT / SUBDIVISION TYPE

- Rural: County, 2 or fewer dwelling units per acre
- Urban: City, more than 2 dwelling units per acre
- Major: more than 5 lots
- Minor: 5 or fewer lots
- PNC/PUD/Cluster Development
- Other

**Comments**

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### COVENANTS

- Homeowners Association (maintenance responsibilities)
- Townhome Declaration
- Roundabout landscaping maintenance
- Traffic-calming landscaping maintenance
- Street lighting maintenance
- Infrastructure maintenance
- Common area, private park, or open space maintenance
- Private road or short court maintenance
- Sidewalk or trail on a public access easement maintenance

## **DIGITAL/ELECTRONIC GIS FILE REQUIREMENTS**

### **File Formats**

- Bookmarked pdf and
- Autodesk® AutoCAD™ \*.DWG format or
- ESRI® ArcMap™- GIS Shapefile or
- Geodatabase or compatible format file

### **File Naming Convention**

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**  
Example for Lot, Parcel Layout, Easements, and Streets: *surface2020-036*

### **Deliverables**

All digital files shall be compressed together in .zip or .rar format using the above naming convention.

### **Coordinate System**

- Un-projected files or files with incorrectly applied projections will be rejected.
- Note: The City only requires that digital data be submitted in state plane grid. It is unnecessary to submit at ground.

### **Accuracy Requirements**

- Submission must be accurate horizontally to **1/10<sup>th</sup> of a foot**. These items include all utilities and property corners within the project area or effected in the project.
- 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.
- If derived from GNSS measurements, the submission must use and note the geoid model used. Valid models for our areas include:
  - GEOID18
  - GEOID12A
  - GEOID12B

## SURFACE INFRASTRUCTURE

### TOPOGRAPHY / GEOTECHNICAL – Hillside / Site Grading

- Floodplain
- Wetland/riparian zone(s)
- Rock/outcrop issues
- Adjacent property topography (grade match)
- Slope delineation (<5%, 5.01-10%, 10.01-20%, 20.01-25%, >25.01 %)
- Grading plan (existing/proposed, pre-graded lots, cuts/fills, access issues)
- Cut and fills (ROW work must be located within ROW) or easements
- Disturbed slopes designed at 2:1 (50%) or less
- Ground water issues
- Slope stability/hazards (unstable slopes, etc.)
- Retaining walls
- Weed control/topsoil/re-vegetation plan
- Existing surface drainage
- Other

**Comments**

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### RIGHTS-OF-WAY – Base Criteria

- Access to public and/or state right-of-way
- Controlled access
- Conformance to Regulations
- Widths (as per City Standards Manual)
- Lengths (as per Standards Manual diameter of cul-de-sac, etc.)
- Alleys (existence, radiuses, access points, drainage, garbage access)
- Other

**Comments**

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### BLOCKS

- Conformance to City Subdivision Regulations, Article 3
- Length maximum uninterrupted block(s)
- Configuration: appropriate access to all lots. See also Driveways, Access/Approaches
- Common area(s): access, maintenance agreements, etc.
- Other

**Comments**

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**LOTS**

- \_\_\_\_\_ Configuration: buildable area, slope, pre-grading
- \_\_\_\_\_ Access: slope, distance from intersections, no access designation
- \_\_\_\_\_ Sight obstruction & visibility triangles: NO structures permitted in visibility triangle
- \_\_\_\_\_ Other \_\_\_\_\_

**Comments**

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**EASEMENTS**

No permanent structures are allowed within easements

- \_\_\_\_\_ Existing easement(s)
- \_\_\_\_\_ Proposed easement(s)
  - \_\_\_\_\_ Public/Private utility easement(s) (location, width – includes:
    - overhead and/or buried sanitary sewer, stormwater, water, electric, natural/propane/high-pressure gas, petroleum, telephone, cable, and other utilities)
      - ➔ Main(s) 20 feet minimum easement width
      - ➔ Service(s) 15 feet minimum easement width
    - \_\_\_\_\_ Public/Private common service easement (for stub-outs)
    - \_\_\_\_\_ Public/Private drainage easement(s) (collection, retention, and detention ponds)
    - \_\_\_\_\_ Public/Private foundation drainage easement(s) (width, location)
    - \_\_\_\_\_ Public/Private access easement(s) (width, location)
    - \_\_\_\_\_ Public/Private NO access easement(s) (width, location)
    - \_\_\_\_\_ Public/Private non-motorized access easement(s) (width, location [trails])
    - \_\_\_\_\_ Construction easement(s) (width, location)
    - \_\_\_\_\_ Maintenance easement(s) (width, location)
    - \_\_\_\_\_ Irrigation/ditch easement(s) (width, location)
    - \_\_\_\_\_ Conservation easement(s) (width, location)
    - \_\_\_\_\_ Off-site adjacent properties easement(s) (width, location)
    - \_\_\_\_\_ Other \_\_\_\_\_
    - \_\_\_\_\_ Other \_\_\_\_\_
    - \_\_\_\_\_ Other \_\_\_\_\_
- \_\_\_\_\_ Other \_\_\_\_\_

**Comments**

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

- \_\_\_\_\_ Public street/roadway – (refer to City Standards Manual)
- \_\_\_\_\_ Private street/roadway/drive – (refer to City Standards Manual)
- \_\_\_\_\_ Public/Private street/roadway names
- \_\_\_\_\_ Cul-de-sac (length, turn-around) – 600 feet maximum

- \_\_\_\_\_ Short court (length, number of units served) – 200 feet maximum
- \_\_\_\_\_ Overflow parking (length, width, number of spaces)
- \_\_\_\_\_ Street/roadway/driveway layout/design cross-section – private/public and short courts
- \_\_\_\_\_ Grades (preliminary grading plan, profiles, include vertical curve data, intersection grading is ADA compliant)
- \_\_\_\_\_ Cuts and fills: include topsoil and re-vegetation
- \_\_\_\_\_ Maintenance agreements for private street/roadway/drive, short courts,
- \_\_\_\_\_ Bridges/culverts
- \_\_\_\_\_ Temporary turn-around, required at phase break(s)
- \_\_\_\_\_ Other

**Comments**

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**TRAFFIC MANAGEMENT (must fully conform to MUTCD, FHWA, and MDT)**

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

- \_\_\_\_\_ Round-a-bout(s): location, design, functional; ADA compliance
- \_\_\_\_\_ Traffic circle(s): location, design, functional; ADA compliance
- \_\_\_\_\_ 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
- \_\_\_\_\_ Raised crosswalk(s): location, design, functional; ADA compliance
- \_\_\_\_\_ Speed table(s): location, design, functional; ADA compliance
- \_\_\_\_\_ Other

**Comments**

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**CURBING**

- \_\_\_\_\_ Location
- \_\_\_\_\_ Curb type: “A”, “B”, “K” – cove, “L”, standard drawings
- \_\_\_\_\_ Access points and curb cut(s): location, width, type—commercial/residential
- \_\_\_\_\_ Controlled access: right-in/right-out, “pork-chop” islands, etc.
- \_\_\_\_\_ ADA compliance: location, width, ramps/grades, landings, cross-slope, etc.
- \_\_\_\_\_ Mail stop pullout, bus pullout, over-flow parking, etc.
- \_\_\_\_\_ Other

**Comments**

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### DRIVEWAYS – Access and Approaches

Refer to City Standards Manual

- \_\_\_\_\_ Location (multiple/shared, public/private street/road/drive/alley, etc.)
- \_\_\_\_\_ Distance from intersection; minimum distance from intersection or crosswalk
- \_\_\_\_\_ Width of approach(es), curb cut, must be constructed perpendicular (90° degrees) to the adjacent street
- \_\_\_\_\_ Grades; eight (8%) percent maximum
- \_\_\_\_\_ Other

#### Comments

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

- \_\_\_\_\_ Sidewalk design
  - \_\_\_\_\_ Location: both/one side(s) of street, other/additional location(s)
  - \_\_\_\_\_ Width, cross-section, material, etc. – standard drawings
  - \_\_\_\_\_ Sidewalk and boulevard width pre-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.
- \_\_\_\_\_ 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

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### **PARKING – Overflow**

- Location: distance from intersections, access, 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.
- Other

#### **Comments**

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### **BUS STOPS (May require Mountain Line Approval)**

- Location: distance from intersections, signing, configuration, standard drawings
- Pedestrian access: connection to sidewalk, trails, etc.
- ADA compliance: width, ramps, grades, landings, cross-slope, etc.
- Other

#### **Comments**

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### **CLUSTER MAILBOX FACILITIES (U.S.P.S. Postmaster approval required)**

- Location
- Mail stop pullout
- Pedestrian Access: connection to sidewalk, trails, etc.
- ADA compliance: width, ramps/grades, landings, cross-slope, etc.
- Documented Post Office concurrence with location/design, letter of approval
- Other

#### **Comments**

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### **STREETLIGHTS**

- Location, minimum: intersections, pedestrian crossings, mid-block pedestrian crossings, etc. (refer to City Standards Manual for minimum standards and when required)
- Maintenance agreement; covenants
- Compliance with Missoula Outdoor Lighting Ordinance – MMC 8.64
- Other

#### **Comments**

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## 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 (See also “STORMWATER” 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 conditions/requirements
  - \_\_\_\_\_ Other
- \_\_\_\_\_ Foundation drains (separate collection system for foundation drains on hillside development)
- \_\_\_\_\_ Maintenance: public/private, homeowner’s association, agreement(s)
- \_\_\_\_\_ Structures: inlets, sumps, manholes; location, design, capacity, etc.
- \_\_\_\_\_ Other

### Comments

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## UTILITY INFRASTRUCTURE

### SANITARY SEWER

- \_\_\_\_\_ Type (Gravity, S.T.E.P., Force, Dry lay)
- \_\_\_\_\_ County review for additional county rules and regulations
- \_\_\_\_\_ Conformance to City, County, and State specifications and requirements; thrust restraint on mains over 20% grade, ownership, etc.
- \_\_\_\_\_ Structures: location, access,
- \_\_\_\_\_ Manholes: location, access, type
- \_\_\_\_\_ 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.
- \_\_\_\_\_ 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
- \_\_\_\_\_ Shallow groundwater requirements
- \_\_\_\_\_ Stub-outs: location, property marked
- \_\_\_\_\_ Specifications: pipe type(s), sizing, bedding, gradations, marking, and compaction

- Number and location (by lot) of stub-outs for auditing and permitting purposes
- Other

**Comments**

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**STORMWATER**

- Type (Gravity, S.T.E.P., Force, Dry lay)
- Conformance with current City, EPA, and state (MT DEQ) rules, regulations, and practices
- Mains: location, sizing, profile, separation, specifications, calculations, etc.
- Appurtenances: manholes, inlets, grates, outfalls, diffusers, beehives, etc.
- Access: appurtenances, collection/retention/detention systems, etc.
- Shallow groundwater requirements
- Other

**Comments**

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**WATER (includes City Fire Department review)**

- 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
- Hydrants: location within 500 feet, clear zone, charged, verified, and approved by Fire Department
- Other

**Comments**

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**PRIVATE UTILITIES**

- Two copies of the Master Utility Plan: comprehensive—all sources, below, at, and above grade
- Gas – Mains: location, placement of related appurtenances (valves, etc.)
- Electric – Mains and Primaries: location, placement of related appurtenances (switches, transformers, etc.), traffic control lights, rail control lights, streetlights, etc.
- Communications: telephone, television, etc.
- Mains and primaries: placement of related appurtenances (pedestals, junction boxes, etc.)
- Other

**Comments**

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**APPLICANTS CERTIFICATION:**

I have reviewed all information, and this submittal is true and accurate. To the best of my knowledge, all requirements of the Stage 2 Checklist have been satisfied.

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Developer Representative's Signature

Date