



**CITY OF CENTRAL POINT  
PLANNING COMMISSION AGENDA  
August 5, 2014 - 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 July 1, 2014 Planning Commission Minutes.

**V. PUBLIC APPEARANCES**

**VI. BUSINESS**

**A.** Consideration of a Major Modification per CPMC 17.09 to replat portions of Beebe Woods Subdivision, Phases 3 and 4, File No. 14015, Applicant: Beebe Woods, LLC

**B.** Consideration of a Floodplain Development Permit to approve a floodway mitigation plan for Twin Creeks TOD, File No. FP14001, Applicant: Twin Creeks Development.

**VII. DISCUSSION**

**A.**

**B.**

**VIII. ADMINISTRATIVE REVIEWS**

**IX. MISCELLANEOUS**

**X. ADJOURNMENT**

**City of Central Point  
Planning Commission Minutes  
July 1, 2014**

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

**Kay Harrison led the pledge of allegiance.**

**II. ROLL CALL**

Commissioners Chuck Piland, Mike Oliver, Tim Schmeusser, Craig Nelson, and Kay Harrison were present.. Also in attendance were: Tom Humphrey, Community Development Director, Don Burt, Planning Manager; Stephanie Holtey, Community Planner and Karin Skelton, Planning Secretary. Tom Van Voorhees arrived at 6:15.

**III. CORRESPONDENCE – None**

**IV. MINUTES:**

Review and approval of June 3, 2014 Planning Commission Minutes. Kay Harrison made a motion to approve the minutes. Mike Oliver seconded the motion. ROLL CALL: Tim Schmeusser, yes; Craig Nelson, yes; Kay Harrison, yes; Mike Oliver, yes. Motion passed.

**V. PUBLIC APPEARANCES**

None

**VI. BUSINESS**

**A.** Stephanie Holtey presented Resolution 804. A resolution of the Planning Commission approving a tentative plan for a 129 lot subdivision to be known as the Twin Creeks TOD, North Village at Twin Creeks, Phases I, II and IV.

Stephanie said the Planning Commission had already reviewed and approved the tentative plan. The only changes to the plan were 1) flood impacts from the FEMA map revision in 2011 and, 2) the conversion of a large neighborhood retail lot to four residential lots. All other aspects of the plan are consistent with the Twin Creeks Master Plan and the applicable zoning standards for the LMR and OS zoning districts.

The FEMA map revision resulted in significant impact to the Twin Creeks master plan area. She stated that in Chapter 8.24 of the City's Flood Damage Prevention Ordinance,

all new lots have to have adequate buildable area outside of the floodway. Development in the flood plain is something that the flood damage prevention ordinance doesn't prohibit but it does include a provision that says if you are going to be creating new lots and putting in streets, fill and doing grading activities you have to demonstrate that those proposed improvements are not going to adversely affect anybody else by resulting in expanded floodplain boundaries or increased flood elevations. The applicant will meet those criteria by preparing a final grading plan for the development. They must also prepare an analysis of the proposed improvements' impacts on the floodplain. The analysis is vetted through FEMA and their review verifies whether or not those improvements are actually accurate and would be acknowledged in an official map amendment once the project is completed.

She indicated that the proposed Phase IV includes 20 lots located in the floodplain and that the applicant has proposed bringing in fill to match the existing elevation in the Twin Creeks Crossing. The FEMA review would need to be completed prior to final plat approval.

In Phase II there are 35 lots with 19 of them in the floodplain. They will be proposing the same type of improvements. Before a final plat will be approved in Phase II they will need to get a letter of map revision and construct flood mitigation improvements to alleviate the floodway impact in Phase I. In Phase I there are 77 lots and all are in the floodplain with 35 of them in the floodway.

Essentially, the applicant will need to demonstrate that the adverse impact of the fill they will be bringing in will be mitigated and that the floodway can be moved away from the proposed lots. This would be done through a proposed flood mitigation project. Currently the FEMA map shows that a significant amount of water is going to overtop Griffin Creek. The applicant is proposing to expand the current bio swale from 35 to 75 feet wide and install a culvert at the railroad crossing. This would effectively move the floodway.

A question was asked regarding how the improvements would impact the other properties in the area. And whether or not the culvert at Scenic road would be able to handle the flow of water.

Stephanie replied that there would be overtopping on some of the roadways at scenic, but that the proposed changes would not be changing the amount of water flowing through the development – only where it flows. So that they can allow development to occur in the original planned areas.

The commissioners asked if FEMA must approve it before the development would be allowed to occur.

Stephanie indicated that the intent of the Flood Damage Ordinance is that before approval of a final plat or prior to allowing fill to be brought in that would displace water, we would need to know what the impact that would have on existing development and planned development. A condition of approval is recommended that the FEMA review would be complete prior to any fill being brought in and prior to improvement of Phase IV. After that review is completed the applicant would be able to proceed with Phase IV and receive a final plat. She stated that in phases I and II the conditions were a bit different. They would have the FEMA review complete and FEMA would do a letter of map revision prior to final plat approval.

It was noted that this was a floodway and not a stream bed and that there would be years where there would be no water issues.

Another question was asked as to when the culvert would be put in.

Stephanie replied that that was a condition of final plat approval for Phase IV after the FEMA review.

Kay Harrison asked if FEMA used models to predict future flood water behavior.

Stephanie replied that the applicant's engineer was the same engineer who did the flood studies for FEMA and they were able to take the proposed mitigation project and plug that into the FEMA mapping model.

With regard to the timing of phase IV, if they get approval now for Twin Creeks North Village and they can get the FEMA conditional letter of map revision by August 1<sup>st</sup>, the improvements could begin then, provided they show that the floodway would be mitigated as shown. Then they would need to get the floodway improvements made and a letter of map revision. Typically it takes about 3-6 months to get a letter of map revision. It is a requirement that the application be submitted within 6 months of project completion.

Don Burt spoke to clarify the process. He said that the initial letter of map revision is based on what is proposed. The final letter is based on what is built. If it is approved at this meeting; the applicant would get the conditional letter of map revision and they could start grading and building. Once a final plat is issued, the lots are created and he has a right to build on them.

The commissioners noted that the decisions based on FEMA's information could possibly be affected by any changes FEMA made in the future.

Don replied that that was why FEMA is the lead agency on the Flood mitigation issues.

Stephanie then addressed the North village tentative plan. There were two changes. A large retail lot would be replaced with residential lots and the proposed traffic circles were eliminated. The applicant would do a Master Plan Amendment outlining those changes.

The Commission expressed concern that the mixed use originally intended for the area did not seem to be coming into existence, but that the area appeared to be turning into another subdivision.

Stephanie stated that there were still mixed use zones and that the North Village was originally intended to be Low Mixed Residential space surrounded by open space. There has been no zoning changes, the one retail lot has just been divided and was still consistent with the original zoning.

Kay Harrison asked about the timing on the railroad crossing.

Stephanie replied it was tentatively scheduled for 2016 – 2017 and there were some questions regarding possible delay. The hope was to have more information in the fall.

Citizen George Daily then addressed the commission. He said he lived on Grant Road and came to see how the flood issues would impact his property. The commissioners obtained a map and showed him that the proposed changes did not touch his property at all. This was confirmed by Surveyor, Herb Farber who was also in attendance.

The public portion of the meeting was opened.

Herb Farber addressed the Commissioners. He stated that they were working with FEMA, the Corp of Engineers, the Division of State Lands and the National Marine Fisheries Service regarding the floodplain mitigation. All parties were ready to sign off, however, due to litigation between FEMA and National Marine Fisheries; they were required to comply with the Environmental Species Act with regard to floodplain issues. The National Marine Fisheries was in charge of that and they needed to sign off prior to FEMA and at this time those agencies were not cooperating with each other. They were hopeful to get this accomplished in the next few weeks and were prepared to start construction as soon as that was accomplished.

The commissioners inquired about who would be responsible for maintaining the bio swale after improvements. Mr. Farber replied it would either be the homeowner association or the city. He stated that removal of vegetation from a creek was prohibited because of the impact to the fish. The floodway model was based on the vegetation being there. The area will be landscaped and as much vegetation as possible will be preserved. Mr. Farber stated the area would be landscaped with vegetation that the National Marine Fisheries approved of as it would also be a water treatment area. The street water would

also empty into this floodway. He said that all water from Twin Creeks would be filtered through the water treatment area before it got into the Creeks.

Brett Moore addressed the Commission. He stated that over the past 6 or 7 years he had performed maintenance by removing trees and limbs and cutting blackberries. He indicated that the bio swale was only going to be widened and not substantively changed. He expressed his frustration with the agencies that were holding things up but stated he was hopeful that they were getting close. He reiterated that Twin Creeks is not just another subdivision but is a genuine mixed use development.

Public portion of the hearing was closed.

Mike Oliver made a motion to approve Resolution 804. Craig Nelson seconded it. ROLL CALL: Mike Oliver, yes; Tim Schmeusser, yes; Tom Van Voorhees, yes; Craig Nelson, yes; Kay Harrison, yes. Motion passed.

Tom Humphrey Introduced Municipal Code Amendments to Title 15 Buildings and Construction Code Revisions and Updates. He noted that the additional corrections and changes have been reviewed and clarified by both the building department and the public works department. He stated that the signs portion of the code would be addressed at a later date.

Mike Oliver noted a change on page 6, where section 15.04.12 should be 15.14.10. Derek Zwagerman, building official explained that this was an effort to update the Municipal Code to conform to the state building code. He said that the State updated the building code every 3 years.

A question was asked about the portion of the code regarding overhead power lines not being allowed in areas where swimming pools are located. Derek Zwagerman answered that this was a safety issue in the event a power line ever came down. It also is a safeguard against electrical shock when using pool vacuums and skimmers.

Mike Oliver moved to approve the changes to Title 15 of the Municipal Code. Kay Harrison seconded it. ROLL CALL: Mike Oliver, yes; Tim Schmeusser, yes; Tom Van Voorhees, yes; Craig Nelson, yes; Kay Harrison, yes. Motion passed.

Tom Humphrey stated that he expected a proposal in the near future for the White Hawk subdivision. Additionally he thought there may be some long range projects coming up this summer.

Mike Oliver made a motion to adjourn the meeting. Kay Harrison seconded it. All members said aye.

Meeting was adjourned.

**VII. DISCUSSION**

**VIII. ADMINISTRATIVE REVIEWS**

**IX. MISCELLANEOUS**

**X. ADJOURNMENT**

The foregoing minutes of the July 1, 2014 Planning Commission meeting were approved by the Planning Commission at its meeting on the \_\_\_\_\_ day of \_\_\_\_\_, 2014.

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Planning Commission Chair



**CONSIDERATION OF A MAJOR MODIFICATION PER CPMC 17.09 TO REPLAT  
PORTIONS OF BEEBE WOODS SUBDIVISION, PHASES 3 AND 4**





## STAFF REPORT

August 5, 2014

### **AGENDA ITEM: File No. 14015**

Consideration of a Major Modification per CPMC 17.09 to re-plat portions of Beebe Woods Subdivision, Phases 3 and 4, located in the in R-2, Residential Two-Family Zoning District on 3.1 acres of property identified as 37 2W 1CB, Tax Lots 144 through 176. Applicant: Beebe Woods, LLC. Agent: Jim Zundel.

### **STAFF SOURCE:**

Don Burt, Planning Manager

### **BACKGROUND:**

On October 4, 2005 by Resolution No. 671 the Planning Commission approved a final development plan and tentative plan for 33 lots in Beebe Woods, Phases 3 and 4, a Planned Unit Development. On October 25, 2005 the final plat for Beebe Woods, Phases 3 and 4 was recorded per the approved final development plan. Since final plat approval all infrastructure improvements have been completed (private streets) and construction (foundations only) has commenced on most of the residential lots. As a result of the recession residential development was halted and has remained so to the present. The Developer has title to all property within Phases 3 and 4.

Presently, and per the planned unit development documents, all lots are designed for two-story attached townhomes. At this time it is the Developer's intent to re-plat parts of Beebe Woods to allow for larger lots capable of accommodating attached single-story homes, thereby broadening the project's marketability. Of the 33 lots the Developer proposes to eliminate all (8) of the smaller lots (Attachment "A – Tentative Re-plat Map", yellow lots) and redistribute to the abutting lots, reducing the number of lots from 33 to 25 and allowing single-story common wall units (Attachment "B-1 through B-4" – Architectural Elevations). The reduction in the number of lots reduces the density from 10.6 units per acre to 8 units per acre, which still meets the density requirements in the R-2 District.

To accomplish the Developer's objective it is necessary that:

1. The Planned Unit Development must be amended to reflect the reduction in the number of lots (33 to 25) and construction of single-story attached homes as an option to the townhouse design. This is considered a minor modification requiring approval of the tentative re-plat (Attachment "A") and the proposed one-story architectural elevations (Attachment "B-1 through B-4").

2. The Beebe Woods, Phases 3 and 4, must be re-platted per Oregon Revised Statutes 92.180. A re-platting is subject to the same procedural requirements of the original tentative plat, which is a Type III application per CPMC 17.05.100, and as such is considered a major modification.

**ISSUES:**

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Public response to the notification to re-plat Beebe Woods, Phases 3 and 4 has raised the question of additional ingress/egress to the subdivision. When Beebe Woods Planned Unit Development was initially approved access was deemed adequate and additional access was not required. Currently, Phases 3 and 4 use Oakview Avenue and Brookdale Drive to access the public street system. All streets within Beebe Woods are served by a private street system.

**FINDINGS:**

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The proposed re-plat and planned unit development modification has been reviewed against, and found to comply with, all applicable sections of CPMC 16, Subdivisions, 17.09, Modifications to Approved Plans, and 17.68, Planned Unit Development of the Central Point Municipal Code.

The proposed modifications remain consistent with the intent of the original approved planned unit development, and are consistent with the original findings prepared for Beebe Woods, Phases 3 and 4.

**CONDITIONS OF APPROVAL:**

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1. An aviation, noise easement for Rogue Valley International-Medford Airport shall be recorded and submitted with the Final Re-plat application.
2. Where applicable existing foundations must meet building code requirements at time of issuance of building permits.
3. Prior to issuance of any building permits the Applicant shall apply for and receive approval of a Final Re-plat, a copy of which shall be recorded and returned to the City.

**ATTACHMENTS:**

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Attachment "A" – Tentative Re-plat Map  
Attachment "B-1 through B-4" – Single-Story Architectural Elevations  
Attachment "C" Applicant Findings  
Attachment "D" – Resolution No. 805

**ACTION:**

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Consideration of the subdivision re-plat and modification of the Beebe Woods, Phases 3 and 4.

**RECOMMENDATION:**

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Approval of Resolution No. 805 for a subdivision re-plat and modification to Beebe Woods, Phases 3 and 4 Planned Unit Development per the Staff Report dated August 5, 2014.

**PLANNING COMMISSION RESOLUTION NO. 805**

**A RESOLUTION GRANTING APPROVAL OF A MAJOR MODIFICATION TO RE-PLAT PHASES 3 and 4 OF BEEBE WOODS A PLANNED UNIT DEVELOPMENT**

**Applicant: Beebe Woods, LLC  
(37S 2W 1CB, Tax Lots 144 through 176)  
File No. 14015**

**WHEREAS**, on October 4, 2005 by Resolution No. 671 the Central Point Planning Commission approved the final development plans for Phases 3 and 4 of Beebe Woods, a 33 lot Planned Unit Development; and

**WHEREAS**, on October 25, 2005 the final subdivision plat for Phases 3 and 4 of Beebe Woods was recorded with the Jackson County Recorder's Office; and

**WHEREAS**, on July 22, 2014 the Applicant submitted an application for a Major Modification to re-plat Phases 3 and 4 of Beebe Woods eliminating eight lots, which will be consolidated with abutting lots to be developed as single-story attached dwellings; and

**WHEREAS**, on August 5, 2014, at a duly noticed public hearing, the City of Central Point Planning Commission considered the Applicant's request for a Major Modification to Phases 3 and 4 of Beebe Woods.

**NOW, THEREFORE, BE IT RESOLVED**, that the City of Central Point Planning Commission, by this Resolution No. 805 does hereby approve a major modification to re-plat Phases 3 and 4 of Beebe Woods and to modify the planned unit development to be consistent with the proposed re-plat.

**BE IT FURTHER RESOLVED**, that approval of Resolution No. 805 is based on the findings and conclusions of approval as set forth in the Staff Report dated August 5, 2014, which includes attachments, attached hereto by reference and incorporated herein.

**PASSED** by the Planning Commission and signed by me in authentication of its passage this 5<sup>th</sup> day of August, 2009

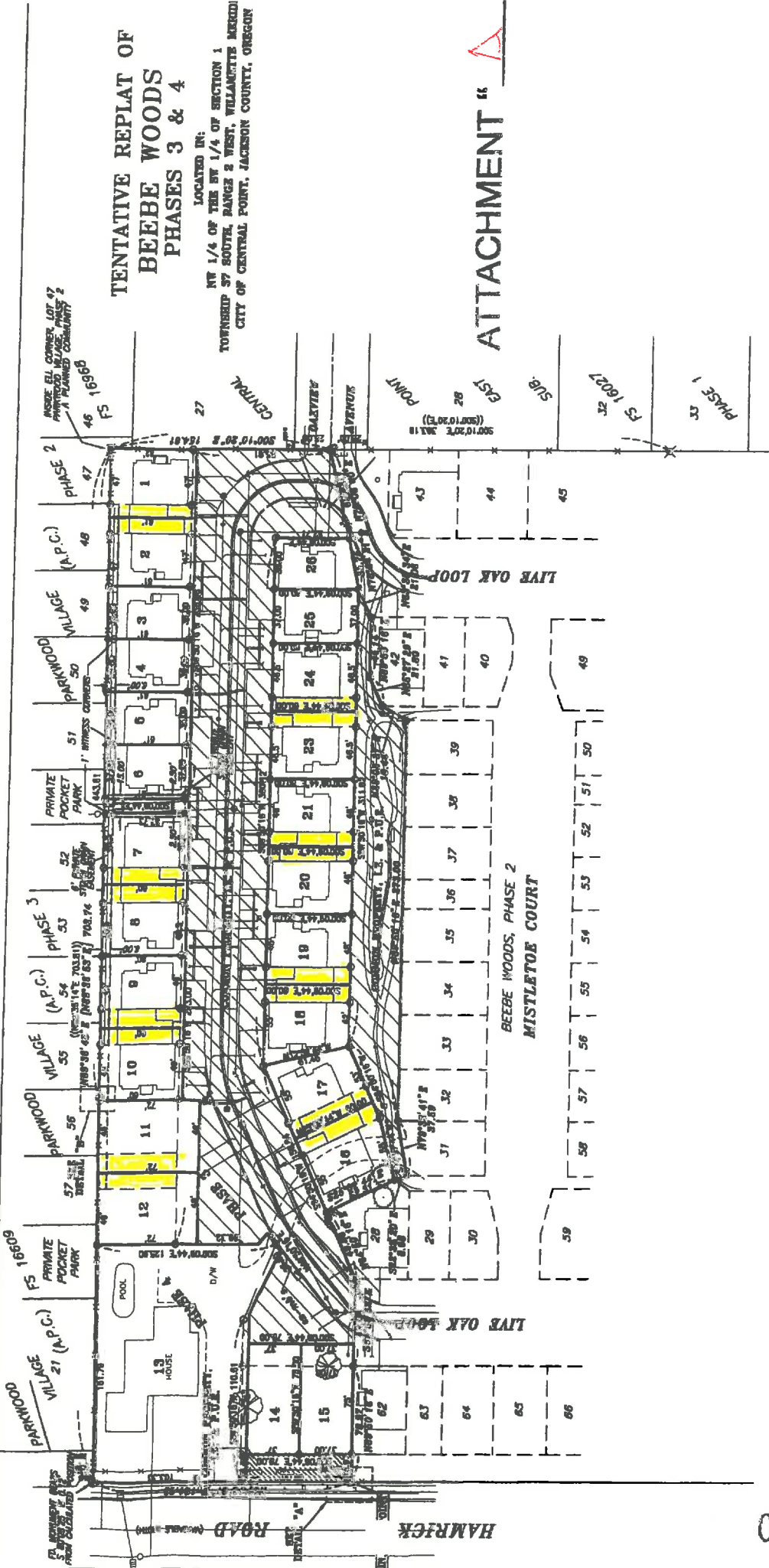
\_\_\_\_\_  
Planning Commission Chair

ATTEST:

\_\_\_\_\_  
City Representative

Approved by me this 1<sup>st</sup> day of December, 2009

\_\_\_\_\_  
Planning Commission Chair



**TENTATIVE REPLAT OF  
BEEBE WOODS  
PHASES 3 & 4**

LOCATED IN:  
 NE 1/4 OF THE SW 1/4 OF SECTION 1  
 TOWNSHIP 37 SOUTH, RANGE 2 WEST, WILLAMETTE MERIDIAN  
 CITY OF CENTRAL POINT, JACKSON COUNTY, OREGON

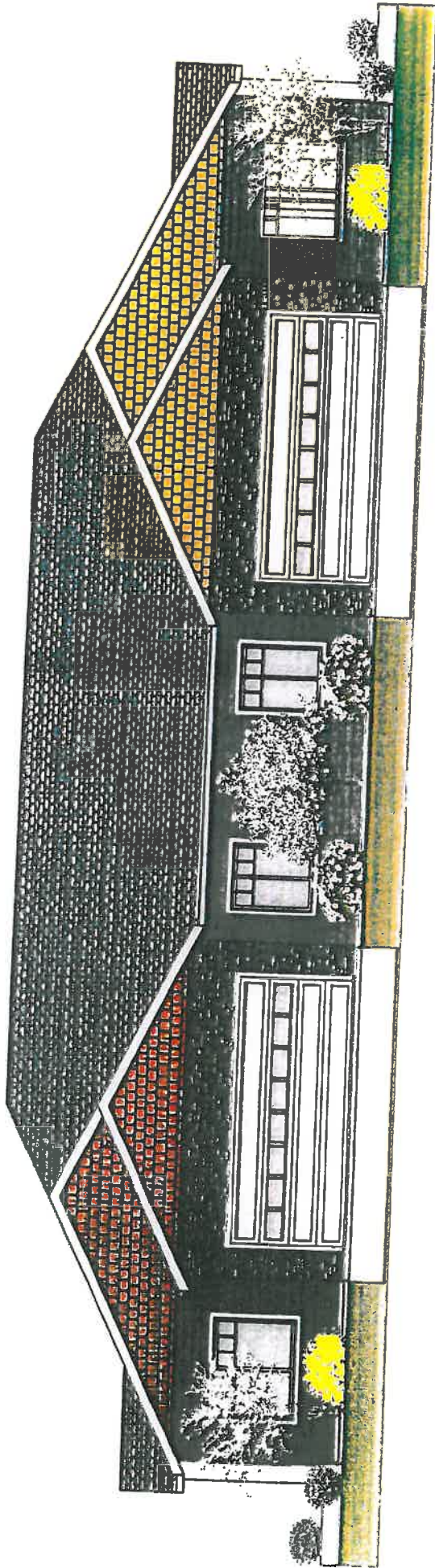
**ATTACHMENT "A"**

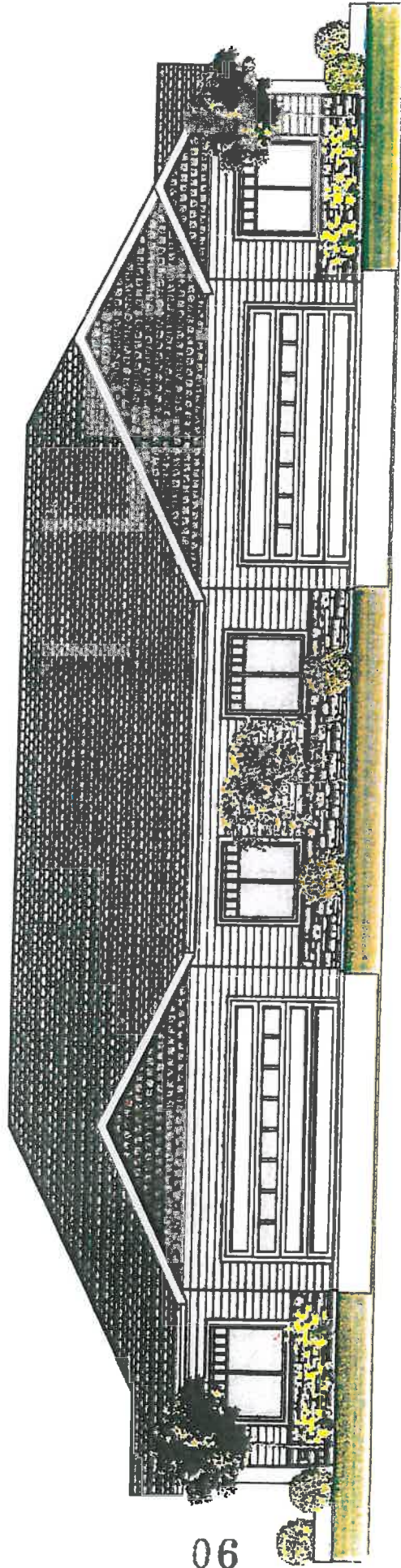
FILE: BEEBE34014TENT.dwg  
**RICHARD TEMPLIN LAND SURVEYING**  
 P.O. BOX 1946 899-8982 JACKSONVILLE, OREGON  
 TENTATIVE REPLAT OF  
 BEEBE WOODS, PHASES 3 & 4  
 NE 1/4 OF THE SW 1/4 OF SECTION 1  
 TOWNSHIP 37 SOUTH, RANGE 2 WEST, WILLAMETTE MERIDIAN  
 CITY OF CENTRAL POINT, JACKSON COUNTY, OREGON  
 DATE: JUNE 4, 2016

REGISTERED PROFESSIONAL LAND SURVEYOR  
*Richard C. Templin*  
 RICHARD C. TEMPLIN  
 2559  
 BY CORPORATE OFFICE  
 JUNE 30, 2016

Beebe Wood LLC  
 P.O. BOX 4874  
 Medford, Or. 97504  
 744 Cardley Ave



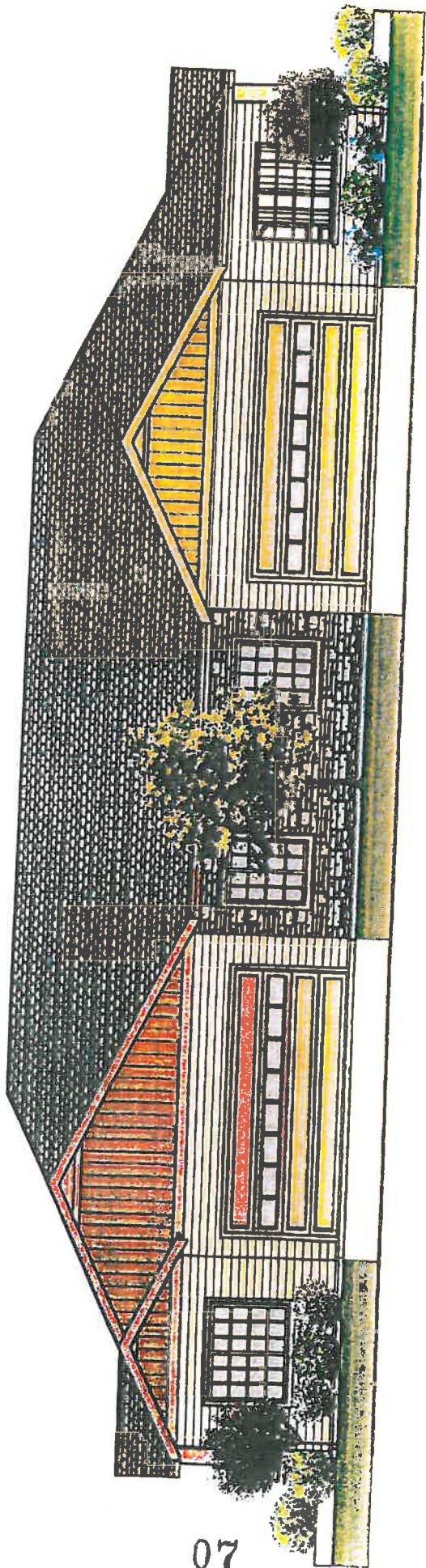




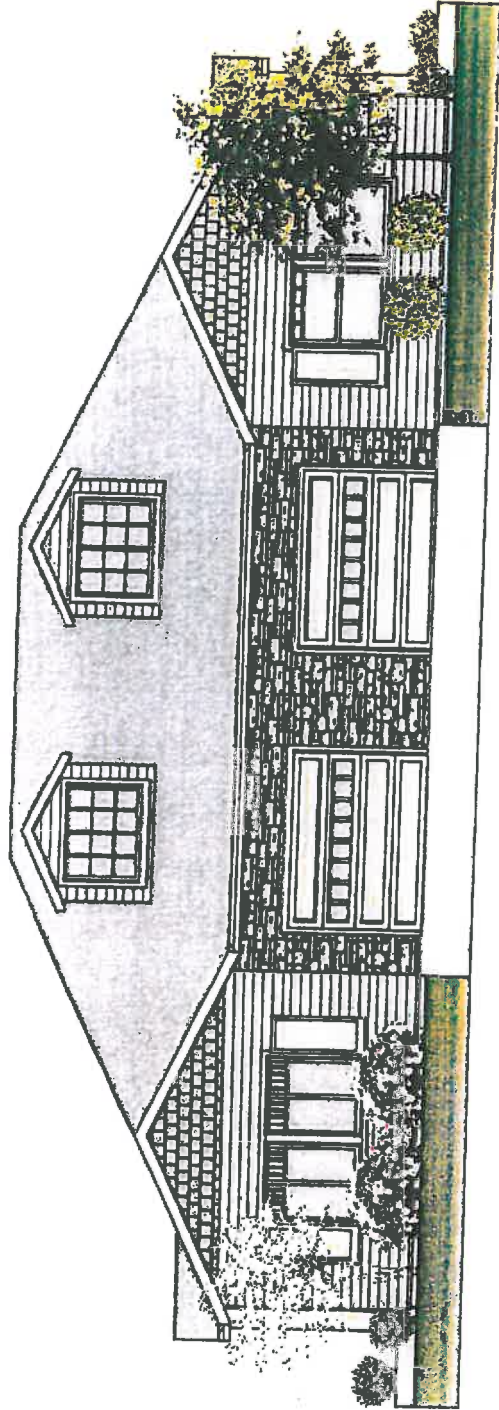
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ATTACHMENT "D-2"





07



### **Description of Changes to Plat of Beebe Wood, Phases 3 and 4**

The modification we are making is to dissolve the small middle unit in the triples, making them duplexes, in order to offer single story units in lieu of all two-story units. There are some slight adjustments to the exterior foundation line (as shown on drawings) in order to create variety and architectural detail to the units. We have also made a slight adjustment to the three lots on the northwest corner in order to protect the existing evergreen trees that are located in that area.

ORS 92.185 (1): This is a replat made to a recorded plat.

ORS 92.185 (2): Not applicable since this is not a replat of ALL of an UNDEVELOPED subdivision. It is already completed developed.

ORS 92.185(3): Address labels are provided for neighbors within 100 feet of the proposed replat so that notice can be provided.

ORS 92.185(4): No utilities, including water, sewer, storm drain, or electrical are being realigned, reduced or omitted. Therefore, this is not applicable.

ORS 92.185(5): This replat does not vacate any public street or road.

ORS 92.185(6): This replat complies with all subdivision provisions of this chapter and all applicable ordinances and regulations adopted under this chapter.

ORS 92.190: The replat does not act to vacate any recorded covenants or restrictions.



**CONSIDERATION OF A FLOODPLAIN DEVELOPMENT PERMIT TO APPROVE A  
FLOODWAY MITIGATION PLAN FOR TWIN CREEKS TOD**



**STAFF REPORT**  
August 5, 2014

**AGENDA ITEM: File No. FP 14001**

Consideration of a Floodplain Development application to complete floodway mitigation activities including both in-channel bank protection for Griffin Creek, and upland grading activities. The project site is located in the Twin Creeks Master Plan area, OS, Open Space zoning district and is identified on the Jackson County Assessor's map as 37 2W 03CA, Tax Lots 900 and 1600; 37 2W 03DB Tax Lot 900; 27 2W 03BD Tax Lot 4200; 37 2W 03BC Tax Lot 100; 37 2W 03B, Tax Lots 1602 and 1800 in Central Point, OR 97502. **Applicant: Twin Creeks Development Co., LLC; Agent: Dan O'Connor.**

**STAFF SOURCE:**

Stephanie Holtey, Community Planner II

**BACKGROUND:**

When originally approved the Twin Creeks TOD was not subject to special flood hazards and Chapter 8.24, Flood Damage Prevention requirements. With the adoption of the new FEMA Flood Insurance Rate Map in 2011 a substantial percentage of Twin Creeks was placed in the special flood hazard area, including 68 lots in the floodway (Attachment "C"). The continued development of Twin Creeks requires mitigation to eliminate floodway impacts on commercial and residential lots. At this time the applicant has prepared engineered plans (Attachment "B") and submitted a floodplain development application to reduce flood hazards within the Twin Creeks Master Plan area.

This project proposes to mitigate floodway impacts that currently limit development potential. The mitigation of floodway impacts not only requires a Floodplain Development Application, but it also includes approval of the following agencies:

- FEMA to conditionally modify the Flood Insurance Rate Map (Attachment "A");
- Army Corps of Engineers to conduct fill and removal activities; and,
- National Marine Fisheries to verify Endangered Species Act compliance.

The proposal includes construction and grading activities to efficiently convey floodwaters from Griffin Creek northward through an existing channel parallel to the railroad tracks and direct flow westward into Jackson Creek (Attachment "B"). Construction activities proposed include:

- Protecting Griffin Creek channel from erosion;
- Expanding the existing stormwater ponds located south and north of the existing bioswale; and,
- Grading to widen the existing bioswale channel from 30 to 75 feet.

The applicant's analysis of the project impacts provided in Attachment "A" demonstrates that floodway impacts to commercial and residential lots will be eliminated and floodplain boundaries and floodwater depths will be reduced.

The proposed floodplain development application has been evaluated against the applicable review criteria as presented in the Planning Department Findings (Attachment "D").

**ISSUES:**

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1. **FEMA Review & Construction Timing.** FEMA review and approval is mandatory (CPMC 8.24.170). At this time the FEMA application has been prepared and pending submittal. The City's approval of a Floodplain Development Application is conditional, pending FEMA approval. The pending review by FEMA will confirm that the proposed mitigation activities will result in the flood map changes shown in the application, including:

- Removal of all residential and commercial lots from the regulatory floodway;
- Reduction of the floodplain boundaries and flood depths;

During the review process, FEMA may require changes to, or conditions on the project and/or the hydraulic models. To address the potential for project changes, staff is recommending conditional approval of the Floodplain Development Application subject to written approval by FEMA in the form of a Conditional Letter of Map Revision (CLOMR) approving the project as provided in Attachment "A".

**CONDITIONS OF APPROVAL:**

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1. Prior to start of construction (grading & channel protection), the applicant shall submit to the City a copy of the CLOMR from FEMA
2. Prior to the start of construction (grading & channel protection), the applicant shall submit to the City a copy of all local, state and federal agency permit approvals. Project timing and habitat monitoring requirements set forth in agency approvals shall be a condition of this Floodplain Development Application.

**ATTACHMENTS:**

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- Attachment "A" – Twin Creeks CLOMR Submittal Application
- Attachment "B" – Twin Creeks Floodway Mitigation Engineered Plans
- Attachment "C" – Effective & Proposed Flood Conditions
- Attachment "D" – Planning Department Supplemental Findings of Fact (Available upon request.)
- Attachment "E" – Resolution No. 806

**ACTION:**

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Consideration of Resolution No. 806, Floodplain Development Application for Twin Creeks Floodway Mitigation with Conditions of Approval.

**RECOMMENDATION:**

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Approve Resolution No. 806, Floodplain Development Application for Twin Creeks Floodway Mitigation with Conditions of Approval.



## Memorandum

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

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DATE:	July 28, 2014	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	

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### 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 (City), 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. This design 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). In addition, bank protection measures are proposed to stabilize the transition where Griffin Creek overflows into the Twin Creeks Development.

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 reach connecting Griffin and Jackson Creeks within the development is referred to as the 'Jackson Creek Overbank'.

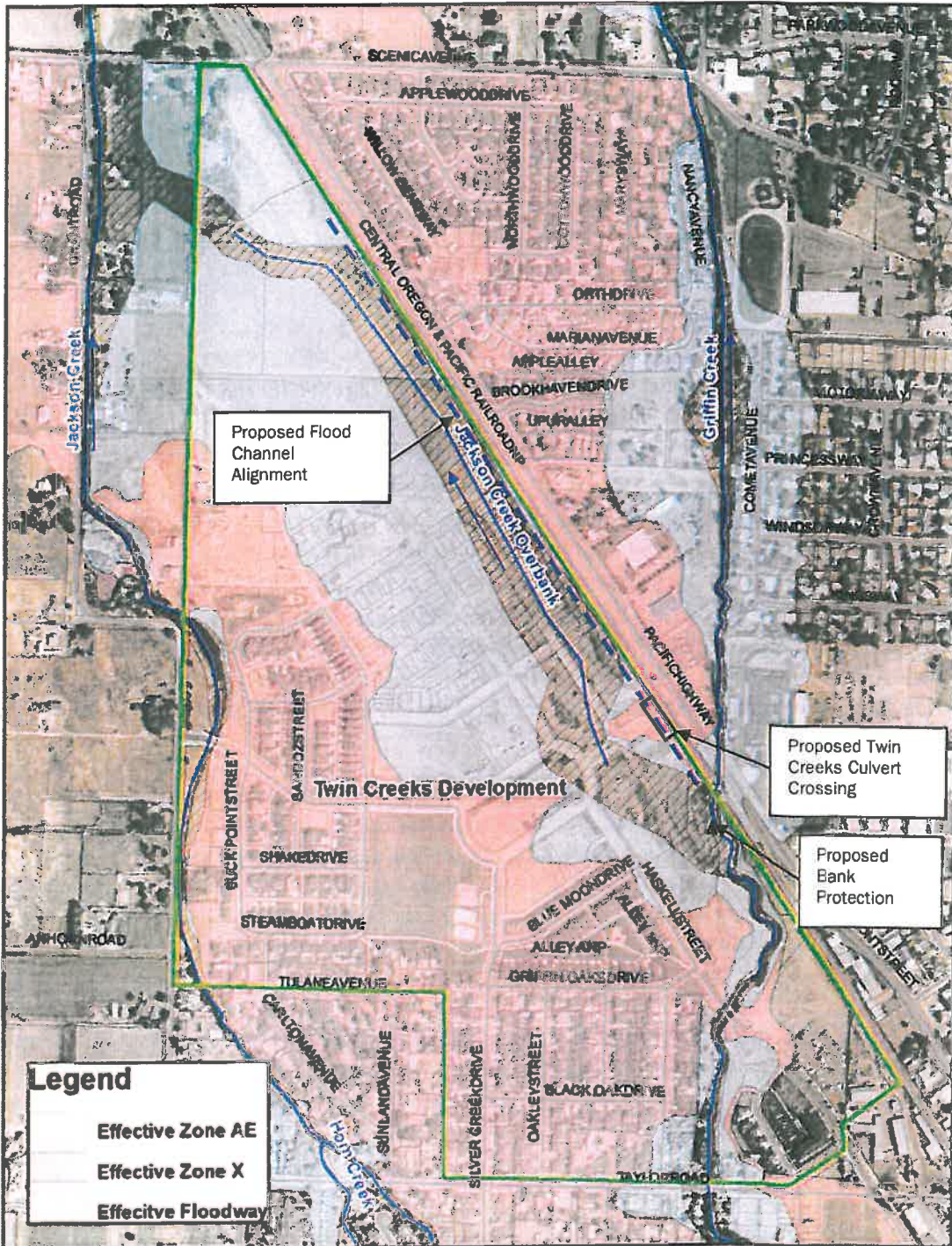


Figure 1 Effective FEMA flood hazard mapping and proposed Twin Creek flood improvement measures.

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 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 and procedures. 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 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, 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 of the Twin Creeks Development were originally provided to NHC by Farber Surveying on May 30, 2008. The master grading plan consisted of a Triangulated Irregular Network (TIN) surface in AutoCAD format and included areas developed after the 2006 LiDAR was collected and while the effective FEMA study was being conducted from 2006 to 2009. Minor revisions to the master grading plan were subsequently made and provided to NHC by Whetstone Engineering on June 17, 2014. A grading plan of the proposed overflow channel was provided to NHC by Whetstone Engineering on December 18, 2012. NHC merged the original and revised master grading plans with that of the proposed overflow channel to construct a Revised Condition digital elevation model (DEM) in ArcGIS.

The Revised Condition DEM includes 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 proceeding 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 culvert structure at Twin Creeks Crossing will consist of a pair of 18-foot wide, 9-foot tall CMP arch structures. Twin Creeks Crossing will serve as the primary arterial between the development and Pacific Highway.

Bank protection measures are being proposed along the left bank of Griffin Creek. The measures were designed by Whetstone Engineering and consist of installation of two large woody debris (LWD) pieces at the upstream and downstream limits of existing rip-rap bank protection that is showing evidence of unraveling. Each LWD piece includes a trunk and root wad; however, only the root wad will be exposed in the channel as the trunk will be keyed into the existing bank and ballasted with rip-rap.

The proposed bank protection measures are located within the Griffin Creek floodway; however, it is our understanding that they will be placed such that they will not cause a hydraulic impact. Trunks will be buried into the banks. Root wads that extend into the channel will blend in with the existing dense vegetation along the entire left bank. Furthermore, flood levels along this reach of Griffin Creek are primarily controlled by the constrictions at the railroad bridge and Pacific Highway culvert located immediately downstream. These crossings create a backwater and ineffective flow areas along the banks, further validating that these measures are not expected to substantially affect flood levels. Based on the factors presented above and engineering judgment, the proposed LWD bank protection features are not expected to have a definable adverse impact to flood levels on Griffin Creek. Conceptual-level flood improvement plans for the proposed channel, culvert structure and bank protection, prepared by Whetstone Engineering, are attached to this submittal.

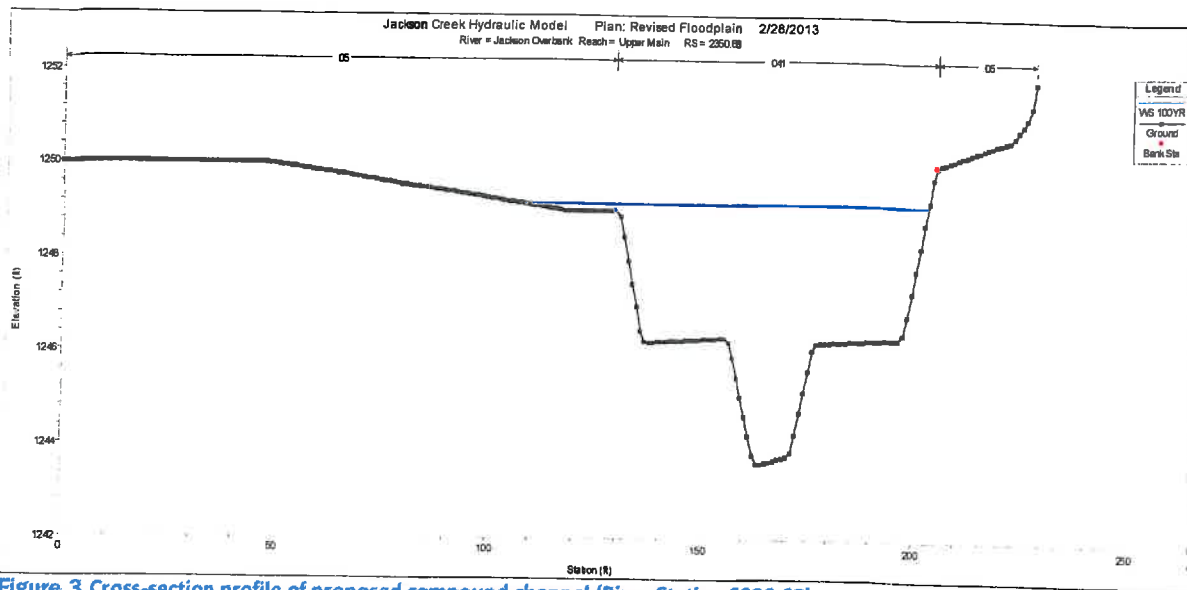


Figure 3 Cross-section profile of proposed compound channel (River Station 2350.68)

### Engineering Methods – Hydraulic Modeling

#### General Model Description

The Jackson Creek HEC-RAS hydraulic model includes the mainstem 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. Discharges from the effective FIS were used for this CLOMR analysis and are given 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, 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. Downstream, the Jackson Overbank reach ties into the mainstem of Jackson Creek between cross-sections D and E.

#### *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 33 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:

- Extend the model to include the entire development
- Represent geometries of the six existing check-dam structures
- Include geometry of the Twin Creeks Crossing culvert structure
- Represent geometry of the proposed check-dam structure 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.

The most prominent difference between the Duplicate Effective and Revised Condition models is the downstream extension of the floodway in the latter. Three additional cross-sections were added downstream of effective Cross-Section A on the Jackson Overbank Reach to represent extension of the flood channel and routing of flood waters westward through a proposed open space in the development. The confluence of the Jackson Overbank floodway still occurs between cross-section D and E on Jackson Creek, but the reach length between was increased due to the additional cross-sections and longer flow path. To account for the added reach length, the floodway width at the downstream limit of the reach was expanded from 220 to 260 feet.

As mapped, the Revised Condition floodway overlaps effective Cross-Section D on Jackson Creek; however, this portion of the cross-section is ineffective due to the influence of the Scenic Avenue road embankment downstream. In addition to the widening and shifting north of the floodway connection between Jackson Overbank and Jackson Creek, a portion of the effective floodway along the southern edge would be deleted as part of the proposed revision. The proposed floodway realignment, from a diagonal to angular alignment, would also require that a portion of the effective floodway be removed (see Appendix A).



**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)
<b>A (793.2)</b>	<b>1238.36</b>	<b>1238.49</b>	<b>-0.13</b>	<b>1239.18</b>	<b>1239.18</b>	<b>0.00</b>
<b>B (951.8)</b>	<b>1238.61</b>	<b>1238.84</b>	<b>-0.23</b>	<b>1239.60</b>	<b>1239.60</b>	<b>0.00</b>
<b>C (1188.3)</b>	<b>1239.72</b>	<b>1239.72</b>	<b>0.00</b>	<b>1240.56</b>	<b>1240.56</b>	<b>0.00</b>
<b>D (1554.8)</b>	<b>1240.75</b>	<b>1240.75</b>	<b>0.00</b>	<b>1241.33</b>	<b>1241.33</b>	<b>0.00</b>
<b>E (1689.0)</b>	<b>1241.82</b>	<b>1241.81</b>	<b>0.01</b>	<b>1242.55</b>	<b>1242.55</b>	<b>0.00</b>
<b>F (1966.3)</b>	<b>1242.82</b>	<b>1242.82</b>	<b>0.00</b>	<b>1243.76</b>	<b>1243.76</b>	<b>0.00</b>
<b>G (2113.1)</b>	<b>1243.65</b>	<b>1243.65</b>	<b>0.00</b>	<b>1244.54</b>	<b>1244.54</b>	<b>0.00</b>
<b>H (2270.1)</b>	<b>1244.36</b>	<b>1244.37</b>	<b>-0.01</b>	<b>1245.29</b>	<b>1245.29</b>	<b>0.00</b>
<b>I (2422.0)</b>	<b>1245.25</b>	<b>1245.25</b>	<b>0.00</b>	<b>1245.97</b>	<b>1245.97</b>	<b>0.00</b>
<b>J (2548.0)</b>	<b>-</b>	<b>1245.86</b>	<b>-</b>	<b>1246.71</b>	<b>1246.71</b>	<b>0.00</b>
<b>K (3071.0)</b>	<b>1248.35</b>	<b>1248.34</b>	<b>0.01</b>	<b>1249.25</b>	<b>1249.25</b>	<b>0.00</b>
<b>L (3454.7)</b>	<b>1250.99</b>	<b>1250.99</b>	<b>0.00</b>	<b>1251.94</b>	<b>1251.94</b>	<b>0.00</b>
<b>M (3722.3)</b>	<b>1252.21</b>	<b>1252.21</b>	<b>0.00</b>	<b>1253.18</b>	<b>1253.18</b>	<b>0.00</b>
<b>N (3956.5)</b>	<b>1254.01</b>	<b>1254.01</b>	<b>0.00</b>	<b>1254.05</b>	<b>1254.05</b>	<b>0.00</b>

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 0.38 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)
-	0.15	-	1237.79	-	-	1238.68	-
-	0.2	-	1237.98	-	-	1238.73	-
-	0.25	-	1237.94	-	-	1238.67	-
793.2 (A)	0.28	1238.49	1238.54	-0.15	1239.18	1238.89	-0.29
951.8 (B)	160.54	1238.84	1238.48	-0.36	1239.60	1239.08	-0.52
-	232.77	-	1238.51	-	-	1239.16	-
-	247.95	-	1238.53	-	-	1239.17	-
-	265.49	-	1238.54	-	-	1239.26	-
1138.3 (C)	401.53	1239.72	1238.63	-1.09	1240.56	1239.56	-1.00
-	579.14	-	1239.28	-	-	1239.99	-
-	706.95	-	1239.65	-	-	1240.42	-
-	718.52	-	1239.70	-	-	1240.38	-
-	731.28	-	1240.03	-	-	1240.63	-
1554.8 (D)	783.83	1240.75	1240.19	-0.56	1241.33	1240.86	-0.47
1689.0 (E)	1002.15	1241.81	1241.41	-0.40	1242.55	1241.74	-0.81
-	1117.8	-	1241.92	-	-	1242.26	-
-	1187.03	-	1242.22	-	-	1242.63	-
-	1200.04	-	1242.32	-	-	1242.58	-
-	1211.98	-	1242.47	-	-	1243.01	-
1966.3 (F)	1249.04	1242.82	1242.58	-0.24	1243.76	1243.27	-0.49
2113.1 (G)	1358.7	1243.65	1243.19	-0.46	1244.54	1243.73	-0.81
2270.1 (H)	1495.18	1244.37	1243.93	-0.44	1245.29	1244.28	-1.01
2422.0 (I)	1646.26	1245.25	1244.75	-0.50	1245.97	1244.94	-1.03
-	1654.09	-	1244.90	-	-	1245.04	-
-	1677.51	-	1244.91	-	-	1245.03	-
-	1691	-	1245.41	-	-	1245.44	-
2548.0 (J)	1757.49	1245.86	1245.69	-0.17	1246.71	1245.80	-0.91
-	1866.28	-	1246.13	-	-	1246.27	-
-	2019.16	-	1246.92	-	-	1247.08	-
-	2138.75	-	1247.67	-	-	1247.79	-
-	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	-	1252.8	-	-	1253.06	-
3956.5 (N)	3067.82	1254.0	1252.83	-1.18	1254.05	1253.08	-0.97
-	3116.56	-	1252.85	-	-	1253.10	-
-	3143.45	-	1252.97	-	-	1253.23	-
-	3341.92	-	1253.41	-	-	1253.66	-
-	3355.18	-	1253.29	-	-	1253.55	-
-	3370.57	-	1253.65	-	-	1253.85	-
-	3639.01	-	1254.33	-	-	1254.53	-

Table 4. Revised Floodway Information.

Effective RAS River Station (FEMA Cross-section Letter in parenthesis, where appropriate)	Revised RAS River Station	Width (feet)	Area (sq ft)	Mean Velocity (ft/sec)	Without Floodway (feet)	With Floodway (feet)	Increase (feet)
-	0.15	255	821	1.5	1237.8	1238.7	0.9
-	0.20	381	1505	0.8	1238.0	1238.7	0.8
-	0.25	78	362	3.4	1237.9	1238.7	0.7
793.2 (A)	0.28	65	345	3.5	1238.3	1238.9	0.6
951.8 (B)	160.54	65	329	3.7	1238.5	1239.1	0.6
-	232.77	65	307	4.0	1238.5	1239.2	0.7
-	247.95	66	283	4.3	1238.5	1239.2	0.6
-	265.49	66	302	4.1	1238.5	1239.3	0.7
1188.3 (C)	401.53	64	275	4.4	1238.6	1239.6	0.9
-	579.14	64	243	5.0	1239.3	1240.0	0.7
-	706.95	64	240	5.1	1239.7	1240.4	0.8
-	718.52	63	204	6.0	1239.7	1240.4	0.7
-	731.28	63	238	5.1	1240.0	1240.6	0.6
1554.8 (D)	783.83	63	232	5.3	1240.2	1240.9	0.7
1689.0 (E)	1002.15	63	223	5.5	1241.4	1241.7	0.3
-	1117.8	64	211	5.8	1241.9	1242.3	0.3
-	1187.03	63	209	5.8	1242.2	1242.6	0.4
-	1200.04	65	175	7.0	1242.3	1242.6	0.3
-	1211.98	64	222	5.5	1242.5	1243.0	0.5
1966.3 (F)	1249.04	69	237	5.1	1242.6	1243.3	0.7
2113.1 (G)	1358.7	72	244	5.0	1243.2	1243.7	0.5
2270.1 (H)	1495.18	78	245	5.0	1243.9	1244.3	0.3
2422.0 (I)	1646.26	73	220	5.5	1244.8	1244.9	0.2
-	1664.09	77	219	5.6	1244.9	1245.0	0.1
-	1677.51	76	186	6.6	1244.9	1245.0	0.1
-	1691.00	76	239	5.1	1245.4	1245.4	0.0
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	0.2
-	2138.75	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	278	4.4	1252.8	1253.1	0.3
3956.5 (N)	3067.82	43	272	4.5	1252.8	1253.1	0.3
-	3110.56	43	242	5.1	1252.9	1253.1	0.3
-	3143.45	49	258	4.7	1253.0	1253.2	0.3
-	3341.92	52	275	4.4	1253.4	1253.7	0.3
-	3355.18	49	213	5.7	1253.3	1253.6	0.3
-	3370.57	54	283	4.3	1253.7	1253.9	0.2
-	3639.01	66	265	4.6	1254.3	1254.5	0.2

### **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.

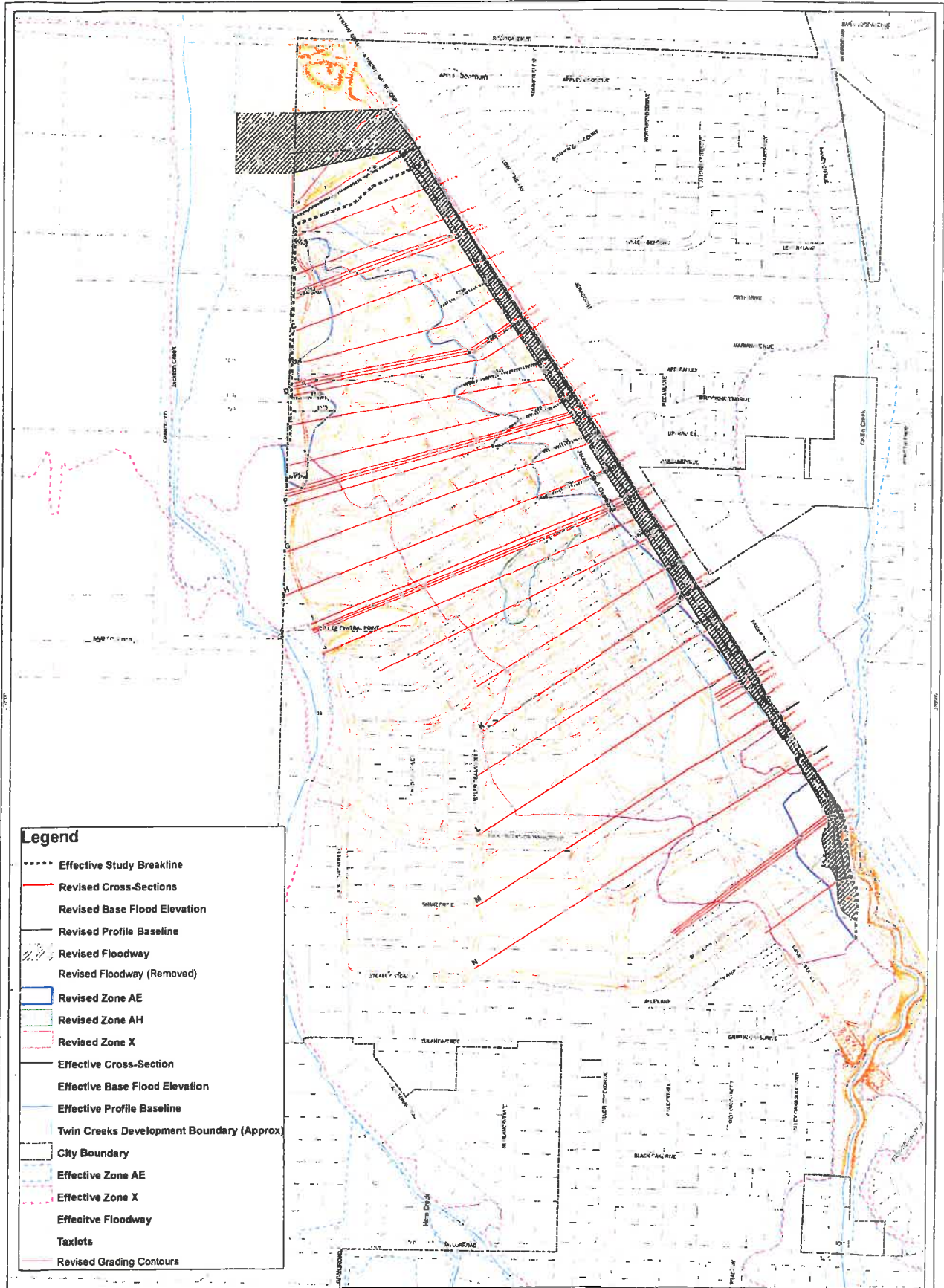
### **References**

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**





**Legend**

- Effective Study Breakline
- Revised Cross-Sections
- Revised Base Flood Elevation
- Revised Profile Baseline
- Revised Floodway
- Revised Floodway (Removed)
- Revised Zone AE
- Revised Zone AH
- Revised Zone X
- Effective Cross-Section
- Effective Base Flood Elevation
- Effective Profile Baseline
- Twin Creeks Development Boundary (Approx)
- City Boundary
- Effective Zone AE
- Effective Zone X
- Effective Floodway
- Taxlots
- Revised Grading Contours

Note: Grading plan contour scale provided to N-C by Whitestone Engineers; Date is shown in NAC of Oregon State Plane South horizontal datum and N-C 088 vertical datum.  
 Effective mapping on this map from preliminary DFIRM, prepared by NHC in 2009.  
 Tax lot data provided by Jackson County.



Twin Creeks Development CLOMR  
 Jackson Creek Overbank  
 Workmap

Scale: 1:2,400

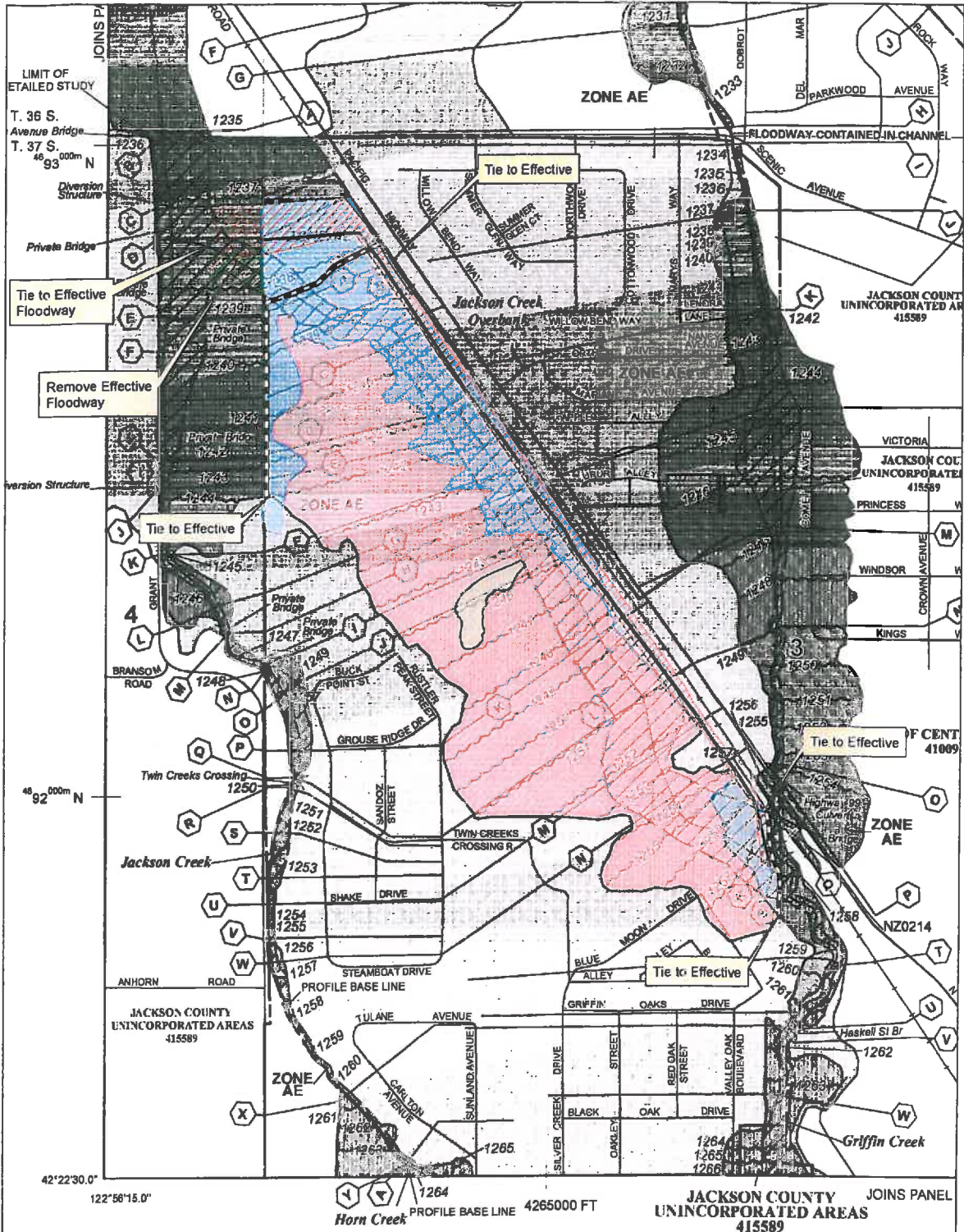
0 50 100 200 Feet

SEAL OF THE STATE OF OREGON  
 JOHN C. BRODY  
 LICENSE NO. 161415  
 EXPIRES 6/30/15

DATE: 11/14/14  
 PROJECT NO: 201404



## **Appendix B. Annotated FIRM**



- Legend**
- Effective Study Breakline
  - Revised Jackson Creek Overbank Profile Baseline
  - Revised Floodway
  - Revised Zone AH
  - Revised Zone AE
  - Revised Zone X
  - Floodway Removal

**Twin Creeks Development CLOMR**

**Jackson Creek Overbank**  
**Annotated FIRM 41029C 1768F**

Scale - 1:6,000

500 250 0 500 Feet

coord syet: UTM Zone 10N	horz datum NAD 83	horz unit: feet
northwest hydraulic consultants	project no. 200044	27-Jul-2014

## **Appendix C. Completed MT-2 Application Forms**

U.S. DEPARTMENT OF HOMELAND SECURITY  
 FEDERAL EMERGENCY MANAGEMENT AGENCY  
**OVERVIEW & CONCURRENCE FORM**

*O.M.B No. 1660-0016  
 Expires February 28, 2014*

**PAPERWORK BURDEN DISCLOSURE NOTICE**

Public reporting burden for this form is estimated to average 1 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20958-3005, Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

**PRIVACY ACT STATEMENT**

**AUTHORITY:** The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.  
**PRINCIPAL PURPOSE(S):** This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).  
**ROUTINE USE(S):** The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.  
**DISCLOSURE:** The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

**A. REQUESTED RESPONSE FROM DHS-FEMA**

This request is for a (check one):

- CLOMR: A letter from DHS-FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60, 65 & 72).
- LOMR: A letter from DHS-FEMA officially revising the current NFIP map to show the changes to floodplains, regulatory floodway or flood elevations. (See 44 CFR Ch. 1, Parts 60, 65 & 72)

**B. OVERVIEW**

1. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Example: 480301	City of Katy	TX	48473C	0005D	02/08/83
480287	Harris County	TX	48201C	0220G	09/28/90
410092	City of Central Point	OR	41029C	1768F	05/03/11

2. a. Flooding Source:

- b. Types of Flooding:  Riverine     Coastal     Shallow Flooding (e.g., Zones AO and AH)  
 Alluvial fan     Lakes     Other (Attach Description)

3. Project Name/Identifier: Twin Creeks Development

4. FEMA zone designations affected: AE, X (choices: A, AH, AO, A1-A30, A99, AE, AR, V, V1-V30, VE, B, C, D, X)

5. Basis for Request and Type of Revision:

a. The basis for this revision request is (check all that apply)

- Physical Change     Improved Methodology/Data     Regulatory Floodway Revision     Base Map Changes  
 Coastal Analysis     Hydraulic Analysis     Hydrologic Analysis     Corrections  
 Weir-Dam Changes     Levee Certification     Alluvial Fan Analysis     Natural Changes  
 New Topographic Data     Other (Attach Description)

Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.



b. The area of revision encompasses the following structures (check all that apply)

- Structures:  Channelization  Levee/Floodwall  Bridge/Culvert  
 Dam  Fill  Other (Attach Description)

6.  Documentation of ESA compliance is submitted (required to initiate CLOMR review). Please refer to the instructions for more information.

**C. REVIEW FEE**

Has the review fee for the appropriate request category been included?  Yes Fee amount: \$0  
 No, Attach Explanation

Please see the DHS-FEMA Web site at [http://www.fema.gov/plan/prevent/fun/fm\\_fees.shtml](http://www.fema.gov/plan/prevent/fun/fm_fees.shtml) for Fee Amounts and Exemptions.

**D. SIGNATURE**

All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

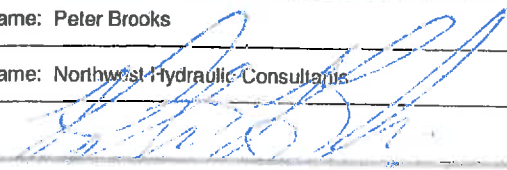
Name: Bret Moore		Company: Twin Creeks Development Co., LLC	
Mailing Address:		Daytime Telephone No.:	Fax No.:
		E-Mail Address:	
Signature of Requester (required):		Date:	

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirements for when fill is placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. For Conditional LOMR requests, the applicant has documented Endangered Species Act (ESA) compliance to FEMA prior to FEMA's review of the Conditional LOMR application. For LOMR requests, I acknowledge that compliance with Sections 9 and 10 of the ESA has been achieved independently of FEMA's process. For actions authorized, funded, or being carried out by Federal or State agencies, documentation from the agency showing its compliance with Section 7(a)(2) of the ESA will be submitted. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.

Community Official's Name and Title:		Community Name:	
Mailing Address:		Daytime Telephone No.:	Fax No.:
		E-Mail Address:	
Community Official's Signature (required):		Date:	

**CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR**

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.2(b) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

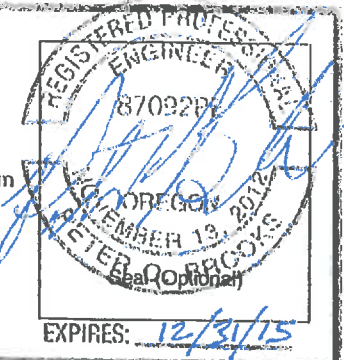
Certifier's Name: Peter Brooks	License No.: 87092PE	Expiration Date: 12/31/15
Company Name: Northwest Hydraulic Consultants	Telephone No.: 206-241-6000	Fax No.: 206-439-2420
Signature: 	Date: 7/29/19	E-Mail Address: pbrooks@nhcweb.com

Ensure the forms that are appropriate to your revision request are included in your submittal.

**Form Name and (Number)**

**Required if ...**

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Riverine Hydrology and Hydraulics Form (Form 2) | New or revised discharges or water-surface elevations   |
| <input checked="" type="checkbox"/> Riverine Structures Form (Form 3)               | Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam |
| <input type="checkbox"/> Coastal Analysis Form (Form 4)                             | New or revised coastal elevations   |
| <input type="checkbox"/> Coastal Structures Form (Form 5)                           | Addition/revision of coastal structure  |
| <input type="checkbox"/> Alluvial Fan Flooding Form (Form 6)                        | Flood control measures on alluvial fans   |



**Form 1, C. Review Fee – Explanation**

No review fee is attached because this as this submittal is an amendment to a previously submitted, and still active, CLOMR application. A fee of \$4,400 was paid by the Twin Creeks Development Company LLC in 2013 for the original submittal. Relevant project identifier information is provided below:

Case No.:	13-10-0914R
Community:	City of Central Point, OR
Community No.:	410092
Requester:	Peter C. Brooks, P.E.
Identifier:	Twin Creeks Development
Flooding Source:	Jackson Creek Overbank
FIRM Panel Affected:	41029C1768F

U.S. DEPARTMENT OF HOMELAND SECURITY  
 FEDERAL EMERGENCY MANAGEMENT AGENCY  
**RIVERINE HYDROLOGY & HYDRAULICS FORM**

*O.M.B No. 1660-0016  
 Expires February 28, 2014*

**PAPERWORK BURDEN DISCLOSURE NOTICE**

Public reporting burden for this form is estimated to average 3.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington VA 20958-3005, Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

**PRIVACY ACT STATEMENT**

**AUTHORITY:** The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.

**PRINCIPAL PURPOSE(S):** This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).

**ROUTINE USE(S):** The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.

**DISCLOSURE:** The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a NFIP Flood Insurance Rate Maps (FIRM).

Flooding Source: Jackson Creek Overbank

**Note:** Fill out one form for each flooding source studied

**A. HYDROLOGY**

1. Reason for New Hydrologic Analysis (check all that apply)

- |   |  |  |
|---|--|--|
| <input checked="" type="checkbox"/> Not revised (skip to section B) | <input type="checkbox"/> No existing analysis        | <input type="checkbox"/> Improved data                           |
| <input type="checkbox"/> Alternative methodology                    | <input type="checkbox"/> Proposed Conditions (CLOMR) | <input type="checkbox"/> Changed physical condition of watershed |

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)
----------	-------------------------	---------------------	---------------

3. Methodology for New Hydrologic Analysis (check all that apply)

- |   |  |
|---|--|
| <input type="checkbox"/> Statistical Analysis of Gage Records | <input type="checkbox"/> Precipitation/Runoff Model → Specify Model: _____ |
| <input type="checkbox"/> Regional Regression Equations        | <input type="checkbox"/> Other (please attach description)                 |

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

is the hydrology for the revised flooding source(s) affected by sediment transport?  Yes  No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation..



## B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.)	
			Effective	Proposed/Revised
Downstream Limit*	<u>Jackson Overbank d/s reach limit</u>	<u>A</u>	<u>1238.49</u>	<u>1238.34</u>
Upstream Limit*	<u>Jackson Overbank u/s reach limit</u>	<u>ties in at breakline</u>	<u>n/a</u>	<u>n/a</u>

\*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS 4.1.0

3. Pre-Submittal Review of Hydraulic Models\*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4. Models Submitted

	<u>Natural Run</u>		<u>Floodway Run</u>		<u>Datum</u>
Duplicate Effective Model*	File Name: <u>JAFISOct04.P10</u>	Plan Name: <u>DupEffect Floodplain</u>	File Name: <u>JAFISOct04.P15</u>	Plan Name: <u>DupEffect Floodway</u>	<u>_NAVD88_</u>
Corrected Effective Model*	File Name: _____	Plan Name: _____	File Name: _____	Plan Name: _____	_____
Existing or Pre-Project Conditions Model	File Name: _____	Plan Name: _____	File Name: _____	Plan Name: _____	_____
Revised or Post-Project Conditions Model	File Name: <u>JAFISOct04.P17</u>	Plan Name: <u>Revised Floodplain</u>	File Name: <u>JAFISOct04.P20</u>	Plan Name: <u>Revised Floodway</u>	<u>_NAVD88_</u>
Other - (attach description)	File Name: _____	Plan Name: _____	File Name: _____	Plan Name: _____	_____

\* For details, refer to the corresponding section of the instructions.

Digital Models Submitted? (Required)

## C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Digital Mapping (GIS/CADD) Data Submitted (preferred)

Topographic Information: Proposed grading plan, 1-foot contours

Source: Grading plan from Whetstone Engineering Date: 12/18/12; 06/17/14

Accuracy: \_\_\_\_\_

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

Annotated FIRM and/or FBFM (Required)

**D. COMMON REGULATORY REQUIREMENTS\***

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) increase?  Yes  No
- a. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:
- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
  - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.
- b. Does this LOMR request cause increase in the BFE and/or SFHA compared with the effective BFEs and/or SFHA?  Yes  No  
If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notifications can be found in the MT-2 Form 2 Instructions.
2. Does the request involve the placement or proposed placement of fill?  Yes  No
- If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.
3. For LOMR requests, is the regulatory floodway being revised?  Yes  No
- If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being established. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)
4. For CLOMR requests, please submit documentation to FEMA and the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (ESA).

For actions authorized, funded, or being carried out by Federal or State agencies, please submit documentation from the agency showing its compliance with Section 7(a)(2) of the ESA. Please see the MT-2 instructions for more detail.

\* Not inclusive of all applicable regulatory requirements. For details, see 44 CFR parts 60 and 65.

DEPARTMENT OF HOMELAND SECURITY  
FEDERAL EMERGENCY MANAGEMENT AGENCY  
**RIVERINE STRUCTURES FORM**

O.M.B. NO. 1660-0016  
Expires February 28, 2014

**PAPERWORK BURDEN DISCLOSURE NOTICE**

Public reporting burden for this form is estimated to average 7 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20598-3005, Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

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Flooding Source: Jackson Overbank

Note: Fill out one form for each flooding source studied.

**A. GENERAL**

Complete the appropriate section(s) for each Structure listed below:

- Channelization.....complete Section B
- Bridge/Culvert.....complete Section C
- Dam.....complete Section D
- Levee/Floodwall.....complete Section E
- Sediment Transport.....complete Section F (if required)

Description Of Modeled Structure

1. Name of Structure: Twin Creeks Flood Channel

Type (check one):     Channelization                       Bridge/Culvert                       Levee/Floodwall                       Dam

Location of Structure: Easternmost edge of development

Downstream Limit/Cross Section: RS 0.28

Upstream Limit/Cross Section: RS 3639.01

2. Name of Structure: Twin Creeks Crossing Culvert

Type (check one):     Channelization                       Bridge/Culvert                       Levee/Floodwall                       Dam

Location of Structure: Crosses flood channel approx. 3400 feet u/s of confluence with Jackson Creek mainstem

Downstream Limit/Cross Section: RS 2927.39

Upstream Limit/Cross Section: 3048.78

3. Name of Structure: \_\_\_\_\_

Type (check one)     Channelization                       Bridge/Culvert                       Levee/Floodwall                       Dam

Location of Structure: \_\_\_\_\_

Downstream Limit/Cross Section: \_\_\_\_\_

Upstream Limit/Cross Section: \_\_\_\_\_

**NOTE: FOR MORE STRUCTURES, ATTACH ADDITIONAL PAGES AS NEEDED.**

B. CHANNELIZATION

Flooding Source: Jackson Overbank

Name of Structure: Twin Creeks Flood Channel

1. Hydraulic Considerations

The channel was designed to carry approx 1220 (cfs) and/or the 100-year flood.

The design elevation in the channel is based on (check one):

- Subcritical flow
- Critical flow
- Supercritical flow
- Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

- Inlet to channel
- Outlet of channel
- At Drop Structures
- At Transitions
- Other locations (specify): \_\_\_\_\_

2. Channel Design Plans

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Accessory Structures

The channelization includes (check one):

- Levees [Attach Section E (Levee/Floodwall)]
- Drop structures
- Superelevated sections
- Transitions in cross sectional geometry
- Debris basin/detention basin [Attach Section D (Dam/Basin)]
- Energy dissipator
- Weir
- Other (Describe): \_\_\_\_\_

4. Sediment Transport Considerations

Are the hydraulics of the channel affected by sediment transport?  Yes  No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source: Jackson Overbank

Name of Structure: Twin Creeks Crossing Culvert

1. This revision reflects (check one):

- Bridge/culvert not modeled in the FIS
- Modified bridge/culvert previously modeled in the FIS
- Revised analysis of bridge/culvert previously modeled in the FIS

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8): HEC-RAS 4.1.0  
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):

- Dimensions (height, width, span, radius, length)
- Shape (culverts only)
- Material
- Beveling or Rounding
- Wing Wall Angle
- Skew Angle
- Distances Between Cross Sections
- Erosion Protection
- Low Chord Elevations – Upstream and Downstream
- Top of Road Elevations – Upstream and Downstream
- Structure Invert Elevations – Upstream and Downstream
- Stream Invert Elevations – Upstream and Downstream
- Cross-Section Locations

4. Sediment Transport Considerations

Are the hydraulics of the structure affected by sediment transport?  Yes  No

If Yes, then fill out Section F (Sediment Transport) of Form 3. If no, then attach an explanation.



**D. DAM/BASIN**

Flooding Source: \_\_\_\_\_  
 Name of Structure: \_\_\_\_\_

1. This request is for (check one):  Existing dam/basin  New dam/basin  Modification of existing dam/basin
2. The dam/basin was designed by (check one):  Federal agency  State agency  Private organization  Local government agency

Name of the agency or organization: \_\_\_\_\_

3. The Dam was permitted as (check one):  Federal Dam  State Dam

Provide the permit or identification number (ID) for the dam and the appropriate permitting agency or organization

Permit or ID number \_\_\_\_\_ Permitting Agency or Organization \_\_\_\_\_

- a.  Local Government Dam  Private Dam

Provided related drawings, specification and supporting design information.

4. Does the project involve revised hydrology?  Yes  No

If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2).

Was the dam/basin designed using critical duration storm? (must account for the maximum volume of runoff)

- Yes, provide supporting documentation with your completed Form 2.  
 No, provide a written explanation and justification for not using the critical duration storm.

5. Does the submittal include debris/sediment yield analysis?  Yes  No

If Yes, then fill out Section F (Sediment Transport). If No, then attach your explanation for why debris/sediment analysis was not considered?

6. Does the Base Flood Elevation behind the dam/basin or downstream of the dam/basin change?  Yes  No

If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2) and complete the table below.

FREQUENCY (% annual chance)	Stillwater Elevation Behind the Dam/Basin	
	FIS	REVISED
10-year (10%)	_____	_____
50-year (2%)	_____	_____
100-year (1%)	_____	_____
500-year (0.2%)	_____	_____
Normal Pool Elevation	_____	_____

7. Please attach a copy of the formal Operation and Maintenance Plan

**E. LEVEE/FLOODWALL**

1. System Elements

a. This Levee/Floodwall analysis is based on (check one):

- upgrading of an existing levee/floodwall system       a newly constructed levee/floodwall system       reanalysis of an existing levee/floodwall system

b. Levee elements and locations are (check one):

- earthen embankment, dike, berm, etc.      Station \_\_\_\_\_ to \_\_\_\_\_  
 structural floodwall      Station \_\_\_\_\_ to \_\_\_\_\_  
 Other (describe): \_\_\_\_\_      Station \_\_\_\_\_ to \_\_\_\_\_

c. Structural Type (check one):     monolithic cast-in place reinforced concrete     reinforced concrete masonry block     sheet piling  
 Other (describe): \_\_\_\_\_

d. Has this levee/floodwall system been certified by a Federal agency to provide protection from the base flood?

- Yes     No

If Yes, by which agency?

e. Attach certified drawings containing the following information (indicate drawing sheet numbers):

- |  |                      |
|--|----------------------|
| 1. Plan of the levee embankment and floodwall structures.  | Sheet Numbers: _____ |
| 2. A profile of the levee/floodwall system showing the Base Flood Elevation (BFE), levee and/or wall crest and foundation, and closure locations for the total levee system. | Sheet Numbers: _____ |
| 3. A profile of the BFE, closure opening outlet and inlet invert elevations, type and size of opening, and kind of closure.  | Sheet Numbers: _____ |
| 4. A layout detail for the embankment protection measures.   | Sheet Numbers: _____ |
| 5. Location, layout, and size and shape of the levee embankment features, foundation treatment, Floodwall structure, closure structures, and pump stations.                  | Sheet Numbers: _____ |

2. Freeboard

a. The minimum freeboard provided above the BFE is:

Riverine

- |  |                              |                             |
|--|------------------------------|-----------------------------|
| 3.0 feet or more at the downstream end and throughout                    | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3.5 feet or more at the upstream end                                     | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4.0 feet within 100 feet upstream of all structures and/or constrictions | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Coastal

- |   |                              |                             |
|---|------------------------------|-----------------------------|
| 1.0 foot above the height of the one percent wave associated with the 1%-annual-chance stillwater surge elevation or maximum wave runup (whichever is greater). | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2.0 feet above the 1%-annual-chance stillwater surge elevation  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Please note, occasionally exceptions are made to the minimum freeboard requirement. If an exception is requested, attach documentation addressing Paragraph 65.10(b)(1)(ii) of the NFIP Regulations.

If No is answered to any of the above, please attach an explanation.

b. Is there an indication from historical records that ice-jamming can affect the BFE?  Yes  No

If Yes, provide ice-jam analysis profile and evidence that the minimum freeboard discussed above still exists.

3. Closures

a. Openings through the levee system (check one):  exists  does not exist

If opening exists, list all closures:

Channel Station	Left or Right Bank	Opening Type	Highest Elevation for Opening Invert	Type of Closure Device

(Extend table on an added sheet as needed and reference)

Note: Geotechnical and geologic data

In addition to the required detailed analysis reports, data obtained during field and laboratory investigations and used in the design analysis for the following system features should be submitted in a tabulated summary form. (Reference U.S. Army Corps of Engineers [USACE] EM-1110-2-1906 Form 2086.)

4. Embankment Protection

- a. The maximum levee slope land side is: \_\_\_\_\_
- b. The maximum levee slope flood side is: \_\_\_\_\_
- c. The range of velocities along the levee during the base flood is: \_\_\_\_\_ (min.) to \_\_\_\_\_ (max.)
- d. Embankment material is protected by (describe what kind): \_\_\_\_\_
- e. Riprap Design Parameters (check one):  Velocity  Tractive stress  
Attach references

Reach	Sideslope	Flow Depth	Velocity	Curve or Straight	Stone Riprap			Depth of Toedown
					D <sub>100</sub>	D <sub>50</sub>	Thickness	
Sta to								
Sta to								
Sta to								
Sta to								
Sta to								
Sta to								

(Extend table on an added sheet as needed and reference each entry)

- f. Is a bedding/filter analysis and design attached?  Yes  No
- g. Describe the analysis used for other kinds of protection used (include copies of the design analysis):

Attach engineering analysis to support construction plans.

5. Embankment And Foundation Stability

- a. Identify locations and describe the basis for selection of critical location for analysis:  
\_\_\_\_\_
  - Overall height: Sta.: \_\_\_\_\_, height \_\_\_\_\_ ft.
  - Limiting foundation soil strength:  
Strength  $\phi$  = \_\_\_\_\_ degrees, c = \_\_\_\_\_ psf  
Slope: SS = \_\_\_\_\_ (h) to \_\_\_\_\_ (v)  
(Repeat as needed on an added sheet for additional locations)
- b. Specify the embankment stability analysis methodology used (e.g., circular arc, sliding block, infinite slope, etc.):  
\_\_\_\_\_
- c. Summary of stability analysis results:



**E. LEVEE/FLOODWALL (CONTINUED)**

5. Embankment And Foundation Stability (continued)

Case	Loading Conditions	Critical Safety Factor	Criteria (Min.)
I	End of construction		1.3
II	Sudden drawdown		1.0
III	Critical flood stage		1.4
IV	Steady seepage at flood stage		1.4
VI	Earthquake (Case I)		1.0

(Reference: USACE EM-1110-2-1913 Table 6-1)

- d. Was a seepage analysis for the embankment performed?  Yes  No  
 If Yes, describe methodology used:
- e. Was a seepage analysis for the foundation performed?  Yes  No
- f. Were uplift pressures at the embankment landside toe checked?  Yes  No
- g. Were seepage exit gradients checked for piping potential?  Yes  No
- h. The duration of the base flood hydrograph against the embankment is \_\_\_\_\_ hours.

Attach engineering analysis to support construction plans.

6. Floodwall And Foundation Stability

- a. Describe analysis submittal based on Code (check one):  UBC (1988)  Other (specify): \_\_\_\_\_
- b. Stability analysis submitted provides for:  Overturning  Sliding If not, explain: \_\_\_\_\_
- c. Loading included in the analyses were:  Lateral earth @  $P_A =$  \_\_\_\_\_ psf;  $P_p =$  \_\_\_\_\_ psf
- Surcharge-Slope @ \_\_\_\_\_,  surface \_\_\_\_\_ psf
- Wind @  $P_w =$  \_\_\_\_\_ psf
- Seepage (Uplift); \_\_\_\_\_  Earthquake @  $P_{eq} =$  \_\_\_\_\_ %g
- 1%-annual-chance significant wave height: \_\_\_\_\_ ft.
- 1%-annual-chance significant wave period: \_\_\_\_\_ sec.
- d. Summary of Stability Analysis Results: Factors of Safety.  
 Itemize for each range in site layout dimension and loading condition limitation for each respective reach.

Loading Condition	Criteria (Min)		Sta	To	Sta	To
	Overtum	Sliding	Overtum	Sliding	Overtum	Sliding
Dead & Wind	1.5	1.5				
Dead & Soil	1.5	1.5				
Dead, Soil, Flood, & Impact	1.5	1.5				
Dead, Soil, & Seismic	1.3	1.3				

(Ref: FEMA 114 Sept 1986; USACE EM 1110-2-2502)  
Note: (Extend table on an added sheet as needed and reference)

**E. LEVEE/FLOODWALL (CONTINUED)**

6. Floodwall And Foundation Stability (continued)

e. Foundation bearing strength for each soil type:

Bearing Pressure	Sustained Load (psf)	Short Term Load (psf)
Computed design maximum		
Maximum allowable		

- f. Foundation scour protection  is,  is not provided. If provided, attach explanation and supporting documentation:  
 Attach engineering analysis to support construction plans.

7. Settlement

- a. Has anticipated potential settlement been determined and incorporated into the specified construction elevations to maintain the established freeboard margin?  Yes  No
- b. The computed range of settlement is \_\_\_\_ ft. to \_\_\_\_ ft.
- c. Settlement of the levee crest is determined to be primarily from :  Foundation consolidation  Embankment compression  
 Other (Describe): \_\_\_\_\_
- d. Differential settlement of floodwalls  has  has not been accommodated in the structural design and construction.  
 Attach engineering analysis to support construction plans.

8. Interior Drainage

- a. Specify size of each interior watershed:

Draining to pressure conduit: \_\_\_\_ acres  
 Draining to ponding area: \_\_\_\_ acres

- b. Relationships Established

Ponding elevation vs. storage  Yes  No  
 Ponding elevation vs. gravity flow  Yes  No  
 Differential head vs. gravity flow  Yes  No

- c. The river flow duration curve is enclosed:  Yes  No

- d. Specify the discharge capacity of the head pressure conduit: \_\_\_\_ cfs

- e. Which flooding conditions were analyzed?

- Gravity flow (Interior Watershed)  Yes  No
- Common storm (River Watershed)  Yes  No
- Historical ponding probability  Yes  No
- Coastal wave overtopping  Yes  No

If No for any of the above, attach explanation.

- e. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection.  Yes  No If No, attach explanation.

- g. The rate of seepage through the levee system for the base flood is \_\_\_\_ cfs

- h. The length of levee system used to drive this seepage rate in item g: \_\_\_\_ ft.

**E. LEVEE/FLOODWALL (CONTINUED)**

8. Interior Drainage (continued)

- i. Will pumping plants be used for interior drainage?  Yes  No

If Yes, include the number of pumping plants: \_\_\_\_ For each pumping plant, list:

	Plant #1	Plant #2
The number of pumps		
The ponding storage capacity		
The maximum pumping rate		
The maximum pumping head		
The pumping starting elevation		
The pumping stopping elevation		
Is the discharge facility protected?		
Is there a flood warning plan?		
How much time is available between warning and flooding?		

Will the operation be automatic?  Yes  No

If the pumps are electric, are there backup power sources?  Yes  No

(Reference: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105)

Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.

9. Other Design Criteria

a. The following items have been addressed as stated:

Liquefaction  is  is not a problem

Hydrocompaction  is  is not a problem

Heave differential movement due to soils of high shrink/swell  is  is not a problem

b. For each of these problems, state the basic facts and corrective action taken:

Attach supporting documentation

c. If the levee/floodwall is new or enlarged, will the structure adversely impact flood levels and/or flow velocities floodside of the structure?  
 Yes  No Attach supporting documentation

d. Sediment Transport Considerations:

Was sediment transport considered?  Yes  No

If Yes, then fill out Section F (Sediment Transport). If No, then attach your explanation for why sediment transport was not considered.

10. Operational Plan And Criteria

a. Are the planned/installed works in full compliance with Part 65.10 of the NFIP Regulations?  Yes  No

b. Does the operation plan incorporate all the provisions for closure devices as required in Paragraph 65.10(c)(1) of the NFIP regulations?  
 Yes  No

c. Does the operation plan incorporate all the provisions for interior drainage as required in Paragraph 65.10(c)(2) of the NFIP regulations?  
 Yes  No If the answer is No to any of the above, please attach supporting documentation.

**E. LEVEE/FLOODWALL (CONTINUED)**

11. Maintenance Plan

Please attach a copy of the formal maintenance plan for the levee/floodwall

12. Operations and Maintenance Plan

Please attach a copy of the formal Operations and Maintenance Plan for the levee/floodwall.

**CERTIFICATION OF THE LEVEE DOCUMENTATION**

This certification is to be signed and sealed by a licensed registered professional engineer authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.10(e) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: \_\_\_\_\_ License No.: \_\_\_\_\_ Expiration Date: \_\_\_\_\_  
Company Name: \_\_\_\_\_ Telephone No.: \_\_\_\_\_ Fax No.: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

**F. SEDIMENT TRANSPORT**

Flooding Source: \_\_\_\_\_

Name of Structure: \_\_\_\_\_

If there is any indication from historical records that sediment transport (including scour and deposition) can affect the Base Flood Elevation (BFE); and/or based on the stream morphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including scour and deposition) to affect the BFEs, then provide the following information along with the supporting documentation:

Sediment load associated with the base flood discharge: Volume \_\_\_\_\_ acre-feet

Debris load associated with the base flood discharge: Volume \_\_\_\_\_ acre-feet

Sediment transport rate \_\_\_\_\_ (percent concentration by volume)

Method used to estimate sediment transport: \_\_\_\_\_

Most sediment transport formulas are intended for a range of hydraulic conditions and sediment sizes; attach a detailed explanation for using the selected method.

Method used to estimate scour and/or deposition: \_\_\_\_\_

Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport: \_\_\_\_\_

Please note that bulked flows are used to evaluate the performance of a structure during the base flood; however, FEMA does not map BFEs based on bulked flows.

If a sediment analysis has not been performed, an explanation as to why sediment transport (including scour and deposition) will not affect the BFEs or structures must be provided.



## **Appendix D. NFIP Regulatory Requirements**

{Date}

{Affected property owner name}

{Affected property owner mailing address}

Re: Notification of Floodway Revision for Jackson Overbank

Dear Mr./Ms./Mr. & Mrs. {Affected property owner}

The Flood Insurance Rate Map (FIRM) for a community depicts the floodplain, the area which has been determined to be subject to a 1% (100-year) or greater chance of flooding in any given year. The floodway is the portion of the floodplain that includes the channel of a river or other watercourse and the adjacent land area that must be reserved in order to discharge the base flood without cumulatively increasing the water-surface elevation by more than a designated height.

The City of Central {insert appropriate community department for floodplain management}, in accordance with National Flood Insurance Program regulation 65.7(b)(1), hereby gives notice of the Twin Creeks Development Co., LLC's intent to revise the floodway, along the Jackson Overbank Reach located between Griffin and Jackson Creeks, west of Highway 99. Specifically, the floodway shall be revised from a point upstream of the confluence with Jackson Creek to the confluence with Griffin Creek near the crossing with Highway 99. As a result of the floodway revision, the floodway shall uniformly be narrowed by a maximum of approximately 380 feet.

In addition, the 1% annual chance water-surface elevations and the 1% annual chance floodplain shall be revised along the Jackson Overbank Reach. As a result of the revision, the 1% annual chance water-surface elevations shall decrease and the 1% annual chance floodplain shall narrow within the area of revision.

Maps and detailed analysis of the floodway revision can be reviewed at the {insert location} at {insert location address}. If you have any questions or concerns about the proposed project or its affect on your property, you may contact {name of appropriate community official} of {name of community} at {community official contact information} from ... to ... {insert dates during which community contact person can be contacted}.

Sincerely,

{Community official name}

{Community official position}

{Community official contact information}

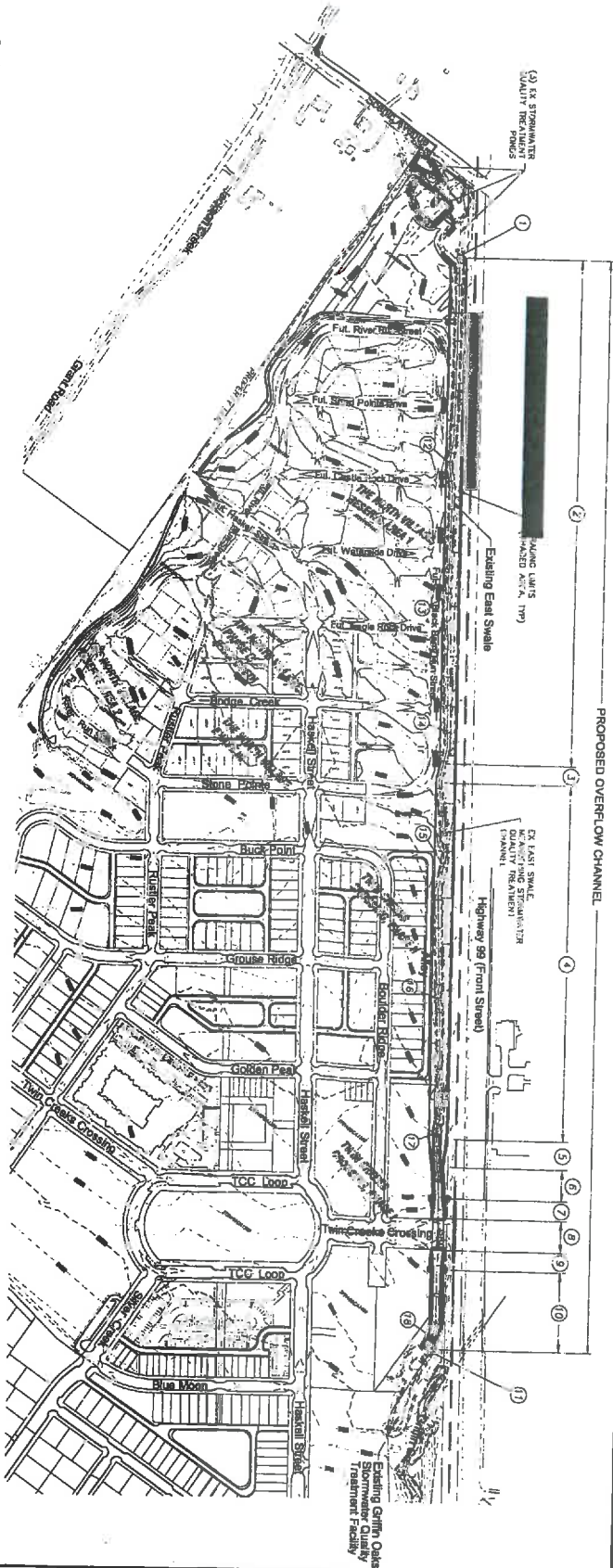
The City of Central {insert appropriate community department for floodplain management}, in accordance with National Flood Insurance Program regulation 65.7(b)(1), hereby gives notice of the Twin Creeks Development Co., LLC's intent to revise the floodway, along the Jackson Overbank Reach located between Griffin and Jackson Creeks, west of Highway 99. Specifically, the floodway shall be revised from a point upstream of the confluence with Jackson Creek to the confluence with Griffin Creek near the crossing with Highway 99. As a result of the floodway revision, the floodway shall uniformly be narrowed by a maximum of approximately 380 feet.

In addition, the 1% annual chance water-surface elevations and the 1% annual chance floodplain shall be revised along the Jackson Overbank Reach. As a result of the revision, the 1% annual chance water-surface elevations shall decrease and the 1% annual chance floodplain shall narrow within the area of revision.

Maps and detailed analysis of the revision can be reviewed at the {insert location} at {insert location address}. Interested persons may call {insert community contact name or position} at {insert contact phone number} for additional information from ... to ... {insert dates during which community contact person can be contacted}.

Figure 5.  
SAMPLE PUBLIC NOTIFICATION FOR FLOODWAY REVISION, WITH OR WITHOUT OTHER FLOOD  
HAZARD CHANGES

(to be used by community when placing a notice in a newspaper)



## PROPOSED OVERFLOW CHANNEL

- Construction Notes:**
1. Station 0+00 to 0+100. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  2. Station 0+100 to 0+200. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  3. Station 0+200 to 0+300. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  4. Station 0+300 to 0+400. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  5. Station 0+400 to 0+500. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  6. Station 0+500 to 0+600. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  7. Station 0+600 to 0+700. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  8. Station 0+700 to 0+800. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  9. Station 0+800 to 0+900. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  10. Station 0+900 to 1+000. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  11. Station 1+000 to 1+100. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
  12. Station 1+100 to 1+200. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.
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  19. Station 1+800 to 1+900. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel. Channel to be constructed on both sides of the existing channel.

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1	Overview - Proposed Overflow Channel
2	Upper Channel Plan and Profile
3	Lower Channel Plan and Profile
4	Proposed Flood Section - Channel, Proposed Flood
E1	Proposed Channel Plan - Upper Channel
E2	Proposed Channel Plan - Lower Channel
E3	Proposed Channel Profile - End Profile

**CONTACTS**

**HYDRAULIC ENGINEER**  
 WHEATSTONE ENGINEERING, INC.  
 65 ALDER STREET  
 CENTRAL POINT, OREGON 97103  
 (503) 261-8144

**CIVIL ENGINEER**  
 WHEATSTONE ENGINEERING, INC.  
 65 ALDER STREET  
 CENTRAL POINT, OREGON 97103  
 (503) 261-8144

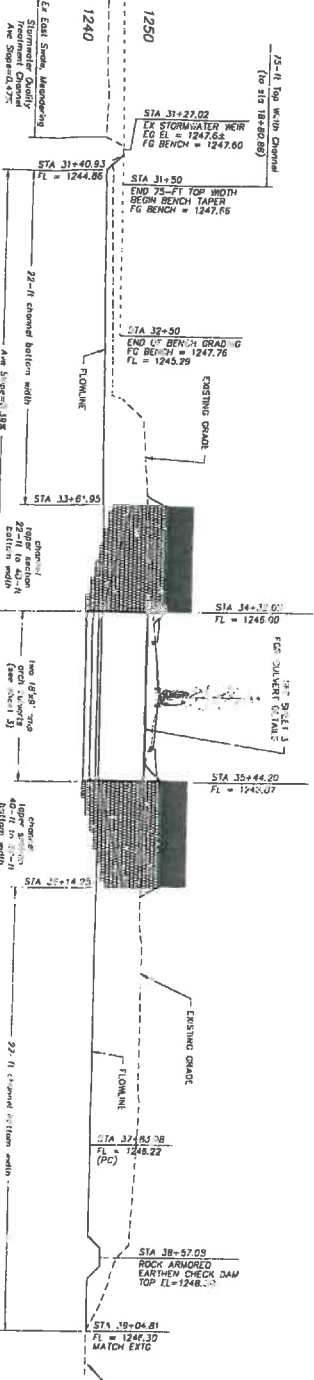
**CENTRAL POINT**  
 CITY ENGINEER  
 100 W. 1ST STREET  
 CENTRAL POINT, OREGON 97103  
 (503) 261-8144



<p><b>CITY OF CENTRAL POINT</b></p> <p><b>GRIFFIN CREEK OVERFLOW FLOOD MITIGATION PLAN</b></p> <p>Conditional Letter of Map Revision</p> <p>Overview - Proposed Overflow Channel</p>		DATE: _____ BY: _____	Drawn By: <i>msd</i> Checked By: <i>msd</i> Date: 2/27/14
		48	
APPROVED BY: _____ APPROVED BY: _____		WHEATSTONE ENGINEERING, INC. OFFICE: (503) 644-8144 wheatstone@griffinqu.com 65 ALDER STREET CENTRAL POINT, OREGON 97103	

30+00  
32+00  
34+00  
36+00  
38+00

**CHANNEL PROFILE**



15'-ft Top Width Channel  
(to 31+84.00)

22'-ft Channel bottom width  
Av. Slope: 1:38

22'-ft Channel bottom width  
Av. Slope: 1:38

22'-ft Channel bottom width  
Av. Slope: 1:38

22'-ft Channel bottom width  
Av. Slope: 1:38

22'-ft Channel bottom width  
Av. Slope: 1:38

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Av. Slope: 1:38

22'-ft Channel bottom width  
Av. Slope: 1:38

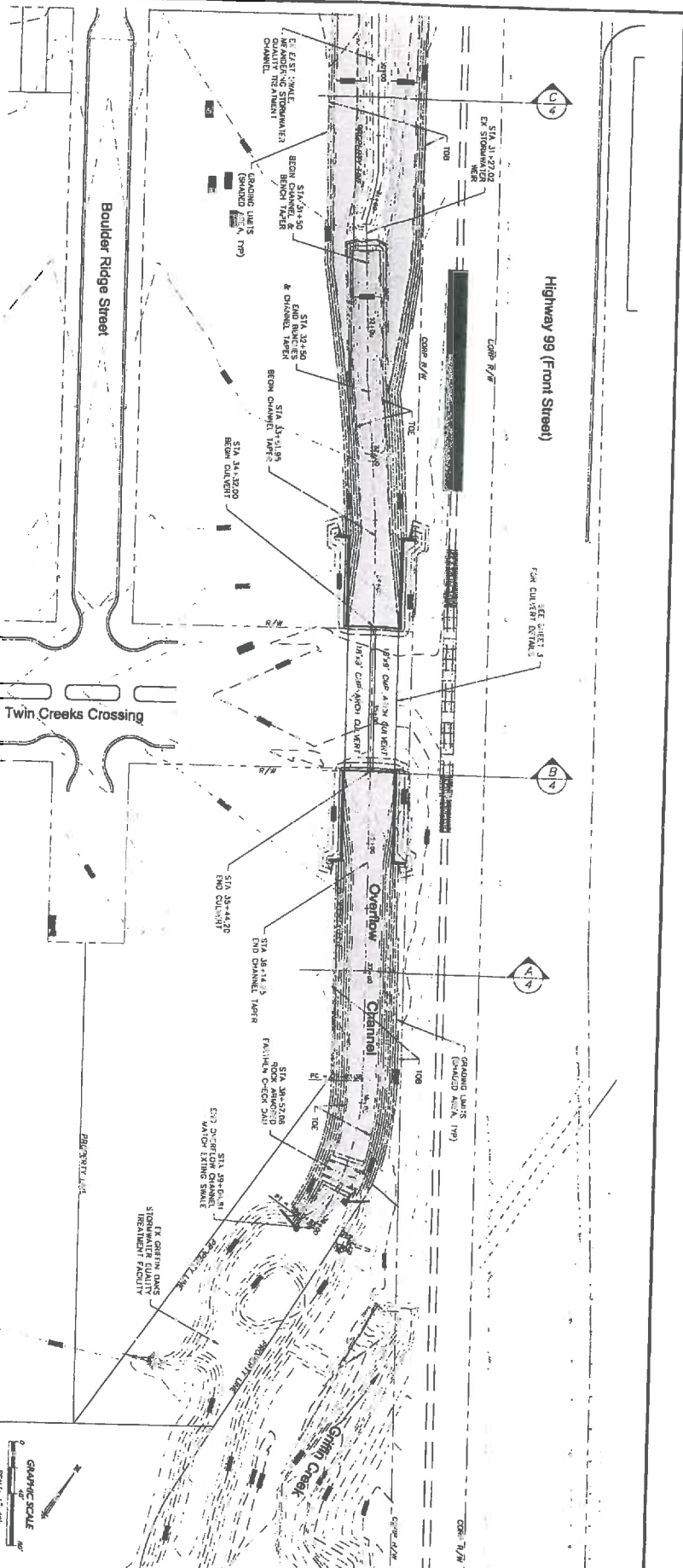
**UPPER CHANNEL PROFILE**

Conceptual Plans  
Not for Construction



**DATUM**  
North American Vertical Datum of 1988 (NAVD 88)

**UPPER CHANNEL PLAN**



**CITY OF CENTRAL POINT**  
**GRIFFIN CREEK OVERFLOW FLOOD MITIGATION PLAN**  
 Conditional Letter of Map Revision  
**Upper Channel Plan & Profile**

NO.	REVISION	DATE	FY

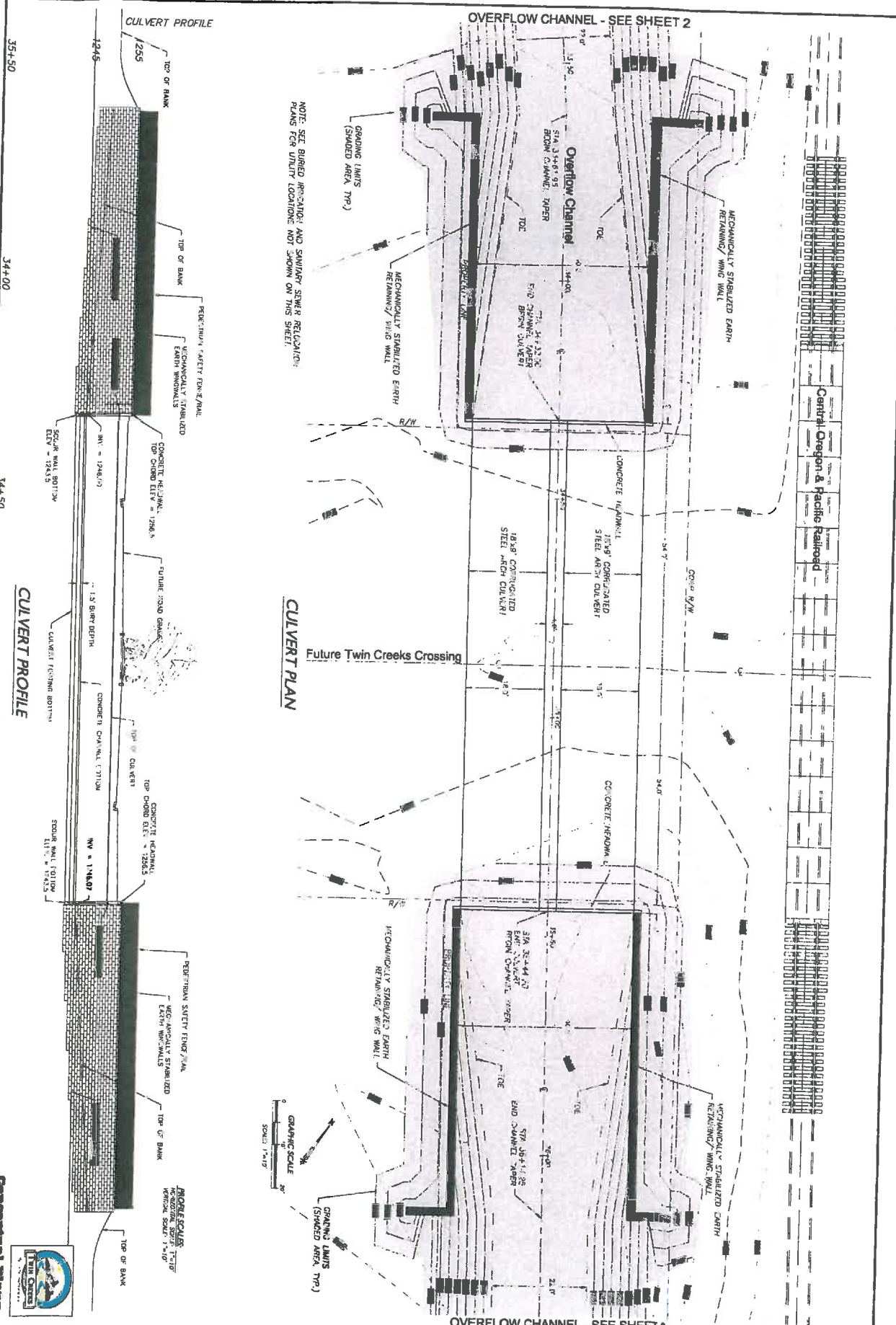
APPROVED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_

49

Drawn By: med  
 Checked By: med  
 Date: 5/27/14

**WHETSTONE ENGINEERING, INC.**  
 OFFICE: 640 664-9364  
 whetstoneengineering@cs.com  
 400 N. HIGH STREET  
 CENTRAL POINT, OREGON 97502





NOTE: SEE BUREAU OF RECONSTRUCTION AND SURVEY STATION RELOCATION PLANS FOR UTILITY LOCATIONS NOT SHOWN ON THIS SHEET.

CULVERT PROFILE

CULVERT PLAN

Geospatial Plans Not for Construction



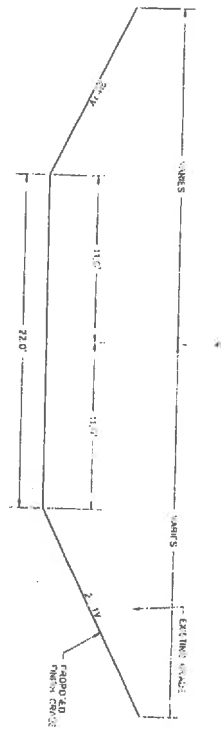
**CITY OF CENTRAL POINT**  
**GRIFFIN CREEK OVERFLOW FLOOD MITIGATION PLAN**  
 Conditional Letter of Map Revision  
 Culvert Plan & Profile



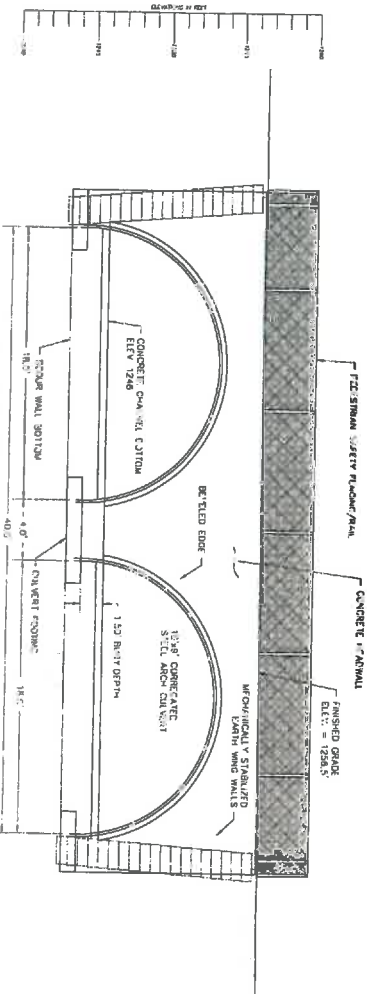
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 APPROVED BY: [Signature]

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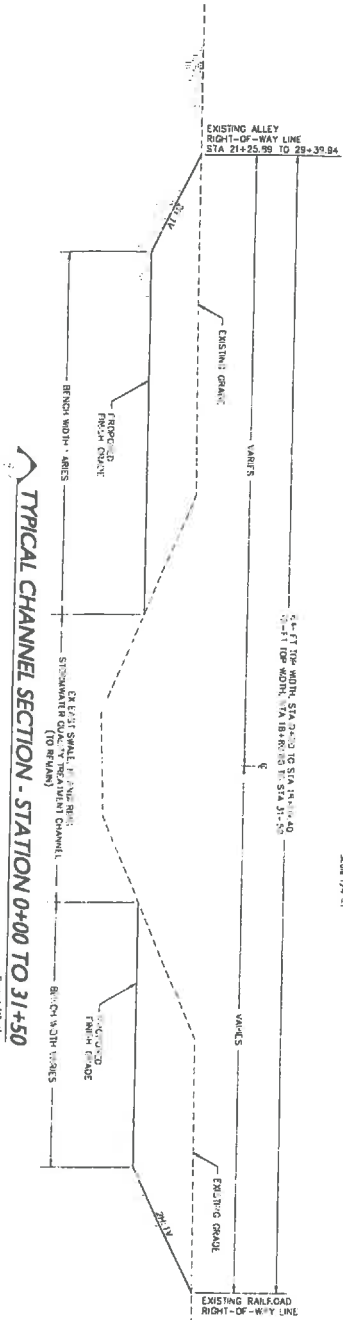
**W HETSTONE ENGINEERING, INC.**  
 OFFICE: (541) 664-9114  
 whetstone@whetstoneeng.com  
 114 ALDER STREET  
 CENTRAL POINT, OREGON 97502



TYPICAL CHANNEL SECTION - STATION 32+50 TO CROSSING & ABOVE  
Scale: 1/2" = 1'



CULVERT HEADWALL ELEVATION  
Scale: 1/2" = 1'



TYPICAL CHANNEL SECTION - STATION 0+00 TO 31+50  
Scale: 1/2" = 1'

Conceptual Plans Not for Construction



**CITY OF CENTRAL POINT**  
**GRIFFIN CREEK OVERFLOW FLOOD MITIGATION PLAN**  
 Conditional Letter of Map Revision  
 Typ Channel Sec/Culvert Headwall Elev

DATE: 3/21/14  
 CHECKED BY: [Signature]  
 DESIGNED BY: [Signature]

NO.	REVISION	DATE	BY
51			

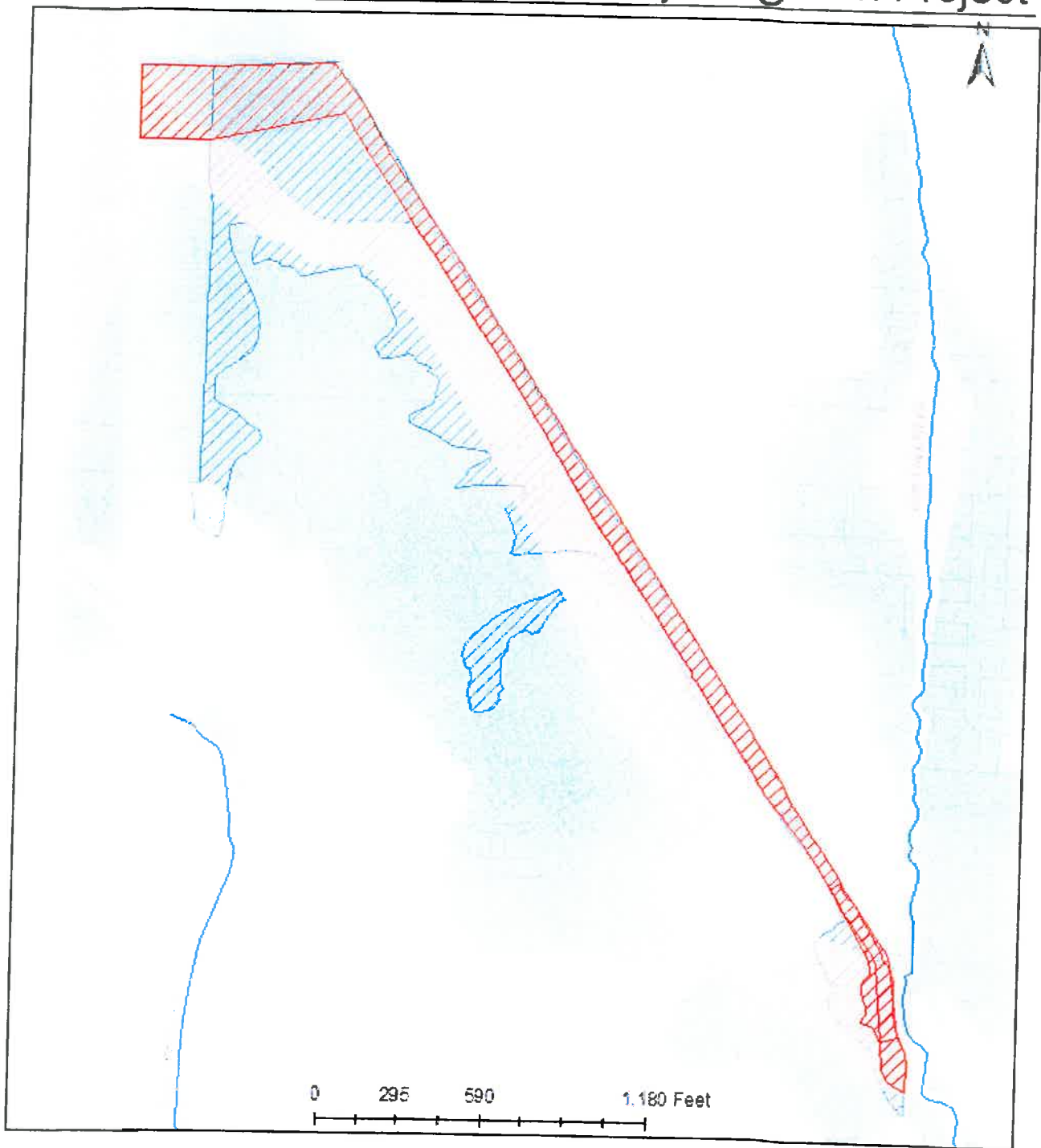
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 APPROVED BY: [Signature]

**WHESTONE ENGINEERING, INC.**  
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 www.whestone-engineering.com  
 605 ALDER STREET  
 CENTRAL POINT, OREGON 97502












# Twin Creeks Floodway Mitigation Project



## Legend

-  cp\_streams
-  Revised\_Floodway\_rev2014
-  Revised\_ZoneAE\_rev2014
-  Revised\_ZoneAH\_rev2014
-  Tax Lots
-  Effective Zone AE
-  Effective Floodway

Source Information:  
FEMA Flood Insurance Rate Map  
Map No. 41029C Panel No. 1768F  
Effective May 3, 2011

Northwest Hydraulic Consultants, Inc.  
Proposed Floodway and Zone AE revisions 2014.

Created by: Stephanie Hotley, CFM  
July 28, 2014



**PLANNING COMMISSION RESOLUTION NO. 806**

**A RESOLUTION OF THE PLANNING COMMISSION APPROVING A FLOODPLAIN DEVELOPMENT PERMIT FOR THE TWIN CREEKS FLOODWAY MITIGATION PROJECT**

**(File No: FP 14001)**

**WHEREAS**, the applicant has submitted a floodplain development application to conduct grading and channel protection activities on property identified on the Jackson County Assessor's map as 37 2W 03CA, Tax Lots 900 and 1600; 37 2W 03DB Tax Lot 900; 27 2W 03BD Tax Lot 4200; 37 2W 03BC Tax Lot 100; 37 2W 03B, Tax Lots 1602 and 1800 in Central Point, OR 97502.

**WHEREAS**, the project site is located in the TOD-OS, Open Space zoning district; and

**WHEREAS**, the application has been found to be consistent with the applicable approval criteria set forth in Chapter 8.24, flood damage prevention standards for floodway development and per conditions noted in the Staff Report dated August 5, 2014; and

**WHEREAS**, on August 5, 2014, at a duly noticed public hearing, the City of Central Point Planning Commission considered the Applicant's request for floodplain development approval for Twin Creeks Floodway Mitigation Project.

**NOW, THEREFORE, BE IT RESOLVED** that the City of Central Point Planning Commission by Resolution No. 806 hereby approves the Twin Creeks Floodway Mitigation Project based on the findings and conditions of approval as set forth in Exhibit "D," the Planning Department Staff Report dated August 5, 2014, including attachments incorporated by reference.

**PASSED** by the Planning Commission and signed by me in authentication of its passage this 5<sup>th</sup> day of August, 2014

\_\_\_\_\_  
Planning Commission Chair

ATTEST:

\_\_\_\_\_  
City Representative