



**CITY OF CENTRAL POINT
PLANNING COMMISSION AGENDA
Tuesday April 7, 2015 - 6:00 p.m.**

I. MEETING CALLED TO ORDER

II. ROLL CALL

Planning Commission members Chuck Piland, Mike Oliver, Tim Schmeusser, Tom Van Voorhees, Susan Szczesniak, Craig Nelson Sr. and Kay Harrison

III. CORRESPONDENCE

IV. MINUTES

Review and approval of February 3, 2015 Planning Commission Minutes

V. PUBLIC APPEARANCES

VI. BUSINESS

- A.** Consideration of a No-Rise Analysis for portions of Twin Creeks Crossing Phases II and III located within the regulatory floodway. **Applicant:** Twin Creeks Development, LLC; Agent: Dan O'Connor. **File No.: FP-15001**
- B.** Consideration of a similar use authorization for Veterinary Clinics within the C-4 (Tourist and Office Professional) zoning district per CPMC 17.60.140. **Applicant:** City of Central Point. **File No.: 15007**

VII. DISCUSSION

- A.** Gebhard Road Route Analysis Update

VIII. ADMINISTRATIVE REVIEWS

IX. MISCELLANEOUS

X. ADJOURNMENT

**City of Central Point
Planning Commission Minutes
March 5, 2015**

I. MEETING CALLED TO ORDER AT 6:00 P.M.

II. ROLL CALL

Commissioners Chuck Piland, Tom Van Voorhees, Tim Schmeusser, Craig Nelson, Susan Szczesniak and Kay Harrison were present. Also in attendance were: Tom Humphrey, Community Development Director, Stephanie Holtey, Community Planner and Karin Skelton, Planning Secretary.

III. CORRESPONDENCE

None

IV. MINUTES

Kay Harrison made a motion to approve the minutes of the February 3, 2015 Planning Commission meeting. Susan Szczesniak seconded the motion. Roll Call: Kay Harrison, yes; Craig Nelson, yes; Tim Schmeusser, yes; Tom Van Voorhees, Susan Szczesniak, yes. Motion passed.

V. PUBLIC APPEARANCES

John Whiting addressed the Planning Commission regarding the proposed extension of Gebhard Road. He explained that the homeowners association of the Green Valley Subdivision had concerns regarding the extension. Their concerns were regarding the impact of traffic on Green Valley Drive by the Subdivision Park. He asked if there were any plans for improvements along the subdivision park. The Homeowners Association was concerned for the safety of the neighborhood children who currently had to wait in the street for their school bus. The Association had discussed making some improvements to the park area to address this issue. They also had plans to remove and possibly replace several trees in the park. They did not want to make plans for these improvements until they knew the how the Gebhard Road extension would impact that area of the Park.

Mr. Humphrey responded that the plan was in the early stages at this point. There had been one meeting with a consultant and they had gathered citizen input. The consultant was reviewing the information and composing three options. Those would be presented at future public hearings and there would be plenty of opportunity for citizen input at that point.

VI. BUSINESS

Stephanie Holtey presented Resolution 816 Consideration of forwarding a recommendation to the City Council for a Zone (map) Amendment changing Residential Single Family (R-1-10) zoning to Residential Single Family (R-1-8) zoning for a 0.67 acre parcel located at 3292 Grant Road. She stated that the parcel had one dwelling unit at this time and the applicant wished to add 2 additional units. By changing the zoning the density would be changed to a minimum of 3 dwelling units. She stated the entire area surrounding the parcel is low density, some R-1-10 and some R-1-8. There are adequate services to service the area. Any additional traffic would not increase the capacity on Grant Road from its current 14%.

Commissioner Piland asked if the entrances to all three units would be off of Grant Road. Ms. Holtey affirmed that would be the case.

The public portion of the meeting was opened. No one appeared regarding the zone change. The public portion of the meeting was closed.

Kay Harrison made a motion to approve Resolution 816. Tim Schmeusser seconded the motion. ROLL CALL: Susan Sczcesniak, yes; Tim Schmeusser, yes; Tom Van Voorhees, yes; Craig Nelson, yes; Kay Harrison, yes. Motion passed.

Tom Humphrey requested the Commission review Resolution no. 814 with the Commission's recommended changes to the Conceptual Land Use and Transportation Plan for CP-1B (Tolo) an urban reserve area of central point. Mr. Humphrey indicated that the planning commission approved Resolution No. 814 at their last meeting which forwarded a recommendation of approval to the City Council with several revisions they asked to be made to the conceptual Plan. City Staff also had some last minute input from other sources who asked for additional revisions. The rescheduling of the Joint Planning commission meeting allowed for this item to return to the Planning Commission for review before the City Council has to take action.

He stated the concept plan is a general land use guide prepared in accordance with, and intended to facilitate implementation of the Central Point Regional Plan Element. It does not address compliance with the Oregon Statewide Land Use Planning goals, applicability of land use planning law, or comprehensive plan compliance. Mr. Humphrey stated that various changes were made to clarify new land use designations and not zoning in the Concept Plan. The implementation guidelines were adjusted to address new land use designations should the UGB be amended prior to the city's adoption of these new designations. The Bear Creek Greenway was acknowledged as a regionally significant transportation document. The performance measures section was amended to reflect input from both the Commission and 1000 Friends of Oregon. He indicated to the Commissioners that businesses located in the CP1-B area would be dedicated solely to serving the immediate community and not as a draw from the

Freeway.

Tom Van Voorhees made a motion to forward a favorable recommendation of Resolution 814 as amended to the City Council. Susan Szczesniak seconded the motion. ROLL CALL: Mike Oliver, yes; Susan Szczesniak, yes; Tim Schmeusser, yes; Tom Van Voorhees, yes; Craig Nelson, yes; Kay Harrison, yes. Motion passed

Mr. Humphrey then addressed the Planning Commission regarding consideration and discussion of various amendments to the Zoning Ordinance related to similar use authorization with the C-4, C-5, M-1 and M-2 zoning districts. Staff has received a Preliminary request for a comprehensive plan and zone change amendment to reclassify property on the south side of East Pine Street, east of Hamrick Road from Tourist Commercial and Professional Office (C-4) to Thoroughfare Commercial (C-5). A land use and zoning change is a very arduous and complex process generally reserved to address general land use issues. The purpose of the request is to allow for the development of a veterinary clinic on part of the property. Veterinary clinics are not specifically identified as a permitted use in the C-4 district, but are permitted in the C-5 district. Within the C-4 district professional offices are permitted with the universally qualifying statement in 17.44.020(A) that reads “. . . including, but not limited to . . .” Based on such a statement it could be concluded that all professional offices are allowed, including veterinary clinics. However, the applicant’s representative refers to Section 17.44.020(B)(18), which reads that “other uses not specifically specified in this or any other district. . .” may be allowed subject to the planning commission making findings per Section 17.60.140, and that because veterinary clinics are “specified as a permitted use in the C-5 district, then 17.44.020(B)(18) is not applicable and the only way to allow veterinary clinics on the property in question is to change the land use and zoning designation to C-5.

A change in land use and zoning for the purpose of permitting a single use is procedurally excessive, unless there is strong justification the City’s Land Use Map needs to be modified to correct a general deficiency in the City’s land use distribution. A more appropriate approach to that proposed by the applicant’s representative involves two steps:

Step 1: Per Section 17.60.140 have the planning commission rule that veterinary clinics are a professional office use and that under the “including, but not limited to” statement are permitted in the C-4 district. As part of the findings required of 17.60.140, specific attention will be given to the language in 17.44.020(B) (18) referring to “. . . uses not specified in this or any other district . . .” vs. the “. . . including, but not limited to . . .” language in 17.44.020(A). This first action could occur at the Planning Commission’s April meeting.

The successful completion of this step would address the allowance of veterinary clinics as a permitted use in the C-4 district. The applicant’s representative has indicated some hesitancy as to the legitimacy of such a determination, citing the

conflict with the “. . . uses not specified in this or any other district . . .” language in 17.44.020(B)(18). Throughout the processing of Step 1, planning staff will involve and seek support from the City Attorney.

Step 2: As a follow-up to Step 1, and to correct the current ambiguities in the zoning ordinance’s permitted/similar use language, staff would modify the zoning ordinance as necessary to clarify and better coordinate “permitted” and “similar” use language. At a minimum these changes would affect the C-4, C-5, M-1, and M-2 districts, as well as

17.60.140, Authorization for similar Use criteria. The primary issue in this case is a determination of the most appropriate methodology for the sanctioning of a specific use (veterinary clinics) within the C-4 zoning district. A change in the land use and zoning designation may get the applicant to their ultimate objective, while use of 17.60.141, Authorization of Similar Use, may also achieve the same objective using a more appropriate and simplified process.

Mr. Humphrey stated that the intention is to demonstrate that the veterinary clinic is a professional office use and as such would be a legitimate use. At this time the Planning Commission is only being asked if this alternative approach is worth pursuing. At the April meeting a final decision will be made, which will include written findings. However, if the Planning Commission does not agree that veterinary clinics are an appropriate use in the C-4 district, then it should be so noted and Staff’s Recommendation in this report should be denied. A question was raised as to whether or not any animals would be housed outdoors at the facility.

Jay Harlan addressed the Planning Commission. He stated that although there would be some outdoor kennels, they would only be used for brief periods by the animals. He indicated that this was a small animal hospital, which would be open 24 hours a day to provide service when regular veterinary clinics were closed.

Craig Nelson Made a motion to continue determination of the most appropriate methodology for the sanctioning of a specific use (veterinary clinics) within the C-4 zoning district. Kay Harrison seconded the motion. ROLL CALL: Mike Oliver, yes; Susan Szczesniak, yes; Tim Schmeusser, yes; Tom Van Voorhees, yes; Craig Nelson, yes; Kay Harrison, yes. Motion passed.

Mr. Humphrey addressed the Planning Commission regarding consideration and discussion of the removal of a hazardous tree from the Central Point Cemetery. He indicated the tree was dead and could easily fall into the roadway blocking traffic. Commissioner Van Voorhees asked if the tree would be replaced with a new tree. Mr. Humphrey responded he thought that would be a good recommendation to the owners. He said the owners had no objection to the removal of the dead tree.

Tom Van Voorhees made a motion to approve the removal of the dead tree with the condition that it be replaced by a new tree. Tim Schmeusser seconded the motion.

ROLL CALL: Susan Szczesniak, yes; Tim Schmeusser, yes; Tom Van Voorhees; Craig Nelson, yes; Kay Harrison, yes. Motion Passed

Mr. Humphrey the asked the Commissioners if they would be amenable to holding a regular Planning Commission meeting on April 7, 2015 in addition to the Joint Meeting with Jackson County which was scheduled for April 2, 2015. The commissioners agreed that they were in favor of two meetings in April.

Mr. Humphrey then informed the commission that T-Mobile was working to put a stealth antenna on the Grange Tower, and would disguise it to look like a part of the building.

VIII. ADMINISTRATIVE REVIEWS

IX. MISCELLANEOUS

X. ADJOURNMENT

Tom Van Voorhees made a motion to adjourn. Kay Harrison seconded the motion. All members said "aye". Meeting adjourned at 7:00 p.m.

The foregoing minutes of the March 5, 2015 Planning Commission meeting were approved by the Planning Commission at its meeting on the _____ day of _____, 2015.

Planning Commission Chair

RESOLUTION 817 – CONSIDERATION OF A NO-RISE ANALYSIS FOR PORTIONS OF TWIN CREEKS CROSSING PHASES 11 AND 111 LOCATED WITHIN THE REGULATORY FLOODWAY.



STAFF REPORT

April 7, 2015

AGENDA ITEM: File No. FP-15001

Consideration of a No-Rise Analysis for portions of Twin Creeks Crossing Phases I-III located within the regulatory floodway. The project site includes 30 lots identified on the Jackson County Assessor's Map as 37S 2W 03BD, Tax Lots 1100, 1200, 1400, 1500, 1700, 1800, 1900, 2000, 2300, 2400, 2500, 2600, 2900, 3000, 3200, 3201, 3202, 3203, 3400, 3500, 3600, 3700, 3800, 3900, 4000, & 4100; 37S 2W 03CA Tax Lots 802, 803 & 804; and 37S 2W 03CA Tax Lot 1200. **Applicant:** Twin Creeks Development, LLC; **Agent:** Dan O'Connor, Medford Law

STAFF SOURCE:

Stephanie Holtey, Community Planner II

BACKGROUND

In 2006 and 2007 Twin Creeks Crossing Phases I-III received final plat allowing development of the lots in those two phases. At the time of final plat approval all lots were located outside of the special flood hazard area and the regulatory floodway. In 2011 FEMA had prepared and the City adopted a new FEMA Flood Insurance Rate Map (FIRM). As a result of the new FIRM thirty (30) of the lots (Lots) in Phases I-III are now located in the special flood hazard area and most are fully impacted by the floodway (Attachment "A").

At this time the applicant proposes to construct single family dwellings and independent living cottages on the Lots. Any proposed construction activities within the floodway are subject to compliance with Section 8.24.200 floodway development requirements, which prohibits floodway encroachments unless it can be demonstrated that there will be no increase to the flood elevations. Per Section 8.24.200 there are two methods of demonstrating no increase in flood elevations:

1. A No-Rise Certification (A No-Rise Certification would leave the properties in the flood hazard area and subject to flood insurance); or
2. A Conditional Letter of Map Revision (CLOMR) followed by a Letter of Map Revision (LOMR) from FEMA (upon issuance of a LOMR the affected properties would be removed from the flood hazard area and no longer require flood insurance).

At this time the applicant has submitted an application for a No-Rise Certification (Attachment "B"). A No-Rise Certification must demonstrate that development will not aggravate flooding. Once a No-Rise Certificate is issued by the Planning Commission the applicant can commence construction on the Lots (est. April 2015).

In addition to the No-Rise application, the applicant has previously submitted, received, and is currently completing a floodway mitigation project approved by the Planning Commission in 2014 (Resolution No. 806). The basis of the approval was a technical analysis reviewed and

approved by FEMA as a Conditional Letter of Map Revision (CLOMR). The CLOMR confirmed that construction of a floodway overflow channel would remove floodway impacts on all of the platted lots that are the subject of the No-Rise application, as well as all remaining platted lots in Twin Creeks Crossing Phase I. Per the Applicant's Findings (Attachment "C"), the mitigation work per the CLOMR has been completed with the exception of the culvert installation at Twin Creeks Crossing, which is scheduled for installation late spring. It is expected that a LOMR will be submitted to FEMA shortly after completion of the culvert, with an estimated issuance date of early fall 2015.

In an effort to facilitate a productive construction season for 2015 it is the applicant's objective to pursue the No-Rise Certification first, followed shortly by completion of the CLOMR mitigation requirements and application for the LOMR.

PROJECT DESCRIPTION

Per the Twin Creeks Master Plan, the applicant proposes to construct single family dwellings and independent living cottages on the Lots. Per the No-Rise documentation, no additional fill material will be utilized to elevate building pads. Construction will entail site grading, foundation excavation and fill compaction consistent with the City's flood damage prevention standards.

The No-Rise Analysis evaluates the effective conditions against existing and proposed conditions based on full build-out of Twin Creeks Crossing Phases I-III, the North Village Phase III, and as-built survey data for the recently constructed floodway swale. According to the No-Rise documentation, there is no difference between existing and proposed conditions. The No-Rise Analysis concludes that the excavated swale mitigates any potential rise associated with the proposed development, consistent with the CLOMR findings and the City's no-rise standard.

To approve the proposal, the No-Rise documentation must demonstrate that the following criteria are satisfied:

- The proposal does not increase flood elevations or floodway widths based upon the effective FEMA flood mapping; and,
- The proposal is consistent with the CLOMR mapping approved by FEMA and the City in 2014, and will therefore not adversely impact the outcome of the LOMR.

Per the applicant's Findings and the No-Rise documentation, the proposal complies with these requirements.

ISSUES

The only issue relative to this application is the successful management of the No-Rise grading and construction activity in a manner that does not jeopardize issuance of the LOMR. Although the applicant can demonstrate that the proposed No-Rise construction does not adversely impact the base flood elevation within any part of Twin Creeks and is consistent with the CLOMR, issuance of a LOMR is needed to revise the effective FEMA mapping and alleviate the flood insurance purchase and development requirements associated with being in a floodway. The Development Agreement between Twin Creeks and the City

provides for a personal guarantee that the floodway mitigation construction per the CLOMR will be completed no later than October 1, 2015 (Attachment "D"). Section 8.24.170(B) provides that the applicant shall complete the LOMR within 6 months of project completion in accordance with Section 8.24.170(B).

CONDITIONS OF APPROVAL

1. Prior to the issuance of a building permit for any of the 30 lots the applicant shall submit a master grading plan for the 30 lots. The Master Grading Plan shall be approved by Northwest Hydraulic Consultants as compliant with and will not otherwise adversely affecting the CLOMR approved by FEMA. At time of submittal of a building permit for each lot, the applicant shall include a grading plan compliant with the approved Master Grading Plan; and prior to the issuance of a Certificate of Occupancy, the applicant shall provide certification by a licensed engineer that the grading plan, including any fill used for landscaping, is compliant with the approved Master Grading Plan.
2. Prior to the City's approval of the LOMR application, the applicant shall demonstrate that the LOMR is consistent with the approved CLOMR. The developer shall be responsible for correcting any deviation from the CLOMR that results in floodway impacts to currently platted lots in Twin Creeks Crossing Phases I-III.
3. For all remaining platted lots in the floodway, no additional no-rise certifications shall be permitted. Development of these lots must rely strictly on receipt of the LOMR.

ATTACHMENTS

Attachment "A" – Floodway Development Application Location map

Attachment "B" – No Rise Analysis

Attachment "C" – Applicant's Findings

Attachment "D" – Twin Creeks Transit Oriented Development Agreement

Attachment "E" – Resolution No. 817

ACTION

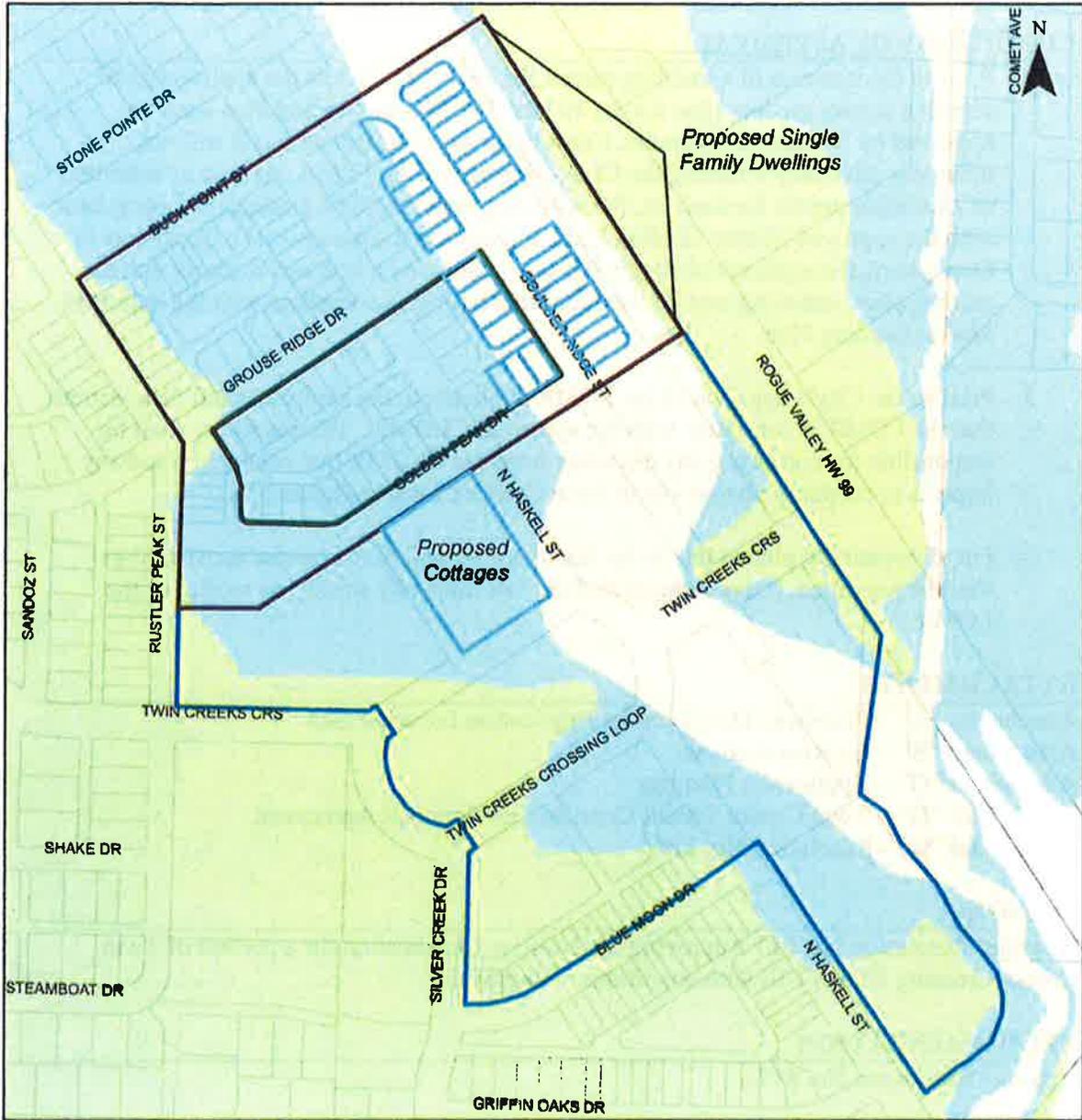
Consider Resolution No. 817 Approving the No-Rise Certification for a portion of Twin Creeks Crossing Phases I-III with conditions of approval

RECOMMENDATION

Approve Resolution No. 817.

Floodway Development Application

Twin Creeks Crossing Phases I and II



Legend

subdivisions

SUBNAME

-  Twin Creek Crossing Phase 3
-  Twin Creeks Crossing Ph 2
-  Twins Creeks Crossing 1

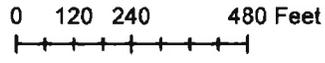
FIRM Information

Flood Zone

-  A
-  AE
-  AO
- FLOODWAY
- X
- X-SHADED

Flood Insurance Rate Map
 Jackson County, Oregon & Incorporated Areas
 City of Central Point - 410092
 Map & Panel No.: 41029C 1768F, 1769F, 1956F, 1957F

Created by: Stephanie Holtey, CFM
 Community Development Department
 March 24, 2015





northwest hydraulic consultants

NHC Ref. No. 200044

25 March 2015

Twin Creeks Development Co. LLC
P.O. Box 3577
Central Point, OR
97502

Attention: Bret Moore

Via email: bretm@twncrks.com

Re: Twin Creeks No-Rise Analysis 2015

Dear Mr. Moore:

As requested, Northwest Hydraulic Consultants (NHC) has completed a "no-rise" analysis for the Twin Creeks Development Company LLC (TCDC) following the Federal Emergency Management Agency (FEMA) "*Procedures for 'No-Rise' Certification for Proposed Developments in the Regulatory Floodway*". This analysis confirms that work conducted to-date within the Twin Creeks Development, as well as the newly proposed work within the effective floodway in the Twin Creeks Crossing Phase I-III will not result in an increase to 100-year flood or floodway profiles relative to effective FEMA mapping (FEMA, 2011). The following letter serves as documentation of the no-rise analysis conducted by NHC.

1 TWIN CREEKS NO-RISE ANALYSIS

1.1 Background

The Twin Creeks Development is located along a FEMA designated 100-year floodplain (Zone AE), with regulatory floodway. This floodplain mapping became effective with the adoption of the Jackson County Flood Insurance Study (FIS) in May, 2011 (FEMA, 2011). The effective mapping was determined through detailed studies of Jackson and Griffin Creeks conducted by NHC for the City of Central Point (City) and FEMA as part of the Jackson County FIS (FEMA, 2011). Findings from these studies indicated that flooding in the Twin Creeks Development originates from overflow of Griffin Creek, immediately upstream of Pacific Highway, and continues to the northwest to merge with Jackson Creek. The reach connecting Griffin and Jackson Creeks within the development is referred to as the 'Jackson Creek Overbank'.

The effective floodplain mapping between the two study reaches, through the Twin Creeks Development, is broad and unconfined, resulting in a relatively wide floodway delineation. It should be noted that this reach does not receive perennial flow and would function as an overflow channel during

infrequent, high magnitude flood events (there has been no observed flooding from Griffin Creek at the project site). Draft mapping for Griffin and Jackson Creeks was provided to FEMA in 2008, and the restudies of both creeks became effective when the Jackson County FIS was adopted by FEMA and Jackson County on May 3, 2011.

The Twin Creeks Development is a master plan community that precedes the most recent FEMA studies within the City. When construction of the Twin Creeks Development began, prior to initiation of NHC's detailed studies of Jackson and Griffin Creeks, the area was not mapped within a FEMA floodplain. Development continued while the technical analysis for the updated FIS was being conducted (2006 to 2009). In 2009, the City began using preliminary flood hazard mapping, provided by NHC, to regulate development. Thereafter, construction within the Twin Creeks Development was limited to areas outside what is now the effective floodway.

In 2014, NHC completed a FEMA Conditional Letter of Map Revision (CLOMR) for the TCDC (NHC, 2014). The purpose of the CLOMR was to provide documentation for proposed floodway mitigation measures, namely, the construction of a flood swale along the eastern edge of the development. The CLOMR considered full build-out conditions including construction of a flood swale, culvert crossing at the Twin Creeks crossing, and development of the entire North Village phase of the property based on plans prepared by Whetstone Engineering. The CLOMR proposed realignment of the effective regulatory floodway, primarily based on the proposed construction of the flood swale, while also meeting no-rise criteria. The CLOMR was accepted by FEMA in late 2014.

To-date, development within the Twin Creeks project site is considered compliant with both FEMA and City floodplain management regulations.

1.2 Purpose

The current no-rise analysis is being conducted so TCDC can have a productive 2015 construction season. To accomplish this the TCDC is proposing construction of approximately 29 lots located within the effective floodway in the Twin Creeks Crossing portion of the development. As such, a FEMA no-rise analysis is required. Full development of the Twin Creeks Crossing Phases I-III and North Village Phase 3, as well as the flood swale constructed in early 2015 is being considered in this analysis. This analysis is intended to meet FEMA regulatory requirements for development within an effective floodway.

A few items related to this analysis should be noted. First, additional fill material will not be imported to the site for any remaining construction (H. Farber, personal communication, March 17, 2015). Second, the proposed work associated with this no-rise analysis does not adversely impact findings from the 2014 CLOMR. This is because the work proposed here represents intermediate conditions that are consistent with those originally proposed in the CLOMR. Similarly, this work will not adversely affect the final Letter of Map Revision (LOMR) to be completed once all floodway mitigation measures are implemented.

1.3 Hydraulic Analysis

A no-rise analysis typically involves evaluation and comparison of (duplicate) effective, existing, and proposed conditions. For this analysis the no-rise comparison was conducted between only effective

and proposed conditions. Comparison between master plan grading and as-built data within Twin Creeks Crossing Phases of the development collected in 2012 show negligible difference. As such, existing conditions were not evaluated separately, but rather considered identical to proposed conditions. A description of effective and proposed conditions used in this analysis follows.

1.3.1 Duplicate Effective Conditions

NHC developed the original HEC-RAS hydraulic models used for effective FEMA flood hazard mapping on Griffin and Jackson Creeks (FEMA, 2011; NHC, 2014). As such, duplicate effective models were obtained directly from a Technical Support Data Notebook (TSDN) prepared by NHC and submitted to FEMA. Effective models and mapping reflect pre-2008 site conditions.

1.3.2 Proposed Conditions

General site grading, including the Twin Creeks Crossing Phases I, II, and III, as well as Phase 3 of the North Village portions of the development, was obtained from Whetstone Engineering on December 18, 2012. As-built topographic data of the recently constructed flood swale was provided to NHC by Farber Surveying on February 14, 2015. These proposed conditions differ from the 2014 CLOMR analysis in that they do not include Phases 1 and 2 of the North Village. As previously noted, proposed conditions are considered identical to existing conditions in Twin Creeks Crossing Phases I, II, and III.

1.4 Results

Results of the analysis show that construction of the flood swale has mitigated for any potential rise associated with the proposed development in the Twin Creeks Crossing Phases I, II, and III. This conclusion is summarized in the attached table comparing computed effective and revised floodplain and floodway profiles. In addition, the following supporting materials are attached:

- A workmap comparing effective and revised contour data, floodplain, and floodway mapping.
- Planimetric boundary survey of the Twin Creeks development (provided by Farber Surveying)
- Cross-section plots comparing effective and revised grading through the development
- A copy of the effective Floodway Data Table (FWDT) from FEMA (2011)
- Engineering “No-Rise” Certification is also attached.

1.5 References

Federal Emergency Management Agency (FEMA). 2011. Flood Insurance Study, Jackson County, Oregon and Incorporated Areas. Flood Insurance Study Number 41029V000A. May 3.

Northwest Hydraulic Consultants Inc. (NHC). 2014. FEMA Conditional Letter of Map Revision Application for the Twin Creeks Development Project. Prepared for Twin Creeks Development Co. LLC. July 28.

Sincerely,

Northwest Hydraulic Consultants Inc.

Prepared by:



Peter C. Brooks, P.E.
Senior Engineer

ENCLOSURES

cc: Herb Farber, P.L.S. – Farber Surveying (herb@farbersurveying.com)
Matthew Dusenbury, P.E. – Whetstone Engineering (whetstoneengineering@a.com)

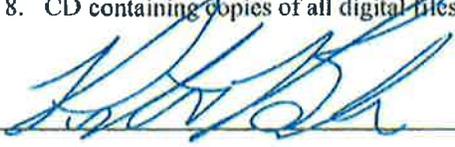
ENGINEERING "NO-RISE" CERTIFICATION

This is to certify that I am a duly qualified engineer licensed to practice in the State of Oregon.

It is to further certify that the attached technical data supports the fact that proposed Twin Creeks Development, Twin Creeks Crossing Phases 1, 2, and 3 will not impact the 100-year flood elevations, floodway elevations and floodway widths on Jackson Creek Overbank at published sections in the Flood Insurance Study for Jackson County, OR, dated May 3, 2011, and will not impact the 100-year flood elevations, floodway elevations, and floodway widths at unpublished cross-sections in the vicinity of the proposed development.

Attached are the following documents that support my findings:

1. Duplicate effective and revised condition HEC-RAS hydraulic models (floodplain and floodway runs) including input and output files
2. Table summarizing computed floodplain and floodway profiles
3. Work map showing contours, floodplain/floodway mapping, and base flood elevations for effective and revised conditions
4. Copy of effective Floodway Data Table
5. Cross-section plots comparing effective and revised conditions
6. Certified planimetric boundary survey of development
7. Printout of output files from effective and revised floodway runs
8. CD containing copies of all digital files


(Signature)

2/26/15
(Date)

SENIOR ENGINEER
(Title)

Northwest Hydraulic Consultants Inc.
16300 Christensen Road, Suite 350
Seattle, WA 98188

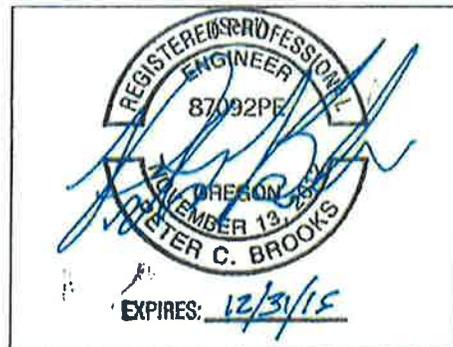
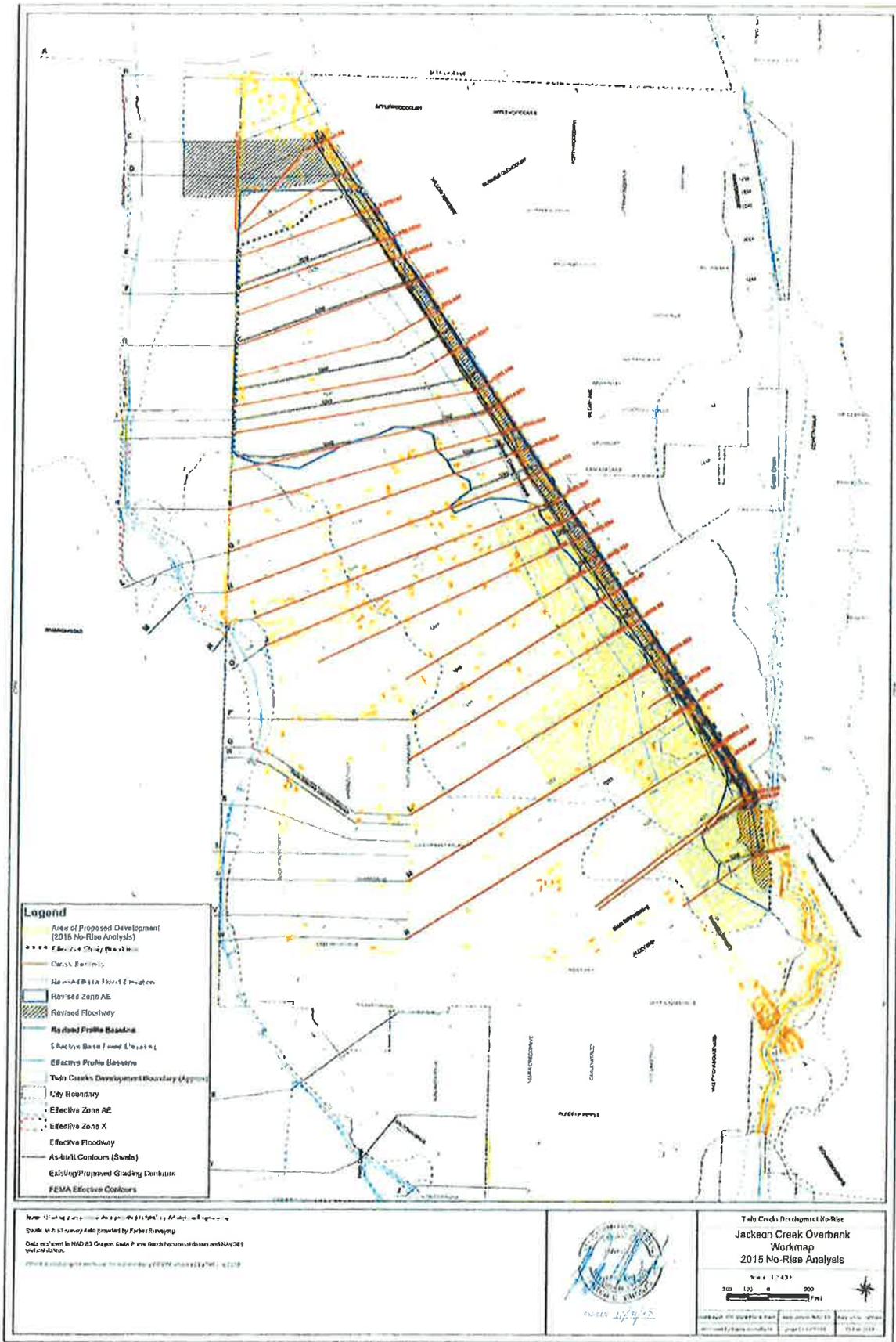


Table 1. Comparison of Effective and Revised 100-year Floodplain and Floodway Water Surface Elevations

River Station		100-Year Floodplain			Floodway		
Effective (FEMA Cross-section Letter in parenthesis, where appropriate)	Revised	Duplicate Effective Elevation (feet)	Revised Elevation (feet)	Difference (feet)	Duplicate Effective Elevation (feet)	Revised Elevation (feet)	Difference (feet)
-	0.15	-	1237.71	-	-	1238.64	-
-	0.2	-	1237.74	-	-	1238.65	-
-	0.25	-	1237.76	-	-	1238.61	-
793.2 (A)	0.28	1238.49*	1237.83	-0.66	1239.18	1238.81	-0.37
951.8 (B)	160.54	1238.84*	1238.04	-0.80	1239.60	1239.03	-0.57
-	265.49	-	1238.35	-	-	1239.18	-
1188.3 (C)	401.53	1239.72	1239.02	-0.70	1240.56	1239.62	-0.94
-	579.14	-	1239.38	-	-	1240.11	-
1554.8 (D)	783.83	1240.75	1240.49	-0.26	1241.33	1240.96	-0.37
1689.0 (E)	1002.15	1241.81	1241.39	-0.42	1242.55	1242.18	-0.37
-	1117.8	-	1242.04	-	-	1242.60	-
1966.3 (F)	1249.04	1242.82	1242.63	-0.19	1243.76	1243.33	-0.43
2113.1 (G)	1358.7	1243.65	1243.37	-0.28	1244.54	1244.08	-0.46
2270.1 (H)	1495.18	1244.37	1244.29	-0.08	1245.29	1244.74	-0.55
2422.0 (I)	1646.26	1245.25	1244.87	-0.38	1245.97	1245.31	-0.66
2548.0 (J)	1757.49	1245.86	1245.46	-0.40	1246.71	1245.69	-1.02
-	1866.28	-	1246.28	-	-	1246.41	-
-	2019.16	-	1247.39	-	-	1247.53	-
3071.0 (K)	2178.49	1248.34	1248.23	-0.11	1249.25	1248.34	-0.91
-	2350.68	-	1249.22	-	-	1249.31	-
3454.7 (L)	2564.28	1250.99	1250.50	-0.49	1251.94	1250.58	-1.36
-	2732.76	-	1251.26	-	-	1251.35	-
3722.3 (M)	2832.34	1252.21	1251.59	-0.62	1253.18	1251.68	-1.50
3956.5 (N)	3067.82	1254.01	1252.48	-1.53	1254.05	1252.59	-1.46
-	3143.45	-	1252.75	-	-	1252.86	-
-	3341.92	-	1253.25	-	-	1253.37	-
-	3370.57	-	1254	-	-	1254.03	-
-	3639.01	-	1255.21	-	-	1256.02	-

*Note: values shown in effective FEMA FWDT are incorrect (NHC, 2014)



- Legend**
- Area of Proposed Development (2015 No-Rise Analysis)
 - Effective Study Boundary
 - Creek Boundary
 - Non-Advised Flood Elevation
 - Revised Zone AE
 - Revised Floodway
 - Revised Profile Baseline
 - Station Based Flood Elevation
 - Station Profile Baseline
 - Tribal Creek's Development Boundary (Approx)
 - City Boundary
 - Effective Zone AE
 - Effective Zone X
 - Effective Floodway
 - As-Built Contour (Sunset)
 - Existing/Proposed Grading Contours
 - FEMA Effective Contours

Note: This map is a preliminary map and should not be used for regulatory purposes.
 Scale: 1" = 100 feet
 Data is shown in NAD 83 Oregon State Plane North horizontal datum and NAVD83 vertical datum.
 Other geographic information for this map is provided on sheet 10/21/15.



Tribal Creek's Development No-Rise
 Jackean Creek Overbank
 Workmap
 2015 No-Rise Analysis

Scale: 1" = 100'
 0 100 200 Feet

North Arrow

Project: Tribal Creek's Development No-Rise Jackean Creek Overbank Workmap
 Date: 10/21/15
 Sheet: 10/21/15

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Jackson Creek Overbank								
A	390	200	575	2.1	1238.4	1238.4	1239.2	0.8
B	588	200	348	3.5	1238.6	1238.6	1239.6	1.0
C	986	239	674	1.8	1239.7	1239.7	1240.6	0.8
D	1394	224	340	3.6	1240.8	1240.8	1241.3	0.6
E	1592	270	452	2.7	1241.8	1241.8	1242.6	0.7
F	1833	292	403	3.0	1242.8	1242.8	1243.8	0.9
G	1949	264	385	3.2	1243.7	1243.7	1244.5	0.9
H	2091	259	464	2.6	1244.4	1244.4	1245.3	0.9
I	2236	283	398	3.1	1245.3	1245.3	1246.0	0.7
K	2790	351	443	2.8	1248.4	1248.4	1249.3	0.9
L	3172	360	411	3.0	1251.0	1251.0	1251.9	1.0
M	3446	423	632	1.9	1252.2	1252.2	1253.2	1.0
N	3683	310	407	3.0	1254.0	1254.0	1254.1	0.0

¹ Feet above confluence with Jackson Creek	
FEDERAL EMERGENCY MANAGEMENT AGENCY	
JACKSON COUNTY, OR AND INCORPORATED AREAS	
FLOODWAY DATA	
JACKSON CREEK OVERBANK	

Table 5

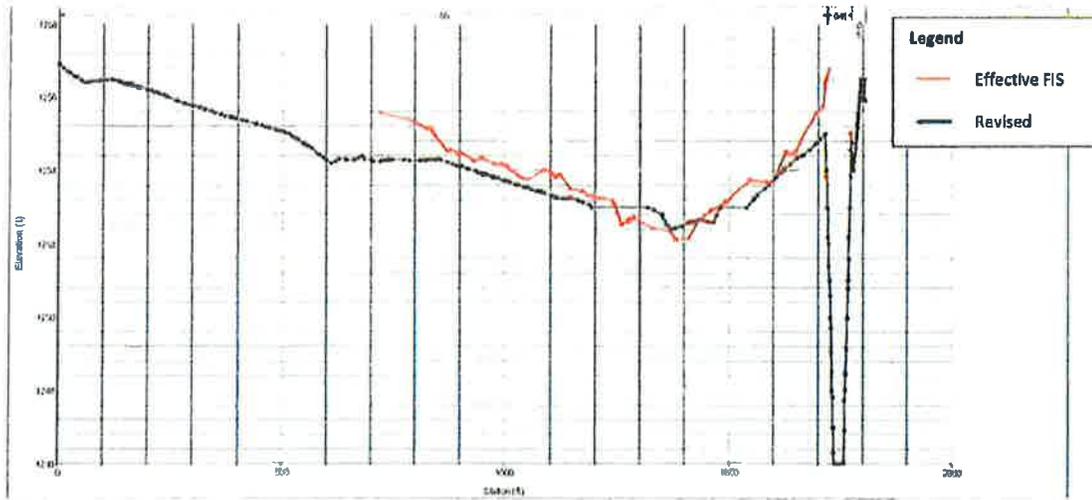


Figure 1. Effective RS 3956.45 (N), Revised RS 3067.82

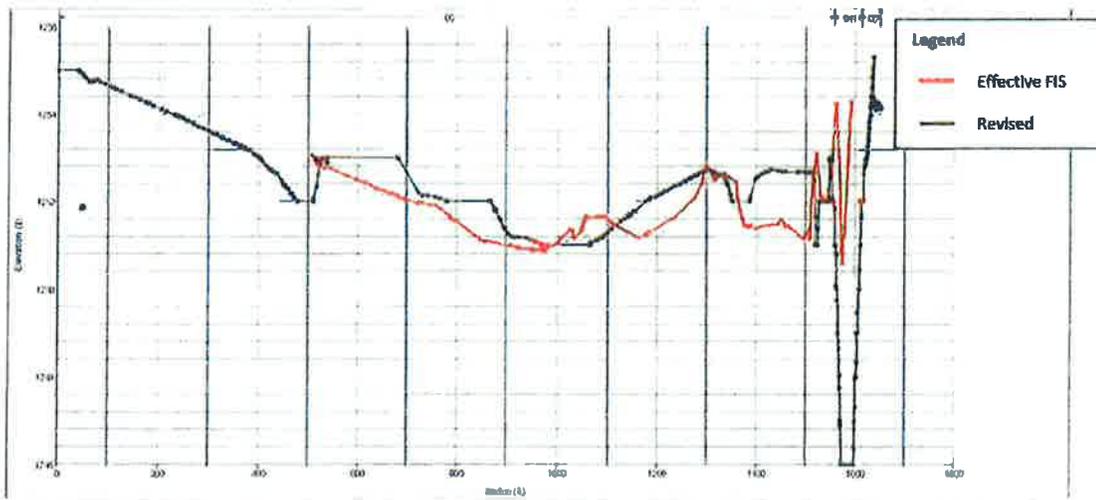


Figure 2. Effective RS 3722.35 (M), Revised RS 2832.34

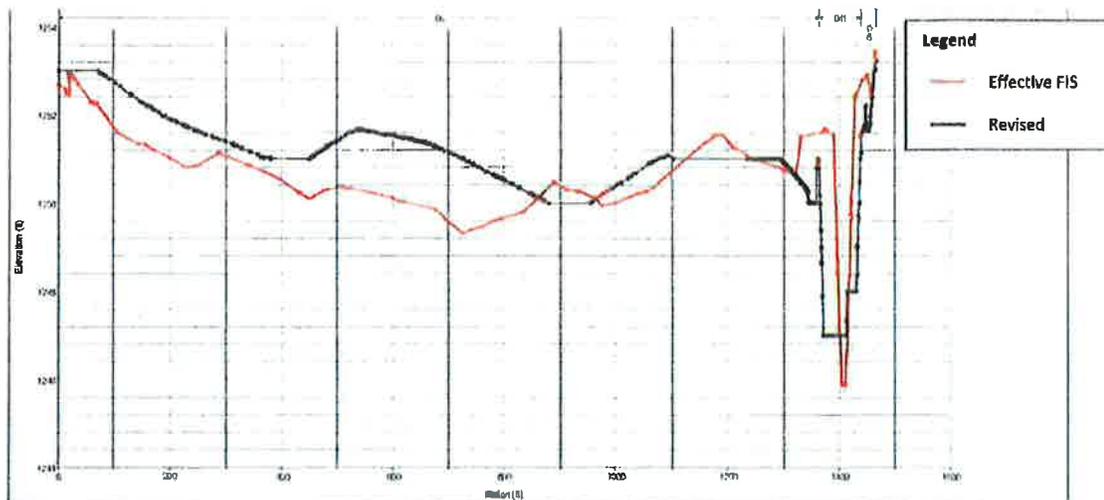


Figure 3. Effective RS 3454.72 (L), Revised RS 2564.28

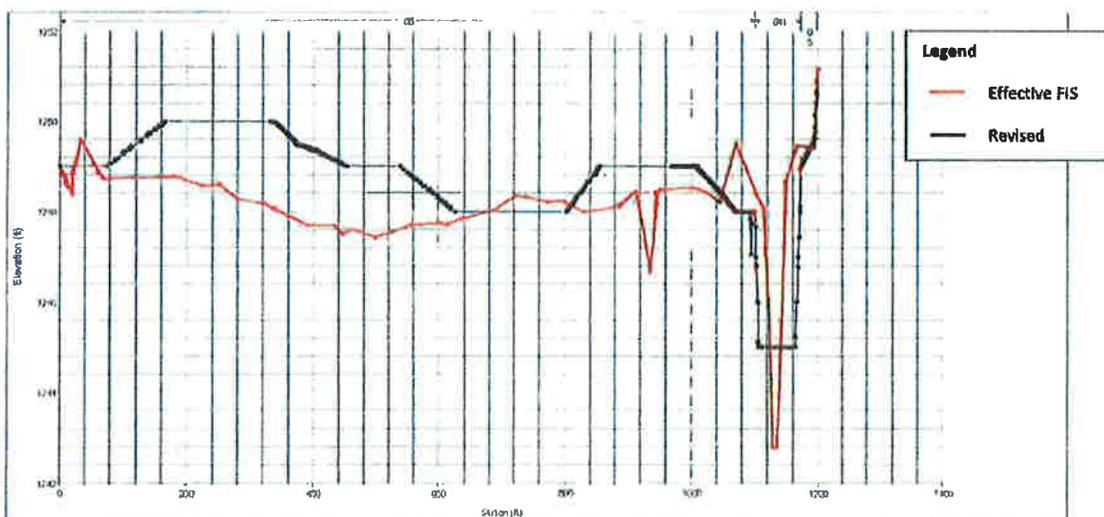


Figure 4. Effective RS 3070.97 (K), Revised RS 2178.49

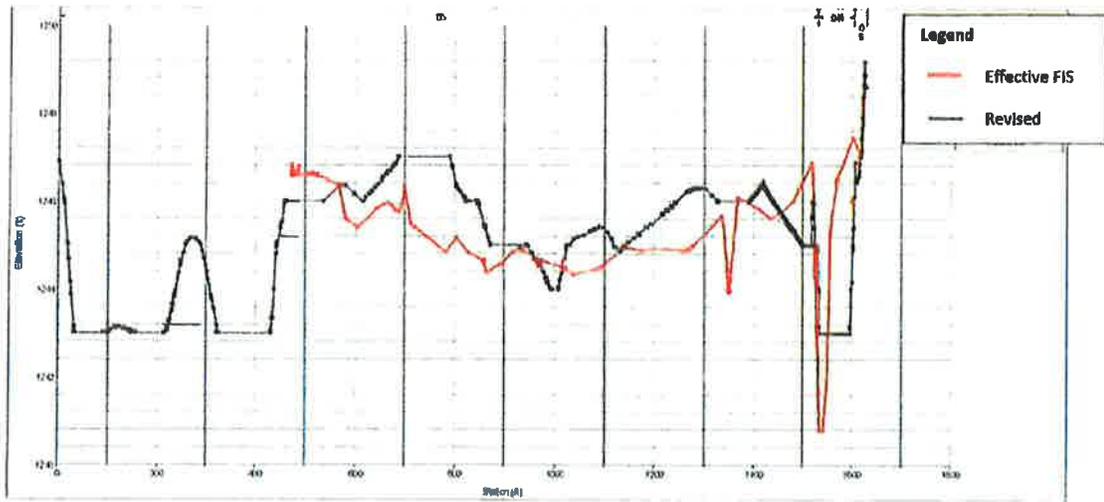


Figure 5. Effective RS 2547.98(1), Revised RS 1757.49

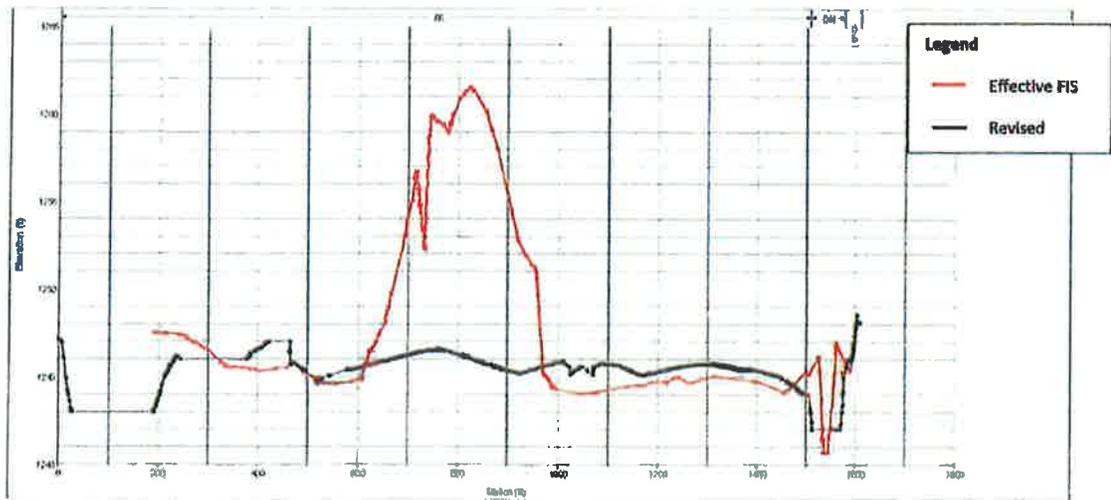


Figure 6. Effective RS 2422.05 (1), Revised RS 1646.26

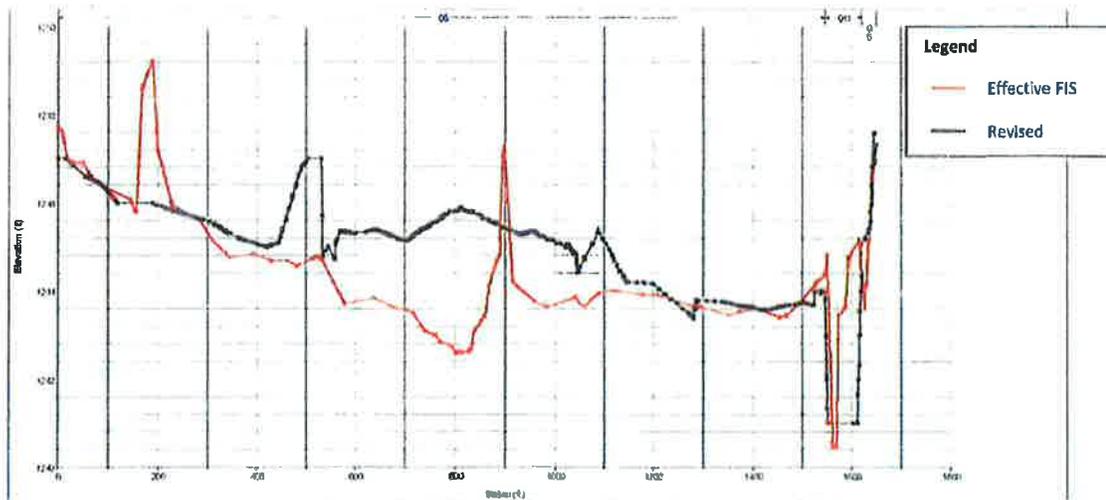


Figure 7. Effective RS 2279.06 (H), Revised RS 1495.18

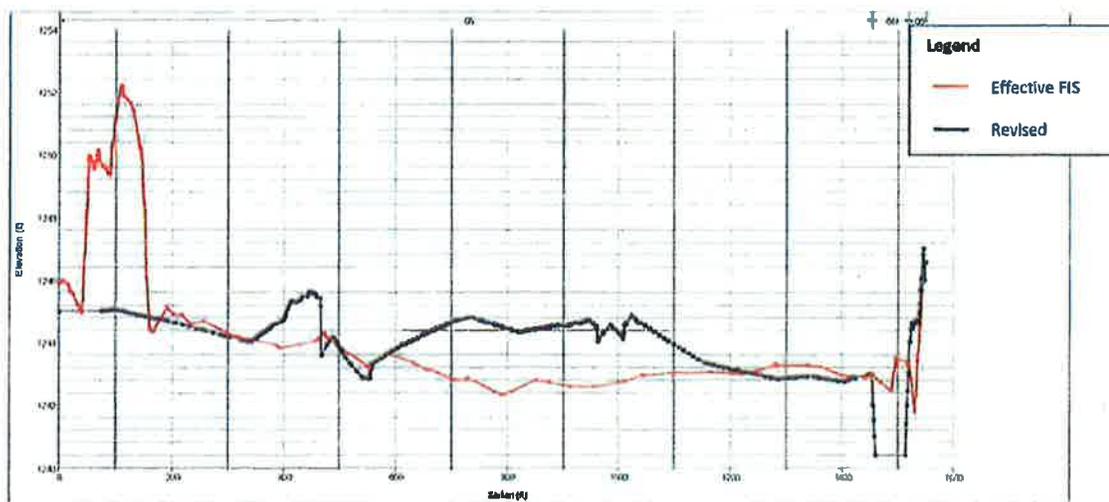


Figure 8. Effective RS 2113.14 (G), Revised RS 1358.70

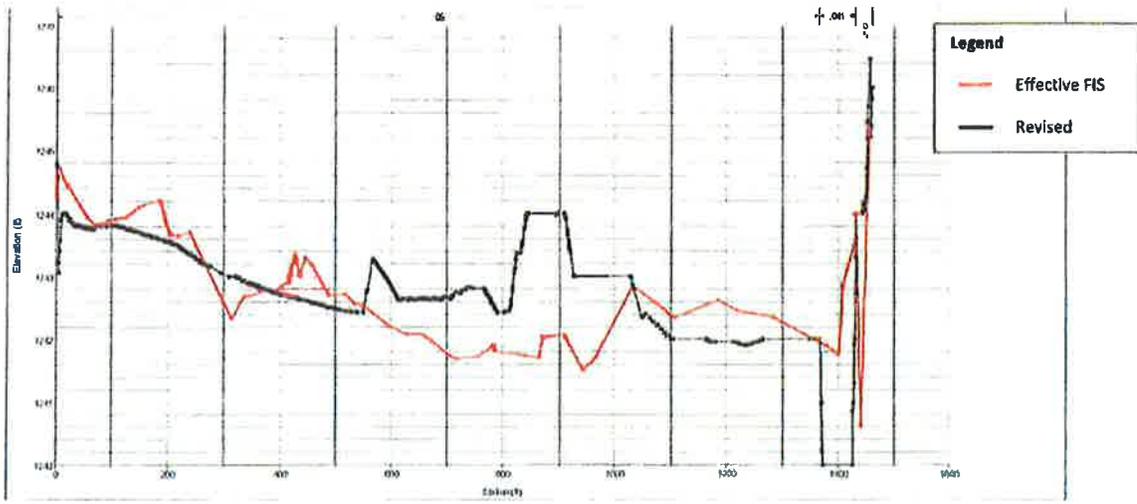


Figure 9. Effective RS 1966.35(F), Revised RS 1249.04

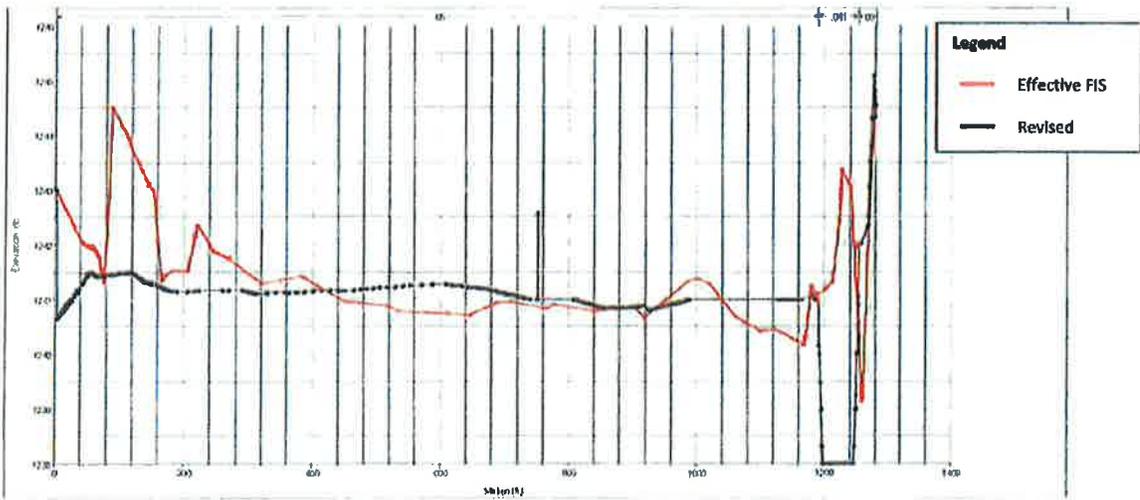


Figure 10. Effective RS 1689.04 (E), Revised RS 1002.15

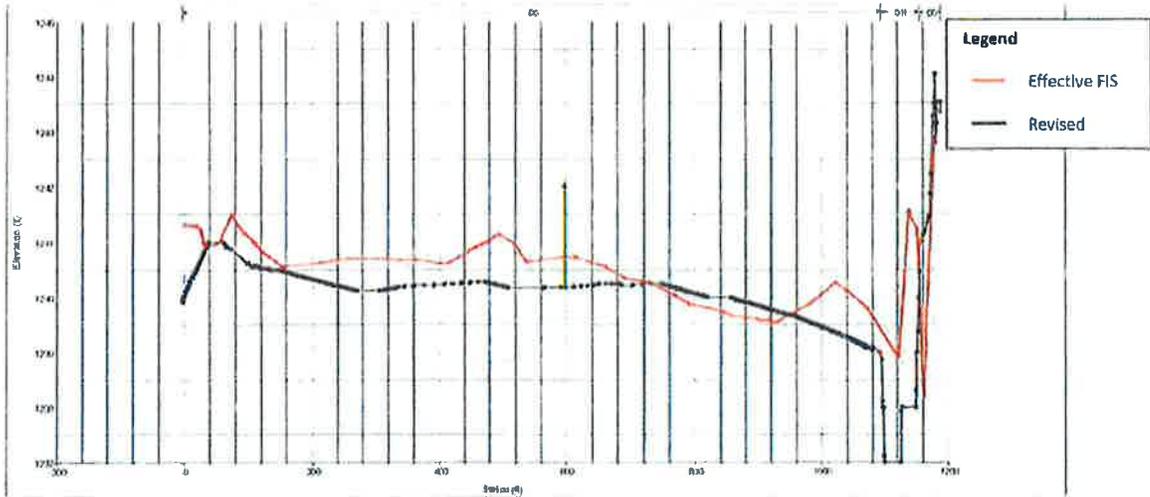


Figure 11. Effective RS 1554.78 (D), Revised RS 783.83

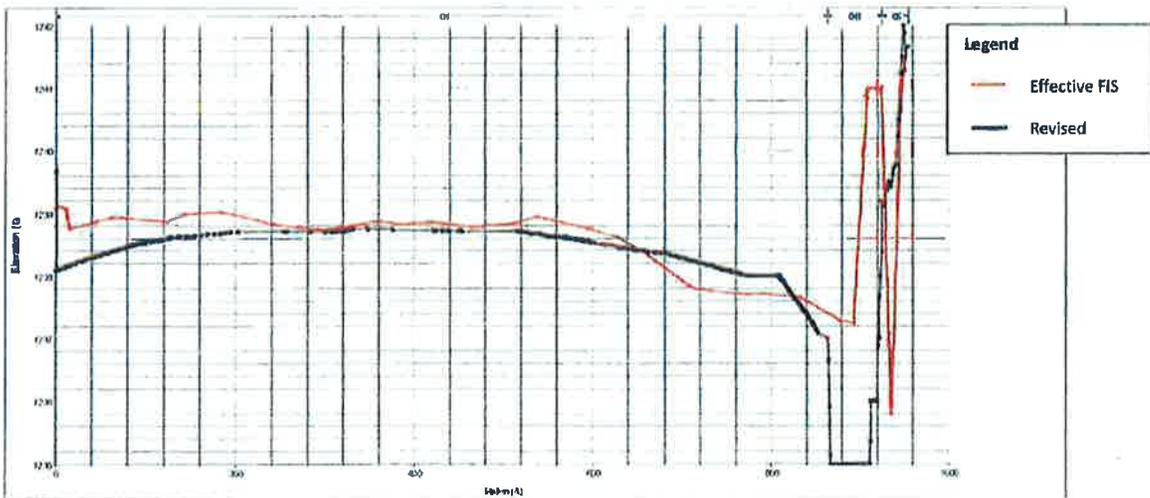


Figure 12. Effective RS 1118.32(C), Revised RS 401.53

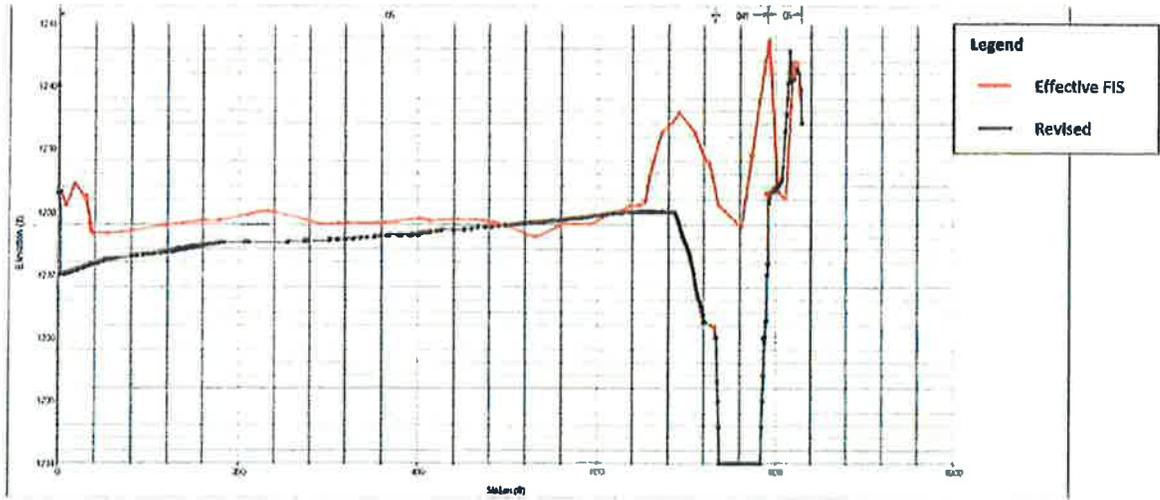


Figure 13. Effective RS 951.84(B), Revised RS 160.54

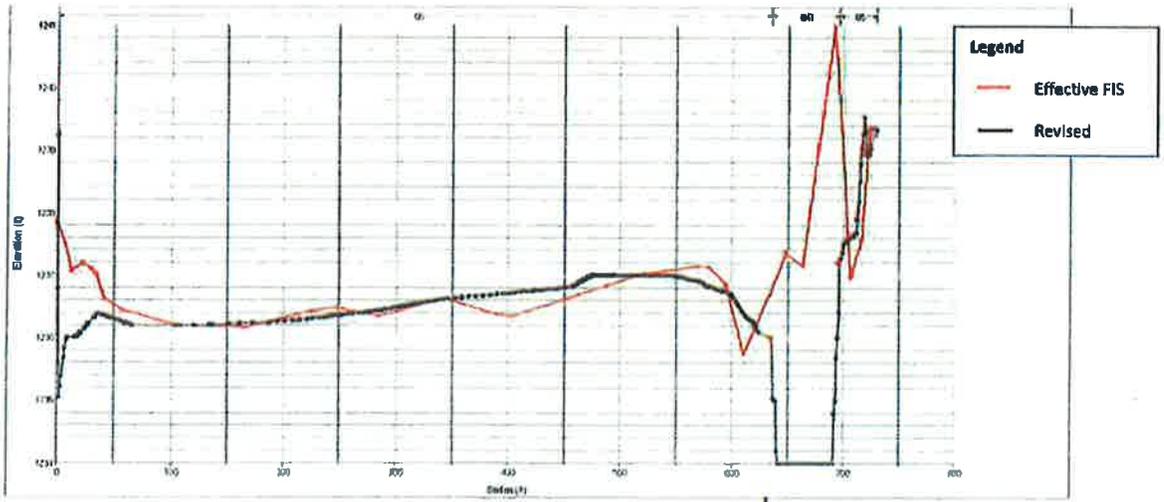
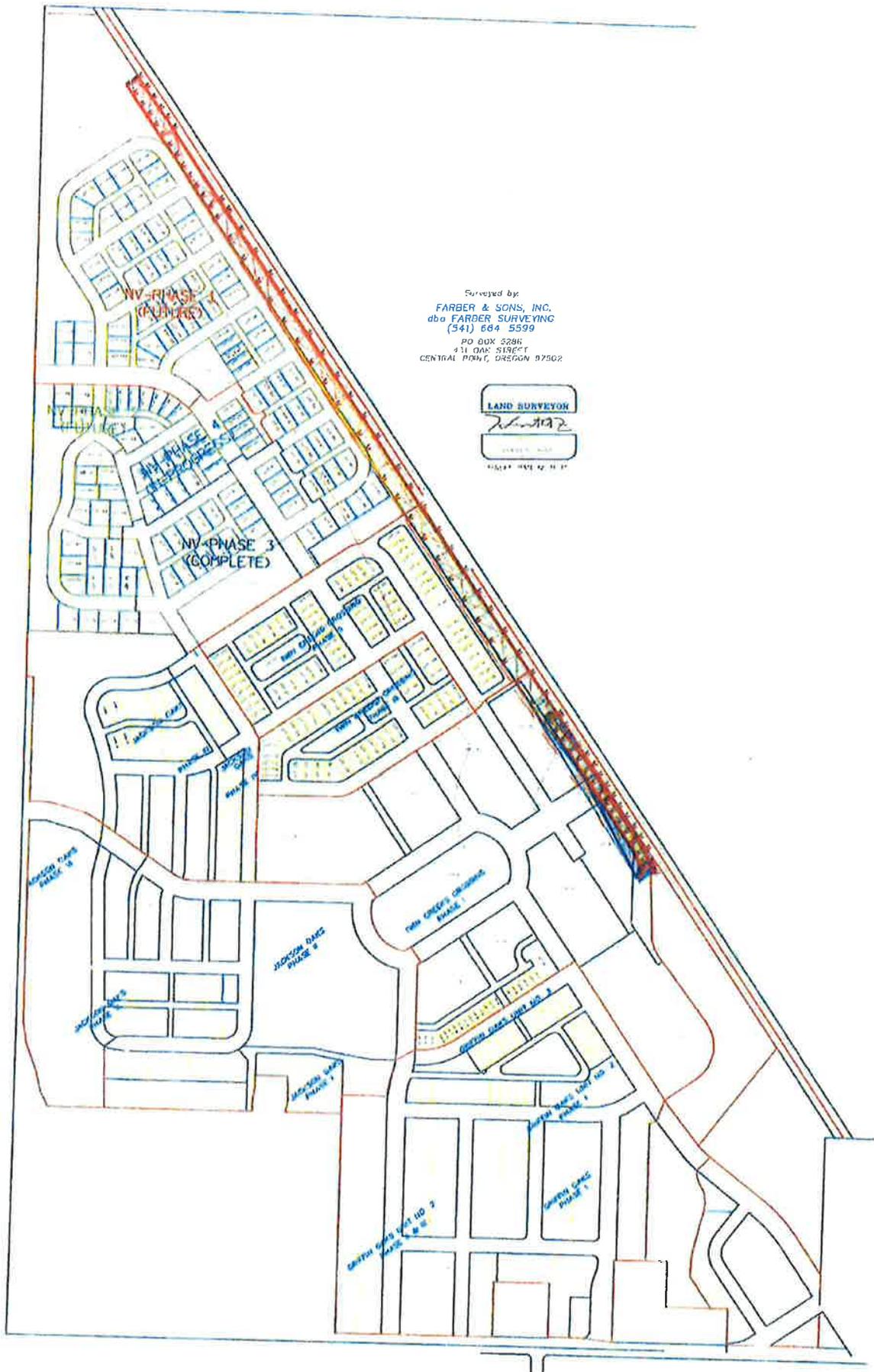


Figure 14. Effective RS 793.19 (A), Revised RS 0.275



Surveyed by:
FARBER & SONS, INC.
 dba **FARBER SURVEYING**
 (541) 684-5599
 PO BOX 5286
 411 OAK STREET
 CENTRAL POINT, OREGON 97502

LAND SURVEYOR
R. H. FARBER
 01/28/2014 10:11:11 AM

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20 PROJECT DATA
21 Project Title: Jackson Creek Hydraulic Model
22 Project File : JAFISOct04.prj
23 Run Date and Time: 2/25/2015 3:23:11 PM
24
25 Project in English units
26
27 Project Description:
28 Jackson Creek HEC-RAS Model - Twin Creeks Development No-Rise
29 Developed by
30 Northwest Hydraulic Consultants, Inc
31 February 25, 2015
32 v4.1.0
33
34 Vertical
35 Datum: NAVD 1988
36 Survey obtained by NHC and terrain data supplied by the City
37 of Central Point, Farber Surveying and Whetstone Engineering
38
39 2015
40 AMMENDMENT
41 As-built of drainage swale grading added to model
42 Development
43 grading includes T.C. Crossing Phases 1, 2, and 3; N.V. Phase 3
44
45
46
47
48 PLAN DATA
49
50 Plan Title: Duplicate Effective Floodway
51 Plan File : Q:\ B\200044 Twin Creeks CLOMR
52 Preparation\2015_NoRise\Submittal\HEC-RAS\JAFISOct04.p15
53
54 Geometry Title: Jackson_Floodway_Effective
55 Geometry File : Q:\_B\200044 Twin Creeks CLOMR
56 Preparation\2015_NoRise\Submittal\HEC-RAS\JAFISOct04.g02
57
58 Flow Title : Jackson Floodway Effective
59 Flow File : Q:\ B\200044 Twin Creeks CLOMR
60 Preparation\2015_NoRise\Submittal\HEC-RAS\JAFISOct04.f03
61
62 Plan Summary Information:
63 Number of: Cross Sections = 72 Multiple Openings 0

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61          Culverts          5  Inline Structures  2
62          Bridges           8  Lateral Structures  9
63
64  Computational Information
65    Water surface calculation tolerance = 0.01
66    Critical depth calculation tolerance = 0.01
67    Maximum number of iterations      = 20
68    Maximum difference tolerance      = 0.3
69    Flow tolerance factor              = 0.001
70
71  Computation Options
72    Critical depth computed only where necessary
73    Conveyance Calculation Method: At breaks in n values only
74    Friction Slope Method:          Average Conveyance
75    Computational Flow Regime:      Subcritical Flow
76
77  Encroachment Data
78    Equal Conveyance = True
79    Left Offset     = 0
80    Right Offset    = 0
81
82  River = Jackson Creek  Reach = Main Channel
83  RS      Profile      Method  Value1  Value2
84  20208.45FLOODWAY      1  1067.75  1120.2
85  20198.01FLOODWAY      1  1144.75  1197.2
86  20166.90FLOODWAY      1  1152.5  1202.36
87  20090.33FLOODWAY      1  1016.25  1057.88
88  18967.88FLOODWAY      1  225.09  279.64
89  17994.36FLOODWAY      1  82  147.06
90  17931.56FLOODWAY      1  82  151
91  17857.52FLOODWAY      1  180  240
92  17716.39FLOODWAY      1  259  323
93  17671.40FLOODWAY      1  270  330
94  17620.46FLOODWAY      1  280  340
95  17591.36FLOODWAY      1  289.21  354
96  16942.29FLOODWAY      1  267.96  303.96
97  16403.44FLOODWAY      1  124.5  220.93
98  15919.80FLOODWAY      1  133.5  198.59
99  15857.49FLOODWAY      1  123.5  188.59
100 15411.86FLOODWAY      1  90.85  154.19
101 15372.82FLOODWAY      1  33  103
102 15319.58FLOODWAY      1  0  62.77
103 15288.48FLOODWAY      1  63.5  115.27
104 15069.27FLOODWAY      1  7.5  38.3
105 15002.72FLOODWAY      1  746.5  783.19
106 14531.71FLOODWAY      1  427.52  464.5
107 13739.75FLOODWAY      1  13.6  75.82
108 13618.45FLOODWAY      1  19.4  63.2
109 13447.21FLOODWAY      1  25.95  65.2
110 13314.60FLOODWAY      1  37.15  96.91
111 13087.59FLOODWAY      1  38.7  144.1
112 12851.71FLOODWAY      1  100.3  149.5
113 12799.54FLOODWAY      1  119.3  168.5
114 12651.65FLOODWAY      1  102.7  230
115 12352.91FLOODWAY      1  40  167
116 12184.87FLOODWAY      1  112.5  153.73
117 12153.40FLOODWAY      1  105.5  141.39
118 11900.70FLOODWAY      1  253.62  299.71
119 11885.36FLOODWAY      1  248  294.09
120 11748.96FLOODWAY      1  264.12  308.05
121 11366.76FLOODWAY      1  12.82  50.24
122 11034.75FLOODWAY      1  22.46  58
123 11018.94FLOODWAY      1  24.66  57.3

```

124	10990.71	FLOODWAY	1	25.71	58.37
125	10948.06	FLOODWAY	1	48.68	81.37
126	10897.78	FLOODWAY	1	0	50.22
127	10884.99	FLOODWAY	1	0	90
128	10589.80	FLOODWAY	1	0	150
129	10343.73	FLOODWAY	1	0	200
130	10325.40	FLOODWAY	1	0	200
131	10175.04	FLOODWAY	1	0	225
132	10159.97	FLOODWAY	1	0	235
133					
134	River = Jackson Creek		Reach = Main Lower		
135	RS	Profile	Method	Value1	Value2
136	9769.785	FLOODWAY	1	57.49	416.4
137	9747.670	FLOODWAY	1	57.61	420.25
138	9611.585	FLOODWAY	1	0	275.68
139	9595.562	FLOODWAY	1	0	275.68
140	9288.338	FLOODWAY	1	0	300
141	9235.024	FLOODWAY	1	361.59	700
142	9220.769	FLOODWAY	1	199.82	690
143	9000	FLOODWAY	1	225	670
144					
145	River = Jackson Overbank		Reach = Jackson Overbank		
146	RS	Profile	Method	Value1	Value2
147	3956.457	FLOODWAY	1	1290	1600
148	3722.349	FLOODWAY	1	1141	1564
149	3454.720	FLOODWAY	1	1070	1430.03
150	3070.973	FLOODWAY	1	800	1150.65
151	2547.979	FLOODWAY	1	1260	1571.73
152	2422.046	FLOODWAY	1	1280	1563.41
153	2270.064	FLOODWAY	1	1335	1594.29
154	2113.142	FLOODWAY	1	1235	1499.38
155	1966.347	FLOODWAY	1	1140	1432.21
156	1689.039	FLOODWAY	1	955	1225.42
157	1554.780	FLOODWAY	1	915	1138.8
158	1188.317	FLOODWAY	1	655	894
159	951.8403	FLOODWAY	1	296	496
160	794.192*	FLOODWAY	1	95	295
161	793.1924	FLOODWAY	1	95	295

162

163

164 Profile Output Table - Encroachment 1

165

166	River	Reach		River Sta			Profile	W.S.
	Elev	Prof	Delta WS	E.G. Elev	Top Wdth	Act	Q Left	Q Channel
	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Ch Sta R	Enc Sta R		

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168							
169	Jackson Creek	Main Lower	9000		100YR		
	1233.89		1234.71	395.15		389.05	
	2066.70	1.27	436.95	479.00			
170	Jackson Creek	Main Lower	9000		FLOODWAY		
	1234.72	0.84	1235.60	445.00		787.16	
	2552.01	71.83	225.00	436.95	479.00	670.00	
171							
172	Jackson Creek	Main Lower	9220.769		100YR		
	1235.15		1235.43	490.18		708.38	
	1616.59	132.04	436.95	479.00			
173	Jackson Creek	Main Lower	9220.769		FLOODWAY		
	1236.04	0.89	1236.29	490.18		1166.96	
	1839.93	404.11	199.82	436.95	479.00	690.00	
174							
175	Jackson Creek	Main Lower	9235.024		100YR		
	1234.82		1235.64	338.41		33.11	
	2150.18	273.73	437.80	484.13			
176	Jackson Creek	Main Lower	9235.024		FLOODWAY		
	1235.80	0.98	1236.45	338.41		179.74	
	2436.59	794.68	361.59	437.80	484.13	700.00	
177							
178	Jackson Creek Culvert	Main Lower	9245				
179							
180	Jackson Creek	Main Lower	9288.338		100YR		
	1236.69		1236.88	400.00		338.65	
	1179.61	938.76	57.83	86.93			
181	Jackson Creek	Main Lower	9288.338		FLOODWAY		
	1237.39	0.69	1237.68	300.00		636.08	
	1572.31	1202.62	0.00	57.83	86.93	300.00	
182							
183	Jackson Creek	Main Lower	9300				Lat

183	Struct						
184							
185	Jackson Creek	Main Lower	9595.562		100YR		
	1237.10		1237.31	416.00		180.38	
	1529.78	1353.09	56.68	99.03			
186	Jackson Creek	Main Lower	9595.562		FLOODWAY		
	1237.91		1238.18	275.68		390.83	
	1843.63	1176.54	0.00	56.68	99.03		275.68
187							
188	Jackson Creek	Main Lower	9607.9				Inl
	Struct						
189							
190	Jackson Creek	Main Lower	9611.585		100YR		
	1237.15		1237.35	414.00		213.86	
	1505.68	1343.70	54.68	97.03			
191	Jackson Creek	Main Lower	9611.585		FLOODWAY		
	1237.98		1238.23	275.68		424.60	
	1788.58	1197.82	0.00	54.68	97.03		275.68
192							
193	Jackson Creek	Main Lower	9700				Lat
	Struct						
194							
195	Jackson Creek	Main Lower	9747.670		100YR		
	1237.35		1237.63	420.25		390.67	
	1252.54	1538.02	57.61	82.13			
196	Jackson Creek	Main Lower	9747.670		FLOODWAY		
	1238.26		1238.46	362.64			
	1222.92	2188.08	57.61	57.61	82.13		420.25
197							
198	Jackson Creek	Main Lower	9758	BR D	100YR		
	1237.54		1237.68	420.25		227.25	
	655.55	2298.43	57.61	82.13			
199	Jackson Creek	Main Lower	9758	BR D	FLOODWAY		
	1238.38		1238.49	362.64			
	616.76	2794.24	57.61	57.61	82.13		420.25
200							
201	Jackson Creek	Main Lower	9758	BR U	100YR		
	1237.59		1237.75	416.40		249.06	
	638.58	2293.58	57.49	83.13			
202	Jackson Creek	Main Lower	9758	BR U	FLOODWAY		
	1238.42		1238.53	358.91			
	614.86	2796.14	57.49	57.49	83.13		416.40
203							
204	Jackson Creek	Main Lower	9769.785		100YR		
	1237.52		1237.78	416.40		447.34	
	1250.51	1483.38	57.49	83.13			
205	Jackson Creek	Main Lower	9769.785		FLOODWAY		
	1238.35		1238.56	358.91			
	1284.04	2126.96	57.49	57.49	83.13		416.40
206							
207	Jackson Creek	Main Channel	10159.97		100YR		
	1238.33		1238.83	52.34		33.59	
	911.59	0.53	43.13	68.88			
208	Jackson Creek	Main Channel	10159.97		FLOODWAY		
	1239.04		1239.82	223.81		150.12	
	1483.06	557.82	0.00	43.13	68.88		235.00
209							
210	Jackson Creek	Main Channel	10168	BR D	100YR		
	1237.52		1239.20				
	945.71		43.13	68.88			
211	Jackson Creek	Main Channel	10168	BR D	FLOODWAY		
	1239.44		1239.87	235.00		113.21	
	777.14	1300.66	0.00	43.13	68.88		235.00

212								
213	Jackson Creek	Main Channel	10168	BR U	100YR			
	1237.76		1239.51					
	945.71		55.05	77.27				
214	Jackson Creek	Main Channel	10168	BR U	FLOODWAY			
	1239.56	1.80	1240.15	225.00	142.32			
	890.87	1157.80	0.00	55.05	77.27	225.00		
215								
216	Jackson Creek	Main Channel	10175.04		100YR			
	1239.65		1239.69	552.82	54.39			
	379.78	511.54	55.05	77.27				
217	Jackson Creek	Main Channel	10175.04		FLOODWAY			
	1239.41	-0.24	1240.22	214.60	182.45			
	1437.53	571.02	0.00	55.05	77.27	225.00		
218								
219	Jackson Creek	Main Channel	10200				Lat	
	Struct							
220								
221	Jackson Creek	Main Channel	10325.40		100YR			
	1239.54		1239.89	43.49	0.53			
	1207.34	0.35	16.27	55.15				
222	Jackson Creek	Main Channel	10325.40		FLOODWAY			
	1240.28	0.74	1240.80	200.00	11.51			
	1801.26	378.23	0.00	16.27	55.15	200.00		
223								
224	Jackson Creek	Main Channel	10335	BR D	100YR			
	1239.21		1240.03	1.00				
	1207.87	0.34	16.27	55.15				
225	Jackson Creek	Main Channel	10335	BR D	FLOODWAY			
	1240.45	1.24	1240.82	200.00	38.93			
	1241.49	910.58	0.00	16.27	55.15	200.00		
226								
227	Jackson Creek	Main Channel	10335	BR U	100YR			
	1239.35		1240.36	38.85				
	1208.21		16.02	55.04				
228	Jackson Creek	Main Channel	10335	BR U	FLOODWAY			
	1240.58	1.22	1241.01	200.00	47.89			
	1271.70	871.41	0.00	16.02	55.04	200.00		
229								
230	Jackson Creek	Main Channel	10343.73		100YR			
	1240.08		1240.43	51.36	3.27			
	1204.94		16.02	55.04				
231	Jackson Creek	Main Channel	10343.73		FLOODWAY			
	1240.52	0.44	1241.05	200.00	20.83			
	1752.55	417.61	0.00	16.02	55.04	200.00		
232								
233	Jackson Creek	Main Channel	10400				Lat	
	Struct							
234								
235	Jackson Creek	Main Channel	10589.80		100YR			
	1240.37		1241.41	34.92				
	1853.30	0.03	22.92	57.84				
236	Jackson Creek	Main Channel	10589.80		FLOODWAY			
	1241.19	0.82	1241.88	142.05	7.35			
	1846.48	337.18	0.00	22.92	57.84	150.00		
237								
238	Jackson Creek	Main Channel	10600				Lat	
	Struct							
239								
240	Jackson Creek	Main Channel	10884.99		100YR			
	1241.82		1242.96	30.37				
	1930.97	0.14	19.65	49.65				
241	Jackson Creek	Main Channel	10884.99		FLOODWAY			

241	1242.04		0.21	1243.42	32.10	0.17	
	2190.56	0.28	0.00	19.65	49.65	90.00	
242							
243	Jackson Creek		Main Channel	10891	BR D	100YR	
	1241.23			1243.22			
	1931.11			19.65	49.65		
244	Jackson Creek		Main Channel	10891	BR D	FLOODWAY	
	1241.22		-0.01	1243.78			
	2191.00		0.00	19.65	49.65	90.00	
245							
246	Jackson Creek		Main Channel	10891	BR U	100YR	
	1241.29			1243.57			
	1931.11			17.42	50.14		
247	Jackson Creek		Main Channel	10891	BR U	FLOODWAY	
	1241.29		0.00	1244.23			
	2191.00		0.00	17.42	50.14	50.22	
248							
249	Jackson Creek		Main Channel	10897.78		100YR	
	1242.73			1243.71	39.44	3.67	
	1925.61	1.84		17.42	50.14		
250	Jackson Creek		Main Channel	10897.78		FLOODWAY	
	1243.39		0.66	1244.43	50.22	22.61	
	2168.35	0.04	0.00	17.42	50.14	50.22	
251							
252	Jackson Creek		Main Channel	10900			Lat
	Struct						
253							
254	Jackson Creek		Main Channel	10948.06		100YR	
	1242.96			1243.93	41.02	5.52	
	1954.93	0.79		48.68	81.37		
255	Jackson Creek		Main Channel	10948.06		FLOODWAY	
	1243.62		0.66	1244.65	32.69		
	2191.00		48.68	48.68	81.37	81.37	
256							
257	Jackson Creek		Main Channel	10990.71		100YR	
	1243.18			1244.10	39.76	4.14	
	1956.63	0.46		25.71	58.37		
258	Jackson Creek		Main Channel	10990.71		FLOODWAY	
	1243.85		0.67	1244.83	32.66		
	2191.00		25.71	25.71	58.37	58.37	
259							
260	Jackson Creek		Main Channel	11018.94		100YR	
	1243.33			1244.21	38.87	1.83	
	1959.08	0.32		24.66	57.30		
261	Jackson Creek		Main Channel	11018.94		FLOODWAY	
	1244.01		0.68	1244.95	32.64		
	2191.00		24.66	24.66	57.30	57.30	
262							
263	Jackson Creek		Main Channel	11027.9			Inl
	Struct						
264							
265	Jackson Creek		Main Channel	11034.75		100YR	
	1243.76			1244.62	42.70	4.88	
	1956.18	0.16		24.41	57.05		
266	Jackson Creek		Main Channel	11034.75		FLOODWAY	
	1244.51		0.75	1245.41	35.54	6.77	
	2183.60	0.63	22.46	24.41	57.05	58.00	
267							
268	Jackson Creek		Main Channel	11366.76		100YR	
	1244.96			1245.70	38.44	0.07	
	1961.10	0.06		12.82	50.24		
269	Jackson Creek		Main Channel	11366.76		FLOODWAY	
	1245.67		0.71	1246.44	37.42		

269	2191.00		12.82	12.82	50.24	50.24	
270							
271	Jackson Creek	Main Channel		11748.96		100YR	
	1246.16		1246.82		42.56		
	1961.23			264.12	308.05		
272	Jackson Creek	Main Channel		11748.96		FLOODWAY	
	1246.85	0.69	1247.54		43.59		
	2191.00		264.12	264.12	308.05		308.05
273							
274	Jackson Creek	Main Channel		11885.36		100YR	
	1246.57		1247.21		43.69		
	1961.23			248.00	294.09		
275	Jackson Creek	Main Channel		11885.36		FLOODWAY	
	1247.25	0.68	1247.90		45.29		
	2191.00		248.00	248.00	294.09		294.09
276							
277	Jackson Creek	Main Channel		11892	BR D	100YR	
	1246.43		1247.27		30.74		
	1961.23			248.00	294.09		
278	Jackson Creek	Main Channel		11892	BR D	FLOODWAY	
	1247.08	0.64	1247.98		30.73		
	2191.00		248.00	248.00	294.09		294.09
279							
280	Jackson Creek	Main Channel		11892	BR U	100YR	
	1246.49		1247.32		31.52		
	1961.23			258.28	295.05		
281	Jackson Creek	Main Channel		11892	BR U	FLOODWAY	
	1247.14	0.65	1248.03		31.52		
	2191.00		253.62	258.28	295.05		299.71
282							
283	Jackson Creek	Main Channel		11900.70		100YR	
	1246.56		1247.33		35.30		
	1961.23			258.28	295.05		
284	Jackson Creek	Main Channel		11900.70		FLOODWAY	
	1247.23	0.67	1249.04		37.96		
	2191.00	0.00	253.62	258.28	295.05		299.71
285							
286	Jackson Creek	Main Channel		12153.40		100YR	
	1247.33		1248.56		29.55		
	1961.23			105.50	141.39		
287	Jackson Creek	Main Channel		12153.40		FLOODWAY	
	1247.99	0.66	1249.28		31.79		
	2191.00		105.50	105.50	141.39		141.39
288							
289	Jackson Creek	Main Channel		12168	BR D	100YR	
	1247.25		1248.65		24.44		
	1961.23			105.50	141.39		
290	Jackson Creek	Main Channel		12168	BR D	FLOODWAY	
	1247.87	0.62	1249.39		24.46		
	2191.00		105.50	105.50	141.39		141.39
291							
292	Jackson Creek	Main Channel		12168	BR U	100YR	
	1247.28		1248.85		23.59		
	1961.23			112.50	153.73		
293	Jackson Creek	Main Channel		12168	BR U	FLOODWAY	
	1247.90	0.62	1249.60		23.58		
	2191.00		112.50	112.50	153.73		153.73
294							
295	Jackson Creek	Main Channel		12184.87		100YR	
	1248.15		1248.96		39.31		
	1961.23			112.50	153.73		
296	Jackson Creek	Main Channel		12184.87		FLOODWAY	
	1248.89	0.75	1249.72		40.97		

296	2191.00		112.50	112.50	153.73	153.73
297						
298	Jackson Creek	Main Channel		12352.91		100YR
	1249.06		1249.12		157.95	2.66
	1958.27	0.29		40.00	167.00	
299	Jackson Creek	Main Channel		12352.91		FLOODWAY
	1249.81	0.75	1249.87		127.00	
	2191.00		40.00	40.00	167.00	167.00
300						
301	Jackson Creek	Main Channel		12651.65		100YR
	1249.09		1249.23		110.62	
	1961.23			102.70	230.00	
302	Jackson Creek	Main Channel		12651.65		FLOODWAY
	1249.84	0.75	1249.98		117.11	
	2191.00		102.70	102.70	230.00	230.00
303						
304	Jackson Creek	Main Channel		12799.54		100YR
	1248.93		1251.14		37.16	
	1961.23			119.30	168.50	
305	Jackson Creek	Main Channel		12799.54		FLOODWAY
	1249.39	0.45	1251.64		40.16	
	2191.00		119.30	119.30	168.50	168.50
306						
307	Jackson Creek	Main Channel		12825	BR D	100YR
	1249.61		1251.24		41.61	
	1961.23			119.30	168.50	
308	Jackson Creek	Main Channel		12825	BR D	FLOODWAY
	1250.05	0.44	1251.74		44.52	
	2191.00		119.30	119.30	168.50	168.50
309						
310	Jackson Creek	Main Channel		12825	BR U	100YR
	1250.67		1251.72		49.06	
	1961.19	0.04		100.30	149.50	
311	Jackson Creek	Main Channel		12825	BR U	FLOODWAY
	1251.10	0.43	1252.20		49.20	
	2191.00		100.30	100.30	149.50	149.50
312						
313	Jackson Creek	Main Channel		12851.71		100YR
	1250.68		1251.72		49.15	
	1961.18	0.05		100.30	149.50	
314	Jackson Creek	Main Channel		12851.71		FLOODWAY
	1251.11	0.43	1252.21		49.20	
	2191.00		100.30	100.30	149.50	149.50
315						
316	Jackson Creek	Main Channel		13087.59		100YR
	1252.41		1252.96		77.29	
	1961.23			38.70	144.10	
317	Jackson Creek	Main Channel		13087.59		FLOODWAY
	1252.85	0.45	1253.41		81.78	
	2191.00		38.70	38.70	144.10	144.10
318						
319	Jackson Creek	Main Channel		13314.60		100YR
	1253.22		1254.04		66.33	
	1958.31	2.92		37.15	96.91	
320	Jackson Creek	Main Channel		13314.60		FLOODWAY
	1253.61	0.39	1254.49		55.46	
	2191.00		37.15	37.15	96.91	96.91
321						
322	Jackson Creek	Main Channel		13447.21		100YR
	1253.10		1255.60		32.01	
	1944.20	17.03		25.95	59.05	
323	Jackson Creek	Main Channel		13447.21		FLOODWAY
	1253.46	0.37	1256.19		32.60	

323	2168.27	22.73	25.95	25.95	59.05	65.20
324						
325	Jackson Creek		Main Channel	13618.45		100YR
	1255.97		1256.87	40.70		
	1859.02	102.21		19.40	52.90	
326	Jackson Creek		Main Channel	13618.45		FLOODWAY
	1256.52		0.55	1257.49	41.51	
	2069.87	121.13		19.40	52.90	63.20
327						
328	Jackson Creek		Main Channel	13739.75		100YR
	1256.51		1257.32	72.09		
	1751.09	210.14		13.60	46.70	
329	Jackson Creek		Main Channel	13739.75		FLOODWAY
	1257.14		0.62	1257.93	62.22	
	1904.86	286.15		13.60	46.70	75.82
330						
331	Jackson Creek		Main Channel	14531.71		100YR
	1260.41		1262.25	34.06		2.49
	1958.74			427.52	464.50	
332	Jackson Creek		Main Channel	14531.71		FLOODWAY
	1260.83		0.42	1262.86	30.79	
	2191.00			427.52	464.50	464.50
333						
334	Jackson Creek		Main Channel	15002.72		100YR
	1263.86		1264.54	98.23		6.61
	1954.62			746.50	783.19	
335	Jackson Creek		Main Channel	15002.72		FLOODWAY
	1264.58		0.72	1265.30	36.69	
	2191.00			746.50	783.19	783.19
336						
337	Jackson Creek		Main Channel	15069.27		100YR
	1263.81		1264.93	33.82		0.35
	1656.88			7.50	38.30	
338	Jackson Creek		Main Channel	15069.27		FLOODWAY
	1264.53		0.72	1265.71	30.78	
	1887.00			7.50	38.30	38.30
339						
340	Jackson Creek		Main Channel	15288.48		100YR
	1265.56		1266.03	64.38		1.73
	1655.50			63.50	115.27	
341	Jackson Creek		Main Channel	15288.48		FLOODWAY
	1266.28		0.72	1266.76	51.77	
	1887.00			63.50	115.27	115.27
342						
343	Jackson Creek		Main Channel	15319.58		100YR
	1265.39		1266.28	62.42		106.37
	1550.86			38.55	62.77	
344	Jackson Creek		Main Channel	15319.58		FLOODWAY
	1266.10		0.71	1267.01	62.77	164.24
	1722.76			0.00	38.55	62.77
345						
346	Jackson Creek		Main Channel	15345		
			Culvert			
347						
348	Jackson Creek		Main Channel	15372.82		100YR
	1267.07		1267.40	228.66		22.61
	1559.65	74.98		45.58	89.81	
349	Jackson Creek		Main Channel	15372.82		FLOODWAY
	1267.99		0.92	1268.36	70.00	15.76
	1843.79	27.45		33.00	89.81	103.00
350						
351	Jackson Creek		Main Channel	15411.86		100YR
	1266.97		1267.58	49.99		0.05

351	1657.18		95.15	144.19	
352	Jackson Creek	Main Channel	15411.86		FLOODWAY
	1267.94	0.97	1268.51	53.20	2.09
	1884.91		90.85	95.15	144.19
353					
354	Jackson Creek	Main Channel	15857.49		100YR
	1268.90		1269.40	57.24	
	1657.23		123.50	188.59	
355	Jackson Creek	Main Channel	15857.49		FLOODWAY
	1269.52	0.62	1270.03	60.47	
	1887.00		123.50	123.50	188.59
356					
357	Jackson Creek	Main Channel	15890	BR D	100YR
	1268.41		1269.40	51.77	
	1657.23		123.50	188.59	
358	Jackson Creek	Main Channel	15890	BR D	FLOODWAY
	1268.41	0.00	1270.03	51.77	
	1887.00		123.50	123.50	188.59
359					
360	Jackson Creek	Main Channel	15890	BR U	100YR
	1268.41		1269.85		
	1657.23		133.50	198.59	
361	Jackson Creek	Main Channel	15890	BR U	FLOODWAY
	1268.41	0.00	1270.75		
	1887.00		133.50	133.50	198.59
362					
363	Jackson Creek	Main Channel	15919.80		100YR
	1269.45		1269.85	60.11	
	1657.23		133.50	198.59	
364	Jackson Creek	Main Channel	15919.80		FLOODWAY
	1270.38	0.93	1270.75	64.34	
	1887.00		133.50	133.50	198.59
365					
366	Jackson Creek	Main Channel	16403.44		100YR
	1270.77		1271.17	60.40	
	1657.23		124.50	220.93	
367	Jackson Creek	Main Channel	16403.44		FLOODWAY
	1271.51	0.73	1271.90	64.36	
	1887.00		124.50	124.50	220.93
368					
369	Jackson Creek	Main Channel	16942.29		100YR
	1272.45		1275.14	23.26	
	1657.23		267.96	303.96	
370	Jackson Creek	Main Channel	16942.29		FLOODWAY
	1273.01	0.56	1275.86	24.28	
	1887.00		267.96	267.96	303.96
371					
372	Jackson Creek	Main Channel	17591.36		100YR
	1279.62		1280.21	35.46	
	1657.23		289.21	328.05	
373	Jackson Creek	Main Channel	17591.36		FLOODWAY
	1280.39	0.77	1281.02	64.30	
	1884.31	2.69	289.21	289.21	328.05
374					
375	Jackson Creek	Main Channel	17620.46		100YR
	1278.94		1281.31	22.17	
	1657.23		293.02	323.00	
376	Jackson Creek	Main Channel	17620.46		FLOODWAY
	1279.76	0.82	1282.06	28.56	
	1887.00		280.00	293.02	323.00
377					
378	Jackson Creek	Main Channel	17645		
	Culvert				

379							
380	Jackson Creek	Main Channel	17671.40		100YR		
	1280.37		1282.19	41.00		1.67	
	1655.57		295.40	316.70			
381	Jackson Creek	Main Channel	17671.40		FLOODWAY		
	1281.21	0.83	1282.96	45.70		51.50	
	1835.50		270.00	316.70		330.00	
382							
383	Jackson Creek	Main Channel	17710				Lat
	Struct						
384							
385	Jackson Creek	Main Channel	17716.39		100YR		
	1282.47		1282.80	43.90		0.24	
	1692.59		269.31	312.90			
386	Jackson Creek	Main Channel	17716.39		FLOODWAY		
	1283.18	0.72	1283.53	43.90		0.56	
	1886.44		259.00	312.90		323.00	
387							
388	Jackson Creek	Main Channel	17857.52		100YR		
	1282.41		1283.70	24.97		5.42	
	1682.89	4.53	213.50	228.50			
389	Jackson Creek	Main Channel	17857.52		FLOODWAY		
	1283.06	0.65	1284.47	29.73		14.09	
	1858.52	14.40	180.00	228.50		240.00	
390							
391	Jackson Creek	Main Channel	17895				
	Culvert						
392							
393	Jackson Creek	Main Channel	17931.56		100YR		
	1284.30		1285.41	59.00			
	1617.22	75.62	92.00	107.70			
394	Jackson Creek	Main Channel	17931.56		FLOODWAY		
	1285.17	0.88	1286.18	59.00			
	1698.47	188.53	82.00	107.70		151.00	
395							
396	Jackson Creek	Main Channel	17950				Lat
	Struct						
397							
398	Jackson Creek	Main Channel	17994.36		100YR		
	1285.61		1285.80	93.00		32.49	
	1749.85		91.00	147.06			
399	Jackson Creek	Main Channel	17994.36		FLOODWAY		
	1286.35	0.74	1286.53	65.00		15.24	
	1871.76		82.00	147.06		147.06	
400							
401	Jackson Creek	Main Channel	18960				Lat
	Struct						
402							
403	Jackson Creek	Main Channel	18967.88		100YR		
	1286.71		1287.16	54.71			
	1887.00		220.50	284.46			
404	Jackson Creek	Main Channel	18967.88		FLOODWAY		
	1287.27	0.56	1287.65	54.55			
	1887.00		225.09	284.46		279.64	
405							
406	Jackson Creek	Main Channel	20090.33		100YR		
	1292.83		1296.59	16.00			
	1887.00		1016.25	1057.88			
407	Jackson Creek	Main Channel	20090.33		FLOODWAY		
	1292.82	-0.01	1296.59	16.00			
	1887.00		1016.25	1057.88		1057.88	
408							
409	Jackson Creek	Main Channel	20128				

409	Culvert					
410						
411	Jackson Creek	Main Channel	20166.90	100YR		
	1299.95	1301.09	15.67			
	1887.00	1152.50	1202.36			
412	Jackson Creek	Main Channel	20166.90	FLOODWAY		
	1299.95	0.00 1301.09	15.67			
	1887.00	1152.50 1152.50	1202.36		1202.36	
413						
414	Jackson Creek	Main Channel	20198.01	100YR		
	1301.02	1301.23	87.22		0.09	
	1879.57	7.33 1144.75	1197.20			
415	Jackson Creek	Main Channel	20198.01	FLOODWAY		
	1301.01	0.00 1301.23	52.45			
	1887.00	1144.75 1144.75	1197.20		1197.20	
416						
417	Jackson Creek	Main Channel	20208.45	100YR		
	1301.00	1301.25	65.52			
	1886.31	0.69 1067.75	1120.20			
418	Jackson Creek	Main Channel	20208.45	FLOODWAY		
	1301.00	0.00 1301.25	50.66			
	1887.00	1067.75 1067.75	1120.20		1120.20	
419						
420	Jackson Overbank	Jackson Overbank	793.1924	100YR		
	1238.50	1238.54	693.16		31.99	
	2154.57	48.97 23.37	648.59			
421	Jackson Overbank	Jackson Overbank	793.1924	FLOODWAY		
	1239.18	0.68 1239.25	200.00			
	1220.00	95.00 23.37	648.59		295.00	
422						
423	Jackson Overbank	Jackson Overbank	794.192*	100YR		
	1238.53	1238.55	694.26		19.39	
	1279.30	29.20 23.42	649.38			
424	Jackson Overbank	Jackson Overbank	794.192*	FLOODWAY		
	1239.18	0.65 1239.25	200.00			
	1220.00	95.00 23.42	649.38		295.00	
425						
426	Jackson Overbank	Jackson Overbank	951.8403	100YR		
	1238.73	1238.81	721.73		19.15	
	1301.81	6.94 31.09	774.35			
427	Jackson Overbank	Jackson Overbank	951.8403	FLOODWAY		
	1239.60	0.87 1239.79	200.00			
	1220.00	296.00 31.09	774.35		496.00	
428						
429	Jackson Overbank	Jackson Overbank	1188.317	100YR		
	1239.73	1239.75	921.36		5.51	
	1195.20	49.42 12.11	909.02			
430	Jackson Overbank	Jackson Overbank	1188.317	FLOODWAY		
	1240.56	0.83 1240.61	239.00			
	1220.00	655.00 12.11	909.02		894.00	
431						
432	Jackson Overbank	Jackson Overbank	1554.780	100YR		
	1240.74	1240.87	919.71		16.17	
	1149.97	83.99 616.04	1138.80			
433	Jackson Overbank	Jackson Overbank	1554.780	FLOODWAY		
	1241.33	0.59 1241.53	222.44			
	1220.00	915.00 616.04	1138.80		1138.80	
434						
435	Jackson Overbank	Jackson Overbank	1689.039	100YR		
	1241.81	1241.84	1041.94		10.94	
	1136.37	72.69 271.02	1180.82			
436	Jackson Overbank	Jackson Overbank	1689.039	FLOODWAY		
	1242.55	0.73 1242.66	270.04			

436	1108.27	111.73	955.00	271.02	1180.82	1225.42
437						
438	Jackson Overbank		Jackson Overbank	1966.347		100YR
	1242.82		1242.88	1051.44		13.79
	1162.22	44.00		458.53	1408.70	
439	Jackson Overbank		Jackson Overbank	1966.347		FLOODWAY
	1243.76		0.94	1243.91	292.21	
	1201.51	18.50	1140.00	458.53	1408.70	1432.21
440						
441	Jackson Overbank		Jackson Overbank	2113.142		100YR
	1243.65		1243.70	1018.30		
	1187.35	32.65		485.34	1499.38	
442	Jackson Overbank		Jackson Overbank	2113.142		FLOODWAY
	1244.54		0.89	1244.69	264.38	
	1220.00		1235.00	485.34	1499.38	1499.38
443						
444	Jackson Overbank		Jackson Overbank	2270.064		100YR
	1244.37		1244.41	1007.27		
	1216.14	3.86		532.09	1594.29	
445	Jackson Overbank		Jackson Overbank	2270.064		FLOODWAY
	1245.29		0.93	1245.40	259.29	
	1220.00		1335.00	532.09	1594.29	1594.29
446						
447	Jackson Overbank		Jackson Overbank	2422.046		100YR
	1245.25		1245.35	679.23		
	1220.00			472.24	1563.41	
448	Jackson Overbank		Jackson Overbank	2422.046		FLOODWAY
	1245.97		0.72	1246.12	277.21	
	1220.00		1280.00	472.24	1563.41	1563.41
449						
450	Jackson Overbank		Jackson Overbank	2547.979		100YR
	1245.86		1245.90	851.99		
	1220.00			566.48	1571.73	
451	Jackson Overbank		Jackson Overbank	2547.979		FLOODWAY
	1246.71		0.84	1246.83	303.77	
	1220.00		1260.00	566.48	1571.73	1571.73
452						
453	Jackson Overbank		Jackson Overbank	3070.973		100YR
	1248.34		1248.48	723.51		
	1220.00			252.52	1150.65	
454	Jackson Overbank		Jackson Overbank	3070.973		FLOODWAY
	1249.25		0.90	1249.36	337.96	
	1220.00		800.00	252.52	1150.65	1150.65
455						
456	Jackson Overbank		Jackson Overbank	3454.720		100YR
	1250.99		1251.03	982.88	2.07	
	1217.93			288.24	1430.03	
457	Jackson Overbank		Jackson Overbank	3454.720		FLOODWAY
	1251.94		0.95	1252.08	358.97	
	1220.00		1070.00	288.24	1430.03	1430.03
458						
459	Jackson Overbank		Jackson Overbank	3722.349		100YR
	1252.21		1252.27	801.95		
	1197.91	22.09		689.68	1564.86	
460	Jackson Overbank		Jackson Overbank	3722.349		FLOODWAY
	1253.18		0.97	1253.23	423.00	
	1220.00		1141.00	689.68	1564.86	1564.00
461						
462	Jackson Overbank		Jackson Overbank	3956.457		100YR
	1254.01		1254.10	594.99		
	1220.00			999.33	1679.91	
463	Jackson Overbank		Jackson Overbank	3956.457		FLOODWAY
	1254.05		0.04	1254.19	310.00	

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463	1220.00	1290.00	999.33	1679.91	1600.00
464					
465					


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61 v4
62
63
64 Plan Summary Information:
65 Number of: Cross Sections = 85 Multiple Openings = 0
66 Culverts = 5 Inline Structures = 2
67 Bridges = 8 Lateral Structures = 9
68
69 Computational Information
70 Water surface calculation tolerance = 0.01
71 Critical depth calculation tolerance = 0.01
72 Maximum number of iterations = 20
73 Maximum difference tolerance = 0.3
74 Flow tolerance factor = 0.001
75
76 Computation Options
77 Critical depth computed only where necessary
78 Conveyance Calculation Method: At breaks in n values only
79 Friction Slope Method: Average Conveyance
80 Computational Flow Regime: Subcritical Flow
81
82 Encroachment Data
83 Equal Conveyance = True
84 Left Offset = 0
85 Right Offset = 0
86
87 River = Jackson Creek Reach = Main Lower
88 RS Profile Method Value1 Value2
89 9769.785FLOODWAY 1 57.49 416.4
90 9747.670FLOODWAY 1 57.61 416.25
91 9611.585FLOODWAY 1 0 275.68
92 9595.562FLOODWAY 1 0 275.68
93 9288.338FLOODWAY 1 0 300
94 9235.024FLOODWAY 1 362 699
95 9220.769FLOODWAY 1 199.82 690
96 9000 FLOODWAY 1 225 670
97
98 River = Jackson Creek Reach = Main Channel
99 RS Profile Method Value1 Value2
100 20208.45FLOODWAY 1 1067.75 1120.2
101 20198.01FLOODWAY 1 1144.75 1197.2
102 20166.90FLOODWAY 1 1152.5 1202.36
103 20090.33FLOODWAY 1 1016.25 1057.88
104 18967.88FLOODWAY 1 225.09 279.64
105 17994.36FLOODWAY 1 82 147.06
106 17931.56FLOODWAY 1 82 151
107 17857.52FLOODWAY 1 180 240
108 17716.39FLOODWAY 1 259 323
109 17671.40FLOODWAY 1 270 330
110 17620.46FLOODWAY 1 280 340
111 17591.36FLOODWAY 1 289.21 354
112 16942.29FLOODWAY 1 267.96 303.96
113 16403.44FLOODWAY 1 124.5 220.93
114 15919.80FLOODWAY 1 133.5 198.59
115 15857.49FLOODWAY 1 123.5 188.59
116 15411.86FLOODWAY 1 90.85 154.19
117 15372.82FLOODWAY 1 33 103
118 15319.58FLOODWAY 1 0 62.77
119 15288.48FLOODWAY 1 63.5 115.27
120 15069.27FLOODWAY 1 7.5 38.3
121 15002.72FLOODWAY 1 746.5 783.19
122 14531.71FLOODWAY 1 427.52 464.5
123 13739.75FLOODWAY 1 13.6 75.82

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124	13618.45	FLOODWAY	1	19.4	63.2
125	13447.21	FLOODWAY	1	25.95	65.2
126	13314.60	FLOODWAY	1	37.15	96.91
127	13087.59	FLOODWAY	1	38.7	144.1
128	12851.71	FLOODWAY	1	100.3	149.5
129	12799.54	FLOODWAY	1	119.3	168.5
130	12651.65	FLOODWAY	1	102.7	230
131	12352.91	FLOODWAY	1	40	167
132	12184.87	FLOODWAY	1	112.5	153.73
133	12153.40	FLOODWAY	1	105.5	141.39
134	11900.70	FLOODWAY	1	253.62	299.71
135	11885.36	FLOODWAY	1	248	294.09
136	11748.96	FLOODWAY	1	264.12	308.05
137	11366.76	FLOODWAY	1	12.82	50.24
138	11034.75	FLOODWAY	1	22.46	58
139	11018.94	FLOODWAY	1	24.66	57.3
140	10990.71	FLOODWAY	1	25.71	58.37
141	10948.06	FLOODWAY	1	48.68	81.37
142	10897.78	FLOODWAY	1	0	50.22
143	10884.99	FLOODWAY	1	0	90
144	10589.80	FLOODWAY	1	0	150
145	10343.73	FLOODWAY	1	0	200
146	10325.40	FLOODWAY	1	0	200
147	10175.04	FLOODWAY	1	0	225
148	10159.97	FLOODWAY	1	0	235
149	9769.785	FLOODWAY	1	57.49	300
150	9747.670	FLOODWAY	1	57.61	300
151					
152	River = Jackson Overbank Reach = Upper Main				
153	RS	Profile	Method	Value1	Value2
154	3639.008	FLOODWAY	1	405.14	470.75
155	3370.57	FLOODWAY		117.78998	70.25
156	3341.924	FLOODWAY		111.67999	66.44
157	3143.447	FLOODWAY		19.809999	64.24
158	3067.819	FLOODWAY	1	2.89	57.31
159	2832.344	FLOODWAY	1	72.63	127.37
160	2732.759	FLOODWAY	1	144.91	199.88
161	2564.282	FLOODWAY	1	128.85	205.76
162	2350.68	FLOODWAY	1	130.6	203.4
163	2178.49	FLOODWAY	1	129.63	203.43
164	2019.163	FLOODWAY	1	127.92	204.87
165	1866.284	FLOODWAY	1	129.92	205.87
166	1757.488	FLOODWAY	1	139.4	213.22
167	1646.261	FLOODWAY	1	1507.32	1577.27
168	1495.177	FLOODWAY	1	1545.16	1619.86
169	1358.697	FLOODWAY	1	1453.71	1520.7
170	1249.037	FLOODWAY	1	1366.99	1432.01
171	1117.801	FLOODWAY	1	1270.28	1335.06
172	1002.145	FLOODWAY	1	1191.48	1254.26
173	783.8261	FLOODWAY	1	1093.56	1155.53
174	579.144	FLOODWAY	1	981.97	1043.94
175	401.5288	FLOODWAY	1	860.33	924.29
176	265.4884	FLOODWAY	1	786.17	849.11
177	160.5392	FLOODWAY	1	719.5	795
178	0.275157	FLOODWAY	1	610.89	715.88
179	0.25	FLOODWAY	1	505	612.09
180	0.20	FLOODWAY	1	248	629.65
181	0.15	FLOODWAY	1	158.56	413.56
182					
183					
184	Profile Output Table - Encroachment 1				
185					
186	River	Reach	River Sta	Profile	W.S.

186 Elev Prof Delta WS E.G. Elev Top Wdth Act Q Left Q Channel
 Q Right Enc Sta L Ch Sta L Ch Sta R Enc Sta R
 187

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188									
189	Jackson Creek	Main Lower	9000						100YR-dummy
	1233.85		1234.68			389.79	363.94		
	2047.46	1.13	436.95			479.00			
190	Jackson Creek	Main Lower	9000						FLOODWAY
	1234.72	0.87	1235.60			445.00	787.16		
	2552.01	71.83	225.00	436.95		479.00	670.00		
191									
192	Jackson Creek	Main Lower	9220.769						100YR-dummy
	1235.12		1235.41			480.00	671.34		
	1617.02	124.18	436.95			479.00			
193	Jackson Creek	Main Lower	9220.769						FLOODWAY
	1236.04	0.92	1236.29			490.18	1166.96		
	1839.93	404.11	199.82	436.95		479.00	690.00		
194									
195	Jackson Creek	Main Lower	9235.024						100YR-dummy
	1234.79		1235.61			333.41	29.76		
	2130.66	252.12	437.80			484.13			
196	Jackson Creek	Main Lower	9235.024						FLOODWAY
	1235.79	1.00	1236.45			333.00	178.33		
	2452.56	780.11	362.00	437.80		484.13	699.00		
197									
198	Jackson Creek	Main Lower	9245						
	Culvert								
199									
200	Jackson Creek	Main Lower	9288.338						100YR-dummy
	1236.66		1236.84			405.00	327.03		
	1161.46	924.06	57.83			86.93			
201	Jackson Creek	Main Lower	9288.338						FLOODWAY
	1237.38	0.72	1237.68			300.00	635.99		
	1572.49	1202.52	0.00	57.83		86.93	300.00		
202									
203	Jackson Creek	Main Lower	9300						Lat
	Struct								
204									

205	Jackson Creek	Main Lower	9595.562	100YR-dummy		
	1237.07		1237.22	530.00	155.74	
	1365.17	1544.31	56.68	99.03		
206	Jackson Creek	Main Lower	9595.562	FLOODWAY		
	1237.91		1238.18	275.68	390.75	
	1843.76	1176.49	0.00	56.68	99.03	275.68
207						
208	Jackson Creek	Main Lower	9607.9			Inl
	Struct					
209						
210	Jackson Creek	Main Lower	9611.585	100YR-dummy		
	1237.10		1237.24	535.00	183.69	
	1351.61	1529.92	54.68	97.03		
211	Jackson Creek	Main Lower	9611.585	FLOODWAY		
	1237.98		1238.22	275.68	424.53	
	1788.70	1197.77	0.00	54.68	97.03	275.68
212						
213	Jackson Creek	Main Lower	9700			Lat
	Struct					
214						
215	Jackson Creek	Main Lower	9747.670	100YR-dummy		
	1237.25		1237.50	513.00	343.50	
	1179.91	1655.85	57.61	82.13		
216	Jackson Creek	Main Lower	9747.670	FLOODWAY		
	1238.25		1238.46	358.64		
	1232.08	2178.92	57.61	57.61	82.13	416.25
217						
218	Jackson Creek	Main Lower	9758	BR D 100YR-dummy		
	1237.43		1237.54	513.00	177.61	
	593.56	2408.09	57.61	82.13		
219	Jackson Creek	Main Lower	9758	BR D FLOODWAY		
	1238.38		1238.49	358.64		
	622.33	2788.67	57.61	57.61	82.13	416.25
220						
221	Jackson Creek	Main Lower	9758	BR U 100YR-dummy		
	1237.48		1237.60	513.78	194.26	
	576.48	2408.52	57.49	83.13		
222	Jackson Creek	Main Lower	9758	BR U FLOODWAY		
	1238.42		1238.53	358.91		
	614.71	2796.29	57.49	57.49	83.13	416.40
223						
224	Jackson Creek	Main Lower	9769.785	100YR-dummy		
	1237.40		1237.63	513.78	394.04	
	1183.11	1602.11	57.49	83.13		
225	Jackson Creek	Main Lower	9769.785	FLOODWAY		
	1238.35		1238.56	358.91		
	1283.70	2127.30	57.49	57.49	83.13	416.40
226						
227	Jackson Creek	Main Channel	10159.97	100YR-dummy		
	1238.23		1238.52	519.64	22.82	
	767.45	220.23	43.13	68.88		
228	Jackson Creek	Main Channel	10159.97	FLOODWAY		
	1239.04		1239.82	223.81	150.08	
	1483.20	557.72	0.00	43.13	68.88	235.00
229						
230	Jackson Creek	Main Channel	10168	BR D 100YR-dummy		
	1238.27		1238.61	459.83		
	560.51	449.99	43.13	68.88		
231	Jackson Creek	Main Channel	10168	BR D FLOODWAY		
	1239.45		1239.87	235.00	115.56	
	774.19	1301.25	0.00	43.13	68.88	235.00
232						
233	Jackson Creek	Main Channel	10168	BR U 100YR-dummy		

233	1238.43			1238.76		461.47	
	545.85	464.65		55.05		77.27	
234	Jackson Creek		Main Channel	10168	BR U	FLOODWAY	
	1239.57		1.14	1240.15		225.00	144.42
	888.23	1158.35	0.00	55.05		77.27	225.00
235							
236	Jackson Creek		Main Channel	10175.04		100YR-dummy	
	1238.54			1238.77		522.14	33.87
	682.52	294.11		55.05		77.27	
237	Jackson Creek		Main Channel	10175.04		FLOODWAY	
	1239.42		0.88	1240.23		215.35	182.23
	1436.08	572.69	0.00	55.05		77.27	225.00
238							
239	Jackson Creek		Main Channel	10200			Lat
	Struct						
240							
241	Jackson Creek		Main Channel	10325.40		100YR-dummy	
	1238.74			1239.14		520.16	
	1170.19	79.73		16.27		55.15	
242	Jackson Creek		Main Channel	10325.40		FLOODWAY	
	1240.28		1.54	1240.80		200.00	11.53
	1801.12	378.36	0.00	16.27		55.15	200.00
243							
244	Jackson Creek		Main Channel	10335	BR D	100YR-dummy	
	1238.50			1239.25		309.25	
	1183.85	66.07		16.27		55.15	
245	Jackson Creek		Main Channel	10335	BR D	FLOODWAY	
	1240.45		1.95	1240.82		200.00	38.99
	1241.26	910.75	0.00	16.27		55.15	200.00
246							
247	Jackson Creek		Main Channel	10335	BR U	100YR-dummy	
	1238.55			1239.51		258.77	
	1198.20	51.72		16.02		55.04	
248	Jackson Creek		Main Channel	10335	BR U	FLOODWAY	
	1240.58		2.03	1241.02		200.00	47.94
	1271.50	871.56	0.00	16.02		55.04	200.00
249							
250	Jackson Creek		Main Channel	10343.73		100YR-dummy	
	1239.37			1239.60		527.73	
	969.49	280.43		16.02		55.04	
251	Jackson Creek		Main Channel	10343.73		FLOODWAY	
	1240.52		1.15	1241.05		200.00	20.86
	1752.40	417.74	0.00	16.02		55.04	200.00
252							
253	Jackson Creek		Main Channel	10400			Lat
	Struct						
254							
255	Jackson Creek		Main Channel	10589.80		100YR-dummy	
	1239.61			1240.64		487.68	
	1704.14	153.48		22.92		57.84	
256	Jackson Creek		Main Channel	10589.80		FLOODWAY	
	1241.19		1.59	1241.89		142.06	7.35
	1846.43	337.22	0.00	22.92		57.84	150.00
257							
258	Jackson Creek		Main Channel	10600			Lat
	Struct						
259							
260	Jackson Creek		Main Channel	10884.99		100YR-dummy	
	1241.28			1242.49		213.40	
	1874.85	54.83		19.65		49.65	
261	Jackson Creek		Main Channel	10884.99		FLOODWAY	
	1242.07		0.79	1243.35		72.40	0.24
	2142.38	48.38	0.00	19.65		49.65	90.00

262								
263	Jackson Creek	Main Channel	10891	BR D	100YR-dummy			
	1240.75		1242.73			65.36		
	1925.65	4.03	19.65			49.65		
264	Jackson Creek	Main Channel	10891	BR D	FLOODWAY			
	1241.19		1243.74			24.32		
	2189.65	1.35	0.00			19.65	49.65	90.00
265								
266	Jackson Creek	Main Channel	10891	BR U	100YR-dummy			
	1240.80		1243.08					
	1929.68		17.42			50.14		
267	Jackson Creek	Main Channel	10891	BR U	FLOODWAY			
	1241.26		1244.20					
	2191.00		0.00			17.42	50.14	50.22
268								
269	Jackson Creek	Main Channel	10897.78		100YR-dummy			
	1241.97		1243.20			33.55		
	1929.09	0.59	17.42			50.14		
270	Jackson Creek	Main Channel	10897.78		FLOODWAY			
	1243.33		1.36			1244.39	50.22	19.43
	2171.53	0.04	0.00			17.42	50.14	50.22
271								
272	Jackson Creek	Main Channel	10900					Lat
	Struct							
273								
274	Jackson Creek	Main Channel	10948.06		100YR-dummy			
	1242.35		1243.51			35.32	0.17	
	1958.88	0.20	48.68			81.37		
275	Jackson Creek	Main Channel	10948.06		FLOODWAY			
	1243.57		1.22			1244.62	32.69	
	2191.00		48.68			48.68	81.37	81.37
276								
277	Jackson Creek	Main Channel	10990.71		100YR-dummy			
	1242.68		1243.73			35.50	0.54	
	1958.64	0.08	25.71			58.37		
278	Jackson Creek	Main Channel	10990.71		FLOODWAY			
	1243.82		1.14			1244.80	32.66	
	2191.00		25.71			25.71	58.37	58.37
279								
280	Jackson Creek	Main Channel	11018.94		100YR-dummy			
	1242.87		1243.87			34.04	0.08	
	1959.16	0.03	24.66			57.30		
281	Jackson Creek	Main Channel	11018.94		FLOODWAY			
	1243.97		1.10			1244.92	32.64	
	2191.00		24.66			24.66	57.30	57.30
282								
283	Jackson Creek	Main Channel	11027.9					In1
	Struct							
284								
285	Jackson Creek	Main Channel	11034.75		100YR-dummy			
	1243.45		1244.39			38.63	1.26	
	1957.99	0.01	24.41			57.05		
286	Jackson Creek	Main Channel	11034.75		FLOODWAY			
	1244.47		1.02			1245.38	35.54	6.59
	2183.81	0.60	22.46			24.41	57.05	58.00
287								
288	Jackson Creek	Main Channel	11366.76		100YR-dummy			
	1244.81		1245.58			38.40	0.04	
	1959.21	0.01	12.82			50.24		
289	Jackson Creek	Main Channel	11366.76		FLOODWAY			
	1245.65		0.84			1246.43	37.42	
	2191.00		12.82			12.82	50.24	50.24
290								

291	Jackson Creek	Main Channel	11748.96		100YR-dummy		
	1246.08		1246.76		42.38		
	1959.26		264.12		308.05		
292	Jackson Creek	Main Channel	11748.96		FLOODWAY		
	1246.84	0.76	1247.53		43.58		
	2191.00		264.12	264.12	308.05		308.05
293							
294	Jackson Creek	Main Channel	11885.36		100YR-dummy		
	1246.51		1247.15		43.54		
	1959.26		248.00		294.09		
295	Jackson Creek	Main Channel	11885.36		FLOODWAY		
	1247.24	0.73	1247.90		45.27		
	2191.00		248.00	248.00	294.09		294.09
296							
297	Jackson Creek	Main Channel	11892	BR D	100YR-dummy		
	1246.37		1247.21		30.74		
	1959.26		248.00		294.09		
298	Jackson Creek	Main Channel	11892	BR D	FLOODWAY		
	1247.07	0.70	1247.97		30.73		
	2191.00		248.00	248.00	294.09		294.09
299							
300	Jackson Creek	Main Channel	11892	BR U	100YR-dummy		
	1246.43		1247.26		31.52		
	1959.26		258.28		295.05		
301	Jackson Creek	Main Channel	11892	BR U	FLOODWAY		
	1247.13	0.70	1248.02		31.52		
	2191.00		253.62	258.28	295.05		299.71
302							
303	Jackson Creek	Main Channel	11900.70		100YR-dummy		
	1246.50		1247.27		35.23		
	1959.26		258.28		295.05		
304	Jackson Creek	Main Channel	11900.70		FLOODWAY		
	1247.22	0.73	1248.03		37.56		
	2191.00	0.00	253.62	258.28	295.05		299.71
305							
306	Jackson Creek	Main Channel	12153.40		100YR-dummy		
	1247.28		1248.53		29.46		
	1959.26		105.50		141.39		
307	Jackson Creek	Main Channel	12153.40		FLOODWAY		
	1247.98	0.70	1249.28		31.76		
	2191.00		105.50	105.50	141.39		141.39
308							
309	Jackson Creek	Main Channel	12168	BR D	100YR-dummy		
	1247.20		1248.62		24.43		
	1959.26		105.50		141.39		
310	Jackson Creek	Main Channel	12168	BR D	FLOODWAY		
	1247.86	0.66	1249.39		24.46		
	2191.00		105.50	105.50	141.39		141.39
311							
312	Jackson Creek	Main Channel	12168	BR U	100YR-dummy		
	1247.23		1248.82		23.59		
	1959.26		112.50		153.73		
313	Jackson Creek	Main Channel	12168	BR U	FLOODWAY		
	1247.89	0.66	1249.59		23.58		
	2191.00		112.50	112.50	153.73		153.73
314							
315	Jackson Creek	Main Channel	12184.87		100YR-dummy		
	1248.11		1248.93		39.23		
	1959.26		112.50		153.73		
316	Jackson Creek	Main Channel	12184.87		FLOODWAY		
	1248.89	0.78	1249.71		40.96		
	2191.00		112.50	112.50	153.73		153.73
317							

318	Jackson Creek	Main Channel	12352.91		100YR-dummy		
	1249.03		1249.09		151.51	2.55	
	1956.44	0.28	40.00		167.00		
319	Jackson Creek	Main Channel	12352.91		FLOODWAY		
	1249.81	0.78	1249.87		127.00		
	2191.00		40.00	40.00	167.00	167.00	
320							
321	Jackson Creek	Main Channel	12651.65		100YR-dummy		
	1249.06		1249.20		110.38		
	1959.26		102.70		230.00		
322	Jackson Creek	Main Channel	12651.65		FLOODWAY		
	1249.83	0.77	1249.97		117.08		
	2191.00		102.70	102.70	230.00	230.00	
323							
324	Jackson Creek	Main Channel	12799.54		100YR-dummy		
	1248.94		1251.14		37.19		
	1959.26		119.30		168.50		
325	Jackson Creek	Main Channel	12799.54		FLOODWAY		
	1249.39	0.45	1251.64		40.16		
	2191.00		119.30	119.30	168.50	168.50	
326							
327	Jackson Creek	Main Channel	12825	BR D	100YR-dummy		
	1249.60		1251.24		41.56		
	1959.26		119.30		168.50		
328	Jackson Creek	Main Channel	12825	BR D	FLOODWAY		
	1250.05	0.45	1251.74		44.52		
	2191.00		119.30	119.30	168.50	168.50	
329							
330	Jackson Creek	Main Channel	12825	BR U	100YR-dummy		
	1250.67		1251.71		49.02		
	1959.22	0.04	100.30		149.50		
331	Jackson Creek	Main Channel	12825	BR U	FLOODWAY		
	1251.10	0.43	1252.20		49.20		
	2191.00		100.30	100.30	149.50	149.50	
332							
333	Jackson Creek	Main Channel	12851.71		100YR-dummy		
	1250.68		1251.72		49.11		
	1959.21	0.05	100.30		149.50		
334	Jackson Creek	Main Channel	12851.71		FLOODWAY		
	1251.11	0.43	1252.21		49.20		
	2191.00		100.30	100.30	149.50	149.50	
335							
336	Jackson Creek	Main Channel	13087.59		100YR-dummy		
	1252.40		1252.95		77.25		
	1959.26		38.70		144.10		
337	Jackson Creek	Main Channel	13087.59		FLOODWAY		
	1252.85	0.45	1253.41		81.78		
	2191.00		38.70	38.70	144.10	144.10	
338							
339	Jackson Creek	Main Channel	13314.60		100YR-dummy		
	1253.21		1254.03		66.27		
	1956.38	2.88	37.15		96.91		
340	Jackson Creek	Main Channel	13314.60		FLOODWAY		
	1253.61	0.39	1254.49		55.46		
	2191.00		37.15	37.15	96.91	96.91	
341							
342	Jackson Creek	Main Channel	13447.21		100YR-dummy		
	1253.09		1255.60		32.01		
	1942.26	17.00	25.95		59.05		
343	Jackson Creek	Main Channel	13447.21		FLOODWAY		
	1253.46	0.37	1256.19		32.60		
	2168.27	22.73	25.95	25.95	59.05	65.20	
344							

345	Jackson Creek	Main Channel	13618.45	100YR-dummy
	1255.96		1256.87	40.70
	1857.22	102.04	19.40	52.90
346	Jackson Creek	Main Channel	13618.45	FLOODWAY
	1256.52	0.55	1257.49	41.51
	2069.87	121.13	19.40	52.90
			19.40	63.20
347				
348	Jackson Creek	Main Channel	13739.75	100YR-dummy
	1256.51		1257.32	72.03
	1749.65	209.61	13.60	46.70
349	Jackson Creek	Main Channel	13739.75	FLOODWAY
	1257.14	0.63	1257.93	62.22
	1904.86	286.15	13.60	46.70
			13.60	75.82
350				
351	Jackson Creek	Main Channel	14531.71	100YR-dummy
	1260.41		1262.25	34.02
	1956.80		427.52	464.50
352	Jackson Creek	Main Channel	14531.71	FLOODWAY
	1260.83	0.43	1262.86	30.79
	2191.00		427.52	464.50
			427.52	464.50
353				
354	Jackson Creek	Main Channel	15002.72	100YR-dummy
	1263.85		1264.53	97.14
	1952.72		746.50	783.19
355	Jackson Creek	Main Channel	15002.72	FLOODWAY
	1264.58	0.73	1265.30	36.69
	2191.00		746.50	783.19
			746.50	783.19
356				
357	Jackson Creek	Main Channel	15069.27	100YR-dummy
	1263.80		1264.92	33.78
	1654.92		7.50	38.30
358	Jackson Creek	Main Channel	15069.27	FLOODWAY
	1264.53	0.73	1265.71	30.78
	1887.00		7.50	38.30
			7.50	38.30
359				
360	Jackson Creek	Main Channel	15288.48	100YR-dummy
	1265.55		1266.02	64.27
	1653.57		63.50	115.27
361	Jackson Creek	Main Channel	15288.48	FLOODWAY
	1266.28	0.73	1266.76	51.77
	1887.00		63.50	115.27
			63.50	115.27
362				
363	Jackson Creek	Main Channel	15319.58	100YR-dummy
	1265.39		1266.28	62.42
	1549.34		38.55	105.92
				62.77
364	Jackson Creek	Main Channel	15319.58	FLOODWAY
	1266.10	0.71	1267.01	62.77
	1722.76		0.00	164.24
			38.55	62.77
				62.77
365				
366	Jackson Creek	Main Channel	15345	
367				
368	Jackson Creek	Main Channel	15372.82	100YR-dummy
	1267.07		1267.39	228.46
	1558.40	74.44	45.58	22.42
				89.81
369	Jackson Creek	Main Channel	15372.82	FLOODWAY
	1267.99	0.92	1268.36	70.00
	1843.79	27.45	33.00	15.76
			45.58	89.81
				103.00
370				
371	Jackson Creek	Main Channel	15411.86	100YR-dummy
	1266.97		1267.58	49.96
	1655.21		95.15	0.05
				144.19
372	Jackson Creek	Main Channel	15411.86	FLOODWAY

372	1267.94	0.97	1268.51	53.20	2.09	
	1884.91		90.85 95.15	144.19	154.19	
373						
374	Jackson Creek	Main Channel	15857.49	100YR-dummy		
	1268.90		1269.39	57.22		
	1655.26		123.50	188.59		
375	Jackson Creek	Main Channel	15857.49	FLOODWAY		
	1269.52	0.62	1270.03	60.47		
	1887.00		123.50 123.50	188.59	188.59	
376						
377	Jackson Creek	Main Channel	15890	BR D 100YR-dummy		
	1268.41		1269.39	51.77		
	1655.26		123.50	188.59		
378	Jackson Creek	Main Channel	15890	BR D FLOODWAY		
	1268.41	0.00	1270.03	51.77		
	1887.00		123.50 123.50	188.59	188.59	
379						
380	Jackson Creek	Main Channel	15890	BR U 100YR-dummy		
	1268.41		1269.84			
	1655.26		133.50	198.59		
381	Jackson Creek	Main Channel	15890	BR U FLOODWAY		
	1268.41	0.00	1270.75			
	1887.00		133.50 133.50	198.59	198.59	
382						
383	Jackson Creek	Main Channel	15919.80	100YR-dummy		
	1269.44		1269.85	60.07		
	1655.26		133.50	198.59		
384	Jackson Creek	Main Channel	15919.80	FLOODWAY		
	1270.38	0.93	1270.75	64.34		
	1887.00		133.50 133.50	198.59	198.59	
385						
386	Jackson Creek	Main Channel	16403.44	100YR-dummy		
	1270.77		1271.16	60.37		
	1655.26		124.50	220.93		
387	Jackson Creek	Main Channel	16403.44	FLOODWAY		
	1271.51	0.74	1271.90	64.36		
	1887.00		124.50 124.50	220.93	220.93	
388						
389	Jackson Creek	Main Channel	16942.29	100YR-dummy		
	1272.44		1275.13	23.24		
	1655.26		267.96	303.96		
390	Jackson Creek	Main Channel	16942.29	FLOODWAY		
	1273.01	0.57	1275.86	24.28		
	1887.00		267.96 267.96	303.96	303.96	
391						
392	Jackson Creek	Main Channel	17591.36	100YR-dummy		
	1279.62		1280.21	35.45		
	1655.26		289.21	328.05		
393	Jackson Creek	Main Channel	17591.36	FLOODWAY		
	1280.39	0.77	1281.02	64.30		
	1884.31	2.69	289.21 289.21	328.05	354.00	
394						
395	Jackson Creek	Main Channel	17620.46	100YR-dummy		
	1278.94		1281.30	22.15		
	1655.26		293.02	323.00		
396	Jackson Creek	Main Channel	17620.46	FLOODWAY		
	1279.76	0.82	1282.06	28.56		
	1887.00		280.00 293.02	323.00	340.00	
397						
398	Jackson Creek	Main Channel	17645			
	Culvert					
399						
400	Jackson Creek	Main Channel	17671.40	100YR-dummy		

400	1280.37		1282.18	40.82	1.57
	1653.69		295.40	316.70	
401	Jackson Creek	Main Channel	17671.40	FLOODWAY	
	1281.21	0.84	1282.96	45.70	51.50
	1835.50		270.00 295.40	316.70	330.00
402					
403	Jackson Creek	Main Channel	17710		Lat
	Struct				
404					
405	Jackson Creek	Main Channel	17716.39	100YR-dummy	
	1282.46		1282.79	43.90	0.24
	1688.50		269.31	312.90	
406	Jackson Creek	Main Channel	17716.39	FLOODWAY	
	1283.18	0.72	1283.53	43.90	0.56
	1886.44		259.00 269.31	312.90	323.00
407					
408	Jackson Creek	Main Channel	17857.52	100YR-dummy	
	1282.41		1283.69	24.95	5.36
	1678.91	4.47	213.50	228.50	
409	Jackson Creek	Main Channel	17857.52	FLOODWAY	
	1283.06	0.66	1284.47	29.73	14.09
	1858.52	14.40	180.00 213.50	228.50	240.00
410					
411	Jackson Creek	Main Channel	17895		
	Culvert				
412					
413	Jackson Creek	Main Channel	17931.56	100YR-dummy	
	1284.29		1285.40	59.00	
	1614.37	74.37	92.00	107.70	
414	Jackson Creek	Main Channel	17931.56	FLOODWAY	
	1285.17	0.89	1286.18	59.00	
	1698.47	188.53	82.00 92.00	107.70	151.00
415					
416	Jackson Creek	Main Channel	17950		Lat
	Struct				
417					
418	Jackson Creek	Main Channel	17994.36	100YR-dummy	
	1285.60		1285.79	93.00	32.06
	1748.53		91.00	147.06	
419	Jackson Creek	Main Channel	17994.36	FLOODWAY	
	1286.35	0.75	1286.53	65.00	15.24
	1871.76		82.00 91.00	147.06	147.06
420					
421	Jackson Creek	Main Channel	18960		Lat
	Struct				
422					
423	Jackson Creek	Main Channel	18967.88	100YR-dummy	
	1286.71		1287.16	54.68	
	1887.00		220.50	284.46	
424	Jackson Creek	Main Channel	18967.88	FLOODWAY	
	1287.27	0.57	1287.65	54.55	
	1887.00		225.09 220.50	284.46	279.64
425					
426	Jackson Creek	Main Channel	20090.33	100YR-dummy	
	1292.83		1296.59	16.00	
	1887.00		1016.25	1057.88	
427	Jackson Creek	Main Channel	20090.33	FLOODWAY	
	1292.82	-0.01	1296.59	16.00	
	1887.00		1016.25 1016.25	1057.88	1057.88
428					
429	Jackson Creek	Main Channel	20128		
	Culvert				
430					

431	Jackson Creek	Main Channel	20166.90	100YR-dummy		
	1299.95		1301.09		15.67	
	1887.00		1152.50		1202.36	
432	Jackson Creek	Main Channel	20166.90	FLOODWAY		
	1299.95	0.00	1301.09		15.67	
	1887.00		1152.50	1152.50	1202.36	1202.36
433						
434	Jackson Creek	Main Channel	20198.01	100YR-dummy		
	1301.02		1301.23		87.22	0.09
	1879.57	7.33	1144.75		1197.20	
435	Jackson Creek	Main Channel	20198.01	FLOODWAY		
	1301.01	0.00	1301.23		52.45	
	1887.00		1144.75	1144.75	1197.20	1197.20
436						
437	Jackson Creek	Main Channel	20208.45	100YR-dummy		
	1301.00		1301.25		65.52	
	1886.31	0.69	1067.75		1120.20	
438	Jackson Creek	Main Channel	20208.45	FLOODWAY		
	1301.00	0.00	1301.25		50.66	
	1887.00		1067.75	1067.75	1120.20	1120.20
439						
440	Jackson Overbank	Upper Main	0.15	100YR-dummy		
	1237.71		1237.74		413.21	
	2168.76		0.00		413.56	
441	Jackson Overbank	Upper Main	0.15	FLOODWAY		
	1238.64	0.93	1238.66		254.65	
	1220.00		158.56	0.00	413.56	413.56
442						
443	Jackson Overbank	Upper Main	0.20	100YR-dummy		
	1237.74		1237.76		634.56	12.65
	2156.11		-2.01		631.16	
444	Jackson Overbank	Upper Main	0.20	FLOODWAY		
	1238.65	0.92	1238.66		381.65	
	1220.00		248.00	-2.01	631.16	629.65
445						
446	Jackson Overbank	Upper Main	0.25	100YR-dummy		
	1237.76		1237.80		609.55	1671.98
	496.62	0.16	547.18		610.10	
447	Jackson Overbank	Upper Main	0.25	FLOODWAY		
	1238.61	0.85	1238.76		107.09	147.00
	1072.11	0.89	505.00	547.18	610.10	612.09
448						
449	Jackson Overbank	Upper Main	0.275157	100YR-dummy		
	1237.83		1237.91		711.82	1188.92
	737.74	2.68	634.89		695.89	
450	Jackson Overbank	Upper Main	0.275157	FLOODWAY		
	1238.81	0.98	1239.01		104.99	130.25
	1060.98	28.77	610.89	634.89	695.89	715.88
451						
452	Jackson Overbank	Upper Main	160.5392	100YR-dummy		
	1238.04		1238.28		789.19	320.64
	1001.00		731.45		791.41	
453	Jackson Overbank	Upper Main	160.5392	FLOODWAY		
	1239.03	0.99	1239.28		75.50	71.88
	1145.52	2.60	719.50	731.45	791.41	795.00
454						
455	Jackson Overbank	Upper Main	265.4884	100YR-dummy		
	1238.35		1238.73		848.77	255.82
	1065.82		786.17		849.11	
456	Jackson Overbank	Upper Main	265.4884	FLOODWAY		
	1239.18	0.83	1239.56		62.94	
	1220.00		786.17	786.17	849.11	849.11
457						

458	Jackson Overbank	Upper Main	401.5288	100YR-dummy	
	1239.02		1239.17	923.35	426.28
	823.31		863.33	924.29	
459	Jackson Overbank	Upper Main	401.5288	FLOODWAY	
	1239.62	0.60	1239.96	63.96	14.72
	1205.28		860.33 863.33	924.29	924.29
460					
461	Jackson Overbank	Upper Main	579.144	100YR-dummy	
	1239.38		1239.76	411.72	213.51
	1036.08		981.97	1043.94	
462	Jackson Overbank	Upper Main	579.144	FLOODWAY	
	1240.11	0.73	1240.52	61.97	
	1220.00		981.97 981.97	1043.94	1043.94
463					
464	Jackson Overbank	Upper Main	783.8261	100YR-dummy	
	1240.49		1240.71	559.22	439.80
	780.20		1093.56	1155.53	
465	Jackson Overbank	Upper Main	783.8261	FLOODWAY	
	1240.96	0.47	1241.54	61.97	
	1220.00		1093.56 1093.56	1155.53	1155.53
466					
467	Jackson Overbank	Upper Main	1002.145	100YR-dummy	
	1241.39		1241.73	502.74	229.26
	990.74		1191.48	1254.26	
468	Jackson Overbank	Upper Main	1002.145	FLOODWAY	
	1242.18	0.79	1242.58	62.78	
	1220.00		1191.48 1191.48	1254.26	1254.26
469					
470	Jackson Overbank	Upper Main	1117.801	100YR-dummy	
	1242.04		1242.25	431.44	431.83
	788.17		1270.28	1335.06	
471	Jackson Overbank	Upper Main	1117.801	FLOODWAY	
	1242.60	0.56	1243.10	64.77	
	1220.00		1270.28 1270.28	1335.06	1335.06
472					
473	Jackson Overbank	Upper Main	1249.037	100YR-dummy	
	1242.63		1242.99	392.59	355.00
	865.00		1366.99	1432.01	
474	Jackson Overbank	Upper Main	1249.037	FLOODWAY	
	1243.33	0.70	1243.91	65.00	
	1220.00		1366.99 1366.99	1432.01	1432.01
475					
476	Jackson Overbank	Upper Main	1358.697	100YR-dummy	
	1243.37		1243.84	367.84	164.47
	1055.53	0.00	1453.71	1520.70	
477	Jackson Overbank	Upper Main	1358.697	FLOODWAY	
	1244.08	0.71	1244.53	66.99	
	1220.00		1453.71 1453.71	1520.70	1520.70
478					
479	Jackson Overbank	Upper Main	1495.177	100YR-dummy	
	1244.29		1244.56	478.11	224.10
	995.90		1545.16	1619.86	
480	Jackson Overbank	Upper Main	1495.177	FLOODWAY	
	1244.74	0.44	1245.09	74.69	
	1220.00		1545.16 1545.16	1619.86	1619.86
481					
482	Jackson Overbank	Upper Main	1646.261	100YR-dummy	
	1244.87		1245.47	123.27	43.64
	1176.36		1507.32	1577.27	
483	Jackson Overbank	Upper Main	1646.261	FLOODWAY	
	1245.31	0.44	1245.80	69.95	
	1220.00		1507.32 1507.32	1577.27	1577.27
484					

485	Jackson Overbank	Upper Main	1757.488	100YR-dummy		
	1245.46		1245.99	124.44	20.46	
	1159.28		139.40	213.22		
486	Jackson Overbank	Upper Main	1757.488	FLOODWAY		
	1245.69	0.23	1246.20	73.30		
	1220.00	139.40	139.40	213.22	213.22	
487						
488	Jackson Overbank	Upper Main	1866.284	100YR-dummy		
	1246.29		1246.84	130.88	38.13	
	1141.61		129.92	205.87		
489	Jackson Overbank	Upper Main	1866.284	FLOODWAY		
	1246.41	0.12	1247.00	74.90		
	1220.00	129.92	129.92	205.87	205.87	
490						
491	Jackson Overbank	Upper Main	2019.163	100YR-dummy		
	1247.40		1247.83	129.00	15.78	
	1163.96		127.92	204.87		
492	Jackson Overbank	Upper Main	2019.163	FLOODWAY		
	1247.53	0.13	1247.97	73.64		
	1220.00	127.92	127.92	204.87	204.87	
493						
494	Jackson Overbank	Upper Main	2178.49	100YR-dummy		
	1248.23		1248.70	115.25	8.11	
	1171.63		129.63	203.43		
495	Jackson Overbank	Upper Main	2178.49	FLOODWAY		
	1248.34	0.10	1248.82	73.07		
	1220.00	129.63	129.63	203.43	203.43	
496						
497	Jackson Overbank	Upper Main	2350.68	100YR-dummy		
	1249.23		1249.72	107.85	6.30	
	1173.44		130.60	203.40		
498	Jackson Overbank	Upper Main	2350.68	FLOODWAY		
	1249.31	0.08	1249.81	72.14		
	1220.00	130.60	130.60	203.40	203.40	
499						
500	Jackson Overbank	Upper Main	2564.282	100YR-dummy		
	1250.50		1250.97	104.08	8.91	
	1170.83		128.85	205.76		
501	Jackson Overbank	Upper Main	2564.282	FLOODWAY		
	1250.58	0.07	1251.06	73.60		
	1220.00	128.85	128.85	205.76	205.76	
502						
503	Jackson Overbank	Upper Main	2732.759	100YR-dummy		
	1251.26		1251.70	68.81	2.92	
	1176.82		144.91	199.88		
504	Jackson Overbank	Upper Main	2732.759	FLOODWAY		
	1251.35	0.08	1251.80	51.82		
	1220.00	144.91	144.91	199.88	199.88	
505						
506	Jackson Overbank	Upper Main	2832.344	100YR-dummy		
	1251.59		1252.09	58.58	3.54	
	1176.20		72.63	127.37		
507	Jackson Overbank	Upper Main	2832.344	FLOODWAY		
	1251.68	0.09	1252.19	52.64		
	1220.00	72.63	72.63	127.37	127.37	
508						
509	Jackson Overbank	Upper Main	3067.819	100YR-dummy		
	1252.49		1252.92	47.24		
	1179.74		2.89	57.31		
510	Jackson Overbank	Upper Main	3067.819	FLOODWAY		
	1252.59	0.10	1253.03	47.48		
	1220.00	2.89	2.89	57.31	57.31	
511						

512	Jackson Overbank	Upper Main	3143.447	100YR-dummy		
	1252.76		1253.15	47.92		
	1179.74		9.81	64.24		
513	Jackson Overbank	Upper Main	3143.447	FLOODWAY		
	1252.86	0.10	1253.26	48.22		
	1220.00	9.81	9.81	64.24	64.24	
514						
515	Jackson Overbank	Upper Main	3341.924	100YR-dummy		
	1253.26		1253.67	151.75	10.81	
	1184.01		11.68	66.44		
516	Jackson Overbank	Upper Main	3341.924	FLOODWAY		
	1253.37	0.10	1253.79	46.86		
	1220.00	11.68	11.68	66.44	66.44	
517						
518	Jackson Overbank	Upper Main	3370.57	100YR-dummy		
	1254.00		1254.51	294.51	350.70	
	869.13	0.17	17.79	70.25		
519	Jackson Overbank	Upper Main	3370.57	FLOODWAY		
	1254.03	0.04	1255.33	52.46		
	1220.00	17.79	17.79	70.25	70.25	
520						
521	Jackson Overbank	Upper Main	3639.008	100YR-dummy		
	1255.21		1255.40	271.83	82.64	
	1135.25	2.11	405.14	470.75		
522	Jackson Overbank	Upper Main	3639.008	FLOODWAY		
	1256.02	0.81	1256.20	65.61		
	1220.00	405.14	405.14	470.75	470.75	
523						
524						

**TYPE 3 APPLICATION SUPPLEMENTAL FINDINGS
NO-RISE DETERMINATION – FLOODWAY DEVELOPMENT**

A. Proposal.

Twin Creeks Development Co., LLC, an Oregon limited liability company, is the owner of certain real property located in Central Point, Oregon, and commonly known as Township 37 South, Range 2 West, Section 03BD, Tax Lots 1200, 1700, 2000, 2300, 2600, 2900, 3200, 3201, 3202, 3203, 3500, 3600, 3700, 3800, 3900, 4000 and 4100, Township 37 South Range 2 West, Section 03CA Tax Lots 802, 803 and 804, and Township 37 South Range 2 West, Section 03CA, Tax Lot 1200 ("Tax Lot 1200") (collectively, "the Twin Creeks property"). John and Marilyn Duke, as Trustees of the John A. Duke Trust, are the owners of the certain real property located in Central Point, Oregon, and commonly known as Township 37 South, Range 2 West, Section 03BD, Tax Lots 1100, 1400, 1500, 1800, 1900, 2400, 2500, 3000 and 3400 ("the Duke property"). Twin Creeks Development Co., LLC, and John and Marilyn Duke, as Trustees of the John A. Duke Trust, shall be collectively referred to herein as "Applicants". For the purposes of these supplemental findings, the Duke property and the Twin Creeks property shall be collectively referred to herein as "the parcels" or "the subject property". The purpose of this land use application is to obtain floodplain development permits to allow for the construction of single family dwellings on each of the parcels and the construction of independent living cottages on Tax Lot 1200 ("the Application"). No other development is being proposed in conjunction with the Application.

B. Schedule of Exhibits.

The following Exhibits have been submitted in support of this Application and by this reference are incorporated herein:

EXHIBIT "A":	CLOMR Maps
EXHIBIT "B":	Assessor's Maps
EXHIBIT "C":	No-Rise Analysis
EXHIBIT "D":	Firm Panel 1768F

C. Background.

The subject property, excluding Tax Lot 1200, consists of 29 parcels zoned High Mixed Residential/Commercial/Commercial (TOD), designated for single family development. Tax Lot 2800 is also zoned High Mixed Residential/Commercial/Commercial (TOD) and is designated for the construction of independent living cottages. A substantial portion of each of the parcels, excluding Tax Lot 1200, is located within the currently designated Floodway. Only the extreme southeastern corner of Tax Lot 1200 is located within the Floodway with the remainder of the property being located within the currently designated 100-year Floodplain.

Applicants obtained a Conditional Letter of Map Revision (CLOMR) from the Federal Emergency Management Agency (FEMA) on October 3, 2014 ("the CLOMR"). A map

depicting the approved Floodway boundary revision pursuant to the CLOMR is attached hereto as **Exhibit "A"** ("the CLOMR Map"). Applicants will obtain a Letter of Map Revision (LOMR) from FEMA subsequent to the completion of all work proposed in the CLOMR. All work has been completed except for the installation of large culverts in conjunction with the proposed Twin Creeks Crossing. It is anticipated that the aforementioned culverts will be installed in late spring, 2015. The LOMR application shall be submitted to FEMA subsequent to the installation of the culverts. As the CLOMR Map depicts, all of the subject property will be located outside of the designated Special Flood Hazard Area (SFHA) upon completion of the LOMR.

D. Applicable Criteria.

The standards and criteria that are applicable to this Application are set forth in Sections 8.24.090, 8.24.200 and 8.24.250 of the Central Point Municipal Code (CPMC). Findings addressing the aforementioned standards are set forth as follows:

1. CPMC 8.24.090. Review Procedure. Section 8.24.090 sets forth the requisite procedural review for floodplain development permits. The applicable provisions of CPMC 8.24.090 are as follows:

A. A floodplain development permit shall be required prior to initiating development activities in any special flood hazard areas as established in Section 8.24.070. The permit shall be for all improvements or structures (including manufactured homes and fences, as set forth in Sections 8.24.050, 8.24.250 and 8.24.260), and for all development including fill and other activities, also set forth in Section 8.24.260. Floodplain development permits shall be subject to the review procedures based on the type of development activity proposed, as set forth below:

** * * **

3. Section 17.05.400, Type III procedure (quasi-judicial), applies to floodplain development projects that meet the following criteria:

- a. Located in the regulatory floodway;*
- b. Increases BFE more than one foot;*
- c. Causes any rise in the regulatory floodway;*
- d. Bridge and culvert replacement projects that are not deemed to be a public emergency as provided in subsection (A)(1)(d) of this section;*
- e. Any bank stabilization that uses methods other than vegetative plantings to achieve shoreline stabilization and safety;*
- f. Requires a conditional letter of map revision (CLOMR) and/or letter of map revision (LOMR) pursuant to Section 8.24.170(A) and (B); and*

g. Requests a variance to the provisions of this chapter. CPMC 8.24.090(A)(3).

Applicants' Findings: The subject property is located within the currently designated Floodway. Consequently, Applicants acknowledge that this Application is subject to a Type III review.

2. CPMC 8.24.200. Development in regulatory floodways. The proposed development within the designated Floodway is subject to the standards set forth in CPMC 8.24.200(A), (B) and (C), which are set forth as follows:

A. Except as provided in subsections E and F of this section, encroachments including fill, new construction, substantial improvements, and other development are prohibited unless certification by a registered professional civil engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that such encroachment shall not result in any increase in flood levels during the occurrence of the base flood discharge. CPMC 8.24.200(A).

Applicants' Findings: A No-Rise Analysis dated February 26, 2015, and prepared by Peter Brooks, an Oregon registered professional engineer with Northwest Hydraulic Consultants is attached hereto as **Exhibit "C"** ("the No-Rise"). The No-Rise analysis is based upon current ground conditions including as-built topographic data of the recently constructed flood swale (See **Exhibit "A"**). The No-Rise states in part as follows:

Results of the analysis show that construction of the flood swale has mitigated for any potential rise associated with development in the Twin Creeks Crossing Phases I, II and III (includes the subject property). No-Rise, Pg. 2 (explanation added).

The above-cited conclusion is based on the fact that all work in conjunction with the CLOMR has been completed excepting the installation of the culverts. Thus, the subject property would be located outside of the Special Flood Hazard Area (SFHA) based on current ground conditions. Consequently, new construction and/or other substantial improvements on the subject property will have no impact on flood levels because the subject property is effectively outside the SFHA.

B. Provided that the conditions in subsection A of this section are met, the following additional provisions shall apply:

- 1. Floodplain development construction standards provided in Sections 8.24.250 and 8.24.260 are met;*
- 2. Any fill allowed to be placed in the floodway shall be designed to be stable under conditions of flooding, including rapid rise and rapid drawdown of floodwaters, prolonged inundation, and flood related erosion and scour;*
- 3. No manufactured dwelling shall be placed in a floodway except in an existing mobile home park or an existing mobile home subdivision, as conditionally*

approved by the local administrator or designee in consideration of the conditions of Section 8.24.250(G). CPMC 8.24.200(B).

Applicants' Findings: Applicants acknowledge and agree that the floodplain development construction development standards will apply to all new construction and standard improvements located within the designated Special Flood Hazard Area (SFHA). In the event any fill is placed in the designated Floodway, it shall be designed to be stable under conditions of flooding, including rapid rise and rapid drawdown of floodwaters, prolonged inundation and flood related erosion and scour. No manufactured dwellings will be located on the subject property.

C. The following activities are prohibited in the regulatory floodway:

- 1. Fences and walls as provided in Section 8.24.260(A)(1) and 17.57.030; and*
- 2. Accessory structures as provided in Section 8.24.250(I). CPMC 8.24.200(C).*

Applicants' Findings: No fences or walls (i.e. masonry walls or retaining walls) shall be constructed within the designated Floodway. Applicants acknowledge that no accessory structures shall be allowed within the designated Floodway.

3. CPMC 8.24.250. Floodplain Development Standards for Construction.

CPMC 8.24.250 sets forth specific construction standards for new construction and substantial improvements located within a designated Special Flood Hazard Area (SFHA).

Applicants' Findings: Applicants acknowledge and are in agreement that any new construction and substantial improvements located within a designated SFHA must comply with the construction standards set forth in CPMC 8.24.250. Applicants propose that these standards be imposed as a condition of approval.

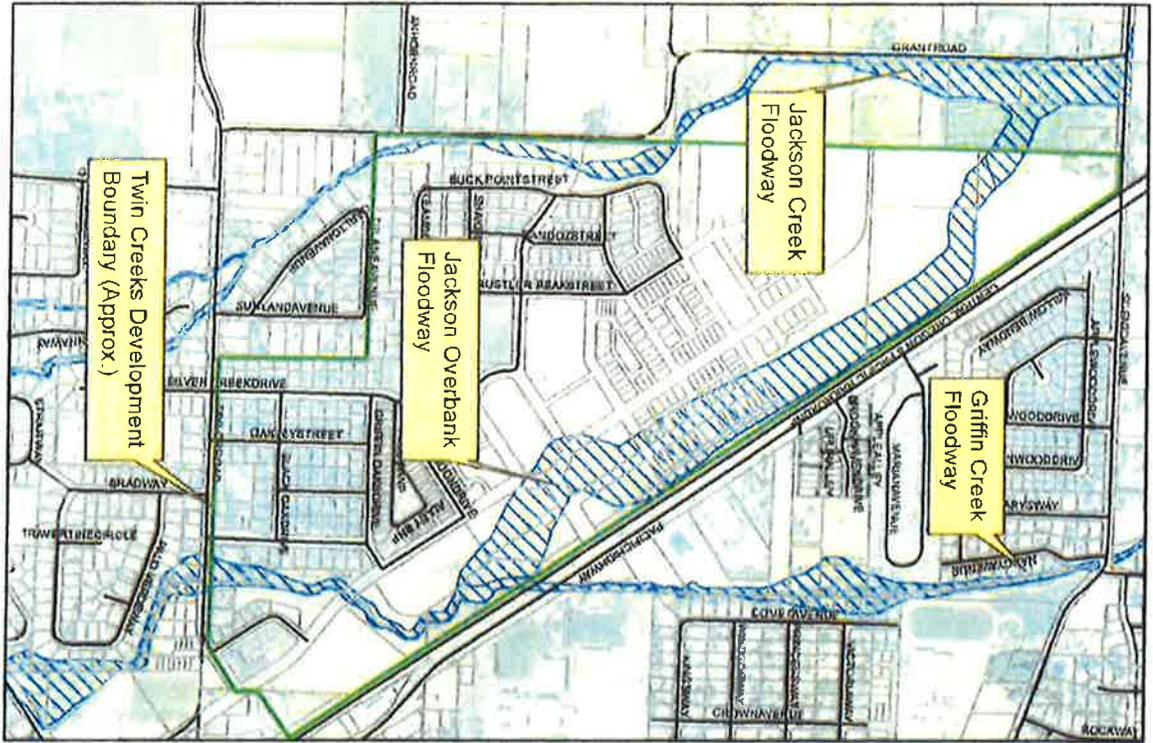
E. Conclusion.

For the reasons set forth above, Applicant respectfully requests that the Floodplain Development Permit application be approved.

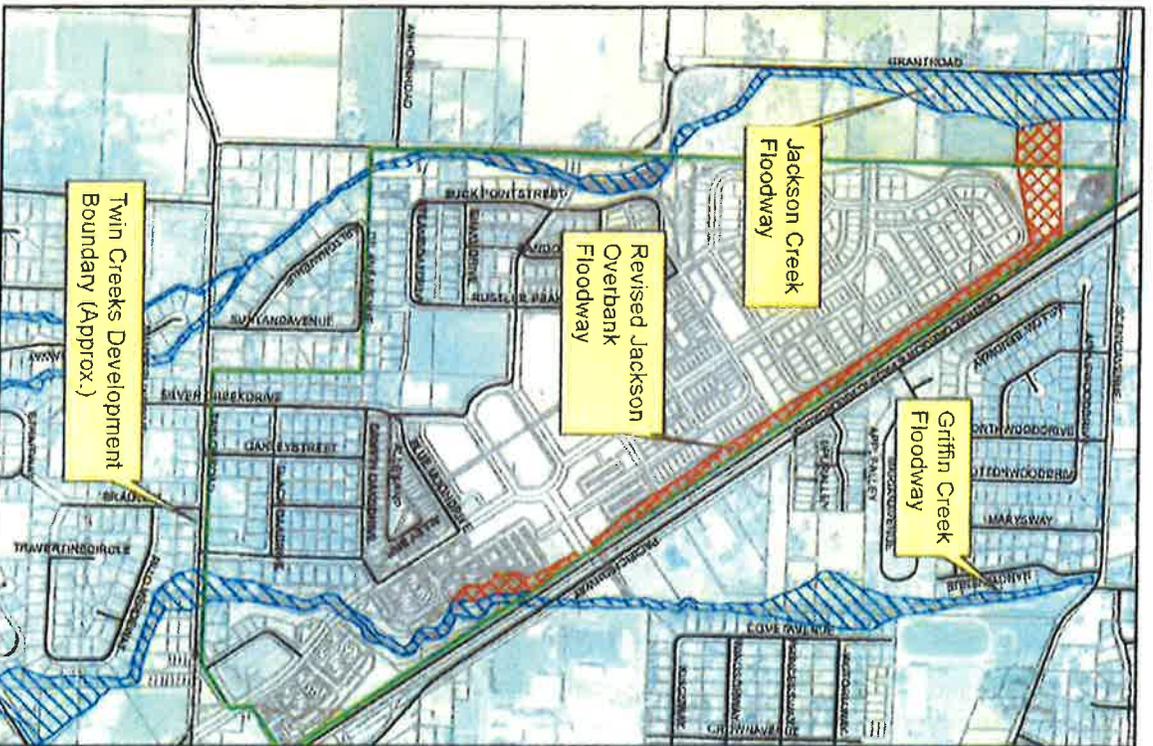
HUYCKE O'CONNOR JARVIS, LLP:



Daniel B. O'Connor, OSB# 950444
Attorney for Applicants



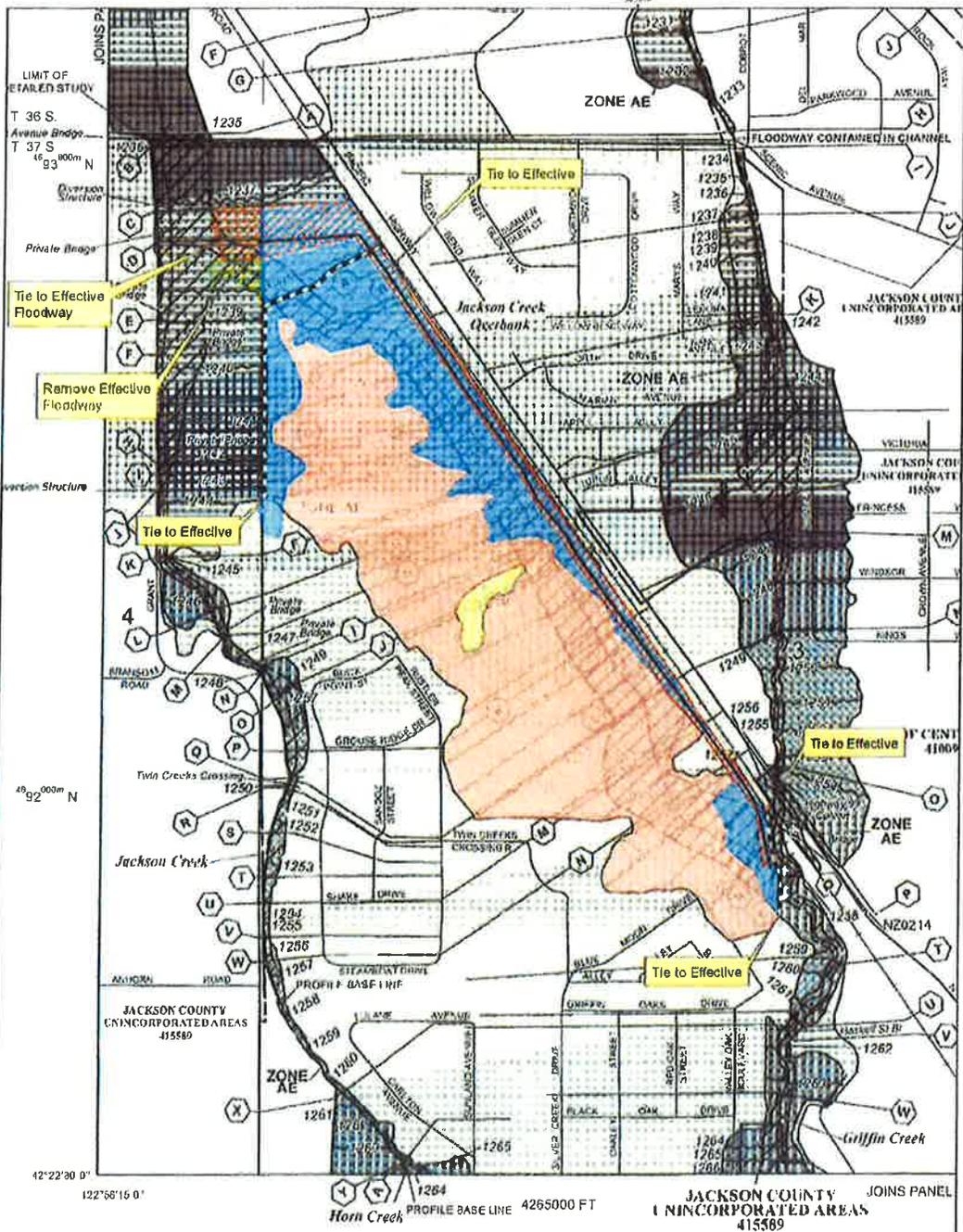
Effective FEMA Floodway Mapping



**Proposed Floodway Revision
(Draft)**

Note: Flow direction is generally northward.

EXHIBIT "A"



Legend

- Effective Study Breakline
- Revised Jackson Creek Overbank Profile Base Line
- Revised Floodway
- Revised Zone AH
- Revised Zone AE
- Revised Zone X
- Floodway Removal

Twin Creeks Development C1.OMR

Jackson Creek Overbank
Annotated FIRM 41029C 1768F

Scale - 1:8,000

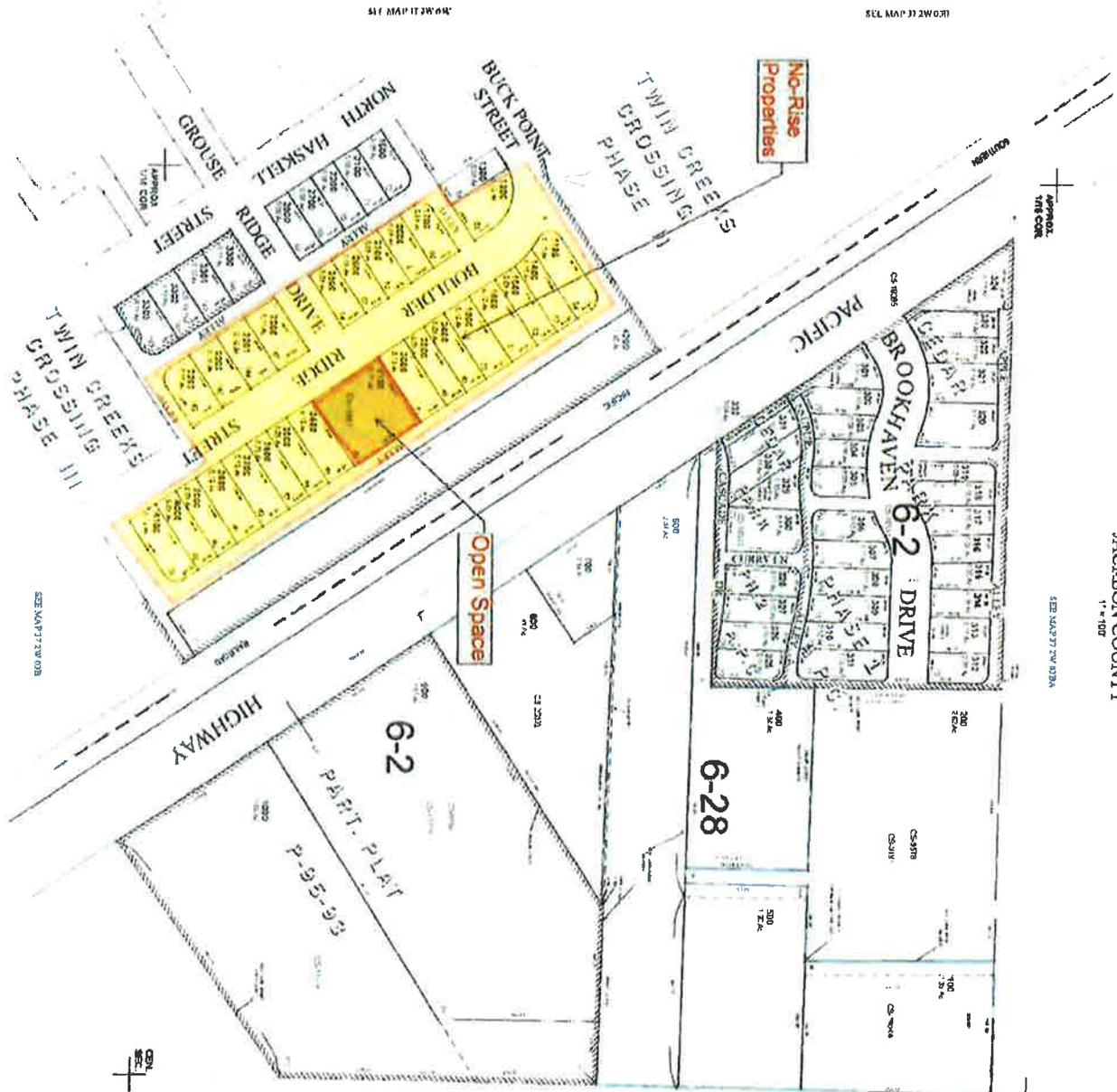
500 250 0 500 Feet

coord. syst.: UTM Zone 10N	horiz. datum: NAD 83	date: 10/14/11
northwest hydraulic consultants	project no. 200044	2/7-JUL-2014

FOR ASSESSMENT AND
TAXATION ONLY

SE 1/4, NW 1/4, SEC. 3, T37S, R2W, WM
JACKSON COUNTY
1" = 100'

37 2W 03BD
CENTRAL POINT



SEE MAP J72W03R

SEE MAP J72W03R

SEE MAP J72W03B

SEE MAP J72W03A

SEE MAP J72W03C

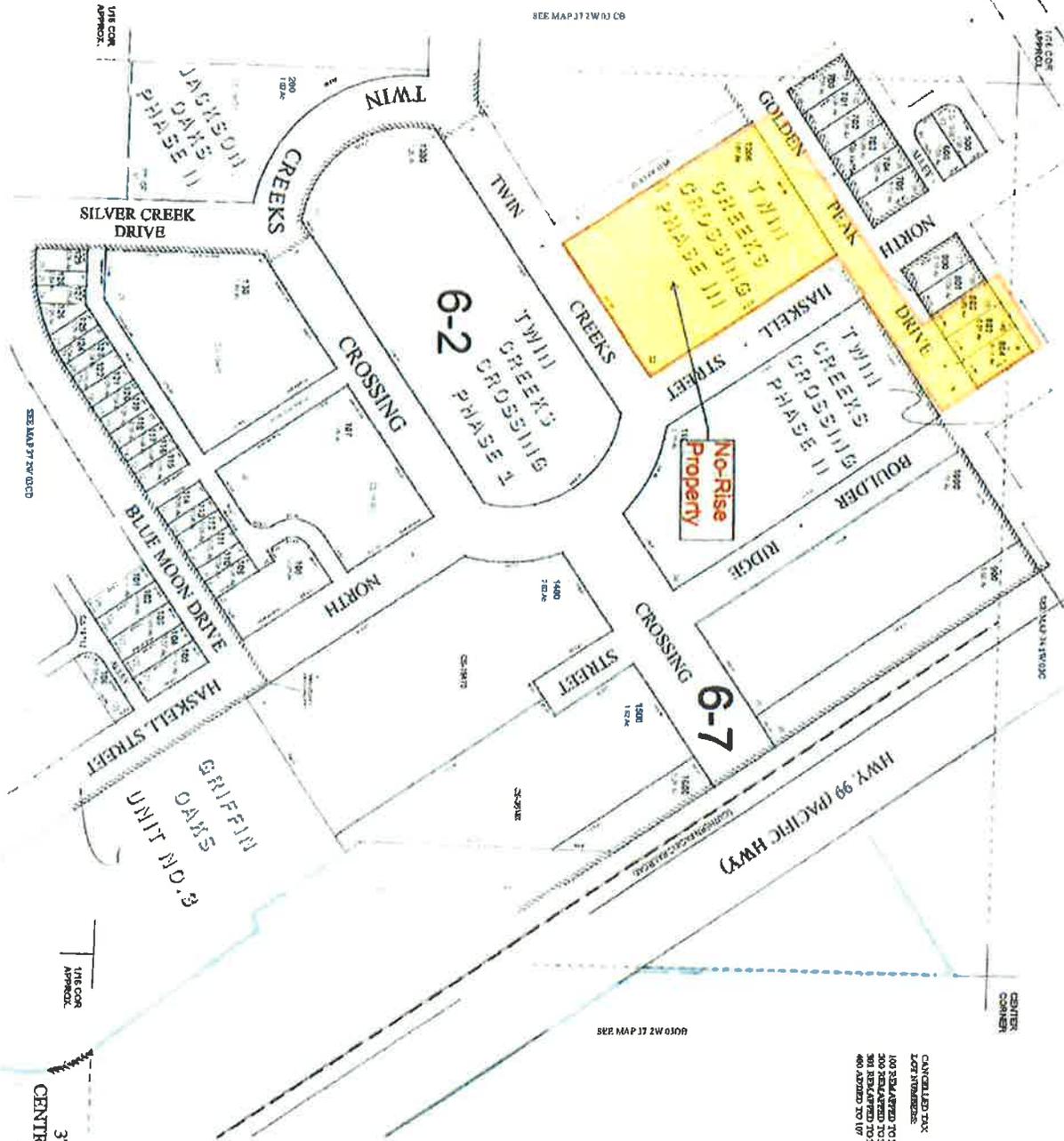
EXHIBIT "B"

37 2W 03BD
CENTRAL POINT
NEW MAP REVISION # 205
2007 APRIL 11, 2012

FOR ASSESSMENT AND
ZONATION ONLY

1/4 COR
APPROX.

SEE MAP 37 2W 03 B



N.E. 1/4, S.W. 1/4, SEC. 3, T.37S., R.2W., W.M.
JACKSON COUNTY
1" = 100'

37 2W 03CA
CENTRAL POINT

CANCELLED TAX
FOR FRODOBAGGINS
JOB RECALCULATED TO 372W03C-400
JOB RECALCULATED TO 372W03C-600
AND ADDED TO 372W03C-100

SEE MAP 37 2W 03 B

1/4 COR
APPROX.

37 2W 03CA
CENTRAL POINT
NEW MAP APRIL 26, 2006
REV. JUNE 27, 2012

**TWIN CREEKS TRANSIT ORIENTED DEVELOPMENT
AGREEMENT**

Effective Date:

Parties:

City of Central Point ("City")
140 South Third Street
Central Point, OR 97502

Twin Creek Development Co., LLC ("Developer")
P.O. Box 3577
Central Point, OR 97502

Recitals:

- A. Developer is the owner of real property located in Jackson County, Oregon more particularly described in Exhibit "A" attached hereto and incorporated herein by reference, located within the Twin Creeks TOD Master Plan. A copy of the Twin Creeks TOD Master Plan Map is attached hereto as Exhibit "B" (the "Subject Property").
- B. In 2001, Developer applied for, and City approved, a Pre-Annexation Development Agreement and Master Plan for the Central Point Transit-Oriented District ("TOD"). As part of that agreement, Developer agreed to make a number of transportation and utility improvements to provide service to the Subject Property. Those improvements were incorporated into the Master Plan as conditions of approval. The improvements include, without limitation, railroad crossing and intersection improvements for a new TOD Crossing and upgrades at Twin Creeks Crossing (extended) and Highway 99 per Oregon Public Utilities Commission and ODOT requirements (the "Railroad Crossing").
- C. Throughout the course of development of the Subject Property, City contributed substantial improvements to the transportation infrastructure improvements required of Developer under the Master Plan. Further, City has applied for a grant to aid Developer with the costs of the Railroad Crossing. Such grant will not cover the full cost of the Railroad Crossing and Developer will be required to contribute a share of the costs of the crossing in lieu of making the full improvements itself.
- D. As City is relying upon Developer's contribution to the Railroad Crossing in applying for the grant, and Developer no longer owns all of the land within the

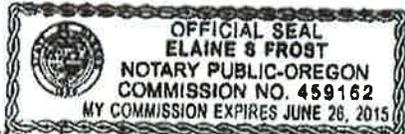
Master Plan area, the parties desire to clarify and assure the performance of Developer's obligations related to the Railroad Crossing.

Agreement:

1. The recitals are incorporated into this Agreement and made a part hereof.
2. As Developer's share of the cost of improving the Railroad Crossing, Developer shall:
 - a. Prior to October 1, 2014 obtain the necessary permits from federal, state and local agencies for construction of the extension of utilities and the pavement of Twin Creeks Crossing from the current terminus easterly to the railroad right-of-way improvements as identified in the drawings entitled "Griffin Creek Overflow Flood Mitigation Plan" dated March 11, 2013, which is attached hereto as Exhibit "C", and complete construction of same no later than October 1, 2015. To secure such obligation, a personal guaranty shall be required, in substantially the form attached hereto as Exhibit "D". If Developer fails to complete construction within the time provided herein, the City may, at its option, make such improvements on Developer's behalf and seek reimbursement for such improvements from Developer, and/or its Guarantor as provided in the personal guaranty attached hereto as Exhibit "D"; and
 - b. Pay to the City into the Railroad Crossing Account the following amounts: No later than December 1, 2014 cash in the amount of \$125,000.00. No later than December 1, 2015 cash in the additional amount of \$125,000.00. No later than December 1, 2016 cash in the additional amount of \$125,000.00. No later than July 1, 2017 cash in the additional amount of \$125,000.00. To secure such obligation, a personal guaranty shall be required, in substantially the form attached hereto as Exhibit "D".
 - i. In the event any payment required of Developer pursuant to this agreement becomes past due for a period of 10 days or more, the principal balance owing pursuant to this Agreement shall, automatically and without further notice to Developer, accrue interest at the rate of twelve percent (12%) per annum until such time as the delinquent payment is paid ("Default Interest"). City may treat the failure to pay such additional interest as a default hereunder. The acceptance of payments or performance by City shall not be deemed a waiver of City's right to collect Default Interest. Interest shall be calculated on the basis of a 30-day month and a 360-day year.
 - ii. In the event construction of the railroad crossing is abandoned by the City and said abandonment is replaced by an alternative route;

which actions shall be acknowledged in the City's Transportation System Plan ("TSP), then the City shall have the authority to use the payments for the designated alternative route. If the City abandons construction of the railroad crossing and does not designate an alternative route; which action shall be acknowledged in the City's TSP, then the City shall refund the payments made by Developer under Section 6 herein, without interest.

3. In consideration for the City's contribution to the transportation improvements identified in the Master Plan approval, Developer agrees to waive all rights to reimbursement from the City for any current or future qualifying Street SDC fees for streets already built or proposed to be built within the Subject Property.
4. As additional consideration for the City's contribution to the transportation improvements identified in the Master Plan approval, Developer agrees to waive all rights to reimbursement from the City for any qualifying Parks SDC fees for parks already built or required to be built in the future within the Subject Property.
5. Nothing herein is intended to alter or modify the requirements to improve the streets, utilities and parks identified in the Master Plan, except as expressly modified herein.
6. This Agreement has been prepared on behalf of the City of Central Point. Developer has been advised that it should seek independent legal counsel as to the effect of this Agreement on its rights.



Elaine Frost

Dated: 7/3/2014

TWIN CREEKS DEVELOPMENT CO.,
LLC

Bret Moorc

By: Bret Moorc, Manager

"Developer"

CITY OF CENTRAL POINT

Dated: 7/24/14

Hank Williams

By: Hank Williams
Its: Mayor

EXHIBIT "A"

**PROPERTY OWNED BY TWIN CREEKS DEVELOPMENT CO.,
LLC as of 12-20-2013**

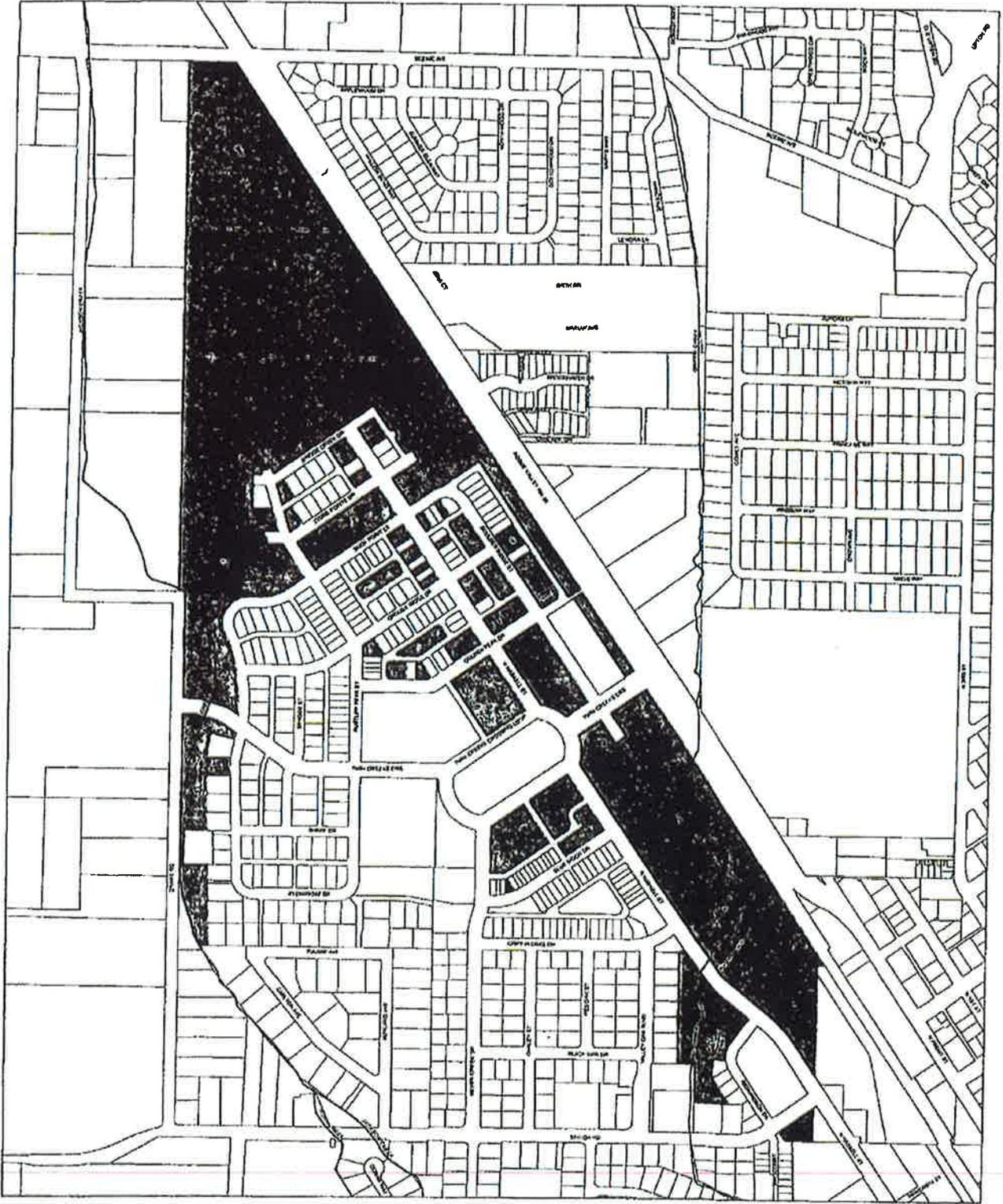
No.	ASSESSORS TAX LOT NO.	ASSESSORS ACCOUNT NO.	FEE OWNER
1	372W03DC3400	10140165	TWIN CREEKS DEVELOPMENT COMPANY, LLC
2	372W03CA900	10985724	TWIN CREEKS DEVELOPMENT COMPANY, LLC
3	372W03CA1500	10985726	TWIN CREEKS DEVELOPMENT COMPANY, LLC
4	372W03CA1600	10985725	TWIN CREEKS DEVELOPMENT COMPANY, LLC
5	372W03DB900	10985507	TWIN CREEKS DEVELOPMENT COMPANY, LLC
6	372W03CA126	10985748	TWIN CREEKS DEVELOPMENT COMPANY, LLC
7	372W03DC3402	10980147	TWIN CREEKS DEVELOPMENT COMPANY, LLC
8	372W03DC3409	10980154	TWIN CREEKS DEVELOPMENT COMPANY, LLC
9	372W03DC3411	10985594	TWIN CREEKS DEVELOPMENT COMPANY, LLC
10	372W03B1601	10631951	TWIN CREEKS DEVELOPMENT COMPANY, LLC
11	372W03CB7101	10986679	TWIN CREEKS DEVELOPMENT COMPANY, LLC
12	372W03BD4000	10986373	TWIN CREEKS DEVELOPMENT COMPANY, LLC
13	372W03BD4100	10986372	TWIN CREEKS DEVELOPMENT COMPANY, LLC
14	372W03CA704	10986692	TWIN CREEKS DEVELOPMENT COMPANY, LLC
15	372W03BD2900	10986398	TWIN CREEKS DEVELOPMENT COMPANY, LLC
16	372W03BC2700	10986415	TWIN CREEKS DEVELOPMENT COMPANY, LLC
17	372W03CA111	10985733	TWIN CREEKS DEVELOPMENT COMPANY, LLC
18	372W03CA130	10985752	TWIN CREEKS DEVELOPMENT COMPANY, LLC
19	372W03BD3800	10986375	TWIN CREEKS DEVELOPMENT COMPANY, LLC
20	372W03CA801	10986694	TWIN CREEKS DEVELOPMENT COMPANY, LLC
21	372W03BD2000	10986395	TWIN CREEKS DEVELOPMENT COMPANY, LLC
22	372W03BD2100	10986405	TWIN CREEKS DEVELOPMENT COMPANY, LLC
23	372W03BC2500	10986413	TWIN CREEKS DEVELOPMENT COMPANY, LLC
24	372W03BD3203	10986685	TWIN CREEKS DEVELOPMENT COMPANY, LLC
25	372W03CA702	10986690	TWIN CREEKS DEVELOPMENT COMPANY, LLC
26	372W03BC800	10986407	TWIN CREEKS DEVELOPMENT COMPANY, LLC
27	372W03BD4200	10986369	TWIN CREEKS DEVELOPMENT COMPANY, LLC
28	372W03CB7200	10986421	TWIN CREEKS DEVELOPMENT COMPANY, LLC
29	372W03BC2000	10986429	TWIN CREEKS DEVELOPMENT COMPANY, LLC
30	372W03B1800	10196422	TWIN CREEKS DEVELOPMENT COMPANY, LLC
31	372W03BC900	10986408	TWIN CREEKS DEVELOPMENT COMPANY, LLC
32	372W03CA703	10986691	TWIN CREEKS DEVELOPMENT COMPANY, LLC
33	372W03CA802	10986695	TWIN CREEKS DEVELOPMENT COMPANY, LLC
34	372W03CA803	10986696	TWIN CREEKS DEVELOPMENT COMPANY, LLC
35	372W03BD3201	10986683	TWIN CREEKS DEVELOPMENT COMPANY, LLC
36	372W03CA114	10985736	TWIN CREEKS DEVELOPMENT COMPANY, LLC
37	372W03BD3200	10986399	TWIN CREEKS DEVELOPMENT COMPANY, LLC
38	372W03BD2300	10986396	TWIN CREEKS DEVELOPMENT COMPANY, LLC
39	372W03BD3500	10986378	TWIN CREEKS DEVELOPMENT COMPANY, LLC
40	372W03BD3600	10986377	TWIN CREEKS DEVELOPMENT COMPANY, LLC

EXHIBIT "A"

No.	ASSESSORS TAX LOT NO.	ASSESSORS ACCOUNT NO.	FEELOWNER
41	372W03BD3300	10986401	TWIN CREEKS DEVELOPMENT COMPANY, LLC
42	372W03CA800	10986400	TWIN CREEKS DEVELOPMENT COMPANY, LLC
43	372W03CA1100	10985722	TWIN CREEKS DEVELOPMENT COMPANY, LLC
44	372W03CA1200	10985721	TWIN CREEKS DEVELOPMENT COMPANY, LLC
45	372W03BC700	10986393	TWIN CREEKS DEVELOPMENT COMPANY, LLC
46	372W03BD3202	10986684	TWIN CREEKS DEVELOPMENT COMPANY, LLC
47	372W03CA804	10986697	TWIN CREEKS DEVELOPMENT COMPANY, LLC
48	372W03CB7100	10986420	TWIN CREEKS DEVELOPMENT COMPANY, LLC
49	372W03C101	10633028	TWIN CREEKS DEVELOPMENT COMPANY, LLC
50	372W03CA108	10985730	TWIN CREEKS DEVELOPMENT COMPANY, LLC
51	372W03CA113	10985735	TWIN CREEKS DEVELOPMENT COMPANY, LLC
52	372W03BC2200	10986410	TWIN CREEKS DEVELOPMENT COMPANY, LLC
53	372W03BC2300	10986411	TWIN CREEKS DEVELOPMENT COMPANY, LLC
54	372W03CA109	10985731	TWIN CREEKS DEVELOPMENT COMPANY, LLC
55	372W03C138	10985727	TWIN CREEKS DEVELOPMENT COMPANY, LLC
56	372W03CB7103	10986681	TWIN CREEKS DEVELOPMENT COMPANY, LLC
57	372W03CA1400	10985728	TWIN CREEKS DEVELOPMENT COMPANY, LLC
58	372W03BD1700	10986394	TWIN CREEKS DEVELOPMENT COMPANY, LLC
59	372W03BD2600	10986397	TWIN CREEKS DEVELOPMENT COMPANY, LLC
60	372W03CA110	10985732	TWIN CREEKS DEVELOPMENT COMPANY, LLC
61	372W03CA112	10985734	TWIN CREEKS DEVELOPMENT COMPANY, LLC
62	372W03CA705	10986693	TWIN CREEKS DEVELOPMENT COMPANY, LLC
63	372W03BD1300	10986390	TWIN CREEKS DEVELOPMENT COMPANY, LLC
64	372W03BD3302	10986687	TWIN CREEKS DEVELOPMENT COMPANY, LLC
65	372W03BD3900	10986374	TWIN CREEKS DEVELOPMENT COMPANY, LLC
66	372W03BD3301	10986686	TWIN CREEKS DEVELOPMENT COMPANY, LLC
67	372W03BD3100	10986380	TWIN CREEKS DEVELOPMENT COMPANY, LLC
68	372W03BC201	10991725	TWIN CREEKS DEVELOPMENT COMPANY, LLC
69	372W03CA107	10985595	TWIN CREEKS DEVELOPMENT COMPANY, LLC
70	372W03BD3700	10986376	TWIN CREEKS DEVELOPMENT COMPANY, LLC
71	372W03CB6600	10986445	TWIN CREEKS DEVELOPMENT COMPANY, LLC
72	372W03BC354	10998395	TWIN CREEKS DEVELOPMENT COMPANY, LLC
73	372W03BC316	10998387	TWIN CREEKS DEVELOPMENT COMPANY, LLC
74	372W03BC318	10998389	TWIN CREEKS DEVELOPMENT COMPANY, LLC
75	372W03BC319	10998390	TWIN CREEKS DEVELOPMENT COMPANY, LLC
76	372W03BC303	10998373	TWIN CREEKS DEVELOPMENT COMPANY, LLC
77	372W03BC300	10633036	TWIN CREEKS DEVELOPMENT COMPANY, LLC
78	372W03BC310	10998381	TWIN CREEKS DEVELOPMENT COMPANY, LLC
79	372W03BC308	10998379	TWIN CREEKS DEVELOPMENT COMPANY, LLC
80	372W03BC309	10998380	TWIN CREEKS DEVELOPMENT COMPANY, LLC
81	372W03BC306	10998377	TWIN CREEKS DEVELOPMENT COMPANY, LLC
82	372W03BC305	10998376	TWIN CREEKS DEVELOPMENT COMPANY, LLC
83	372W03BC307	10998378	TWIN CREEKS DEVELOPMENT COMPANY, LLC
84	372W03BC100	10883813	TWIN CREEKS DEVELOPMENT COMPANY, LLC

EXHIBIT "A"

No.	ASSESSORS TAX LOT NO.	ASSESSORS ACCOUNT NO.	FEE OWNER
85	372W03BC200	10196414	TWIN CREEKS DEVELOPMENT COMPANY, LLC
86	372W03DC3303	10985506	TWIN CREEKS DEVELOPMENT COMPANY, LLC
87	372W03C208	10782603	TWIN CREEKS DEVELOPMENT COMPANY, LLC
88	372W03CB5700	10984649	TWIN CREEKS DEVELOPMENT COMPANY, LLC



Legend

■ TWIN CREEK DEVELOP CO LLC

Date: 12/20/2013

TWIN CREEKS TRANSIT-ORIENTED DEVELOPMENT

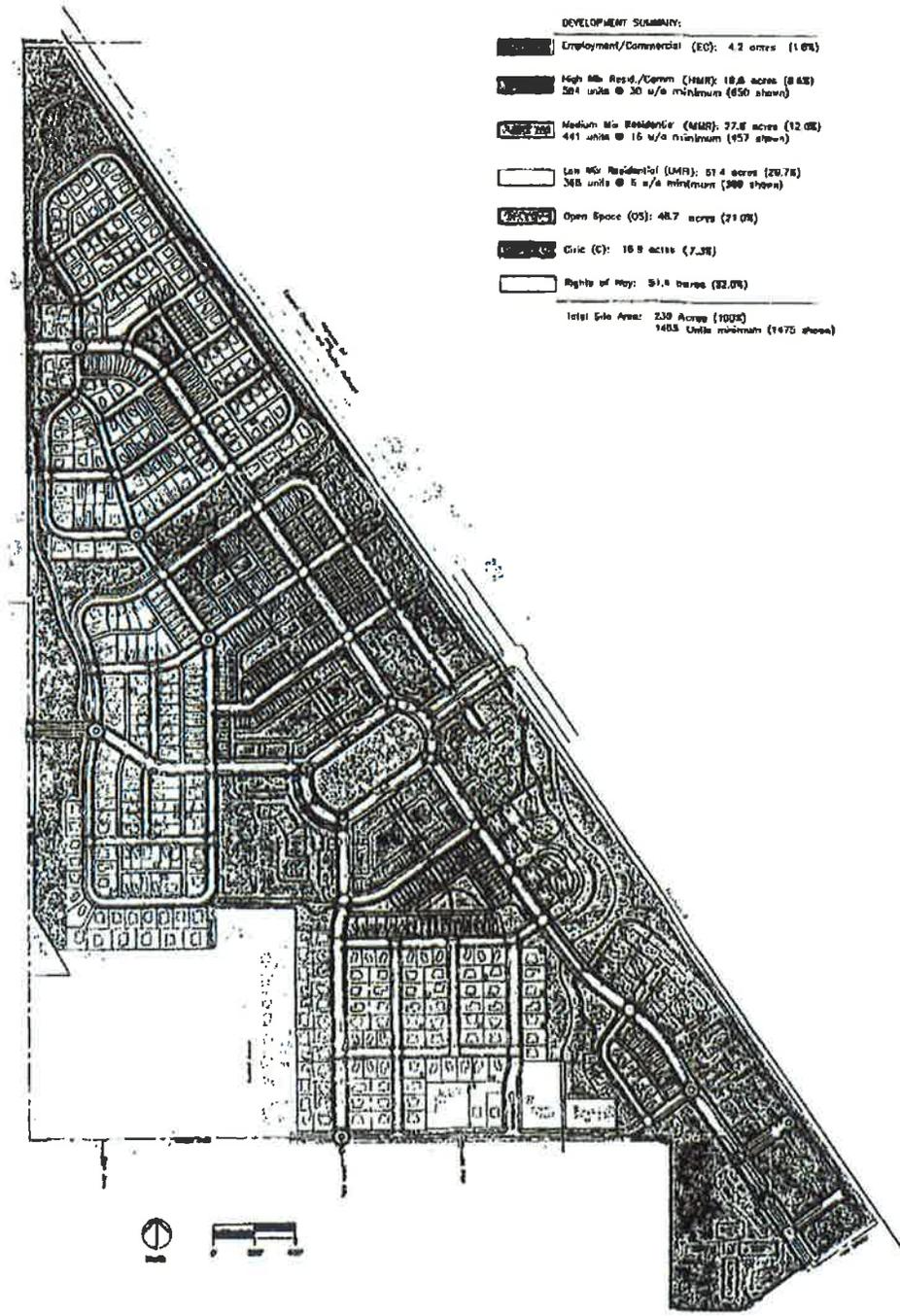


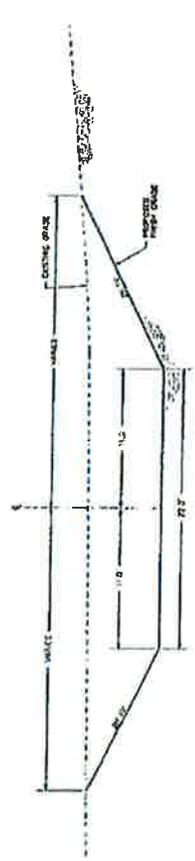
Exhibit 18, Land Use Plan

CITY OF CENTRAL POINT
GASTON CREEK CULVERT ON
FLOOD MITIGATION PLAN
 Considered Letter of Map Repeal
 Typ Channel Section Headwall Elevation

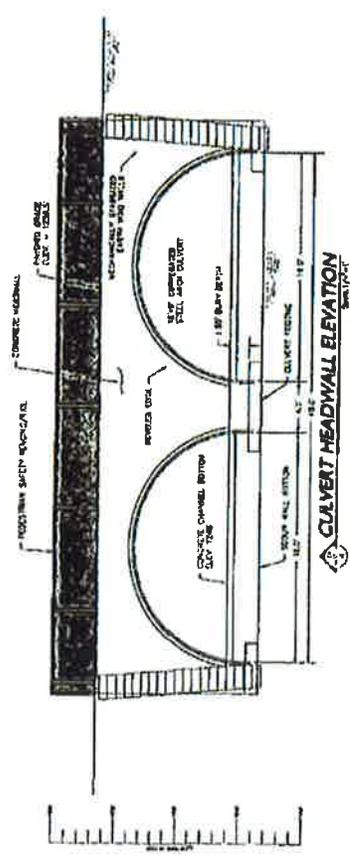
WHETSTONE ENGINEERING, INC.
 1000 W. 10th St., Suite 100
 Central Point, Oregon 97514
 Phone: (531) 235-1100
 Fax: (531) 235-1101
 www.whetstoneeng.com

APPROVED BY: [Signature]
 DATE: 08/27/17

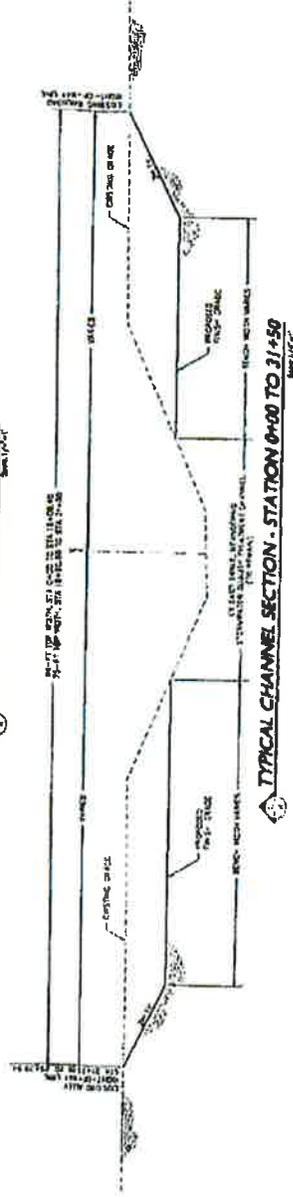
PROJECT NO: 17-001
 SHEET NO: 17-001-01



TYPICAL CHANNEL SECTION - STATION 32+50 TO CROSSING & ABOVE
 Scale: 1/4" = 1'-0"

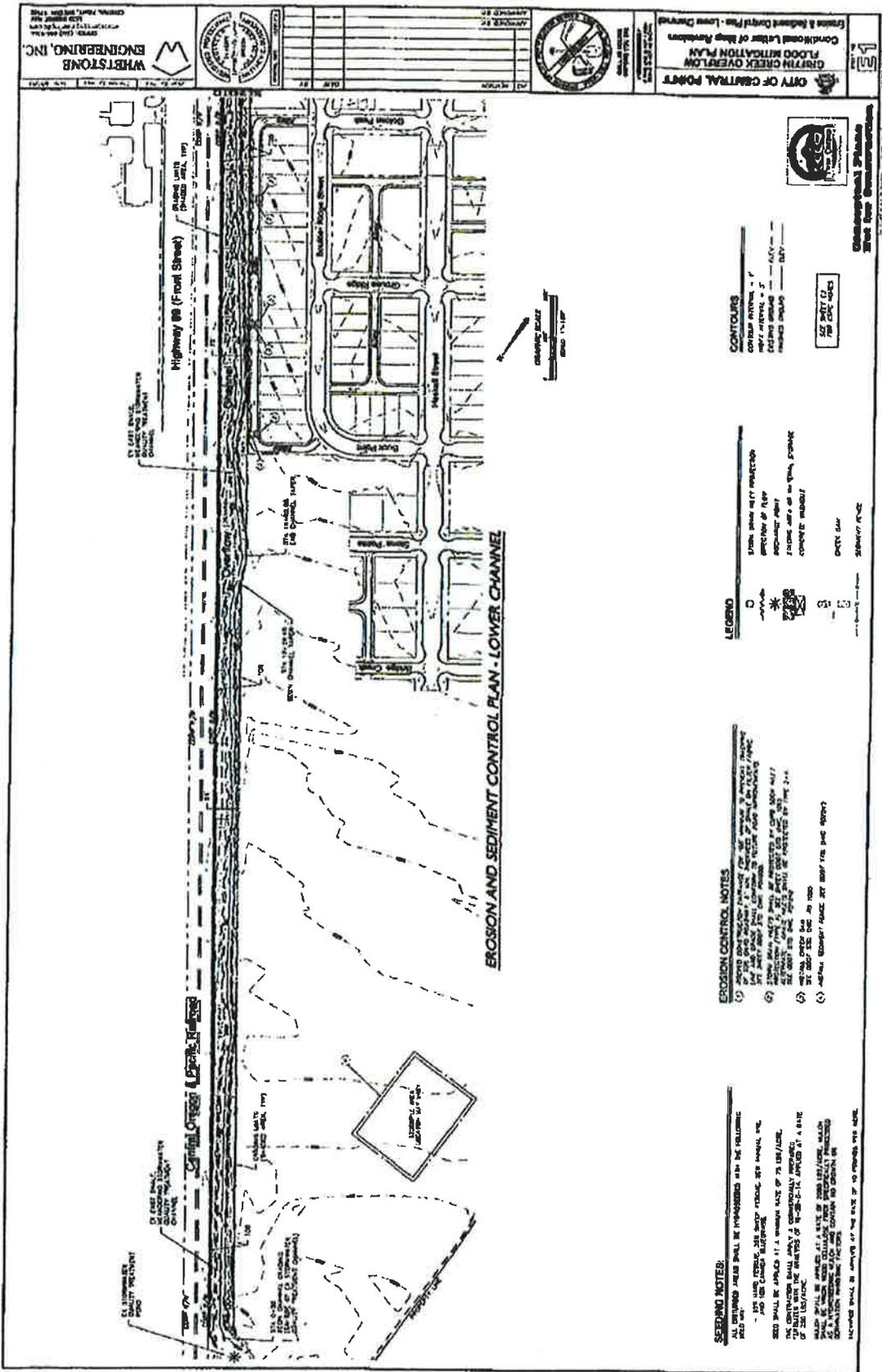


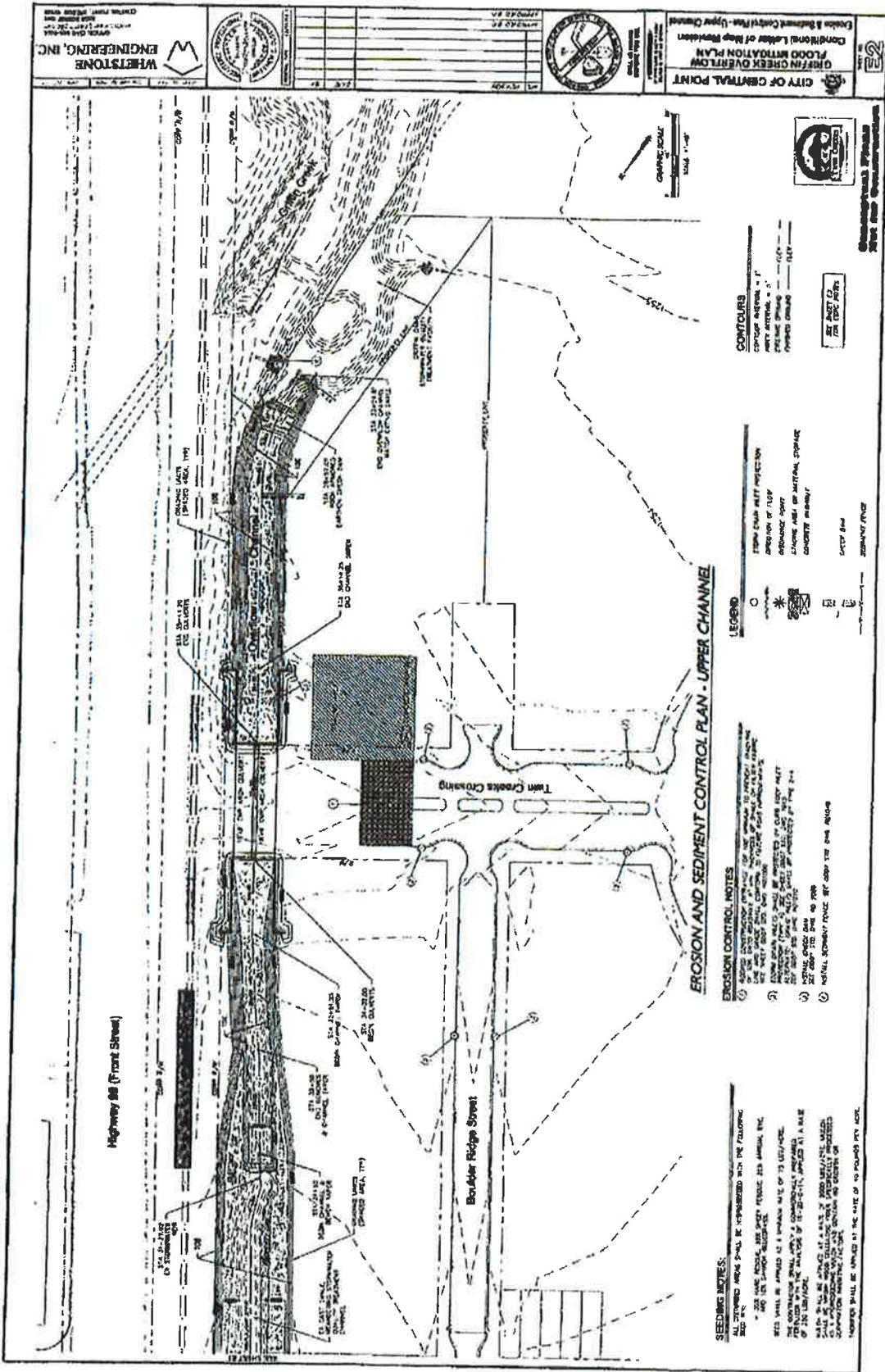
CULVERT HEADWALL ELEVATION
 Scale: 1/4" = 1'-0"



TYPICAL CHANNEL SECTION - STATION 0+00 TO 31+50
 Scale: 1/4" = 1'-0"







WHEATSTONE ENGINEERING, INC.
 1000 S. 10th Street
 Central Point, Oregon 97502
 Phone: 531-242-1100
 Fax: 531-242-1101



DATE	DESCRIPTION
12/31/2024	FINAL PLAN
12/15/2024	REVISION 1
12/01/2024	REVISION 2

PROJECT NO. 2024-001
 SHEET NO. 1 OF 1
 SCALE: AS SHOWN
 DRAWN BY: J. SMITH
 CHECKED BY: M. JONES
 APPROVED BY: P. BROWN



CITY OF CENTRAL POINT
 GREEN CHANNEL FLOOD MITIGATION PLAN
 Erosion & Sediment Control Plan - Upper Channel

CONTOURS

- Contour Interval = 1'
- Contour Interval = 2'
- Contour Interval = 5'
- Contour Interval = 10'
- Contour Interval = 20'

LEGEND

- 1. Erosion Control Structure
- 2. Sediment Basin
- 3. Silt Fence
- 4. Stormwater Inlet
- 5. Stormwater Outlet
- 6. Stormwater Pipe
- 7. Stormwater Pond
- 8. Stormwater Tank
- 9. Stormwater Vault
- 10. Stormwater Chamber
- 11. Stormwater Collector
- 12. Stormwater Conduit
- 13. Stormwater Tunnel
- 14. Stormwater Arch
- 15. Stormwater Box
- 16. Stormwater Culvert
- 17. Stormwater Bridge
- 18. Stormwater Viaduct
- 19. Stormwater Trestle
- 20. Stormwater Span
- 21. Stormwater Pier
- 22. Stormwater Abutment
- 23. Stormwater Retention Wall
- 24. Stormwater Gravity Well
- 25. Stormwater Pump Station
- 26. Stormwater Treatment Plant
- 27. Stormwater Filtration System
- 28. Stormwater Sedimentation Basin
- 29. Stormwater Clarification Basin
- 30. Stormwater Aeration Basin
- 31. Stormwater Activated Sludge Basin
- 32. Stormwater Trickling Filter
- 33. Stormwater Rotating Biological Contactors
- 34. Stormwater Membrane Bioreactor
- 35. Stormwater Ultrafiltration
- 36. Stormwater Reverse Osmosis
- 37. Stormwater Nanofiltration
- 38. Stormwater Ion Exchange
- 39. Stormwater Adsorption
- 40. Stormwater Precipitation/Dissolution
- 41. Stormwater Chemical Precipitation
- 42. Stormwater Electrocoagulation
- 43. Stormwater Ozonation
- 44. Stormwater UV Disinfection
- 45. Stormwater Chlorination
- 46. Stormwater Ultraviolet Radiation
- 47. Stormwater Gamma Radiation
- 48. Stormwater X-Ray Radiation
- 49. Stormwater Alpha Radiation
- 50. Stormwater Beta Radiation

EROSION CONTROL NOTES

1. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION.
2. EROSION CONTROL MEASURES SHALL BE DESIGNED BY THE CONTRACTOR AND APPROVED BY THE CITY ENGINEER.
3. EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
4. EROSION CONTROL MEASURES SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
5. EROSION CONTROL MEASURES SHALL BE REINSTALLED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.

SEEDING NOTES:

1. ALL SEEDING SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING:
2. SEEDING SHALL BE PERFORMED AT THE RATE OF 10 POUNDS PER ACRE.
3. SEEDING SHALL BE PERFORMED AT THE RATE OF 10 POUNDS PER ACRE.
4. SEEDING SHALL BE PERFORMED AT THE RATE OF 10 POUNDS PER ACRE.
5. SEEDING SHALL BE PERFORMED AT THE RATE OF 10 POUNDS PER ACRE.

Memorandum

Northwest Hydraulic Consultants
16300 Christensen Road, Suite 350
Seattle, WA 98188
206.241.6000
206.439.2420 (fax)

DATE: August 5, 2013 NHC PROJECT: 200044
TO: Bret Moore
COMPANY/AGENCY: Twin Creeks Development Company, LLC
FROM: Peter Brooks, P.E.
SUBJECT: FEMA Conditional Letter of Map Revision Application for the Twin Creeks
Development Project

Introduction

Northwest Hydraulic Consultants Inc. (NHC) has been retained by the Twin Creeks Development Company LLC (TCDC) to prepare a Conditional Letter of Map Revision (CLOMR) application package for the Twin Creeks Development in the City of Central Point, Jackson County, Oregon (FEMA Community Number 410092). The Twin Creeks Development is located along a recently designated FEMA 100-year floodplain (Zone AE), with regulatory floodway, which became effective with the adoption of the Jackson County Flood Insurance Study (FIS) in May, 2011 (FEMA, 2011). The floodplain within the development is an overflow path that connects the left overbank of Griffin Creek to the right overbank of Jackson Creek.

A conceptual-level flood improvement design has been developed to more efficiently convey Griffin Creek overflow through the site. The primary improvement consists of excavating a continuous overflow channel along the eastern edge of the project site to improve overall flood conveyance through the development. The flood improvement design also includes a proposed double-barreled culvert structure routing flows below the Twin Creeks Crossing. The Twin Creeks Crossing will serve as a main arterial connecting the development with Pacific Highway (State Highway 99) located to the east (see Figure 1). Anticipated flood improvements associated with these features include lowered Base Flood Elevations (BFEs) and reduced 100-year floodplain and floodway extents, relative to effective conditions. This memorandum summarizes the approach and results of the technical analysis conducted by NHC for the Twin Creeks Development CLOMR.

Background

The Twin Creeks Development is located within a recently designated Special Flood Hazard Area (SFHA) between two separate flooding sources, Jackson and Griffin Creeks (see Figure 1). The SFHA, including regulatory floodway, were determined through detailed studies of Jackson and Griffin Creeks conducted by NHC for the City of Central Point (City) and FEMA as part of the Jackson County FIS (FEMA, 2011). Findings from these studies indicated that flooding in the area originates from overflow of Griffin Creek, immediately upstream of Pacific Highway, and continues to the northwest to merge with Jackson Creek.

The effective floodplain mapping between the two study reaches, through the Twin Creeks Development, is broad and unconfined, resulting in a relatively wide floodway delineation. It should be noted that this reach does not receive perennial flow and would function as an overflow channel during infrequent, high magnitude flood events (there has been no observed flooding from Griffin Creek at the project site). Draft mapping for Griffin and Jackson Creeks was provided to FEMA in 2008, and the restudies of both creeks became effective when the Jackson County FIS was adopted by FEMA and Jackson County on May 3, 2011.

The Twin Creeks Development is a master plan community that precedes the most recent FEMA studies within the City of Central Point. When construction of the Twin Creeks Development began, prior to initiation of NHC's detailed studies of Jackson and Griffin Creeks, the area was not mapped as a SFHA. Development continued while the technical analysis for the updated FIS was being conducted (2006 to 2009). In 2009, the City began using preliminary flood hazard mapping, provided by NHC, to regulate development. Thereafter, construction within the Twin Creeks Development was limited to areas outside what is now the effective floodway. To date, development within the Twin Creeks project site is compliant with both FEMA and City floodplain management regulations.

CLOMR Submittal Information

This memo contains appropriate supporting information for the CLOMR submittal. A narrative on the technical analysis is provided in the following text. Other supporting information prepared by NHC is provided in the appendices as follows:

Appendix A. Certified Topographic Floodplain and Floodway Map

Appendix B. Annotated FIRM

Appendix C. Completed MT-2 Application Forms

Appendix D. NFIP Regulatory Requirements, including a proposed example public announcement and notification letter for floodway revision

Additional supporting information to be attached to this submittal includes:

Conceptual-Level Flood Improvement Design Plans (provided by Whetstone Engineering)

Endangered Species Act (ESA) Compliance Documentation (provided by the TCDC)

Technical Analysis

NHC completed several technical tasks for this CLOMR following FEMA MT-2 instructions. Model scenarios presented include a Duplicate Effective Model that replicates the water surface elevations in the effective Jackson County FIS, and a Revised Conditions Model simulating the proposed construction of the flood channel. Elevations specified in this memo are referenced to the NAVD 1988 vertical datum.

Data Description

Duplicate Effective Conditions

NHC completed the most recent detailed flood studies of Griffin and Jackson Creeks for the City of Central Point and FEMA as part of the recently adopted Jackson County FIS (FEMA, 2011). As such, NHC already has possession of the duplicate effective hydraulic models for both Jackson and Griffin Creeks,

EXHIBIT "C"

as well as the 2006 City of Central Point LiDAR topographic data used for the floodplain mapping. These data were located in the Technical Support Data Notebook (TSDN) submitted to FEMA at the conclusion of the Jackson County FIS.

Revised Conditions

Revised condition topographic data in the form of a master grading plan were provided to NHC by Whetstone Engineering on December 18, 2012. The grading plan consisted of 1-foot interval contours, in AutoCAD format, and included areas developed after the 2006 LiDAR were collected and while the effective FIS was being conducted from 2006 to 2009, as well as the proposed development of the Phase III area of the North Village (see Figure 1). This submitted technical assessment assumes there is no development of the North Village outside of the 'Phase III' portion (see Figure 1). NHC used the grading plan data provided by Whetstone Engineering to construct a digital elevation model (DEM) in ArcGIS of the Revised Conditions.

The grading plan includes construction of a continuous flood (or overflow) channel and culvert structure at the Twin Creeks Crossing. The flood channel would connect with the existing detention pond adjacent to Griffin Creek and proceed northward toward Jackson Creek. Physically, the flood channel terminates at a proposed detention pond at the northern limit of the Twin Creeks development, but during a 100-year event this area will be inundated and drain overland toward the Scenic Avenue Bridge crossing to the west on Jackson Creek. The proposed flood channel would consist of a compound channel (see Figure 2). The top width of the proposed flood channel would range from 65 to 75 feet with approximately 20-foot wide flood benches located on either side of an existing 20-foot wide drainage swale. This swale was constructed between 2006 and 2009 and includes six approximately 2-foot high check dam structures located within the channel for stormwater treatment purposes. The project also proposes to construct a culvert crossing consisting of two 18-foot wide, 9-foot tall arch structures at Twin Creeks Crossing, a primary access point between the Twin Creeks Development and Pacific Highway. Conceptual-level flood improvement plans for the proposed channel and culvert structure, prepared by Whetstone Engineering, are attached to this submittal.

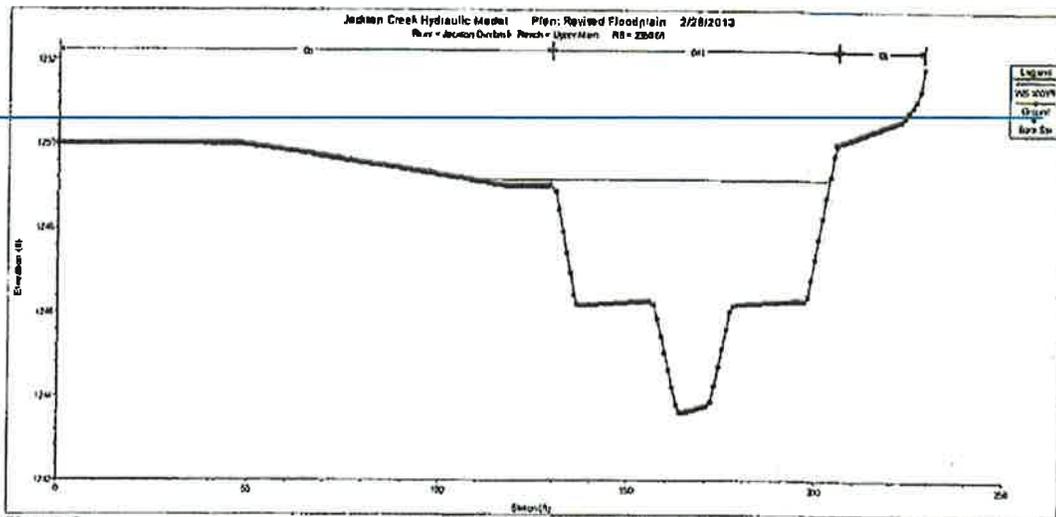


Figure 2 Cross-section profile of proposed compound channel (River Station 2350.68)

Engineering Methods – Hydraulic Modeling

General Model Description

The Jackson Creek HEC-RAS hydraulic model includes the main stem of Jackson Creek located to the west of the Twin Creeks Development (see Figure 1), but also includes Jackson Creek Overbank reach which was used to compute flood levels within the Twin Creeks Development. As previously mentioned, flood waters enter the Jackson Overbank reach from Griffin Creek where overtopping of the left bank occurs upstream of Pacific Highway. Discharges escaping the Griffin Creek system and entering the Jackson Overbank reach were computed through a series of "lateral structures" within the HEC-RAS model for the 10-, 50-, 100-, and 500-year return periods. These discharges from the effective FIS were used for this CLOMR analysis and are provided in Table 1.

Table 1. Computed Flood Discharges Entering the Jackson Creek Overbank Reach from Griffin Creek (FEMA, 2011).

Return Period	10-year	50-year	100-year	500-year
Discharge (cfs)	326	922	1220	1850

Duplicate Effective and Revised Condition HEC-RAS models are being submitted as part of this CLOMR analysis. Two HEC-RAS 'plans' are associated with each modeled condition: a Floodplain and Floodway plan. Separate Floodplain and Floodway plans were developed because changes to the geometry files were necessary to perform the encroachment analysis (e.g. turning off optimization of lateral weirs).

Duplicate Effective Model

The effective model is available, as previously discussed; however, it was developed using HEC-RAS Version 3.1.3. The effective model was re-run in HEC-RAS Version 4.1.0 for the CLOMR analysis and the 100-year and Floodway simulations have been reproduced within 0.01 feet at FEMA lettered cross-sections C through N (Table 2). Differences at cross-section A and B are a maximum of 0.23 feet and are the result of late modifications made to the Jackson Creek model that did not get incorporated into the adopted Jackson County FIS (FEMA, 2011).

The Duplicate Effective Model consists of the entire Jackson Creek HEC-RAS model, including the Jackson Creek Overbank reach, which spans the area proposed to be physically modified by the project. The effective Jackson Creek Overbank reach contains a total of 16 cross-sections, 14 of which are lettered (A to N) as shown in Appendix B. The upstream and downstream limits of the Jackson Creek Overbank reach are delineated by study break lines. Therefore, any changes on the Overbank Reach do not propagate upstream and impact conditions in Griffin Creek as long as the submergence of the lateral structures does not change. The model includes downstream to Jackson Creek in order to tie into the effective model.

Revised Condition Model

The Revised Condition Model was created by adding the proposed flood channel and twin barrel culvert structure combined with the revised condition grading plan mentioned in the Data Description section. A total of 31 new cross-sections were inserted into the Jackson Overbank reach in the Revised Conditions Model to augment the 16 cross-sections in the Duplicate Effective Model (see Appendix A). The new cross-sections were added to represent the geometries of the six existing check-dam structures

and the Twin Creeks Crossing culvert structure as well as an additional proposed check-dam structure to be located at the outlet of the upstream detention pond.

An additional modification made to the Revised Condition Model included splitting the Jackson Creek Overbank reach into parallel reaches between effective cross-sections I and N, to separately compute flood levels between the proposed flood channel and the left overbank. Only 5% of the total 100-year discharge (Table 1) is computed as entering the left overbank split reach. Computed flooding in the overbank split reach is predominantly shallow (less than 1-foot) sheet flow, but deepens to over 1-foot in a small area in the vicinity of cross-section J. Considering the ponding nature of computed flooding in this area, i.e. constant elevation and low velocity, it was delineated Zone AH with an elevation of 1246 feet. Downstream of this area, shallow (less than 1-foot) sheet flow flooding resumes.

Table 2. Comparison of Effective FIS to Duplicate Effective Water Surface Elevations for the 100-year and Floodway Simulations.

Effective FIS Cross-Section (HEC-RAS Station In Parenthesis)	100-year Floodplain			Floodway		
	Effective FIS	Duplicate Effective	Difference (feet)	Effective FIS	Duplicate Effective	Difference (feet)
A (793.2)	1238.36	1238.49	-0.13	1239.18	1239.18	0.00
B (951.8)	1238.61	1238.84	-0.23	1239.60	1239.60	0.00
C (1188.3)	1239.72	1239.72	0.00	1240.56	1240.56	0.00
D (1554.8)	1240.75	1240.75	0.00	1241.33	1241.33	0.00
E (1689.0)	1241.82	1241.81	0.01	1242.55	1242.55	0.00
F (1966.3)	1242.82	1242.82	0.00	1243.76	1243.76	0.00
G (2113.1)	1243.65	1243.65	0.00	1244.54	1244.54	0.00
H (2270.1)	1244.36	1244.37	-0.01	1245.29	1245.29	0.00
I (2422.0)	1245.25	1245.25	0.00	1245.97	1245.97	0.00
J (2548.0)	-	1245.86	-	1246.71	1246.71	0.00
K (3071.0)	1248.35	1248.34	0.01	1249.25	1249.25	0.00
L (3454.7)	1250.99	1250.99	0.00	1251.94	1251.94	0.00
M (3722.3)	1252.21	1252.21	0.00	1253.18	1253.18	0.00
N (3956.5)	1254.01	1254.01	0.00	1254.05	1254.05	0.00

Overall, the Revised Condition Model shows reductions in flood levels along the entire Jackson Creek Overbank reach compared to the effective conditions (Table 3). The upstream and downstream limits of the Jackson Creek Overbank reach are delineated by study reach breaklines, between Griffin Creek and the mainstem of Jackson Creek, respectively. Downstream, the Revised Condition Model simulates effective conditions to within 0.20 feet, which is within the 0.5 foot threshold specified by FEMA. Upstream, the proposed work within the Twin Creek Development will not impact the quantity of overflow entering the project (Table 1), thus changes to BFEs will not propagate upstream into Griffin Creek and the flood hazard boundaries are effectively tied-in at the study breakline between the two reaches. Table 4 tabulates the FEMA Floodway Data Table information from the Revised Model.

Table 3. Comparison of Duplicate Effective and Revised Conditions.

River Station		100-Year Floodplain			Floodway		
Effective (FEMA Cross-section Letter in parenthesis, where appropriate)	Revised	Duplicate Effective Elevation (feet)	Revised Elevation (feet)	Difference (feet)	Duplicate Effective Elevation (feet)	Revised Elevation (feet)	Difference (feet)
793.2 (A)	0.28	1238.49	1238.29	-0.20	1239.18	1239.17	-0.01
951.8 (B)	160.54	1238.84	1238.39	-0.45	1239.60	1239.31	-0.29
-	232.77	-	1238.42	-	-	1239.38	-
-	247.95	-	1238.49	-	-	1239.39	-
-	265.49	-	1238.57	-	-	1239.46	-
1188.3 (C)	401.53	1239.72	1238.84	-0.88	1240.56	1239.73	-0.83
-	579.14	-	1239.41	-	-	1240.12	-
-	706.95	-	1239.94	-	-	1240.52	-
-	718.52	-	1239.98	-	-	1240.49	-
-	731.28	-	1240.27	-	-	1240.71	-
1554.8 (D)	783.83	1240.75	1240.45	-0.30	1241.33	1240.92	-0.41
1689.0 (E)	1002.15	1241.81	1241.15	-0.66	1242.55	1241.76	-0.79
-	1117.80	-	1242.03	-	-	1242.28	-
-	1187.03	-	1242.18	-	-	1242.64	-
-	1200.04	-	1242.35	-	-	1242.59	-
-	1211.98	-	1242.57	-	-	1243.01	-
1966.3 (F)	1249.04	1242.82	1242.71	-0.11	1243.76	1243.26	-0.50
2113.1 (G)	1358.70	1243.65	1243.11	-0.54	1244.54	1243.72	-0.82
2270.1 (H)	1495.18	1244.37	1243.85	-0.52	1245.29	1244.27	-1.02
2422.0 (I)	1646.26	1245.25	1244.82	-0.43	1245.97	1244.94	-1.03
-	1664.09	-	1244.96	-	-	1245.01	-
-	1677.51	-	1244.96	-	-	1245.00	-
-	1691.00	-	1245.38	-	-	1245.43	-
2548.0 (J)	1757.49	1245.86	1245.70	-0.16	1246.71	1245.80	-0.91
-	1866.28	-	1246.13	-	-	1246.27	-
-	2019.16	-	1246.93	-	-	1247.08	-
-	2138.75	-	1247.67	-	-	1247.78	-
-	2153.71	-	1247.57	-	-	1247.70	-
3071.0 (K)	2178.49	1248.34	1248.33	-0.01	1249.25	1248.43	-0.82
-	2350.68	-	1249.15	-	-	1249.28	-
3454.7 (L)	2564.28	1250.99	1250.11	-0.88	1251.94	1250.23	-1.71
-	2611.46	-	1250.37	-	-	1250.49	-
-	2626.62	-	1250.38	-	-	1250.50	-
-	2642.96	-	1250.76	-	-	1250.89	-
-	2673.75	-	1250.81	-	-	1250.94	-
-	2732.76	-	1250.86	-	-	1250.98	-
3722.3 (M)	2832.34	1252.21	1251.22	-0.99	1253.18	1251.35	-1.83
-	2865.01	-	1251.36	-	-	1251.49	-
-	2927.39	-	1251.79	-	-	1251.94	-
-	3048.78	-	1252.80	-	-	1253.13	-
3956.5 (N)	3067.82	1254.01	1252.83	-1.18	1254.05	1253.16	-0.89
-	3110.56	-	1252.85	-	-	1253.18	-
-	3143.45	-	1252.97	-	-	1253.31	-
-	3341.92	-	1253.41	-	-	1253.71	-
-	3355.18	-	1253.30	-	-	1253.61	-
-	3370.57	-	1253.65	-	-	1253.90	-
-	3639.01	-	1254.33	-	-	1254.56	-

EXHIBIT "C"

Table 4. Revised Floodway Information.

Effective RAS River Station (FEMA Cross- section Letter in parenthesis, where appropriate)	Revised RAS River Station			Mean Velocity (ft/sec)	Without Floodway (feet)	With Floodway (feet)	Increase (feet)
		Width (feet)	Area (sq ft)				
793.2 (A)	0.28	82	379	3.2	1238.3	1239.0	0.7
951.8 (B)	160.54	65	335	3.6	1238.4	1239.2	0.8
-	232.77	65	313	3.9	1238.4	1239.3	0.8
-	247.95	66	289	4.2	1238.5	1239.3	0.8
-	265.49	66	307	4.0	1238.6	1239.3	0.8
1188.3 (C)	401.53	64	279	4.4	1238.8	1239.6	0.8
-	579.14	63	245	5.0	1239.4	1240.0	0.6
-	706.95	63	242	5.1	1239.9	1240.5	0.5
-	718.52	63	208	5.9	1240.0	1240.4	0.5
-	731.28	63	240	5.1	1240.3	1240.7	0.4
1554.8 (D)	783.83	63	235	5.2	1240.5	1240.9	0.4
1689.0 (E)	1002.15	63	223	5.5	1241.2	1241.8	0.6
-	1117.80	64	211	5.8	1242.0	1242.3	0.2
-	1187.09	63	210	5.8	1242.2	1242.6	0.5
-	1200.04	65	176	6.9	1242.4	1242.6	0.2
-	1211.98	64	222	5.5	1242.6	1243.0	0.4
1966.3 (F)	1249.04	69	237	5.2	1242.7	1243.3	0.5
2113.1 (G)	1358.70	72	244	5.0	1243.1	1243.7	0.6
2270.1 (H)	1495.18	78	244	5.0	1243.9	1244.3	0.4
2422.0 (I)	1646.26	73	220	5.5	1244.8	1244.9	0.1
-	1664.09	77	219	5.6	1245.0	1245.0	0.1
-	1677.51	76	186	6.6	1245.0	1245.0	0.1
-	1691.00	76	239	5.1	1245.4	1245.4	0.1
2548.0 (J)	1757.49	76	242	5.0	1245.7	1245.8	0.1
-	1866.28	77	230	5.3	1246.1	1246.3	0.1
-	2019.16	79	218	5.6	1246.9	1247.1	0.1
-	2158.75	75	218	5.6	1247.7	1247.8	0.1
-	2153.71	80	168	7.3	1247.6	1247.7	0.1
3071.0 (K)	2178.49	75	244	5.0	1248.3	1248.4	0.1
-	2350.68	76	241	5.1	1249.2	1249.3	0.1
3454.7 (L)	2564.28	74	226	5.4	1250.1	1250.2	0.1
-	2611.46	73	236	5.2	1250.4	1250.5	0.1
-	2626.62	77	206	5.9	1250.4	1250.5	0.1
-	2642.96	75	294	4.2	1250.8	1250.9	0.1
-	2673.75	68	270	4.5	1250.8	1250.9	0.1
-	2732.76	52	209	5.8	1250.9	1251.0	0.1
3722.3 (M)	2832.34	49	193	6.3	1251.2	1251.4	0.1
-	2865.01	42	191	6.4	1251.4	1251.5	0.1
-	2927.39	42	236	5.2	1251.8	1251.9	0.2
-	3048.78	42	281	4.4	1252.8	1253.1	0.3
-	3067.82	43	275	4.4	1252.8	1253.2	0.3
3956.5 (N)	3110.56	43	245	5.0	1252.9	1253.2	0.3
-	3143.45	49	262	4.7	1253.0	1253.3	0.3
-	3341.92	52	278	4.4	1253.4	1253.7	0.3
-	3355.18	49	216	5.7	1253.3	1253.6	0.3
-	3370.57	54	284	4.3	1253.7	1253.9	0.3
-	3639.01	66	267	4.6	1254.3	1254.6	0.2

EXHIBIT "C"

Notification

This CLOMR lowers BFEs, reduces the extent of the 100-year floodplain, and proposes to narrow the floodway. In order to comply with NFIP and FEMA standards and policy for a proposed floodway revision, the FEMA MT-2 instructing state that the community can either be alerted through a published public announcement or individual letters sent to affected landowners. Examples of the proposed public announcement and notification letter for floodway revision are provided in Appendix D. Following acceptance of the language in these documents one or the other will be used to alert the community of the proposed project.

Compliance with Endangered Species Act

The TCDC has completed environmental permitting that documents that the project does not "take" or harm endangered species and is therefore in compliance with the Endangered Species Act. The relevant ESA compliance documentation, provided by the TCDC, is attached to this submittal.

References

- Federal Emergency Management Agency (FEMA). 2011. Flood Insurance Study, Jackson County, Oregon and Incorporated Areas. Flood Insurance Study Number 41029V000A. May 3.
- Northwest Hydraulic Consultants (NHC). 2008. Hydraulic Summary, City of Central Point, Jackson County, Oregon. Document prepared for Michael Baker Jr. Corp. July 10.

Appendix A. Certified Topographic Floodplain and Floodway Maps

Appendix B. Annotated FIRM

EXHIBIT "C"

Appendix C. Completed MT-2 Application Forms

Appendix D. NFIP Regulatory Requirements

EXHIBIT "C"

EXHIBIT "D"

GUARANTY

Date: July 3, 2014

OBLIGOR: TWIN CREEKS DEVELOPMENT CO., LLC

GUARANTOR: NOEL MOORE
JOHN DUKE
BRET MOORE

CREDITOR: CITY OF CENTRAL POINT, a municipal corporation

OBLIGATIONS GUARANTEED: The payment and performance of all liabilities and obligations owing by Obligor to Creditor pursuant to the Twin Creeks Transit Oriented Development Agreement dated July 3, 2014 ("Agreement") for the extension of Twin Creeks Crossing, including contribution to the costs of a railroad crossing within Twin Creeks TOD Master Plan in the original amount of **Five Hundred Thousand and 00/100 Dollars (\$500,000.00)** and the costs for construction of the extension of utilities and the pavement of Twin Creeks Crossing from the current terminus easterly to the railroad right-of-way improvements as identified in the drawings entitled "Griffin Creek Overflow Flood Mitigation Plan" dated March 11, 2013, as identified in Section 2a and 2b of the Agreement.

For a valuable consideration the undersigned Guarantor, and each of them, jointly and severally and unconditionally guarantees and promises to pay, on demand, in lawful money of the United States of America, any and all indebtedness of the above named Obligor to Creditor, and Creditor's successors and assigns, as follows:

I. **MAXIMUM LIABILITY:** The liability of Guarantor hereunder shall not exceed at any one time the sum of:

(a) The liabilities and obligations guaranteed described above including the principal amount thereof, if any;

(b) An amount equal to all interest owed by Obligor at any time hereafter upon the principal indebtedness of Obligor, or owing with respect to the guaranteed liabilities and obligations; provided, that if such indebtedness shall exceed the dollar amount specified in item (a) above, if any, interest to be included in this item shall

be on such indebtedness not exceeding the amount specified in item (a) as shall be designated by Creditor; and

(c) All costs, expenses and attorneys' fees, including any on appeals, incurred by Creditor in connection with the collection of the indebtedness of Obligor, with the guaranteed liabilities and obligations, or with the repossession, foreclosure and sale of any collateral.

Such limitation on liability shall not be a restriction on the amount of the indebtedness of Obligor to Creditor either in the aggregate or at one time.

2. "INDEBTEDNESS" DEFINED: The word "indebtedness" is used herein in its most comprehensive sense and includes, but is not limited to, any and all advances, debts, obligations, and liabilities of Obligor, or any one or more of them, including judgments against Obligor, heretofore, now, or hereafter made, incurred or created, whether voluntarily or involuntarily and however arising, whether due or not due, absolute or contingent, liquidated or unliquidated, determined or undetermined, and whether Obligor may be liable individually or jointly with others or primarily or secondarily, or as guarantor, and whether recovery upon such indebtedness may be or hereafter may become barred by any statute of limitations, and whether such indebtedness may be or hereafter may become otherwise unenforceable and whether such indebtedness arises from transactions which may be voidable on account of infancy, insanity, ultra vires or otherwise.

3. NATURE OF GUARANTOR'S UNDERTAKING: The liability of Guarantor hereunder shall be open and continuous for as long as this guaranty shall be in force. Guarantor intends to guarantee at all times the performance of all obligations of Obligor to Creditor within the limits set forth above. Thus, no payments made upon Obligor's indebtedness shall be held to discharge or diminish the liability of Guarantor for any and all remaining and succeeding indebtedness of Obligor to Creditor. The liability of Guarantor hereunder shall be enforceable against both the separate and community property of Guarantor existing at the date of execution hereof or hereafter acquired.

4. CREDITOR'S RIGHTS AND OBLIGATIONS IN DEALING WITH OBLIGOR: Guarantor authorizes Creditor to deal with Obligor and Obligor's sureties, endorsers and other guarantors in any manner in which Creditor sees fit in connection with any indebtedness of Obligor to Creditor, now or hereafter created, without any further consent or authorization from Guarantor being necessary. Specifically, but without limiting the powers of Creditor, Creditor may extend the time for payment of any indebtedness of Obligor, Creditor may release or agree not to sue Obligor's sureties, endorsers, or other guarantors on any terms it chooses; Creditor may sue or fail to sue Obligor upon any overdue indebtedness; all of the foregoing without the necessity of any notice to or consent from Guarantor and all without affecting Guarantor's liability hereunder.

5. DURATION OF GUARANTY: This guaranty shall take effect when received by Creditor, without the necessity of any acceptance by Creditor, and shall continue in full force until the obligations guaranteed have been fully paid and/or performed. This guaranty shall bind the estate of Guarantor as to indebtedness created both before and after the death or incapacity of Guarantor.

6. CREDITOR'S RIGHTS AGAINST AND OBLIGATIONS TO GUARANTOR: Guarantor hereby expressly waives presentment, protest, demand, or notice of any kind, including notice of nonpayment of any of Obligor's indebtedness or of any collateral thereto and notice of any action or non-action on the part of Obligor, the Creditor, or any surety, endorser, or other guarantor. Upon any default of Obligor on any obligation to Creditor, Creditor may, at its option, then and there demand and be entitled to payment from Guarantor of the full amount or any part of the amount of Obligor's indebtedness to Creditor, within the limitations set forth above, and if Guarantor shall not pay the sum demanded to Creditor, Creditor may proceed directly and at once against Guarantor to collect such sum without first proceeding against Obligor, or any surety, endorser, or other guarantor and without foreclosing upon or selling or otherwise disposing of any collateral it may have as security for any of Obligor's indebtedness. Failure of Creditor to make such demand at such time or to proceed shall not relieve Guarantor of its obligations hereunder or in any sense constitute a waiver. Creditor shall have the right to demand and collect from Guarantor all or any portion of Obligor's indebtedness and failure of Creditor at any time to demand from Guarantor or to proceed to collect from Guarantor the full amount of Obligor's indebtedness from Guarantor shall not preclude Creditor from later demanding or proceeding to collect from Guarantor any remaining indebtedness of Obligor to Creditor covered by this guaranty. In any action or suit against Guarantor to enforce this guaranty, Creditor shall be entitled to recover from Guarantor, in addition to costs and disbursements allowed by law, a reasonable amount for Creditor's attorneys' fees in such action or suit or appeal therefrom. In any action or suit brought by Creditor against Guarantor, Guarantor will not assert as a defense any statute of limitations if at the time the action or suit is commenced there is outstanding any indebtedness of Obligor to Creditor which is not barred by the statute of limitations of the State of Oregon. If payment is made by Obligor on a debt guaranteed hereby and thereafter the Creditor is forced to remit the amount of that payment to the Obligor's trustee in bankruptcy or similar person under any federal or state bankruptcy law or law for the relief of debtors, the Obligor's debt shall be considered unpaid for the purpose of enforcement of this guaranty.

7. SUBORDINATION OF GUARANTOR'S RIGHTS AGAINST OBLIGOR: Guarantor agrees that the indebtedness of Obligor to Creditor, whether now existing or hereafter created, shall be, and the same hereby is, declared to be prior to any claim that Guarantor may now have or hereafter acquire against Obligor, whether or not Obligor becomes insolvent, and Guarantor shall and does expressly subordinate any such claim Guarantor may have against Obligor, upon any account whatsoever, to any claim that Creditor may now or hereafter have against Obligor. In the event of insolvency and consequent liquidation of the assets of Obligor, through bankruptcy, by an assignment for the benefit of creditors, by voluntary liquidation, or otherwise, the assets of Obligor

applicable to the payment of the claims of both Creditor and Guarantor shall be paid to Creditor and shall be first applied by Creditor to the indebtedness of Obligor to Creditor, Guarantor does hereby assign to Creditor all claims which it may have or acquire against Obligor or any assignee or trustee in bankruptcy of Obligor; provided, that such assignment shall be effective only for the purpose of assuring to Creditor full payment of all indebtedness of Obligor to Creditor.

8. ASSIGNMENT OF GUARANTY: Assignment by Creditor of all or part of the indebtedness shall transfer to the assignee all benefits of this guaranty as to the portion of the indebtedness assigned. This guaranty shall remain in effect in favor of the Creditor as to the portion of the indebtedness not assigned.

9. GOVERNING LAW: This guaranty has been executed and delivered in the State of Oregon and the laws of such state shall govern the validity, construction, enforcement and interpretation of this guaranty.

10. VENUE AND JURISDICTION: If any suit or action is filed by any party to enforce this guaranty or otherwise with respect to the subject matter of this guaranty, exclusive venue and jurisdiction shall be in the state courts in Jackson County, Oregon.

11. REPRESENTATION: This Guaranty has been prepared on behalf of the City of Central Point. Guarantor is hereby advised that it should seek independent legal counsel as to the effect of this Guaranty on their individual rights.

IN WITNESS WHEREOF, Guarantor has executed this Guaranty on the date set forth above.

Noel Moore
Signature

NOEL MOORE
(Print Name Here)

John Duke
Signature

John Duke
(Print Name Here)

Bret Moore

BRET MOORE

Signature

(Print Name Here)

"Guarantor"



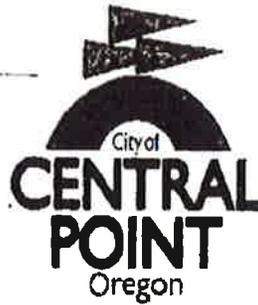
I, Elaine Frost, do hereby certify that Noel Moore, Bret Moore and John Duice, personally appeared before me this day & acknowledged the due execution of this instrument.

July 17, 2014

Elaine Frost

Oregon
Jackson County

City of Central Point, Oregon
140 S 3rd Street, Central Point, OR 97502
541.664.3321 Fax 541.664.6384
www.centralpointoregon.gov



Administration Department
Christopher Clayton, City Manager
Deanna Casey, City Recorder

March 4, 2014

Twin Creeks Development Co., LLC
PO Box 3577
Central Point OR 97502

Dear Developer,

Enclosed with this letter are two originals of the Twin Creeks Transit Oriented Development Agreement. The City has kept one of the originals.

We did not record this document with the County, as our City Attorney stated that it does not contain notary statements for the City officials or acknowledgement of the right to record.

If you have any questions please feel free to contact me at 541-423-1026.

Sincerely yours,

A handwritten signature in cursive script that reads "Deanna Casey".

Deanna Casey, MMC
City Recorder

RESOLUTION NO. 817

A RESOLUTION OF THE PLANNING COMMISSION APPROVING THE NO-RISE CERTIFICATION FOR A PORTION OF TWIN CREEKS CROSSING PHASES I-III WITH CONDITIONS OF APPROVAL

(File No: FP 15001)

WHEREAS, the applicant has submitted a No-Rise Certification to construct single family dwellings and independent living cottages in the regulatory floodway on 30 lots in Twin Creeks Crossing Phases I-III on property identified on the Jackson County Assessor's map as 37S 2W 03BD, Tax Lots 1100, 1200, 1400, 1500, 1700, 1800, 1900, 2000, 2300, 2400, 2500, 2600, 2900, 3000, 3200, 3201, 3202, 3203, 3400, 3500, 3600, 3700, 3800, 3900, 4000, & 4100; 37S 2W 03CA Tax Lots 802, 803 & 804; and 37S 2W 03CA Tax Lot 1200 in Central Point, OR 97502.

WHEREAS, the No-Rise Certification was prepared in accordance with FEMA's Guidance for "No-Rise/No-Impact" Certification for Proposed Developments in Regulatory Floodways; and

WHEREAS, the No-Rise Certification confirms that work conducted to-date within the Twin Creeks Development, as well as the newly proposed work within the effective floodway in Twin Creeks Crossing Phases I-III will not increase the base flood elevation or floodway profiles relative to the effective FEMA mapping and is consistent with the CLOMR issued by FEMA in 2014; and

WHEREAS, on April 7, 2015, at a duly noticed public hearing, the City of Central Point Planning Commission considered the Applicant's request for floodplain development approval for the Twin Creeks No Rise Certification (the "Project"); and,

NOW, THEREFORE, BE IT RESOLVED that the City of Central Point Planning Commission by Resolution No. 817 hereby approves the Twin Creeks No-Rise Certification based on the findings and conditions of approval as set forth in Exhibit "A" the Staff Report dated April 7, 2015, including attachments incorporated by reference; and

PASSED by the Planning Commission and signed by me in authentication of its passage this 7th day of April 7, 2015

Planning Commission Chair

ATTEST:

City Representative

Planning Commission Resolution No. 817 (4/7/2015)

RESOLUTION 818 – CONSIDERATION OF A SIMILAR USE AUTHORIZATION FOR VETERINARY CLINICS
WITHIN THE C-4 (TOURIST AND OFFICE PROFESSIONAL) ZONING DISTRICT PER CPMC 17.60.140.

STAFF REPORT



Planning Department

Tom Humphrey, AICP,
Community Development Director

STAFF REPORT

April 7, 2015

AGENDA ITEM: File No. 15007

Consideration of Resolution No. 818 authorizing Veterinary Clinics as a similar and compatible use within the C-4 zoning district; **Applicant:** City of Central Point.

STAFF SOURCE:

Don Burt, AICP

BACKGROUND:

The City recently received a request to rezone property in a C-4 zoning district to C-5 for the purpose of constructing and operating a veterinary clinic. As an alternative, the City has initiated this request to authorize Veterinary Clinics as a similar and compatible to General Professional uses within the C-4 zoning district. Veterinary clinics are allowed in the C-5 district¹ as a specific use. In the C-4 district veterinary clinics are not specifically identified as a permitted use², but professional office uses in general are permitted. The specific language in Section 17.44.020(A) reads “. . . *General professional and financial offices; including, but not limited to: . . .*”. Based on this language Section 17.44.020(A) can be read to include all professional and financial offices. However, it has been argued that since veterinary clinics are not specifically noted as a permitted use that Section 17.44.020(B)(18) applies, requiring that “. . . *uses not specified in this or any other district. . .*” may be allowed by the Planning Commission per Section 17.60.140, Authorization for Similar Use.

For purposes of addressing the required findings of Section 17.60.140 the City uses the North American Industrial Classification System (NAICS) as a reference. The NAICS is used by businesses and governments throughout Canada, Mexico and the United States to classify business establishments according to type of economic activity. The NAICS uses a six-digit coding system to classify all economic activity. Establishments using similar raw material inputs, capital equipment, and labor, and doing similar things in similar ways are classified together.

Veterinary clinics (54194) are classified in the NAICS as a Professional, Scientific, and Technical Service (541 and defined as: “*Veterinary Services - This industry comprises establishments of licensed veterinary practitioners primarily engaged in the practice of veterinary medicine, dentistry, or surgery for animals; and establishments primarily engaged in providing testing services for licensed veterinary practitioners.*”

ISSUES:

There are no issues relative to the authorization of veterinary clinics as a permitted use in the C-4 district. Veterinary clinics would be required to comply with the use and development standards for the C-4 district, including the provision that all uses be conducted “. . . entirely within an enclosed structure”³.

FINDINGS:

The Planning Commission, in responding to the “similar” use question is required to make four (4) findings. Those findings and their conclusions are:

¹ 17.46.020(B)(15)

² 17.44.020

³ Section 17.44.050(B)

Finding 1. *That the use is closely related to listed uses and can be shown to exist compatibly with those uses.* The NAICS classifies uses based on similarity in raw material inputs, similar capital equipment and labor, and doing similar things in similar ways. The basis of the NAICS classification system is consistent with the purpose of Section 17.60.140 in addressing the issue of similar (closely related) uses. Therefore, if uses are within a designated NAICS sector they are considered to be similar, and that similarity improves as the uses progress from sector to subsector to industry classification.

For this report determinations of similarity will be based on the Subsector (3 digit) NAICS classification, 541 Professional, Scientific & Technical Services. The NAICS defines this subsector as follows:

“Industries in the Professional, Scientific, and Technical Services subsector group establishments engaged in processes where human capital is the major input. These establishments make available the knowledge and skills of their employees, often on an assignment basis, where an individual or team is responsible for the delivery of services to the client. The individual industries of this subsector are defined on the basis of the particular expertise and training of the services provider.

The distinguishing feature of the Professional, Scientific, and Technical Services subsector is the fact that most of the industries grouped in it have production processes that are almost wholly dependent on worker skills. In most of these industries, equipment and materials are not of major importance, unlike health care, for example, where "high tech" machines and materials are important collaborating inputs to labor skills in the production of health care. Thus, the establishments classified in this subsector sell expertise. Much of the expertise requires degrees, though not in every case.”

Table 1

Sector	Subsector	Industry	NAICS Industry	Industry Description
54				Professional, Scientific & Technical Services
	541			Professional, Scientific & Technical Services
		5419		Other Professional, Scientific and Technical Services
			54194	Veterinary Services

As noted in Table 1 the NAICS places veterinary clinics in the Professional, Scientific & Technical Services subsector (541). Consequently, uses within subsector 541 should be similar. Table 2 identifies permitted uses within the C-4 district that have a NAICS 541 subsector classification.

Table 2

Sector	Subsector	Industry	Industry Description	C-4
54	541	5412	Accounting & Bookkeeping Offices	Permitted
54	541	5411	Legal Services	Permitted
54	541	5413	Architectural & Engineering Services	Permitted
54	541	5419	Professional Photo or Art Studios	Permitted
54	541	5419	Counseling Services	Permitted

Finding 1 also includes the need for a determination of “compatibility” with uses in the zone. As defined compatibility is the capability of living or performing in harmonious, agreeable association with others. In general similar uses tend to be harmonious with other similar uses. This is particularly true when the uses are conducted wholly within an enclosed environment as required by Section 17.44.050(B). This is further reinforced when the built environment is regulated by zoning standards for setbacks, coverage, parking/loading, etc.

Conclusion 1: Veterinary clinics are classified as a professional office use and the C-4 district allows, without limitation, professional offices as a permitted use. As such veterinary clinics are similar and closely related to other subsector 541 uses permitted in the C-4 district. Therefore Veterinary Clinics are considered a similar use to, and compatible with, other permitted professional office uses in the C-4 district.

Finding 2. *That the use was not anticipated or known to exist on the effective date of the ordinance codified in this title, either because it involves products, services or activities not available in the community at the time or the use involves new products, services or activities that are nonetheless similar to permitted uses in size, traffic, impact, appearance and other attributes.*

Veterinary clinics have been in existence prior to adoption of the Zoning Ordinance, and there is no record of veterinary clinics being intentionally excluded from the Zoning Ordinance⁴. However, the wording in Section 17.44.020(A) is clearly not intended to be exclusionary when referring to permitted professional offices. Consequently; the only rational conclusion is that veterinary clinics, although not specifically referenced, are professional office uses and permitted by general reference in the C-4 district subject to all applicable C-4 development standards.

Conclusion 2: Veterinary clinics fall under the category of professional office use are permitted in the C-4 district under the category of general office use.

Finding 3. *That the use is treated under local, state, or national codes or rules in the same manner as permitted uses. Except that these codes or rules shall not include land use or zoning regulations.*

Veterinary clinics are subject to all local, state, and national code requirements that apply to similar uses in the City. This includes compliance with local, state, and federal laws regulating the processing of controlled substances.

Conclusion 3: Veterinary clinics will be subject to all local, state, and national code requirements that apply to similar uses in the City.

Finding 4. *That the use is consistent with the purpose of the district and the comprehensive plan map and policies.* The purpose of the C-4 district is “. . . provide for the development of concentrated tourist commercial and entertainment facilities to serve both local residents and traveling public; and also for the development of compatible professional office facilities.” In Finding 1 it was concluded that veterinary clinics were similar to other professional office uses permitted in the C-4 district and that development of veterinary clinics are subject to the same development standards as all other professional office uses.

Conclusion 4: A veterinary clinics is considered a professional office use similar to other professional office uses permitted in the C-4 district, and as such are consistent and compatible with the purpose of the C-5 district.

Concluding Findings: Within the C-4 district the veterinary clinics can be found to meet all the findings for similarity as set forth in Section 17.60.140 and can be considered a similar use.

EXHIBITS/ATTACHMENTS:

Resolution No. 818

ACTION:

Consideration of Resolution No. 818

RECOMMENDATION:

Approve Resolution No. 818 accepting veterinary clinics as a permitted professional office use within the C-4 district.

⁴ Section 17.46.020(B)(15)

PLANNING COMMISSION RESOLUTION NO. 818

A RESOLUTION APPROVING VETERINARY CLINICS AS A SIMILAR USE TO OTHER USES IN THE C-4 ZONING DISTRICT

FILE NO. 15007

Applicant: City of Central Point

WHEREAS, the Planning Commission has the authority to allow a use, not specifically named in the examples of allowed uses of a district, to be permitted provided that the findings as set forth CPMC 17.60.140 Authorization for Similar Use, can be made; and

WHEREAS, on April 7, 2015 the Planning Commission, at a regularly scheduled meeting, considered allowing veterinary clinics as a permitted use in the C-4 district; and

NOW, THEREFORE, BE IT RESOLVED, that the City of Central Point Planning Commission, by this Resolution No. 818, does hereby authorize Veterinary Clinics as a permitted use in the C-4 zoning districts. This decision is based on the Staff Report dated April 7, 2015 attached hereto by reference and incorporated herein.

PASSED by the Planning Commission and signed by me in authentication of its passage this 7th day of April 2015.

Planning Commission Chair

ATTEST:

City Representative
Approved by me this 7th day of April 2015.