

Lindebak, Scott

From: Greg Allison [gallison@mkec.com]
Sent: Thursday, May 26, 2011 1:05 PM
To: Lindebak, Scott
Subject: FW: Kiser West 2nd - Hydrographs
Attachments: ~~Kiser West 2nd~~HydraflowHydrographsExtension.pdf

Here are the Hydrographs for the site let me know if this is helpful.

Greg

From: Kara Anderson
Sent: Thursday, May 26, 2011 8:51 AM
To: Greg Allison
Subject: Kiser West 2nd - Hydrographs

The Hydrographs area attached.

Kara Anderson, P.E.

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Lindebak, Scott

From: Greg Allison [gallison@Mkec.com]
Sent: Wednesday, May 25, 2011 4:17 PM
To: Lindebak, Scott; Davidson, Tim
Cc: Kara Anderson; Gene Rath; Amy Liebau; Ken Bengtson
Subject: RE: Kiser west 2nd

Here is additional information in regard to the proposed pond. This information summarizes portions of the report.

Pond Bottom Elevation = 1385.5 (elevation controlled by an existing SS crossing)

Pond 100-year = 1388.9 (will require berming to contain detention up to this elevation)

125'x125' Bottom Area = 15,625 sf = 0.36 ac

100-year Area = 23409 sf = 0.54 ac

100-year volume of storage = 1.5 ac-ft

(Shape and location will be coordinated with the final site plan)

Outlet Structure

12" circular pipe elev = 1385.5 – This pipe controls the flow into an area inlet riser structure, the pipe controls the small storm events, WQ volume, and Stream Protection volume.

4'x4' Riser Structure Elev = 1387.5 – The 2-year event will begin to flow into the top of the riser. An 18" RCP flows out of the riser structure and connects to the underground system in Greenwich from the detention basin. Upon closer review, the detention system on the Kiser property will control nearly the 10 yr event.

Flow Rates

Existing 100-year to streets = 74.9 cfs – All 74.9 cfs is flowing into the street where it makes its way into the underground storm system at the street inlets (21.8 cfs), the remaining runoff flows in the street. This was designed as a combined storm system using both underground and street to carry the runoff.

Pipe Capacity = 21.8 cfs

Proposed 100-year = 73.2 cfs-- 51.4 cfs going into the street.

This plan has reduced the runoff into the street system by nearly 30% in the 100 year event. (and eliminated runoff from offsite flow in the street up to nearly the 10 yr event). During the detail design of the construction plans, we may be able to deepen the pond bottom, without using more land area, to pick up additional storage and further reduce the flow into the street. These tables may be useful to understand all storm intervals.

Table 3.2. Proposed Conditions Basin Information.

Basin	Area (ac)	CN	T _c (min.)	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
Off Site Flow (cfs)	5.3	84.0	22.1	7.5	10.8	16.0	19.5	24.8	28.8	32.3
On Site Flow (cfs)	6.0	96.5	3.3	24.6	30.7	40.9	47.4	57.1	64.4	70.9
Total Flow To 13 th & Greenwich	11.3	n/a	n/a	4.6	12.0	19.5	28.4	47.9	61.7	73.2
Total Flow To 13 th & Greenwich SWS	11.3	n/a	n/a	4.6	12.0	19.5	21.8	21.8	21.8	21.8
Flow To 13 th & Greenwich Streets	11.3	n/a	n/a	0.0	0.0	0.0	6.6	26.1	39.9	51.4

Volume of Detention (ac-ft)	n/a	n/a	n/a	0.8	0.9	1.1	1.3	1.4	1.4	1.5
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Table 3.1. Proposed Conditions Basin Information.

Basin	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
Peak Flow In (cfs)	28.7	37.1	50.4	59.2	72.4	82.4	91.2
Peak Flow Out (cfs)	4.6	12.0	19.5	28.4	47.9	61.7	73.2
Water Surface Elevation (ft)	1387.5	1387.8	1388.2	1388.4	1388.7	1388.8	1388.9
Volume of Detention (ac-ft)	0.8	0.9	1.1	1.3	1.4	1.4	1.5
Normal Pool Elevation (ft)	1385.5						
Outlet Structure	12" Circular Orifice at 1385.5, Riser Structure with Top = 1387.5,						

Let me know if you have any further questions.

Greg

From: Greg Allison
Sent: Wednesday, May 25, 2011 12:02 PM
To: 'Lindebak, Scott'; Davidson, Tim
Cc: Kara Anderson; Gene Rath; 'Amy Liebau'; Ken Bengtson
Subject: RE: Kiser west 2nd

From: Lindebak, Scott [mailto:SLindebak@wichita.gov]
Sent: Wednesday, May 18, 2011 10:32 AM
To: Strahl, Neil; Davidson, Tim
Cc: Greg Allison; Kara Anderson; Gene Rath; Kallman, Julianne
Subject: RE: Kiser west 2nd

Neil, Stormwater Management has reviewed Kiser West Second Addition Drainage Plan dated May 11, 2011 and have the following comments:

- 1.) The stormwater management facility shall be placed in a Reserve with the minimum pad elevation and the maintenance responsibility listed on the face of the plat.
 - a. As we reviewed yesterday. A note will be added to the Drainage Report which indicates a Separate Instrument easement will be provided prior to issuance of a Building Permit for this one lot plat. This easement will contain the required detention facility and storm water management requirements within the manual. We will also provide a generic plan of the detention facility that matches the size required. This of course may be modified at the time the Separate Instrument easement and the site plan are finalized, but the easement will contain a detention pond with the required volume.
- 2.) A conceptual plan needs to show how the offsite stormwater runoff will be conveyed through the proposed development, including either a proposed ditch section and/or stormwater conduit sizes

required to drain through the proposed stormwater management facility located at the NE corner of the subdivision.

- a. As discussed yesterday, notes will be provided on the plan which indicates offsite runoff will be conveyed onto and thru the site. The conveyance thru the site may consist of 1. Underground SWS System, 2. Channel, 3. Sheet drainage from offsite into the onsite system. The plan will also note that the 100yr offsite drainage will not be blocked for conveyance thru one of these systems. Escape routes for this offsite flow will be provided.
- 3.) It appears a portion of the offsite west drainage is not tributary to the proposed subdivision and the stormwater runoff will drain out the existing drive of the development west of Kiser West Second Addition.
 - a. We will modify the existing drainage areas to show the proper direction of flow. The net effect is less offsite water actually flows thru the Kiser West 2nd property. The corrected offsite flow rates will be provided..
- 4.) The offsite stormwater runoff shall be conveyed through a drainage easement.
 - a. This offsite water will flow through the property by use of a cross lot drainage agreement that will be provided prior to council approval with all the other platting documents.
- 5.) The discharge of the detention pond shall be limited to the existing capacity of the stormwater sewer in Greenwich Road. Please evaluate the stormwater sewer capacity and revised the pond sizing accordingly.
 - a. Kiser West 2nd site has allowed for an approximately 15,000 sf surface area to store water almost 4 ft high. This will provide the required 1.3 ac-ft of storage to detain the developed flow rate and volume from the site and reduces runoff from existing conditions. The detention pond will provide at minimum a 5 yr system that will not require above ground/street flow to carry the storm water. It also will provide the necessary WQ and Stream protection volume required by the City. It will not increase the flow rate onto the existing city system in Greenwich in all storm intervals. As we discussed, the existing city system is designed to carry the 5 yr flow in the underground pipe system and the remaining flow to be carried in less than one lane of the street (approximately 9 ft wide). It is a combined system. The detention pond will be designed to maximize the storage to further reduce the flow rate into the existing combined storm system in Greenwich. At most, without detailed design plans, we could achieve another .25 ac-ft.
 - b. You had asked how much additional storage is needed to reduce the flow into Greenwich to only outflow in the 5 yr pipe system, a total of 2.5 ac-ft will be required. There is not the land area or the depth to provide this additional detention on site. The depth of the detention pond is an issue with other utilities... i.e. the sanitary sewer which is about 1.5 ft higher than the storm sewer in Greenwich. (the bottom of the pond is set by the SS elevation)
 - c. The system that is planned and provided for with this report reduces the flow from existing conditions in all storm intervals up to the 100 yr. As we talked about, this plan has improved the drainage from what existing conditions are today.

I would be happy to review this further with you.

Greg

From: Strahl, Neil
Sent: Wednesday, May 18, 2011 8:23 AM
To: Lindebak, Scott; Davidson, Tim
Subject: Kiser west 2nd

Any changes to current comment on staff report?

D. **City Stormwater Management (SWM)** has not received or reviewed a drainage plan for the subdivision plat and recommends the plat be deferred until such time SWM has adequate time to review and approve the one-step final plat. SWM will require water quality treatment; detention to limit discharge to not exceed the existing stormwater sewer conduit capacity in Greenwich Road; and downstream channel protection for this subdivision. SWM prefers that the stormwater management facility be located in a reserve. SWM will require drainage easements to address offsite stormwater runoff from the south and west and show how the runoff will be collected or handled (i.e. stormwater sewer, ditch, pond, etc.). Stormwater should be spelled as one word on the face of the plat.

*Neil Evan Strahl, Senior Planner
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