

Monument Junction West Filing No. 1
Construction Documents Review (Streets, Storm Sewer and Final Drainage Report
Review) - Submittal 2

Date:	07/25/2022	Jacobs Engineering Group Inc.
Project no:	A.PN.CI.067	6312 S. Fiddlers Green Circle
Attention:	Debbie Flynn, Planner II	Suite 300N
Company:	Town of Monument:	Greenwood Village, CO 80111
Prepared by:	Mark Kitzmiller	United States
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CCES Responses in red

Jacobs has reviewed the following documents associated with Submittal 2 of the referenced Construction Documents as required for independent Traffic and Drainage reviews:

1. "Monument Junction West Filing No. 1 Construction Plan Set," by Classic Consulting, dated June 20, 2022.
2. "Final Drainage Report for Monument Junction West Filing No. 1," by Classic Consulting, dated July 2022.
3. CCES Responses to Submittal 1 review memo. **Note: Per e-mail attached, Jacobs did not have any comments on storm or pond plans.**

Jacobs has reviewed the documents against the **Town of Monument Construction Documents and Final Drainage Report Checklists**, and we have the following comments (Submittal 1 comments are reiterated below, followed by ***bold/italic*** comments that pertain to Submittal 2 responses, or are new comments).

Note that Submittal 1 included a Sanitary Sewer System Plan Set, a Water System Plan Set, and a Final Drainage Report (FDR) for Highway 105 Corridor & Jackson Creek Parkway Intersection Improvements; however, these documents were not included with the Submittal 2 documents. Corresponding notations are provided below for the Submittal 1 comments on documents not included.

Public Street Improvement Plans:

General Sheet Requirements:

1. Vertical Profiles are cut along flowline. It would be beneficial to cut profiles along centerline to see grade transitions at intersections. ***Addressed. It is acceptable to not have profiles cut along centerline of road if left and right profiles are provided at intersections.*** **Noted, thank you**

Sheet 2:

1. Curb return radii C4 and C5 do not meet the minimum curb return radius requirements. ***Not addressed. Curb return radii requirements are listed in Table 5.2 of Appendix A of the Town of Monument Roadway Design and Technical Criteria. A waiver would be necessary to reduce curb returns radii from 30 feet to 20 feet.*** **Waiver for curb returns now provided**

2. Provide pavement section to be used for roadway pavement. **Partially addressed. The applicant's response is that the developer will provide a pavement design report meeting current Town criteria prior to paving. This will serve to memorialize that response.** Noted, thank you
3. On Laughing Lab vertical right flowline profile, grade breaks are discouraged at station 3+82.97. Could there be a vertical curve? **Addressed**
4. Grade break at station 5+32.92 for Laughing Lab right flowline profile exceeds maximum grade break allowable for a curb return. **Partially addressed. Slope shown is for FL intersection. Clarify if that is perpendicular or parallel to intersecting road. If perpendicular, is the road slope really 4% there?** The exist. 4% slope shown is perpendicular and is the exist. superelevation grade of JCP that we must tie into.
5. K value for vertical curve at station 4+56.36 on Fat Tire Drive right flowline doesn't meet minimum requirements. **Not addressed. Intersection is currently stop condition but could have a signal in the future; therefore, K value needs to meet design speed of the road.** Design adjusted to meet K value criteria for future signalized intersection
6. Grade break on both the left flowline and right flow line profiles for Fat Tire exceeds maximum grade break at curb return. (LT station 4+63.48 and RT station 4+56.36). **Partially addressed. Slope shown is for FL intersection. Clarify if that is perpendicular or parallel to intersecting road. If perpendicular, is the road slope really 2.81% and 3.85% there?**

The exist. 2.81% and 3.85% slopes shown are perpendicular and are the exist. superelevation grade of JCP that we must tie into.

Sheet 3:

1. Curb return radii C12 and C13 do not meet the minimum curb return radius requirements. **Not addressed. Curb return radii requirements are listed in Table 5.2 of Appendix A of the Town of Monument Roadway Design and Technical Criteria. A waiver would be necessary to reduce curb returns radii from 30 feet to 20 feet.** Waiver for curb returns now provided
2. K value for vertical curve at station 15+09.01 for Oktoberfest Drive right flowline does not meet the minimum requirements. **Not addressed. Intersection is currently stop condition but could have a signal in the future; therefore, K value needs to meet design speed of the road.** This design follows the CDOT approach road std. M-203-1 and provides for a 20 mph design speed at the int. This int. is planned to be a RI/RO only and NO signal planned.
3. K value for vertical curve at station 15+16.21 for Oktoberfest Drive left flowline does not meet the minimum requirements. **Not addressed. Intersection is currently stop condition but could have a signal in the future; therefore, K value needs to meet design speed of the road.**

This design follows the CDOT approach road std. M-203-1 and provides for a 20 mph design speed at the int. This int. is planned to be a RI/RO only and NO signal planned.

Sheet 4:

1. The Monument Junction TIS (LSC, Feb 2022) indicates that Fat Tire Dr. (Access B in the TIS) left-turn lane recommended storage be 200' so that LT's do not block the TH/RT vehicles. Has this length been accommodated? It's obvious the striping doesn't accommodate this but perhaps the roadway width does. **Addressed**
2. Add left turn arrows at beginning of left turn lanes, typical. **Addressed**
3. Add 8" before "SOLID" in the proposed solid white channelizing stripe callouts, typical. **Addressed**

4. Add 4" before "SOLID" in the proposed solid double yellow centerline stripe callouts, typical. **Addressed**
5. Add stop bars and crosswalk markings per town standards DT 33 on all roads intersecting with Jackson Creek Pkwy., if not included in those improvement plans. Turn lane striping should extend to stop bars once drawn in. **Partially addressed. Turn lane striping should extend to the stop bars (no gap). Crosswalk lines are to be 24" wide. Revised to 24" wide**
6. Add station and offsets or something to include where striping begins and ends. **Addressed**
7. The sign shown at the end of Oktoberfest Dr. on the barricade does not match the detail or the sign code (R11-2) shown. Please update sign to match detail. Message should be ROAD CLOSED, unless you're letting general traffic (not construction vehicles) past the barricade. **Addressed**
8. The detour sign shown on the barricade detail is not needed. Please remove. **Addressed**
9. **New Comment: add "Town of Monument Standard DT 33 and" to *Note in Striping Legend. Added**
10. **New Comment: Are the parking spaces shown along Oktoberfest Drive part of this submittal? If so, stall dimensions, striping details, etc., should be provided. Added**

Sanitary Sewer System Plan Set:

The Sanitary Sewer Plan Set was not included with the Submittal 2 Construction Documents. The Applicant's response to the following comments is that Woodmoor utility comments were addressed, and the plans were approved. We will defer to the Town as to whether these comments need responses. CCES continues coordinating with Woodmoor Utility District for approvals of utility plans

1. Identify/label storm sewer junction structures.
2. Manholes to be provided "where practical" at PT and PC of curvilinear sewer.
3. Identify/Label existing utility end features.
4. Manhole callouts should include applicable reference to District's standard detail drawings.
5. "Where sewer system improvements cross other utilities (existing or proposed), label the crossing point with station, offset, the term 'utility crossing', size and type of utilities that cross, and crossing configuration."

Example:

STA 10+00, 5' RT, utility crossing, 8" PVC sewer over 30" RCP storm sewer.

Water System Plan Set: **CCES continues coordinating with Woodmoor Utility District for approvals of utility plans**

The Water System Plan Set was not included with the Submittal 2 Construction Documents. The Applicant's response to the following comments is that Woodmoor utility comments were addressed. We will defer to the Town as to whether these comments need responses.

General Sheet Requirements:

1. Identify/label storm sewer junction structures.

2. "Where sewer system improvements cross other utilities (existing or proposed), label the crossing point with station, offset, the term 'utility crossing', size and type of utilities that cross, and crossing configuration."
3. Full profiles needed, show all crossings, low/high points, cover dimension, etc.
4. Include detail references in plan/profile sheets.

Sheet 2:

1. Existing waterlines should be dashed lines
2. Include CDOT permit number.
3. Show proposed sewer and detention pond, possible utility conflicts.
4. References to Sheet 5 should be corrected, no profile Sheet 5.
5. Station 4+94.29 should be 24" RCP storm sewer crossing, correct reference to profile.
6. Station 1+11.00 sanitary sewer crossing missing profile.
7. Missing sanitary sewer crossing callout near station 7+79.30, include profile.
8. Missing storm sewer crossing near station 3+18.15, include profile.

Sheet 3:

1. Station 1+61.00 storm sewer crossing missing profile, correct reference to profile
2. Station 1+84.00 profile, should this be profile for 1+61.00 storm sewer crossing?
3. Station 5+03.21 storm sewer crossing missing profile

Sheet 4:

1. Need callout for Fiber optic crossing, include in profile
2. Add CDOT Permit note from Sheet 2 including permit number
3. Include distance between parallel utility lines
4. Show proposed storm sewer & detention pond improvements in profile, potential utility conflicts?

Final Drainage Report for Monument Junction West Filing No. 1:

1. Beginning on page 9 of the FDR, it appears that references to pipe runs are off by "1", starting at Pipe Run 17 (i.e., run 17 should be 18, 18 should be 19, etc.). **Addressed**
2. On PDF pages 42 and 73, Design Point 11 refers to a Type R inlet; however, in basin mapping and the DP narrative, it appears the DP is a 24" stub. Please clarify. **Addressed**
3. On PDF page 66, Qpeak for the major storm is 8.0 cfs (not 7.0), according to the design tables. **Addressed**
4. Please confirm: This FDR reports the developed conditions for Inlets D4 through D10 along Hwy. 105, while the Hwy. 105 and JCP FDR reports pre-development/existing conditions for corresponding Inlets H4 through H9. **Addressed**
5. Storm sewer profiles with HGL depicted are required with the Construction Document submission. **Addressed**

6. Time of concentration paths are required. Subject to Town approval, these can be depicted on the Construction Documents. **Addressed**
7. Detention facility details are required. Subject to Town approval, these can be depicted on the Construction Documents. **Addressed**
8. The Master Development Drainage Plan retained the major creek basin boundary between the developed and pre-developed conditions. Monument Junction East and West developed conditions cause a deviation from the pre-development major basin boundary; however, the net change in basin area appears to be minimized via a flip in basin areas between the East and West developments. Please include a discussion in the FDR narrative to document this. **Addressed**

Final Drainage Report for Monument Junction Development Highway 105 Corridor & Jackson Creek Parkway Intersection Improvements:

The Hwy. 105 Corridor & JCP Intersection FDR was not included with the Submittal 2 Construction Documents. The Applicant states that response to the following comments will be provided with a Hwy. 105 street plan submittal. Will be submitted for another review along with CD's for Hwy. 105

1. On PDF page 24, there is a reference to "Individual Pipe Sheets" for hydraulic information; however, no pipe calculation sheets were found in the report.
2. Please clarify why existing inlet basins appear to be used for inlet design, as opposed to developed conditions (i.e., "H" basins versus "D" basins).
3. On PDF page 39, confirm the value of 1.05 inches for orifice diameter (using 1 1/16" diameter).
4. Storm sewer profiles with HGL depicted are required with the Construction Document submission.
5. Time of concentration paths are required. Subject to Town approval, these can be depicted on the Construction Documents.
6. Detention facility details are required. Subject to Town approval, these can be depicted on the Construction Documents.

Marc Whorton

From: Debbie Flynn <Dflynn@tomgov.org>
Sent: Wednesday, August 10, 2022 11:34 AM
To: Marc Whorton
Cc: Nina Ruiz
Subject: FW: Monument Junction West Filing No. 1 - CDs - 2nd Submittal - Comment Letter

Good Morning Marc,

You mentioned in your previous email if Jacobs will be providing comments on MJ West storm or pond plans. Please see Marck with Jacobs email below.

Respectfully Yours,

DEBBIE FLYNN

Planner II

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From: Kitzmiller, Mark <Mark.Kitzmiller@jacobs.com>
Sent: Wednesday, August 3, 2022 12:17 PM
To: Debbie Flynn <Dflynn@tomgov.org>
Subject: RE: Monument Junction West Filing No. 1 - CDs - 2nd Submittal - Comment Letter

Hi Debbie:

Regarding the curb return radii, we have no objection to the 20' radii, as long as they're suitable for turning templates for anticipated vehicles with minimal overtracking into opposing lanes, and that compliant pedestrian ramps can be built.

We brought it up because it's a Town requirement to have 30' radii, so my thinking is there would need to be regulatory relief provided from the 30' requirement to change it to 20', and generally, the applicant needs to supply documentation that supports such relief.

Regarding the storm and pond plans, we reviewed them and have no comments.

Hope this helps. Thanks.

Mark Kitzmiller | [Jacobs](#)
M:+01.484.269.3738 | mark.kitzmiller@jacobs.com

From: Debbie Flynn <Dflynn@tomgov.org>
Sent: Wednesday, August 3, 2022 9:30 AM
To: Kitzmiller, Mark <Mark.Kitzmiller@jacobs.com>
Subject: [EXTERNAL] FW: Monument Junction West Filing No. 1 - CDs - 2nd Submittal - Comment Letter

Good Morning Mark,

Please see the email below.

Respectfully Yours,

DEBBIE FLYNN

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From: Marc Whorton <MWhorton@classicconsulting.net>
Sent: Tuesday, August 2, 2022 7:50 PM
To: Debbie Flynn <Dflynn@tomgov.org>
Cc: Thomas Martinez <tmartinez@tomgov.org>
Subject: RE: Monument Junction West Filing No. 1 - CDs - 2nd Submittal - Comment Letter