PLANNING COMMISSION AGENDA
City Commission Chambers - City Hall
625 Center Street, Oregon City, Oregon 97045
August 23, 2010 at 7:00 p.m.

The Planning Commission agendas, including staff reports, memorandums, and minutes are available from the Oregon City Web site home page under meetings.(www.orcity.org)

1. CALL TO ORDER

2. PUBLIC COMMENT ON ITEMS NOT LISTED ON AGENDA

3. ADOPTION OF PLANNING COMMISSION MINUTES

a. Adoption of Planning Commission Minutes from June 28, 2010.

4. PLANNING COMMISSION HEARING

a. WR 10-02: Natural Resource Overlay District (Water Resource), US 10-01: Geologic Hazard and VR 10-01: Variance
The applicant, Oregon City Public Works Department, is requesting approval of a Natural Resource Overlay District (NROD) review, Geologic Hazard Overlay District review, Floodplain Management Overlay District review and Variance application for the I-205 / 0R 213 "Jughandle" Transportation Improvement Project.

5. ADJOURN

Video Streaming & Broadcasts: The meeting is streamed live on Internet on the Oregon City's Web site at www.orcity.org and available on demand following the meeting. The meeting can be viewed live on Willamette Falls Television on Channels 23 and 28 for Oregon City and Gladstone residents; Channel 18 for Redland residents; and Channel 30 for West Linn residents. The meetings are also rebroadcast on WFTV. Please contact WFTV at 503-650-0275 for a programming schedule.

City Hall is wheelchair accessible with entry ramps and handicapped parking located on the east side of the building. Hearing devices may be requested from the City Recorder prior to the Commission meeting. Disabled individuals requiring other assistance must make their request known 48 hours preceding the meeting by contacting the Planning Dept. at 503-722-3789.

CITY OF OREGON CITY
PLANNING COMMISSION HEARING

June 28, 2010, 7:00 P.M.
City Commission Chambers - City Hall

1. CALL TO ORDER

Roll Call:	**Staff Present:**
Chair Tim Powell	Tony Konkol, Senior Planner
Commissioner Dan Lajoie	Pete Walter, Associate Planner
Commissioner Carter Stein	Carrie Richter, Assistant City Attorney
Commissioner Chris Groener	
Commissioner Charles Kidwell	

Chair Powell called the meeting to order at 7 p.m.

2. PUBLIC COMMENT ON ITEMS NOT LISTED ON AGENDA

There was no public comment on items not listed on the agenda.

3. ADOPTION OF MINUTES

June 14, 2010 Draft Minutes

June 14, 2010 Draft Minutes

Motion by Commissioner Carter Stein, second by Commissioner Dan Lajoie to to approve the June 14, 2010 Regular Meeting Minutes as submitted.

A roll call was taken and the motion passed with Commissioner Dan Lajoie, Commissioner Carter Stein, Commissioner Chris Groener, Commissioner Charles Kidwell voting aye and Chair Tim Powell abstained. [4:0:1]

4. PLANNING COMMISSION HEARING

CU 10-01 and SP 10-01: Conditional Use and Site Plan and Design Review Application for Atkinson Memorial Church Education Building.

Commission Report

CU 10-01 and SP 10-01 Revised Staff Report

Exhibit 35-Senior Center Parking Lot

Exhibit 36-Occupancy Load Table

Exhibit 37-Occupancy Load Calculation

Chair Powell said the public testimony portion of the hearing was closed and the Commission would discuss the issue and make a decision that night. He asked if there was any conflict of interest, statements, or items to declare. There were none.

Chair Powell watched the video of the last meeting and read the documentation and was prepared to discuss the issue and make a decision.

Pete Walter, Associate Planner, said staff recommended approval of the application. He explained the additional Exhibits 35-37. The staff report included revised findings for the design modification and staff thought it was appropriate for the new wing and there was also approval for the setback of the wing from the right-of-way. Regarding parking, staff prepared a table that summarized the parking analysis. There was no expansion or changes to the uses that were already occuring at the church and the parking requirements had been met. The applicant submitted a rebuttal letter and staff thought the clarifications were appropriate.

Commissioner Carter Stein did not support Condition of Approval 1 because the parking requirements were based on the square footage not the number of students.

Commissioner Groener supported the language suggested in the rebuttal letter for Condition of Approval 2 regarding adding non religious activities.

Commissioner Kidwell thought the use proposed was appropriate.

Condition 2 would address the parking issue. Regarding the architectural style, he thought the building seemed to mimic the Ermatinger House which was an aberration in the neighborhood and should not have been used for the design. He thought it would be acceptable in other parts of the City, but in this location it missed the mark in terms of the architectural style that was dominant in this historic district.

Chair Powell lived in the neighborhood and said it was an eclectic mix. Overall the building fit in the neighborhood. The Historic Review Board and SHPO also approved the design.

Commissioner Carter Stein thought the applicant had been sensitive to the historic structure. The subject of architecture and place was subjective even among architects. The applicant made an honest attempt at providing an architecturally integral design and listened to the public input and made accommodations.

Commissioner LaJoie said the Historic Review Board had expertise and approved the application. This was a new addition and he wanted the distinction between the historic and the new. He thought the design was compatible and materials appropriate.

Chair Powell was concerned about the parking as the Library moved temporarily to the Carnegie, however the church and library would have different hours. He thought it was a good plan and would enhance the neighborhood.

Commissioner LaJoie said regarding Condition 1, he thought they should limit the number of students due to parking issues and potential growth in the future.

There was discussion regarding whether or not to put an enrollment cap on the preschool.

Mr. Walter reviewed all of the Conditions of Approval, which ones had been removed, changed, or remained the same.

Chair Powell was concerned about the access on the alley and lack of visibility due to the fence and trees. Mr. Walter said it could be added to the Conditions of Approval that there was compliance with the clear view triangle requirements of OCMC 10.32.

The Commission agreed to add the conditions as stated by staff.

Motion by Commissioner Carter Stein, second by Commissioner Chris Groener to to approve CU 10-01 and SP 10-01, Conditional Use and Site Plan and Design Review Application for the Atkinson Memorial Church Education Building with the agreed upon revised Conditions of Approval.

A roll call was taken and the motion passed with Chair Tim Powell, Commissioner Dan Lajoie, Commissioner Carter Stein, Commissioner Chris Groener voting aye and Commissioner Charles Kidwell voting no. [4:1:0]

Tony Konkol, Community Development Director, gave an update on the Jughandle project, appeal of the Historic Review Board decision for the Atkinson Memorial Church, parking and circulation studies, Code update, the Cove project, Library move to the Carnegie, and housing authority of Clackamas County application.

6. ADJOURN

Chair Powell adjourned the meeting at 8:05 p.m.

Agenda Item No.
Meeting Date: 23 Aug 2010

COMMISSION REPORT: CITY OF OREGON CITY

TO:	Planning Commission
FROM:	Tony Konkol, Community Development Director
PRESENTER:	Pete Walter, Planner
SUBJECT:	The applicant, Oregon City Public Works Department, is requesting approval of a Natural Resource Overlay District (NROD) review, Geologic Hazard Overlay District review, Floodplain Management Overlay District review and Variance application for the I-205 / OR 213 "Jughandle" Transportation Improvement Project.
Agenda Heading: Public Hearing	
Approved by: Tony Konkol, Community Development Director	

RECOMMENDED ACTION (Motion):

Staff recommends Approval with Conditions.

BACKGROUND:

Please see Attached Staff Report and Recommended Conditions of Approval.

BUDGET IMPACT:

FY(s):
Funding Source:

ATTACHMENTS:

OREGON CITY

Community Development – Planning

221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

TYPE III LAND USE APPLICATION - PLANNING COMMISSION
STAFF REPORT AND RECOMMENDATION

HEARING DATE: August 23, 2010

FILE NO.: WR 10-02: Natural Resource Overlay District (Water Resource)
US 10-01: Geologic Hazard
VR 10-01: Variance

Submitted 6/4/2010
Incomplete: 6/21/2010
Complete: 7/1/2010
120-Day: 10/29/2010

APPLICANT/ OWNER: City of Oregon City Public Works Dept.
Attn: Aleta Froman-Goodrich, P.E.
615 Center Street
Oregon City, Oregon 97045

REPRESENTATIVE:

Mason, Bruce and Girard, Inc.
707 SW Washington St, Ste. 1300
Portland, OR 97205

OBEC Consulting Engineers
225 Mission Street, Ste. 100
Salem, OR 97302-1295

REQUEST: The applicant is requesting approval of a Natural Resource Overlay District (NROD) review, Geologic Hazard Overlay District review, Floodplain Management Overlay District review and Variance application for the I-205 / 0R 213 "Jughandle" Transportation Improvement Project.

LOCATION: Public Right-of-Way in Vicinity of I-205 / OR 213 / Washington Street / Clackamas River Drive Redland Road intersection (See Map, Exhibit 2).

REVIEWERS: Pete Walter, AICP, Associate Planner
Bob Cullison, Development Services Manager

RECOMMENDATION: Approval with Conditions (Exhibit 1).

PROCESS: Pursuant to OCMC 17.50. The decision of the Community Development Director is final unless appealed to the City Commission within ten (10) days following the mailing of this notice. Only persons who commented in writing to the Community Development Director may appeal this limited land use decision. The request for a hearing shall be in writing. The request for a hearing shall demonstrate how the party is aggrieved or how the proposal does not meet the applicable criteria. The application, decision (including specific conditions of approval), and supporting documents are available for inspection at the Oregon City Planning Division. Copies of these documents are available (for a fee) upon request. A city-recognized neighborhood association requesting an appeal fee waiver pursuant to 17.50.290(C) must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal. IF YOU HAVE ANY QUESTIONS ABOUT THIS APPLICATION, PLEASE CONTACT THE PLANNING DIVISION OFFICE AT (503) 722-3789.

I. BACKGROUND:

Project Location

The proposed Project is located in Oregon City, Clackamas County, Oregon. It begins on OR 213 at the I-205 interchange and continues south along OR 213 to the bridge over Redland Road. Portions of the project extend west from OR 213 along Washington Street, east from OR 213 along Clackamas River Drive, and west from OR 213 along Redland Road to Abernethy Road.

Portions of the proposed Project improvements are located within the following three Oregon City Zoning Overlay districts:

1. The Flood Management Overlay District (FMOD), (Exhibit 8).
2. The Natural Resource Overlay District (NROD), (Exhibit 6); and
3. The Geologic Hazard Overlay District (Exhibit 9).

Impacts to these overlay districts are located within existing City public road right-of-way, Oregon Department of Transportation (ODOT) public road right-of-way, and a portion of the Stein Oil property taxlot number 2-2E-29-02700. Currently the portion of Stein Oil property is in the process of being acquired by the City for public road right-of-way.

The area proposed for floodplain and NROD mitigation is within two tax lots (400 and 1400) totaling about 9.6 acres and owned by the Oregon City Urban Renewal Agency abutting the south side of I-205 (Exhibit 2).

Project Overview

As previously indicated, the goal of the project is to improve traffic flow and safety on OR 213 between the I-205 interchange and the Redland Road overcrossing for the following reasons:

- This section of OR 213 is designated as an expressway and serves as an important southeast Portland Metropolitan Area north-south transportation facility.
- To avoid or minimize traffic congestion on OR 213 caused by traffic backing up from the Washington Street/Clackamas River Drive intersection to the I-205 interchange and the mainline freeway.
- To allow for continued development along this section of OR 213 and the surrounding area, which is within the City limits and the urban growth boundary of the Portland Metropolitan Area.

The proposed Project includes realignment of Washington Street and Clackamas River Drive to cross under OR 213 at a new overcrossing bridge. A roundabout will be added along Clackamas River Drive east of OR 213. These modifications combine to create a jughandle intersection configuration that eliminates left-turn and east-west cross movements at the OR 213 intersection, reducing the signal phases from eight to two. The project also involves roadway widening and lane realignments on OR 213 to accommodate three travel lanes in each direction and both southbound (SB) and northbound (NB) right-turn lanes at the jughandle intersection.

The OR 213 roadway and the new bridge will be constructed to accommodate 12-foot-wide travel lanes, 10-foot shoulder widths (includes 2 feet shy distance), and an 8-foot-wide median.

Additional improvements involve roadway widening to accommodate the upgrade of the NB left-turn lane at the Redland Road intersection, the construction of a SB right-turn lane at the Redland Road intersection, and widening and lane realignment changes to Redland Road. Redland Road will be widened to provide two 12-foot travel lanes approaching OR 213, one 12-foot travel lane approaching Abernethy Road, one 14-foot median, and two 6-foot shoulders.

Floodplain and Floodway

The project involves lands currently mapped within the designated flood management areas. As a result, the project has been designed to be consistent with all applicable flood management area standards outlined in OCMC § 17.42.170, as discussed below.

Wetlands and Water Resources

The project will impact mapped streams, wetlands and ditches regulated by the City and State. The applicant has delineated all of the wetlands, ditches and streams that will be impacted by the project (Exhibit 6). The City's Natural Resource Overlay District (OCMC 17.49) protects these resources by requiring review, impact analysis and mitigation of impacts.

Other Jurisdiction Permits

Separate permits have been applied for from the Oregon Department of State Lands (DSL), US Army Corps of Engineers (ACOE), Oregon Dept of Environmental Quality (DEQ), Oregon Department of Transportation (ODOT), and State Historic Preservation Office (NPS-SHPO – See Exhibit 13)).

II. BASIC FACTS:

1. **Zoning/Permitted Use:** Adjacent Zoning of Properties abutting the project areas is shown in Exhibit _. The adjacent zoning is MUD – Mixed Use Downtown, GI – General Industrial (e.g. Metro transfer facility, properties along Park Place Court), and C- General Commercial (the Stein Oil site).

2. **Public Notice and Comments:** Notice of the proposed subdivision with details of the development and requesting comments was mailed to property owners within 300 feet of the subject site on July 23rd, 2010. On August 2nd and 3rd, 2010, the project area was posted with Notice of Land Use Action signs within the existing Public Right-of-Way requesting comments. A Notice of Public Hearing was posted in the Clackamas Review on July 21, 2010. Notice and Details of the application were uploaded to the Planning Division website at www.orcity.org/planning/landuse.

   As of the date of this staff report, no comments have been received from the general public regarding this application.

3. **Agency, CIC and City Department Comments.**

   The application was transmitted to the following agencies and the Citizen Involvement Council for comment on July 29, 2010: US Army Corps of Engineers (ACOE), Oregon Department of Environmental Quality (DEQ), Oregon Department of State Lands (DSL), Oregon Department of Transportation (ODOT), Metro, and Clackamas County.

   METRO indicated no conflicts with this application (Exhibit 15). ODOT did not provide a response for inclusion in the Staff Report. Clackamas County did not respond.

   The Citizen Involvement Council (CIC) has not indicated any conflicts with the application.

   The City of Oregon City Development Services Division Manager and Public Works Operations Manager indicated no conflicts with this application. Their comments have been included in this report where applicable.

III. COMPLIANCE WITH APPROVAL CRITERIA

DECISION-MAKING CRITERIA:

This review is primarily an overlay district review. All of the proposed improvements will be in existing public right-of-way, or right-of-way that in the process of being dedicated in order to implement the project.

The following Municipal Code Standards and Requirements apply:

Title 17, Zoning:

Chapter 17.50, Administration and Procedures
Chapter 17.41, Tree Protection
Chapter 17.42, Flood Management Overlay District
Chapter 17.44, Geologic Hazards Overlay District
Chapter 17.49, Natural Resource Overlay District
Chapter 17.60, Variances
Chapter 12.08, Public and Street Trees

CHAPTER 17.50 ADMINISTRATION AND PROCEDURES

This chapter provides the procedures by which Oregon City reviews and decides upon applications for all permits relating to the use of land authorized by ORS Chapters 92, 197 and 227. These permits include all form of land divisions, land use, limited land use and expedited land division and legislative enactments and amendments to the Oregon City comprehensive plan and Titles 16 and 17 of this Code.

Finding: Complies as Proposed. This application was reviewed pursuant to the relevant procedures required by Chapter 17.50, including Planning Commission review of the overlay district requirements, public notice and comment, and recommended conditions of approval. Any appeal, request for reconsideration, or modification of this application shall be processed in accordance with the applicable procedures required by Chapter 17.50.

17.50.030 - Summary of the city's decision-making processes.

The following decision-making processes chart shall control the City's review of the indicated permits:
C. Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not required to be heard by the city commission, except upon appeal. In the event that any decision is not classified, it shall be treated as a Type III decision. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the planning commission or the historic review board hearing is published and mailed to the applicant, recognized neighborhood association(s) and property owners within three hundred feet. Notice must be issued at least twenty days pre-hearing, and the staff report must be available at least seven days pre-hearing. At the evidentiary hearing held before the planning commission or the historic review board, all issues are addressed. The decision of the planning commission or historic review board is appealable to the city commission, on the record. The city commission decision on appeal from the historic review board or the planning commission is the city's final decision and is appealable to LUBA within twenty-one days of when it becomes final.

Finding: the applicant is applying for a Type III review, since the application requests both an adjustment from adopted NROD mitigation standards pursuant to OCMC 17.49.200, as well as a variance to the Geologic Hazard Overlay District cut and fill standards of OCMC 17.44.060.D. The respective approval criteria for the NROD adjustment are in OCMC 17.49.200 and the grounds for approval of the variance are in OCMC 17.60.030.

17.50.050 - Preapplication conference and neighborhood meeting.

Finding: Complies as Proposed. The applicant attended a pre-application conference PA 10-12 with the Planning Division staff on April 23, 2010. The applicant also presented the project to the Citizen Involvement Council at a meeting on March 1, 2010. In addition the applicant has done extensive public outreach including several open houses, a project website (http://www.jughandleproject.com/), and has presented details of the project to the City Commission and Urban Renewal Commission.

17.50.090 - Public notices.

All public notices issued by the city with regard to a land use matter, announcing applications or public hearings of quasi-judicial or legislative actions, shall comply with the requirements of this section.
Notice of Public Hearing on a Type III or IV Quasi-Judicial Application. Notice for all public hearings concerning a quasi-judicial application shall conform to the requirements of this subsection. At least twenty days prior to the hearing, the city shall prepare and send, by first class mail, notice of the hearing to all record owners of property within three hundred feet of the subject property and to any city-recognized neighborhood

association whose territory includes the subject property. The city shall also publish the notice in a newspaper of general circulation within the city at least twenty days prior to the hearing.

Finding: Complies as Proposed. Notice of the public hearing for this application was provided pursuant to this section. Mailed Notice within 300' of the project area was sent out on July 23, 2010 (Exhibit 5). Copies of the application were transmitted to the Citizen Involvement Committee and affected agencies on July 29, 2010. The notice was published in the *Clackamas Review/Oregon City News* on July 21, 2010 (Exhibit 4). Finally, staff completed the posting of Land Use Notices in visible locations in the public ROW throughout the project site on August 3, 2010. All notices we sent or posted 20 days prior to the August 23, 2010 hearing.

Chapter 17.41 TREE PROTECTION STANDARDS

The applicant has prepared a Tree Removal Narrative in response to the requirements of this section and OCMC 12.08 – Public and Street Trees (Exhibit 7).

This narrative provides preliminary information regarding the number of trees that will be removed during construction activities. A complete tree survey will be conducted to accurately assess the total number, caliper, and location of trees to be removed. This information will be provided to the City for approval prior to the Planning Commission's review on August 23.

17.41.010 - .040 Tree Protection.

New development shall be designed in a manner that preserves trees to the maximum extent practicable. As a requirement of any Type II land use application, the siting of structures, roadways and utility easements shall provide for the protection of tree resources to the maximum extent practicable. This applies to all subdivision, partition and site plan and design review applications.

Finding: The applicant has indicated the proposed removal of approximately 195 trees within the construction area of the project. Many of these trees fall within the city's mapped NROD boundary, however the majority of these trees were planted as formal landscaping, rather than part of a natural vegetation or stream buffer. Due to the scale of the project and the complexity of determining whether a regulated tree is within or outside of the NROD boundary, the applicant has prudently chosen to demonstrate compliance with both the tree removal and mitigation standards of OCMC 17.41 -Tree Protection, as well as 17.49 – Natural Resource Overlay District. Compliance with 17.41 is demonstrated below.

17.41.050 Same--Compliance options.

Applicants for review shall comply with these requirements through one of the following procedures:
A. Option 1 - Mitigation. Retention and removal of trees, with subsequent mitigation by replanting pursuant to Sections 17.41.060 or 17.41.070; or
B. Option 2 -- Dedicated Tract. Protection of trees or groves by placement in a tract within a new subdivision or partition plat pursuant to Section 17.41.080, or
C. Option 3 -- Restrictive Covenant. Protection of trees or groves by recordation of a permanent restrictive covenant pursuant to Section 17.41.090.

Finding: based on the scope of work proposed for this project, the applicants have opted to comply with the tree protection standards through Option 1, Mitigation. The Applicant has identified all trees to be protected and removed within the project area, and is providing mitigation for the removed trees by replanting pursuant to the tree protection requirements.

17.41.060 Tree removal and replanting--Mitigation (Option 1).

Regulated trees that are removed outside of the construction area, if removed shall be replanted with the number of trees specified in Column 1 of Table 17.41.060-1. Regulated trees that are removed within the construction area shall be replanted with the number of replacement trees required in Column 2.
Table 17.41.060-1
Tree Replacement Requirements

Size of tree removed (DBH)	*Column 1 Number of trees to be planted. (If removed **Outside** of construction area)*	*Column 2 Number of trees to be planted. (If removed **Within** the construction area)*
6 to 12"	*3*	*1*
13 to 18"	*5*	*2*
19 to 24"	*8*	*3*
25 to 30"	*10*	*4*
31 and over"	*15*	*5*

Finding: Complies with Conditions. As stated by the applicant, it is currently anticipated that the Applicant will be required to remove approximately 195 regulated trees from within the project construction area. Tree removal will occur throughout the project area in order to accommodate roadway widening and realignment as well as the construction of a temporary access road to the proposed mitigation site.

In accordance with OCMC § 17.41.060, the Applicant will plant replacement trees for all regulated trees that are removed from within the construction area at the prescribed ratios based on the diameter at breast height (DBH) of the removed trees. The total DBH of the removed trees will be obtained during the tree survey. This information will be compiled upon survey completion and provided to the City for review and approval. Currently, the Applicant is proposing to plant approximately 3,584 trees, or approximately 762 trees and 436 shrubs per acre within the NROD mitigation area. This quantity will likely exceed the minimum requirements specified in OCMC Table 17.41.060-1. All proposed trees were selected from the approved Oregon City Native Plant List. Please refer to the Applicant's Natural Resource Overlay District (NROD) Mitigation Plan for further details on tree species to be planted as mitigation. The applicant shall provide a final tree removal and mitigation plan for approval by the Planning Division upon completion of the final tree inventory for the site. The **Applicant can meet this standard through compliance with Conditions of Approval 6 and 7.**

17.41.070 Planting area priority for mitigation (Option 1).

Development applications which opt for removal of trees with subsequent replanting pursuant to Section 17.41.050A. shall be required to mitigate for tree cutting by complying with the following priority for replanting standards C.1.—4. below:
A. First Priority. Replanting on the development site. First priority for replacement tree locations shall be planting on-site.
B. Second Priority. Off-site replacement tree planting locations. If the community development director determines that it is not practicable to plant the total number of replacement trees on-site, a suitable off-site planting location for the remainder of the trees may be approved that will reasonably satisfy the objectives of this section. Such locations may include either publicly owned or private land and must be approved by the community development director.
C. Third Priority. Cash-in-lieu of planting (tree bank/fund). If an appropriate off-site location cannot be found, the community development director may approve the payment of cash-in-lieu into a dedicated fund for the remainder of trees that cannot be planted in the manner described above:

1. A tree bank is hereby created which may include the following: Tree and nursery stock in an acceptable condition, to be planted and maintained in storage for future planting or transplanting. Monies paid into the tree fund shall be used exclusively for the purpose of purchase and planting of trees on public and private property in lieu of planting actual trees as determined by the community development director.
2. The cash-in-lieu payment per tree shall be as listed on the adopted fee schedule as adjusted for the Consumer Price Index (Index). The price shall include the cost of installation.
3. The amount of the cash-in-lieu payment into the tree bank shall be calculated as the difference between the value of the total number of trees an applicant is required to plant, including cost of installation and adjusted for Consumer Price Index, minus the value of the trees actually planted.

Finding: Complies with Condition. As stated by the applicant, due to project site restrictions and property ownership, the Applicant is proposing to utilize an off-site replacement tree planting location. This City-owned property is located between the UPRR tracks and I-205 (northeast of the Metro Transfer Station property). The tree replacement activities will be conducted in conjunction with the required NROD and Flood Management Overlay District (FMOD) mitigation. Please refer to the applicant's NROD Mitigation Plan for further details.

Prior to approval of final as-built drawings for the project, the applicant shall prepare a final tree removal and mitigation plan for review by the Planning Division. The tree removal and mitigation plan shall take into account any opportunities to replant trees both within and abutting the ROW of the project site pursuant to Priority One of this section, in addition to replanting off-site mitigation areas. **Applicant can meet this standard through Condition of Approval 6.**

17.41.130. Regulated Tree Protection Procedures During Construction.

No permit for any grading or construction of public or private improvements may be released prior to verification by the Community Development Director that regulated trees designated for protection or conservation have been protected according to OCMC 17.41.130(B). No trees designated for removal shall be removed without prior written approval from the Community Development Director.

Tree protection measures have been identified on the attached Preliminary Tree Removal and Mitigation Plan. The project conforms to the following tree protection standards as outlined in OCMC § 17.41.130(B)(1-10):

1: Except as otherwise determined by the community development director, all required tree protection measures set forth in this section shall be instituted prior to any development activities, including but not limited to clearing, grading, excavation or demolition work, and such measures shall be removed only after completion of all construction activity, including necessary landscaping and irrigation installation, and any required plat, tract, conservation easement or restrictive covenant has been recorded.

Finding: Complies as proposed. The Applicant shall install all required tree protection measures prior to commencing construction activities, and will remove all installed tree protection measures upon project completion.

2: Approved construction fencing, a minimum of 4 feet tall with steel posts placed no farther than 10 feet apart, shall be installed at the edge of the tree protection zone or dripline, whichever is greater. An alternative dripline fencing material secured by metal posts staked at no more than 4 feet on center around the dripline of the tree or grove may be used with the approval of the community development director.

Finding: Complies as proposed. The Applicant will utilize existing roadway fences where available to protect existing trees that will not be removed during construction activities. Where necessary, new fencing will be installed and removed following project completion. All fencing will be a minimum of 4 feet tall with steel posts placed no farther than 10 feet apart.

3: Approved signs shall be attached to the fencing stating that inside the fencing is a tree protection zone, not to be disturbed unless prior approval has been obtained from the community development director.

Finding: Complies as proposed. The Applicant shall provide appropriate signage along newly installed and existing fences proposed for tree protection, to deter unauthorized disturbance.

4: No construction activity shall occur within the tree protection zone, including, but not limited to, dumping or storage of materials such as building supplies, soil, waste items; nor passage or parking of vehicles or equipment.

Finding: Complies as proposed. No construction activities are proposed within the tree protection zone. All staging and stockpiling will occur outside of the tree protection zone, in an approved upland location.

5: The tree protection zone shall remain free of chemically injurious materials and liquids such as paints, thinners, cleaning solutions, petroleum products, and concrete or dry wall excess, construction debris, or run-off.

Finding: Complies as proposed. The Applicant does not propose to dispose of chemicals or other construction debris within the tree protection zone. These materials will be discarded in an approved upland location.

6: No excavation, trenching, grading, root pruning or other activity shall occur within the tree protection zone unless directed by an arborist present on-site and approved by the community development director.

Finding: Complies as proposed. All proposed tree protection measures will be implemented prior to construction to preclude any construction activities from occurring within the tree protection zone.

7: No machinery repair or cleaning shall be performed within 10 feet of the dripline of any trees identified for protection.

Finding: Complies as proposed. All equipment repair and cleaning will be performed at a distance greater than 10 feet from the dripline of all trees proposed for protection.

8: Digging a trench for placement of public or private utilities or other structure within the critical root zone of a tree to be protected is prohibited. Boring under or through the tree protection zone may be permitted if approved by the community development director and pursuant to the approved written recommendations and on-site guidance and supervision of acertified arborist.

Finding: Complies as proposed. No excavation within the critical root zone of the protected trees is proposed. All excavation will occur at a distance far enough away to avoid damaging the protected trees.

9: The City may require that a certified arborist be present during any construction or grading activities that may affect the dripline of trees to be protected.

Finding: Complies as proposed. No grading or construction activities are proposed that will disturb the dripline of protected trees. If changes to the site design require that activities occur within a distance close

enough to the tree protection zone that it might result in adverse impacts, the Applicant shall contact a certified arborist to oversee and monitor construction activities.

10: The community development director may impose conditions to avoid disturbance to tree roots from grading activities and to protect trees and other significant vegetation identified for retention from harm. Such conditions may include, if necessary, the advisory expertise of a qualified consulting arborist or horticulturist both during and after site preparation, and a special maintenance/management program to provide protection to the resource as recommended by the arborist or horticulturist.

Finding: Conditionally Complies. As indicated within Response 9, no grading or construction activities shall commence prior to verification by the Planning Division that adequate tree protection fences and measures have been installed pursuant to OCMC 17.41.130(B). All contractors working on the site shall receive a copy of Section 17.41.130(B) and the tree protection plan at the city pre-construction meeting. If modifications to the site design result in the need to conduct activities within the critical root zone of a protected tree, the Applicant shall implement all necessary precautionary measures to avoid or minimize unauthorized impacts to protected trees. **Applicant can assure this standard is met through Compliance with Condition of Approval 3.**

Chapter 17.42 - FLOOD MANAGEMENT OVERLAY DISTRICT

17.42.020 - Applicability.
A. This chapter shall apply to development in the flood management overlay district, which may also be referred to as the "floodplain overlay district" in this Code. The flood management overlay district includes all areas of special flood hazards and all flood management areas within the city. The overlay district restricts the uses that are allowed in the base zone by right, with limitations, or as provisional uses.
B. The flood management areas which have been mapped include the following locations:
1. Land contained within the one-hundred-year floodplain, flood area and floodway as shown on the Federal Emergency Management Agency Flood Insurance Maps dated June 17, 2008, including areas of special flood hazard pursuant to Section 17.42.040 and the area of inundation for the February 1996 flood; and
2. Lands that have physical or documented evidence of flooding within recorded history based on aerial photographs of the 1996 flooding and/or the water quality and flood management areas maps.
C. The standards that apply to the flood management areas apply in addition to state or federal restrictions governing floodplains or flood management areas.

Finding: The project involves lands currently mapped within the designated flood management areas. As a result, the project has been designed to be consistent with all applicable flood management area standards outlined in OCMC § 17.42.170, as discussed below.

17.42.030 - Basis for establishing the areas of special flood hazard.
The areas or special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for Clackamas County, Oregon and Incorporated Areas," dated June 17, 2008, with accompanying flood insurance maps is adopted by reference and declared to be a part of this chapter. The flood insurance study is on file at the office of the city recorder in the city hall.

17.42.080 - Administration.

This chapter establishes a flood management overlay district, which is delineated on the water quality and flood management areas map attached and incorporated by reference as a part of this document.
A. The following maps and studies are adopted and declared to be a part of this chapter. These maps are on file in the office of the city recorder:
1. The Water Quality and Flood Management Areas Map, dated June 7, 1999;
2. The Federal Insurance Administration, Flood Insurance Rate Maps for Clackamas County, Oregon and Incorporated Areas dated June 17, 2008;
3. The Federal Insurance Administration (FIA) "Flood Insurance Rate Maps for Clackamas County, Oregon and Incorporated Areas," dated June 17, 2008.
B. Applicants are required to provide the city with a delineation of the flood management areas on the subject property as part of any application. An application shall not be complete until this delineation is submitted to the city.
C. The city shall review the water quality and flood management areas maps during periodic review as required by ORS 197.633 (1997).
D. Development Permit.
1. A development permit shall be obtained before construction or development begins within any portion of the flood management overlay district. The permit shall be for all structures, including manufactured homes and all other development, including fill and other activities, as set forth in Chapter 17.04 (Definitions).
2. Application for a development permit shall be made on forms furnished by the community development department. Requirements may include, but are not limited to: plans in duplicate drawn to scale showing the nature, location, dimensions and elevations of the area in question; existing or proposed structures, fill, storage materials, drainage facilities; and the location of the foregoing.
3. The following information is specifically required:
a. Elevation in relation to mean sea level of the lowest floor (including basement) of all structures;
b. Elevation in relation to mean sea level to which any structure has been floodproofed;
c. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in Section 17.42.170E.5.; and
d. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

Finding: The project involves lands currently mapped within the designated flood management areas. The project involves excavation and fill. As a result, the project has been designed to be consistent with all applicable flood management area standards outlined in OCMC § 17.42.170, as discussed below.

17.42.120 - Alteration of watercourses.
A. Notify adjacent communities and the department of land conservation and development prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.
B. Require that maintenance is provided within the altered or relocated portion of the watercourse so that the flood-carrying capacity is not diminished.

17.42.160 - Flood management area standards.
A. Uses Permitted Outright:
1. Excavation and fill required to plant any new trees or vegetation.
2. Restoration or enhancement of floodplains, riparian areas, wetland, upland and streams that meet federal and state standards provided that any restoration project which encroaches on the floodway complies with the requirements of Section 17.42.190 (Floodways).
B. Provisional Uses.

1. All uses allowed in the base zone or existing flood hazard overlay zone are allowed in the flood management overlay district subject to compliance with the development standards of this section.
C. Prohibited Uses.
1. Any use prohibited in the base zone;
2. Uncontained areas of hazardous materials as defined by the Department of Environmental Quality.

Finding: transportation and road improvements are permitted in the base zones affected by the project, and are a provisional use subject to flood management review.

17.42.160 - Flood management area standards. - D. Site Development Standards.
All development in the floodplain shall conform to the following balanced cut and fill standards:
1. This subsection does not apply to work necessary to protect, repair, maintain or replace existing structures, utility facilities, roadways, driveways, accessory uses and exterior improvements in response to emergencies provided that, after the emergency has passed, adverse impacts are mitigated in accordance with applicable standards.

Finding: Complies as proposed. According to the applicant, the project will require some maintenance and repair activities along existing roadways; however, these activities are not in response to an emergency situation. As a result, these activities have been designed to be consistent with the flood management area standards, and all adverse impacts will be mitigated.

2. No net fill in any floodplain is allowed. All fill placed in a floodplain shall be balanced with at least an equal amount of soil material removed. For the purposes of calculating net fill, fill shall include any structure below the design flood elevation that has been floodproofed pursuant to subsection E.5. of this section.

Finding: Complies as proposed. According to the applicant, the project will require approximately 21,000 cubic yards (CY) of net fill below the design flood elevation (50.7 feet). Fill activities are associated with grading activities required to accommodate new roadway alignments and existing roadway widening. As mitigation, the Applicant is proposing to balance the fill with approximately 21,000 CY of cut. In addition, the Applicant is proposing to provide an additional 25,000 CY of excavation within the mitigation area, to be banked for future use by the City for floodplain compensation on subsequent projects.

3. Any excavation below bankfull stage shall not count toward compensating for fill.

Finding: Complies as proposed. According to the applicant, the bankfull stage for the project area has been determined to be at 29 feet. No excavation below this elevation will occur within the mitigation area. Therefore, no excavation below the bankfull stage is being proposed as compensation for the 21,000 CY of fill below the design flood elevation.

4. Excavation to balance a fill shall be located on the same parcel as the fill unless it is not practicable to do so. In such cases, the excavation shall be located in the same Oregon City floodplain, so long as the proposed excavation and fill will not increase flood impacts for surrounding properties as determined through hydrologic and hydraulic analysis.

Finding: Complies as proposed. According to the applicant, due to project location, right-of-way size and layout, and property ownership issues, the excavation to balance proposed fill activities cannot be located on the same parcel; however, it will be located within the same City floodplain. The mitigation area is north of the Union Pacific Railroad between the railway and I-205 on a property currently owned by the City. The

proposed excavation and fill will not increase flood impacts for surrounding properties or modify the existing hydrological regime of the surrounding wetlands.

5. For excavated areas identified by the city to remain dry in the summer, such as parks or mowed areas, the lowest elevation of the excavated area shall be at least six inches above the winter "low water" elevation, and sloped at a minimum of two percent towards the protected water feature pursuant to Chapter 17.49. One percent slopes will be allowed in smaller areas.

6. For excavated areas identified by the city to remain wet in the summer, such as a constructed wetland, the grade shall be designed not to drain into the protected water feature pursuant to Chapter 17.49.

Finding: Complies as proposed. According to the applicant, the proposed excavation site has been designed to provide both upland and wetland habitats on the City-owned property adjacent to I-205. The lowest elevations may remain wet during the summer months, particularly during normal to high water year precipitation levels. The site will consist of the excavation of existing woody and mixed fill materials at a depth ranging from 7 to 14 feet. Hydrology within the wetland areas will be maintained by subsurface groundwater flows as well as surface flows from the adjacent upland areas. The side slopes of the excavated area will be graded at a 3:1 slope to facilitate water movement towards the proposed wetland areas. Please refer to the applicant's NROD Mitigation Plan for further details.

7. Parking areas in the floodplain shall be accompanied by signs that inform the public that the parking area is located in a flood management area and that care should be taken when the potential for flooding exists.

Finding: Not applicable. No new parking areas are being constructed as a component of this Project.

8. Temporary fills permitted during construction shall be removed at the end of construction, thirty days after subdivision acceptance or completion of the final inspection.

Finding: Complies as proposed. According to the applicant, there will be temporary fill within the designated flood management areas associated with the project. All temporary fills shall be removed at the end of the construction period.

9. New culverts, stream crossings and transportation projects shall be designed as balanced cut and fill projects or designed not to significantly raise the design flood elevation. Such projects shall be designed to minimize the area of fill in flood management areas and to minimize erosive velocities. Stream crossings shall be as close to perpendicular to the stream as practicable. Bridges shall be used instead of culverts wherever practicable.

Finding: Complies as proposed. According to the applicant, only one new culvert is proposed as a component of this project. This culvert shall be placed in Stream 15 to accommodate required grading for the widening along Clackamas River Drive. Stream 15 runs along the east side of the Clackamas River Drive roadway fill for several hundred feet (Sheet 1). Because the current stream alignment is parallel to the existing roadway, and the required catch lines will extend beyond the limits of the stream, a 5-foot wide, by approximately 345-foot long culvert will be installed to convey stormwater flows beneath the roadway fill. The proposed culvert has been sized to be consistent with the existing 60-inch pipe that currently extends south beyond the project area. Stream flows from the newly installed culvert will flow into the existing culvert and off-site before discharging into the unnamed tributary to Abernethy Creek. To avoid a significant rise in the design flood elevation, the proposed and existing culverts are appropriately sized to allow for the passing of the 100-year storm event.

10. Excavation and fill required for the construction of detention facilities or structures, and other facilities, such as levees, specifically shall be designed to reduce or mitigate flood impacts and improve water quality. Levees shall not be used to create vacant buildable lands.

Finding: Not applicable. No such structures are proposed as a component of the project.

Chapter 17.47 - EROSION AND SEDIMENT CONTROL

17.47.070 Erosion and sediment control plans.

A. An application for an erosion and sediment control permit shall include an erosion and sediment control plan, which contains methods and interim measures to be used during and following construction to prevent or control erosion prepared in compliance with City of Oregon City public works standards for erosion and sediment control. These standards are incorporated herein and made a part of this title and are on file in the office of the city recorder.

Finding: Complies as proposed. The applicant has provided a preliminary erosion and sediment control plan that appears to meet this standard. Compliance with 17.47 will be provided to during the construction review process.

CHAPTER 17.49 - NATURAL RESOURCE OVERLAY DISTRICT

The findings in the section document the proposed project's compliance with the OCMC Municipal Code 17.49 – Natural Resource Overlay District (NROD).

The applicant prepared and submitted a Water Resource Report, Wetland / Water Feature Delineation, Mitigation Plan and Report, and associated materials (Exhibit 6). The report was prepared by Kristin Currens of the Environmental Consulting Firm Mason Bruce and Gerard (MBG).

The applicant's report and mitigation plan was independently reviewed for concurrence with OCMC 17.49 by the wetland and NROD consultant firm David Evans and Associates (Exhibit 10).

The applicant is requesting an adjustment to a standard of OCMC 17.49; therefore a Type III application review process is requested.

17.49.[0]30 Map as reference.

This chapter applies to all development within the Natural Resources Overlay District as shown on the NROD Map, which is a regulatory boundary mapped ten feet beyond the required vegetated corridor width specified in Section 17.49.110. The map can only be amended by the city commission. Verification of the map shall be processed pursuant to Section 17.49.250.

Finding: The applicant has referenced the adopted NROD map in relation to the project area (Exhibit 6h). The Applicant has elected to provide a verifiable delineation rather than using the existing NROD buffer. Section 17.40.250 permits verification of the boundary through a site-specific survey. The Applicant has completed a wetland delineation and identified the existing NROD overlay area compared with the delineated features. DEA has reviewed the delineation prepared by the Applicant. Based on aerial photos, it appears that the delineation identifies the specific NROD features in the vicinity of the project. Generally, the applicant also identifies the required the width of buffer applied to the NROD resource as described in Table 17.49.110 (see below).

17.49.[0]35 Addition of wetlands to map following adoption.

The NROD boundary shall be expanded to include a wetland identified during the course of a development permit review if it is within or partially within the mapped NROD boundary and meets the State of Oregon's definition of a "Locally Significant Wetland". In such cases the entire wetland and its required vegetated corridor as defined in Table 17.49.110 shall be regulated pursuant to the standards of this chapter. The NROD boundary shall be added to the NROD map by the community development director after the development permit becomes final.

Finding: The application includes wetlands identified as part of the on-site delineation that within or partially within the NROD buffer and the width of the vegetated corridor has been expanded to include them.

17.49.[0]40 NROD permit.

An NROD permit is required for those uses regulated under Section 17.49.[0]90, Uses Allowed under Prescribed Conditions. An NROD permit shall be processed under the Type II development permit procedure, unless an adjustment of standards pursuant to Chapter 17.49 is requested or the application is being processed in conjunction with a concurrent application or action requiring a Type III or Type IV development permit.

Finding: Applies. This application includes a request for adjustment from NROD standards, and also includes a concurrent application for variance of Geologic Hazard Overlay District standards, therefore the application is processed as a Type III development permit. The proposed use is allowed under prescribed conditions under Section 17.49.090.

17.49.[0]50 Emergencies.

This section permits certain activities in response to emergencies without an NROD permit provided that after the emergency has passed, any disturbed native vegetation areas shall be replanted.

Finding: Not applicable. The applicant has not indentified that an emergency.

17.49.[0]60 Consistency and relationship to other regulations.

A. Where the provisions of the NROD are less restrictive or conflict with comparable provisions of the Oregon City Municipal Code, other city requirements, regional, state or federal law, the provisions that are more restrictive shall govern.

Finding: Not applicable. No conflicts have been identified..

B. Compliance with federal and state requirements.

a. If the proposed development requires the approval of any other governmental agency, such as the Division of State Lands or the U.S. Army Corps of Engineers, the applicant shall make application for such approval prior to or simultaneously with the submittal of its development application to the city. The planning division shall coordinate city approvals with those of other agencies to the extent necessary and feasible. Any permit issued by the city pursuant to this chapter shall not become valid until other agency approvals have been obtained or those agencies indicate that such approvals are not required.

b. The requirements of this chapter apply only to areas within the NROD and to locally significant wetlands that may be added to the boundary during the course of development review pursuant to Section 17.49.035. If, in the course of a development review, evidence suggests that a property outside the NROD may contain a wetland or other protected water resource, the provisions of this chapter shall not be applied to that development review. However, the omission shall not excuse the applicant from satisfying any state and federal

wetland requirements which are otherwise applicable. Those requirements apply in addition to, and apart from the requirements of the city's comprehensive plan and this Code.

Finding: conditionally complies. The applicant has sought approval for the proposed project from the Oregon Department of State Lands (Joint Permit Application to comply with the State of Oregon's Removal/Fill Law) and the U.S. Army Corps of Engineers (Joint Permit Application to comply with section 404 of the Clean Water Act). The Joint Permit Application was submitted to both agencies May 25, 2010. A permit is expected to be issued by both agencies by September 25, 2010.

The wetland delineation was also reviewed by the City's wetland consultant, David Evans and Associates (DEA) (See Exhibit 10), who also visited the site. David Evans and Associates has recommended the following Conditions of Approval related to this standard:

- The Applicant shall provide the City correspondence with the Army Corps of Engineers and the Oregon Department of State Lands to confirm the impacts associated with the project do not require additional mitigation to meet federal and state standards.

Applicant shall assure this standard is met through compliance with Condition of Approval 3.

17.49.[0]70 Prohibited uses.

Finding: Not applicable. The applicant has not proposed a prohibited use.

17.49.[0]80 Uses allowed outright (exempted).

Finding: Not applicable. The applicant has not proposed an exempted use.

17.49.[0]90 Uses allowed under prescribed conditions.

The following uses within the NROD are subject to the applicable standards listed in Sections 17.49.100 through 17.49.190 pursuant to a Type II process:

A. Alteration to existing structures within the NROD when not exempted by Section 17.49.80, subject to Section 17.49.130.

B. A residence on a highly constrained vacant lot of record that has less than five thousand square feet of buildable area, with minimum dimensions of fifty feet by fifty feet, remaining outside the NROD portion of the property, subject to the maximum disturbance allowance prescribed in Section 17.49.120A.

C. A land division that would create a new lot for an existing residence currently within the NROD, subject to Section 17.49.160.

D. Trails/pedestrian paths when not exempted by Section 17.49.80, subject to Section 17.49.170 (for trails) or Section 17.49.150 (for paved pedestrian paths).

E. New roadways, bridges/creek crossings, utilities or alterations to such facilities when not exempted by Section 17.49.80, subject to Section 17.49.150 (for roads, bridges/creek crossings) or Section 17.49.140 (for utility lines) or Section 17.49.100 (for stormwater detention or pre-treatment facilities).

F. Institutional, industrial or commercial development on a vacant lot of record situated in an area designated for such use that has more than seventy-five percent of its area covered by the NROD, subject to Section 17.49.120B.

G. City, county and state capital improvement projects, including sanitary sewer, water and stormwater facilities, water stations, and parks and recreation projects.

Finding: The proposed project includes a new roadway and alterations to existing roadways and is therefore an allowed use under prescribed conditions pursuant to (E) above.

17.49.100 - General Development Standards

The following standards apply to all uses allowed under prescribed conditions within the NROD with the exception of rights-of-ways (subject to Section 17.49.150), trails (subject to Section 17.49.170), utility lines (subject to Section 17.49.140), land divisions (subject to Section 17.49.160), and mitigation projects (subject to Sections 17.49.180 or 17.49.190):

Finding: The proposed project will follow 17.49.150 (Rights-of-Way) and 17.49.155 (Stormwater Facilities) standards, therefore the standards in this section do not apply.

17.49.110 Width of vegetated corridor.

A. Calculation of Vegetated Corridor Width within City Limits. The NROD consists of a vegetated corridor measured from the top of bank or edge of a protected habitat or water feature. The minimum required width is the amount of buffer required on each side of a stream, or on all sides of a feature if non-linear. The width of the vegetated corridor necessary to adequately protect the habitat or water feature is specified in Table 17.49.110.

Table 17.49.110

Protected Feature Type (See Definitions)	*Anadromous Fish-bearing Stream*	*All Other Features*			
		Intermittent Stream < 25%, drains < 100 acres	*All Other Streams (Intermittent or Perennial)*		*Delineated Wetland*
Minimum Required Width	*200'*	*15'*	*50'*	*200'*	*50'*
Slope Adjacent to Feature	*Any*	*< 25 %*	*> 25 % for less than 150 feet (see Note 2)*	*> 25 % for 150 feet or more (see Note 2)*	*Any*
Starting Point for Measurements from Feature	*Top of Bank*	*Top of Bank*	*Top of Bank*	*Top of bank to break in > 25 % slope (See Note 3) + 50'*	*Delineated Edge of Title 3 Wetland*
Maximum Disturbance Allowance	*See Section 17.49.120*				
Mitigation Requirements	*See Section17.49.180 or 17.49.190*				

Notes:

1. Vegetated corridors in excess of fifty feet apply on steep slopes only in the uphill direction from the protected water feature.

2. Where the protected water feature is confined by a ravine or gully, the top of the ravine is the break in the >= twenty-five percent slope.

B. Habitat Areas Within City Parks. For habitat and water features identified by Metro as regionally significant which are located within city parks, the NROD Boundary shall correspond to the Metro Regionally Significant Habitat Map.

C. Habitat Areas Outside City Limit/Within UGB. For habitat and water features identified by Metro as regionally significant which are located outside of the city limits as of the date of adoption of this chapter, the minimum corridor width from any non-anadramous fish bearing stream or wetland shall be fifty feet.

(Ord. No. 08-1014, §§ 1--3(Exhs. 1--3), 7-1-2009)

Finding: As described above in response to 17.49.030, the Applicant has elected to verify the NROD buffers through a site specific survey. The Applicant has applied the appropriate buffers to each NROD resource, as described in Sections 4.1 and 4.2 of the NROD Report (Exhibit 6).

17.49.140 Standards for utility lines.

The following standards apply to new utilities, private connections to existing or new utility lines, and upgrades of existing utility lines within the NROD:

A. The disturbance area for private connections to utility lines shall be no greater than ten feet wide;

B. The disturbance area for the upgrade of existing utility lines shall be no greater than fifteen feet wide;

C. New utility lines shall be within the right-of-way.

D. No fill or excavation is allowed within the ordinary high water mark of a stream;

E. The Division of State Lands must approve any work that requires excavation or fill in a wetland;

F. Native trees more than ten inches in diameter shall not be removed unless it is shown that there are no feasible alternatives; and

G. Each six to ten-inch diameter native tree cut shall be replaced at a ratio of three trees for each one removed. Each eleven-inch or greater diameter native tree shall be replaced at a ratio of five trees for each removed. The replacement trees shall be a minimum one-half inch diameter and selected from the Oregon City Native Plant List. All trees shall be planted on the applicant's site. Where a utility line is approximately parallel with the stream channel, at least half of the replacement trees shall be planted between the utility line and the stream channel.

H. Mitigation is required, subject to Section 17.49.180 or 17.49.190.

Finding: Complies with Condition. The applicant indicates that the project may require connection to an existing water line connection at the southern end of the mitigation site. Based on current design concepts, it is unlikely that excavation or fill would be required within features under the jurisdiction of the DSL or ACOE (see attached figure). All utility work is currently planned for north of jurisdictional features. The work will entail excavating a 1.5' wide by 38' long (57 square foot) trench to place a 6" water line (see attached figure) within the Wetland J NROD buffer. This impact falls within the threshold for an Exempt Use pursuant to 17.49.080(I) for an existing utility line, and the NROD impacts will be temporary and will be restored reseeding the area with native species. The applicant shall provide details of the utility line and provide appropriate additional mitigation for any such disturbance within the project area as part of the revised mitigation plan. **Applicant can assure this standard is met through Condition of Approval 9.**

17.49.150 Standards for rights-of-ways.

The following standards apply to public rights-of-way within the NROD, including roads, bridges/stream crossings and pedestrian paths with impervious surfaces:

A. Stream crossings shall be limited to the minimum number necessary to ensure safe and convenient pedestrian, bicycle and vehicle connectivity, and shall cross the stream at an angle as close to perpendicular to the stream channel as practicable. Bridges shall be used instead of culverts wherever practicable.

Finding: Complies as Proposed. The applicant indicates no new stream crossings are proposed for this project. In addition, no stream crossing culverts will be modified or reconstructed as part of the project.

B. Where the right-of-way crosses a stream the crossing shall be by bridge or a bottomless culvert;

Response: Not applicable.

C. No fill or excavation shall occur within the ordinary high water mark of a stream;

Finding: Complies with conditions. This code section was revised with the latest 6-month code update to state "C. No fill or excavation shall occur within the ordinary high water mark of a stream without the approval of the Division of State Lands and/or the U.S. Army Corps of Engineers". The intent of this code section is met. The intent of this code section is to require that fill and/or excavation required within the ordinary high water mark of Stream 15 will be regulated by the Oregon Department of State Lands and U.S. Army Corps of Engineers. Permits have been submitted to both agencies to authorize the fill and excavation within this stream. **Applicant shall assure this standard is met through compliance with Condition of Approval 3.**

D. If the Oregon Department of State Lands (DSL) has jurisdiction over any work that requires excavation or fill in a wetland, required permits or authorization shall be obtained from DSL prior to release of a grading permit;

Finding: Complies with conditions. Approval for the proposed project has been requested from the Oregon Department of State Lands (Joint Permit Application to comply with the State of Oregon's Removal/Fill Law) and the U.S. Army Corps of Engineers (Joint Permit Application to comply with section 404 of the Clean Water Act). A Joint Permit Application was submitted May 25, 2010 and a permit is expected to be issued by both agencies by September 25, 2010. **Applicant shall assure this standard is met through compliance with Condition of Approval 3.**

E. Any work that will take place within the banks of a stream shall be conducted between June 1 and August 31, or shall be approved by the Oregon Department of Fish and Wildlife; and

Finding: Complies with conditions. Stream 15, where work will be conducted, is a tributary of Abernethy Creek. The Oregon Department of Fish and Wildlife in-water-work-window for Abernethy Creek is July 15-September 30 (ODFW 2008) and the project will comply with this timing. The applicant shall provide correspondence with ODFW to confirm the impacts associated with the project are approved by ODFW. **Applicant shall assure this standard is met through compliance with Condition of Approval 3.**

F. Mitigation is required, subject to Section 17.49.180 or 17.49.190.

Finding: Applicant has provided a Mitigation Plan and Report for impacts to the NROD, please refer to 17.49.190.

17.49.155 Standards for stormwater facilities.

Approved facilities that infiltrate stormwater on-site in accordance with Public Works Low-Impact Development standards, including but not limited to; vegetated swales, rain gardens, vegetated filter strips, and vegetated infiltration basins, and their associated piping, may be placed within the NROD boundary pursuant to the following standards:

Finding: the proposed project includes the addition of stormwater facilities; therefore the Development Standards listed below apply.

A. The forest canopy within the driplines of existing trees shall not be disturbed.

Finding: the applicant has documented compliance with the Tree Protection regulations of OCMC 17.41 in this report. The majority of the stormwater facilities will not require forest canopy disturbance. However, in several situations where impacts to the canopy are unavoidable for the construction of stormwater swales, the impacted trees will be mitigated for under 17.41.

B. Only vegetation from the Oregon City Native Plant List shall be planted within these facilities.

Finding: the applicant indicates that only vegetation from the native plant list will be exclusively used within these facilities.

C. Mitigation is required, subject to Section 17.49.180 or 17.49.190.

Finding: Mitigation will be provided for impacts of stormwater facilities within NROD buffers subject to section 17.49.190.

D. The community development director may allow landscaping requirements of the base zone, other than landscaping required for parking lots, to be met by preserving, restoring and permanently protecting habitat on development sites within the Natural Resource Overlay District.

Finding: not applicable.

17.49.160 - Standards for land divisions.

Finding: Not applicable. The applicant has not proposed a land division.

17.49.170 - Standards for trails.

Finding: Not applicable. No trails, other than approved sidewalks and bicycle paths within the right-of-way of the project are proposed.

17.49.180 – 190 – Explanation of Proposed Mitigation

According to the applicant, due to the large size of the required mitigation, many of the mitigation standards in 17.49.180 do not apply to the site. In lieu of the mitigation standards, the project will comply with the alternative mitigation standards in 17.49.190. However, the project will comply with the intent of 17.49.180 wherever possible as demonstrated below.

- The applicant proposes the following mitigation in lieu of the mitigation standards identified in 17.49.180.
- The Applicant has identified a mitigation site located approximately 225 feet northwest of the proposed project where all Project-related mitigation will occur.
- The mitigation will be contiguous to the NROD buffer of Wetlands J, K, and L, and is currently mapped as NROD according to the City's NROD map.
- All vegetation, including invasive and nuisance species, will be cleared during removal of the approximately 21,000 cubic yards of wood waste and bark chips.
- The mitigation site will be planted and seeded with species on the Oregon City Native Plant list.
- Based on the proposed planting strategy that allows for planting in rows at 7-foot on-center spacing to facilitate maintenance, 762 trees and 436 shrubs per acre are recommended.
- Irrigation and imported, high quality topsoil will be used at the mitigation site to ensure planting success and to achieve the functional equivalent of the planting densities set forth in the current municipal code.

- Trees and shrubs will be planted in triangular spacing at 7-feet on-center. Clusters of shrubs and groundcovers will be planted in clusters of two plants spaced at 18-inches on-center.
- Irrigation will be installed throughout the mitigation site to ensure 80% survival after 5 years.
- Nine species of trees and nine species of shrubs will be installed at the mitigation site.
- Less than one-third of the trees will be in the same genus.
- Five years of monitoring and maintenance are proposed along with annual reporting. Photographs shall accompany the report indicating the progress of the mitigation.

Success criteria for the mitigation site at the end of the 5-year monitoring period will include the following, as defined by the Oregon Department of Agriculture:

- a minimum of 80% survival of trees and shrubs and no more than 10% cover of invasive species.
- As the proposed project is a capital improvement project funded through a combination of federal, state and city funding, the Public Works Department, as the Applicant, will provide appropriate oversight and assurances that all mitigation requirements shall be met.
- The applicant has elected to provide a deed restriction as a long-term protection instrument for the mitigation site. Upon completion, this deed restriction will be provided to the Planning Department.

17.49.180 Mitigation Standards

Finding: Not applicable. As the Applicant has proposed to meet 17.48.190 Alternative Mitigation Standards, 17.49.180 does not apply.

17.49.190 Alternative mitigation standards.

17.49.190 Alternative Mitigation Standards
In lieu of the above mitigation standards of Section 17.49.180, the following standards may be used. Compliance with these standards shall be demonstrated in a mitigation plan report prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. At the applicant's expense, the City may require the report to be reviewed by an environmental consultant.

A. The proposed mitigation shall occur at a minimum 2:1 ratio of mitigation area to proposed disturbance area;

Finding: <u>The applicant has requested an adjustment to this standard pursuant to the adjustment criteria of 17.49.200</u>. The applicant states that due to the low quality of the existing NROD buffers, the heavily degraded nature of the mitigation site that will be highly improved by the mitigation action, and the large acreage of mitigation that would be required at a 2:1 replacement, mitigation at a ratio of 1:1 is proposed. 4.7 acres of NROD impacts will be created for the proposed project.

B. The proposed mitigation shall result in a significant improvement of at least one functional value listed in section 17.49.10, as determined by a qualified environmental professional;

Finding: The applicant indicates that the proposed mitigation will improve the following functional values listed in section 17.49.(0)10:

B. Protect floodplains and wetlands, and restore them for improved hydrology, flood protection, aquifer recharge, and habitat functions, and

C. Protect upland habitats, and enhance connections between upland and riparian habitats.

The applicant indicates that this will be accomplished through the native plant revegetation effort, soil replacement, and long-term protection of the site which will prevent future development at the mitigation site. Please refer to Section 2.0 of the applicant's NROD report, *Functional Values,* for discussion of how the specific functional values will be improved.

C. There shall be no detrimental impact on resources and functional values in the area designated to be left undisturbed;

Finding: Complies as Proposed. The applicant indicates that there will be no impacts to wetlands and waters that surround the mitigation site. These areas will be considered "no-work" zones and will be fenced accordingly during construction activities. The hydrology source for these wetlands and waters has been carefully considered and will not be altered by the proposed mitigation. The functional values of areas left undisturbed are expected to increase after the mitigation site is created due to the removal of invasive species in adjacent areas and reestablishment of a seed source, through mitigation planting, of native species in adjacent areas.

D. Where the proposed mitigation includes alteration or replacement of development in a stream channel, wetland, or other water body, there shall be no detrimental impact related to the migration, rearing, feeding or spawning of fish;

Finding: Complies as Proposed. The applicant indicates that no mitigation work will be conducted within a stream, wetland, or other water body. No migration, rearing, feeding or spawning habitat for native migratory fish (including endangered species) is located within the proposed project. The closest known migration, rearing, feeding or spawning of native migratory fish is located within Abernethy Creek and the Clackamas River, located outside of the proposed project.

E. Mitigation shall occur on the site of the disturbance to the extent practicable. If the proposed mitigation cannot practically occur on the site of the disturbance, then the applicant shall possess a legal instrument, such as an easement, sufficient to carryout and ensure the success of the mitigation.

Finding: Complies with Conditions: The applicant has indicated that all proposed impacts will permanently remove vegetation within the NROD, not allowing for mitigation at the site of the impact. Investing resources to restore NROD buffers in highway or road rights-of-way will encourage wildlife to utilize areas adjacent to roadways, which will lead to a potential increase in wildlife and vehicle collisions. In addition, the right-of-way space is confined and does not provide adequate acreage for NROD mitigation. Due to the large size of the required mitigation, locating the mitigation in one large area will be the best ecological option for the project, by providing a large, contiguous expanse of habitat within an otherwise developed landscape. This large area will be protected by an easement or deed restriction which will protect the mitigation site in perpetuity. In addition, one large mitigation area will provide the most cost efficient means to maintain and monitor the site. An access agreement is being established with UPRR for the construction and planting work and for the monitoring period.

Additionally, in addition and separate from the city's NROD mitigation area, the Applicant has proposed to create additional ditches in the project area and also purchase wetland mitigation banking credits in the Foster Creek and Mod Slough Wetland Mitigation Bank as part of the mitigation strategy identified in its Joint Permit Application to the Department of State Lands and Corps of Engineers (See Exhibit 6j), as follows:

The applicant proposes to purchase 1.56 credits (1 credit=1 acre) of mitigation bank credit to compensate for impacting 1.56 acres of wetland and stream. They also propose to create 0.33 acre of new ditches and swales onsite to replace 0.18 acre of ACOE and DSL jurisdictional ditches.

Proposed permanent wetland impacts of 1.50 acres will require compensatory mitigation. On-site mitigation was considered for the proposed project. However, wetland creation would require greater than 2 acres of mitigation. Publically owned areas that would not require private property acquisition for an area this large with available hydrology are not available on-site or within close proximity to the proposed project. In addition, the cost of designing, constructing, maintaining, and monitoring a 2-acre site would be infeasible for a public entity.

Therefore, as the project is located in the service areas of two wetland mitigation banks, permanent impacts to wetlands are proposed to be mitigated within the Foster Creek and Mud Slough Wetland Mitigation Banks. Permanent impacts to Wetlands B, C, and E (1.37 acres) will be mitigated via purchase of wetland mitigation credits from the Foster Creek Wetland Mitigation Bank. Permanent impacts to Wetlands D, H and I (0.13 acre) will be mitigated via purchase of wetland mitigation credits from the Mud Slough Wetland Mitigation Bank.

Due to the small impact area in Stream 15 (0.055 acre), onsite mitigation and subsequent monitoring is not financially feasible. Therefore, impacts to Stream 15 will be mitigated via purchase of swale restoration credits at the Foster Creek Wetland Mitigation Bank (0.06 acre). Permanent impacts to jurisdictional ditches (0.18 acre) will be mitigated onsite by the creation of 0.33 acre of new ditches and swales (not including bio-retention ponds or bio-slopes). These ditches will be graded to approximately similar elevations as the impacted ditches so that they intercept approximately the same amount of ground water and maintain similar hydrologic and vegetative conditions as the existing ditches.

While these state and federal mitigation requirement to not match city requirements for mitigation within in the project site, the 2 acres of ACOE / DSL mitigation will occur within the Willamette River watershed and may be considered to meet the, requirements for a "separate legal instrument … sufficient to carryout and ensure the success of the mitigation." pursuant to (E) above although not within the project vicinity.

David Evans and Associates has provided comments noting that the application could provide additional mitigation to meet the required 2:1 Mitigation / Impact area ratio. The applicant has requested an adjustment to this standard to allow 1:1 Mitigation / Impact area ratio.

Staff finds that the applicant has presented adequate justification for adjustment of the 2:1 ratio based on the adjustment approval criteria of 17.49.200 below, and recommends approval of the proposed 1:1 mitigation at this time.

Applicant can assure this standard is met through Conditions of Approval 3 and 7.

17.49.200 - Adjustment from standards.

The applicant has requested the following adjustments from the following NROD standard:

- The requirement for a mitigation area to impact area ratio of 2:1.

If a regulated NROD use listed in Section 17.49.90 cannot meet one or more of the applicable NROD standards then an adjustment may be issued if all of the following criteria are met. Compliance with these criteria shall be demonstrated by the applicant in a written report prepared by an environmental professional with experience

and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. At the applicant's expense, the City may require the report to be reviewed by an environmental consultant. Such requests shall be processed under the Type III development permit procedure.

The Applicant has proposed an adjustment to the minimum mitigation ratio of 2:1 to 1:1 as identified in 17.49.190(A). The mitigation plan will improve the proposed mitigation site by removing wood debris and invasive species and replacing it with clean topsoil and native trees and shrubs. The Applicant has proposed to purchase approximately 2 acres of mitigation banking credits as part of the mitigation strategy identified in its joint permit application to the Department of State Lands and Corps of Engineers, as described above under 17.49.190(E).

The applicant shall demonstrate:
A. There are no feasible alternatives for the proposed use or activity to be located outside the NROD area or to be located inside the NROD area and to be designed in a way that will meet all of the applicable NR-SW development standards;

Finding: The applicant has described in Section 5.0 of their NROD report, *Impacts within the NROD*, a discussion on avoidance and minimization measures employed to reduce impacts within NROD buffers. This included an evaluation of nine alternatives as part of the project's environmentally sensitive avoidance planning process. Based on this analysis, the proposed transportation improvement project:

- Utilizes one of the smaller project footprints
- Requires a small amount of roadway compared to other alternatives.
- Does not require additional stream crossings.
- Does not permanently impact a large, non-delineated, wetland or associated NROD buffer that is located immediately west of the Union Pacific Railroad bridge.
- Does not impact Stream 16 or Abernethy Creek or the associated Buffer of Abernethy Creek, a Salmonid fish-bearing stream.

Finding: Complies as Proposed. The applicant states that, although avoidance and minimization measures were employed throughout the project to reduce environmental impacts, unavoidable impacts within some portions of the NROD buffer will be necessary. **Staff concurs with the applicant's analysis and finds that this standard is met.**

B. The proposal has fewer adverse impacts on significant resources and resource functions found in the local NROD area than actions that would meet the applicable environmental development standards;

Finding: Complies as Proposed. The applicant states that the proposed project has fewer adverse impacts on NROD resources and their functions than an action that would meet the applicable environmental development standards. This is due to the heavily degraded nature of the NROD buffers and the suitable mitigation that will create a higher functioning NROD area than currently exists within the project. **Staff concurs with the applicant's analysis and finds that this standard is met.**

C. The proposed use or activity proposes the minimum intrusion into the NROD area that is necessary to meet development objectives;

Finding: Complies as Proposed. Applicant's description of impacts within the NROD provides a detailed discussion on avoidance and minimization measures employed to reduce impacts within NROD buffers. The

smallest project footprint possible has been developed to reduce impacts within the NROD buffers. **Staff concurs with the applicant's analysis and finds that this standard is met.**

D. Fish and wildlife passage will not be impeded; and

Finding: Complies as Proposed. According to the applicant's communication with Oregon Department of Fish and Wildlife, native migratory fish are not known to occur within the proposed project area (Brick 2009). In addition, ODFW has determined that native migratory fish that would require fish passage are not present within the project area. The proposed project will not cause additional wildlife passage impacts above those already present from the existing roadways. **Staff concurs with the applicant's analysis and finds that this standard is met.**

E. With the exception of the standard(s) subject to the adjustment request, all other applicable NROD standards can be met.

Finding: Complies with Conditions. As demonstrated by the applicant's responses provided in this section, all standards will be met with the exception of the standards where adjustments have been requested.

David Evans and Associates provided the following assessment of the proposed mitigation relative to City code and generally acceptable practices:

- DEA concurs with the proposed removal of invasive species in disturbed areas and the proposed mitigation strategy and planting plan for the off-site mitigation area.
- DEA concurs with the proposed monitoring schedule, although this may need to be revisited should monitoring show that problems are occurring and remedial efforts are needed.
- If the Corps or DSL should require additional mitigation, then the applicant should provide the City with the details of the mitigation to determine how this fits within City code. The Applicant should also provide specific information relating to which impacts will be mitigated through purchasing mitigation credits and which impacts are being mitigated at the proposed NROD mitigation site. The Applicant may actually be achieving a greater than 1:1 mitigation ratio than the adjustment they are proposing.
- To the extent practicable, the applicant should explore opportunities in the area to provide additional mitigation, such as immediately north of the proposed mitigation area in order to maximize the amount of on-site mitigation.

Finding: Staff finds that the applicant has presented adequate justification for adjustment of the 2:1 ratio based on the proposed mitigation plan and responses to the approval criteria above, and recommends approval of the proposed 1:1 mitigation at this time. All other applicable NROD standards can be met. **Applicant can assure this standard is met through Conditions of Approval 3 and 7.**

17.49.220 - Required site plans.

Site plans showing the following required items shall be part of the application:

A. For the entire subject property (NROD and non-NROD areas):

1. The NROD district boundary. This may be scaled in relation to property lines from the NROD Map;

2. One-hundred-year floodplain and floodway boundary (if determined by FEMA);

3. Creeks and other waterbodies;

4. Any wetlands, with the boundary of the wetland that will be adjacent to the proposed development determined in a wetlands delineation report prepared by a professional wetland specialist and following the Oregon Division of State Lands wetlands delineation procedures;
5. Topography shown by contour lines of two or one foot intervals for slopes less than fifteen percent and by ten-foot intervals for slopes fifteen percent or greater;
6. Existing improvements such as structures or buildings, utility lines, fences, driveways, parking areas, etc.
7. Extent of the required Vegetated Corridor required by Table 17.49.110.

B. Within the NROD area of the subject property:
1. The distribution outline of shrubs and ground covers, with a list of most abundant species;
2. Trees six inches or greater in diameter, identified by species. When trees are located in clusters they may be described by the approximate number of trees, the diameter range, and a listing of dominant species;
3. An outline of the disturbance area that identifies the vegetation that will be removed. All trees to be removed with a diameter of six inches or greater shall be specifically identified as to number, trunk diameters and species;
4. If grading will occur within the NROD, a grading plan showing the proposed alteration of the ground at two-foot vertical contours in areas of slopes less than fifteen percent and at five-foot vertical contours of slopes fifteen percent or greater.

C. A construction management plan including:
1. Location of site access and egress that construction equipment will use;
2. Equipment and material staging and stockpile areas;
3. Erosion control measures that conform to City of Oregon City erosion control standards;
4. Measures to protect trees and other vegetation located outside the disturbance area.

D. A mitigation site plan demonstrating compliance with Section 17.49.180 or 17.49.190, including:
1. Dams, weirs or other in-water features;
2. Distribution, species composition, and percent cover of ground covers to be planted or seeded;
3. Distribution, species composition, size, and spacing of shrubs to be planted;
4. Location, species and size of each tree to be planted;
5. Stormwater management features, including retention, infiltration, detention, discharges and outfalls;
6. Water bodies or wetlands to be created, including depth;
7. Water sources to be used for irrigation of plantings or for a water source for a proposed wetland.
(Ord. No. 08-1014, §§ 1--3(Exhs. 1--3), 7-1-2009)

Finding: Complies as Proposed. According to DEA, it appears that generally, the required information under 17.49.220(A-C) is shown on the preliminary site plans or included in plans attached to the Water Resources Study and Mitigation Plan, except where the scale of the project limits the amount of detail. Where this is the case, the Applicant has requested an adjustment to these standards. In general, as the drawings provided provide enough information to evaluate the proposal, it appears that these standards are met.

17.49.230 Mitigation plan report.

A mitigation plan report that accompanies the above mitigation site plan is also required. The report shall be prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. The mitigation plan report shall, at a minimum, discuss:
A. Written responses to each applicable Mitigation Standard 17.49.180 or 17.49.190 indicating how the proposed development complies with the mitigation standards;

B. The resources and functional values to be restored, created, or enhanced through the mitigation plan;
C. Documentation of coordination with appropriate local, regional, state and federal regulatory/resource agencies such as the Oregon Department of State Lands (DSL) and the United States Army Crops of Engineers (USACE);
D. Construction timetables;
E. Monitoring and Maintenance practices pursuant to Section 17.49.230 and a contingency plan for undertaking remedial actions that might be needed to correct unsuccessful mitigation actions during the first five years of the mitigation area establishment.

David Evans and Associates reviewed the applicant's mitigation plan and mitigation plan report for the project for compliance with this section (Exhibit 10).

DEA generally concurs with the proposed planting and mitigation plan, but recommends that the amount of mitigation as required in 17.49.190(A) should be reviewed to determine whether the proposed NROD mitigation combined with purchasing the mitigation banking credits is sufficient to meet this standard. While the proposed mitigation will improve the off-site mitigation area, adding mitigation areas preferably adjacent to the off-site mitigation area that may better comply with 17.49.230(B).

In addition to the mitigation proposed as part of 17.49.190, the Applicant proposes to purchase 1.56 mitigation banking credits from area mitigation banks to mitigate impacts to wetlands located with the NROD buffer and also plans to create approximately 0.33 acres of ditches and swales onsite as part of the mitigation strategy identified in its JPA (Walter, 2010). The NROD mitigation proposal, in addition to what is proposed in the JPA, totals approximately 6.6 acres.

17.49.230(C) requires consultation with appropriate state and federal regulatory agencies. As described above, the Applicant has submitted a Joint Permit Application to the ACOE and DSL, and has proposed to purchase mitigation credits in addition to the NROD mitigation.

Finding: Complies with Conditions. Based on the analysis provided by the applicant in response to the adjustment approval criteria of 17.49.200, Staff concurs with the applicant and finds that the proposed mitigation area to impact area ratio of 1:1, along with the mitigation planting proposal to restore the currently degraded NROD buffer areas, along with purchase of additional wetland banking credits within the Willamette River watershed, is sufficient to meet this standard. 17.49.230(D) requires a construction timetable which the Applicant has provided. Mitigation monitoring as required under 17.49.230(E) is also addressed. **These standards appear to be met.**

David Evans and Associates found that the Applicant's mitigation plan and NROD application are well organized and generally clear in how they propose to mitigate the impacts associated with the project. Given that the Applicant has elected to complete its own delineation and propose an alternative mitigation plan, DEA has relied on the information submitted by the Applicant for its review as opposed to existing NROD data. Based on this review, and on the information submitted, DEA recommends the following condition of approval: *The Applicant shall provide the City correspondence with the Army Corps of Engineers, Oregon Department of State Lands and Oregon Dept of Fish and Wildlife to confirm the impacts associated with the project do not require additional mitigation to meet federal and state standards.*

Applicant can assure this standard is met through Conditions of Approval 3 and 7.

17.44.060 - (D) GEOLOGIC HAZARDS VARIANCE

Explanation

One of the OCMC 17.44 Geologic Hazards requirements for development standards pertains to the wall face height of the two retaining walls. The code states that "cut and fill slopes, such as those for a street, driveway accesses, or yard area, greater than seven feet in height (as measured vertically) shall be terraced. Faces on a terraced section shall not exceed five feet.

Terrace widths shall be a minimum of three feet and shall be vegetated. Total cut and fill slopes shall not exceed a vertical height of 15 feet. These code requirements, terracing, and maximum dimensions are not feasible for Retaining Walls #1 and #2 of the project. In working with the Community Development Department, it was determined that it would be appropriate to apply for a variance to the code limitations.

The applicant is applying for a variance to OCMC 17.44.060 D to allow faces on a cut slope to exceed five feet for Retaining Walls # 1 and 2 and to allow a finished cut slope to exceed fifteen vertical feet below Retaining Wall #1. This application is requesting the following specific variances:

1. Retaining Wall #1: a 13-foot variance for the wall face.
2. Retaining Wall #2: a 2-foot variance for the wall face and a 3-foot variance for the finished cut slope below the wall.

Exhibit 9(a) shows the two retaining wall locations relative to the Geologic Hazards base map. Figure 1 is a Vicinity Map that illustrates where Retaining Walls #1 and #2 are found within the Redland Road Intersection Improvements area and the Jughandle project area. Construction for the Jughandle (Retaining Wall #2) will begin in 2011. The construction schedule for the Redland Road Intersection Improvements (including Retaining Wall #1) is not certain because funding is not yet identified for this phase of the project construction. To provide certainty for the final project design and public funding that will be used for the project, the applicant requests that if approved, the variance permit for Retaining Wall #1 remain effective through its construction. (Note: The city's land use permit will expire two years from the date of issuance and a extension of one year may also be requested, however it is expected that issuance of the construction permit by ODOT will precede expiration of the City's land use permit, so this is not a concern).

Finding: Complies as proposed.

17.60.030 – Variance - Grounds.

A variance may be granted only in the event that all of the following conditions exist:

A. That the variance from the requirements is not likely to cause substantial damage to adjacent properties by reducing light, air, safe access or other desirable or necessary qualities otherwise protected by this title;

Retaining Wall #1:

Adjacent properties include single family residential properties on the Holcomb Overlook bluff above the wall and the wide OR 213 right-of-way at the base of the wall. Use of a retaining wall in this location greatly reduces the impact on properties above the wall that would result if a code-required terraced slope (with 5-foot wall faces and 3-foot terraces) was constructed into the hillside instead of the proposed retaining wall. Such a terraced slope would require significant additional excavation into the slope behind the proposed wall location, considerable additional disturbance of the existing slope below the residential properties, and increase the potential for detrimental slope impacts. The retaining wall allows a greater buffer between the highway improvements and the residential properties and preserves existing vegetation on the existing slope.

The retaining wall will be designed to stabilize materials above the wall. Light, air, and other desirable qualities will not be changed for properties above the wall. The light, air, and other desirable qualities on the highway will not change because of the retaining wall. The wall will be designed by a structural engineer with geotechnical engineering recommendations. The project design meets ODOT and/or AASHTO highway design standards. The structural design, highway design, and geotechnical design ensure standard engineering practices are followed for safe access.

The retaining wall surface will include architectural style detailing similar to the Retaining Wall Surface Examples presented in Attachment B. A 5-foot high vinyl coated chain link fence is required at the top of the wall to meet safety standards.

Retaining Wall #2:

Above the wall, adjacent properties include Stein Oil Card Lock and Gas Station. Below the wall lies a finished cut slope. Below the finished cut slope, the new Washington Street connection to Clackamas River Drive will be constructed. The existing Union Pacific railroad (UPRR) tracks are adjacent to the opposite side of the new road. The retaining wall is aligned with the new bridge abutment walls. Efforts have been made to reduce the wall height as much as possible by increasing the finished cut slope height slightly. The retaining wall has been designed to stabilize materials above the wall.

Light, air, and other desirable qualities will not be changed for properties above the wall. There is an existing steep slope that will be cut into for the new alignment of Washington Street. The light, air, and other desirable qualities on the new Washington Street connection to Clackamas River Drive and the UPRR tracks will not be impacted by the retaining wall because of the broad slope below the wall.

The wall will be designed by a structural engineer with geotechnical engineering recommendations. The project design meets ODOT and/or AASHTO highway design standards. The structural design, highway design, and geotechnical design ensure standard engineering practices are followed for safe access. Additional safety features include a 3.5-foot pedestrian railing on top of Wall #2 and a new pedestrian connection to OR 213 from Clackamas River Drive located just behind the wall.

The retaining wall surface will include architectural style detailing similar to the Retaining Wall Surface Examples presented in Attachment B. An extensive landscaping plan designed by a registered landscape architect will be used on the cut slope below the wall to enhance the area.

Finding: Complies as proposed. Based on the information provided by the applicant below, the variance is not likely to cause substantial damage to adjacent properties by reducing light, air, safe access or other desirable or necessary qualities otherwise protected by this title.

Finding: Complies as Proposed.

B. That the request is the minimum variance that would alleviate the hardship;

Retaining Wall #1:

This retaining wall is 808 feet long. The retaining wall varies from less than 2 feet to 18 feet in height. The wall face height variance requested is 13 feet. To meet code terracing requirements, far greater impacts to private properties above the wall would result due to major additional cuts needed to provide 5-foot maximum wall faces terraced into the final hill design.

The wall location and dimensions also minimizes impacts on the Holcomb Overlook residential properties by maintaining a significant buffer between their properties and the highway and preserving as much vegetation as possible within that buffer. Given the overall geography and proximity of the residential properties to OR 213, the project design has minimized the highway project footprint and resulting negative impacts on adjoining properties while meeting ODOT design standards.

Retaining Wall #2:

This retaining wall is only 109 feet long and the requested 2-foot height variance applies to less than 50 feet of that length. To minimize the face height variance, the project has increased the slope height which requires the 3-foot slope height variance request. The project has attempted to minimize the wall face height in balance with requesting a minimum slope height variance. These variances are needed to fit the new roadway design between private property and the UPRR tracks. The project has been carefully designed to benefit the general public.

Finding: Complies as Proposed.

17.60.030 C - Granting the variance will equal or exceed the purpose of the regulation to be modified.

Retaining Wall #1:

The project design meets ODOT and AASHTO safety standards. The retaining wall is being designed by structural and geotechnical engineers to support the slopes in the area. Use of the taller wall at this location greatly reduces the excavation and disturbance of the existing slope. The wall will be structurally equivalent or more stable (less risky relative to geologic hazards) than terracing with multiple walls. In addition, drainage around the retaining wall is being managed by drainage systems designed by Oregon registered civil engineers to maintain stable surface and subsurface conditions in the wall area. Drainage above and behind this single wall is more easily managed than drainage above multiple terraced walls (which at this location would be approximately 5 terraced walls. Use of the taller wall also allows for protection of the Holcomb Boulevard bridge that crosses OR 213 in this area. Efforts to terrace a new wall would create greater potential for detrimental impact on the embankment behind the bridge abutments.

Retaining Wall #2:

The slope to be excavated for the new alignment of Washington Street is not a natural slope but a manmade slope created for OR 213 and Clackamas River Drive area. The cut into this manmade slope is required to allow for adequate clearance between the new OR 213 bridge and the new Washington Street that will pass under OR 213. The retaining wall is being designed by structural and geotechnical engineers to support the slopes in the area. Drainage around the retaining wall is being managed by engineered drainage systems to maintain stable surface and subsurface conditions in the wall area. The wall will be structurally equivalent or more stable (less risky relative to geologic hazards) than terracing with multiple walls. The slope below the wall will be graded using controlled construction specifications and landscaped to ensure structural integrity.

Finding: Complies as Proposed.

17.60.030 D - Any impacts resulting from the adjustment are mitigated.

Retaining Wall #1:

The adjustment in allowable wall face height and cut slope height result in a single retaining wall which is a more favorable condition for this location. As discussed above, the single wall has fewer negative impacts than using a terraced wall approach. Keeping the highway in a smaller footprint is beneficial to the integrity of the slopes and properties in this area. In addition, architectural detailing will be used for the retaining wall (see Attachment 3) to mitigate the appearance of the wall to the traveling public on OR 213.

Retaining Wall #2:

The adjustment requested for the face height of Wall #2 is fairly small (a 2-foot adjustment from 5 feet to 7 feet maximum height) as is the adjustment requested for the cut slope height (3-foot adjustment from 15 feet to 18 feet maximum height). Project approaches that mitigate for these adjustments include an elaborate landscaping plan to beautify the new cut slope, new sidewalk connection from Clackamas River Drive to OR 213, and architectural detailing to be used for the concrete wall (see Attachment 3).

Finding: Complies as Proposed.

17.60.030 E - No practical alternatives have been identified which would accomplish the same purpose and not require a variance.

Retaining Wall #1:

This slope and wall configuration is the only practical alternative to achieve the OR 213 improvements with minimal impact on the slope adjacent to the highway and below the Holcomb Overlook residential properties. Minimizing the highway improvement footprint by using the proposed wall maintains a buffer between the highway and the private properties and requires the least amount of excavation and disturbance to the existing slope and vegetation. No alternatives exist for the wall that would not interfere with the existing Holcomb Boulevard bridge (and its abutments) that crosses over OR 213 at this location.

Retaining Wall #2:

The wall and slope configuration at this location is the only practical alternative that keeps both the wall face and slope cut variance request fairly small. It also allows for a more elaborate native landscaping scenario with the expansive slope below the wall. The space available to construct the new Washington Street alignment under OR 213 (including sidewalks and bike lanes), the bridge abutments, the new sidewalk connection at the top of the slope, and the roundabout at the Clackamas River Drive intersection is very constrained by the existing Union Pacific railroad tracks. Expanding the footprint to not require a variance would not be possible on the railroad side, would conflict with the new bridge abutment, and would require considerable additional right-of-way acquisition on the Stein Oil side which would impact use of this private property.

Finding: Complies as Proposed.

17.60.030 F - The variance conforms to the comprehensive plan and the intent of the ordinance being varied.

Retaining Wall #1 and Retaining Wall #2:

Intent of Ordinance Being Varied – The requested variances conform to the intent of the ordinance varied because the proposed walls and cut slope represent the least risk of negative impacts to surrounding private properties and will protect against future landslides. The proposed walls and cut slope also represent the least risk of negative impacts to the bridge abutments for the existing Holcomb and future Washington Street overcrossings and the slopes and embankments they retain.

In the case of Retaining Wall #1, the wall provides a more protective approach to slope stability through less disturbance of the existing slopes and existing vegetation below Holcomb Overlook.

For Retaining Wall #2, the wall and cut slope below are being designed to ensure stable conditions. Portions of the cut slope will be more gentle (flatter) than the existing slope. Drainage will be managed to avoid damaging adjacent properties and maintain slope stability in the area.

Finding: Complies as Proposed.

RELEVANT COMPREHENSIVE PLAN GOALS AND POLICIES

The following responses have been prepared to explain how the variances conform to the Oregon City Comprehensive Plan:

Goal 2.2 – Downtown Oregon City: Develop the Downtown area, which includes the Historic Downtown Area, the "north end" of the Downtown, Clackamette Cove, and the End of the Oregon Trail area, as a quality place for shopping, living, working, cultural and recreational activities, and social interaction. Provide walkways for pedestrian and bicycle traffic, preserve views of Willamette Falls and the Willamette River, and preserve the natural amenities of the area.

Policy 2.2.2: Support multi-modal transportation options throughout the Regional Center and to other Regional and Town Centers.

Policy 2.2.9: Improve connectivity for vehicles, bicycles, and pedestrians within the Oregon City Downtown community and waterfront master plan areas and improve links between residential areas and the community beyond.

Finding: Complies as Proposed. The variances are necessary to construct the OR 213: I-205 to Redland Road O'xing transportation project. The project supports multi-modal access to and development in the Oregon City Regional Center which includes the End of the Oregon Trail area, Downtown, and Clackamette Cove. The realignment of Washington Street under OR 213 will provide safer connectivity for bicycles and pedestrians across OR 213 by replacing the at-grade crossing of the 7+ lane expressway.

Goal 7.1 – Natural Hazard: Protect life and reduce property loss from the destruction associated with natural hazards.

Policy 7.1.8: Provide standards in City Codes for planning, reviewing, and approving development in areas of potential landslides that will prevent or minimize potential landslides while allowing appropriate development.

Finding: Complies as Proposed. The variances represent carefully designed retaining wall and cut slope configurations that protect life and reduce property loss from the destruction associated with natural hazards while providing roadway improvements that improve safety and mitigate congestion. The wall designs will provide stability for the slopes and materials they support. Portions of the slope in the area of Retaining Wall #2 will be gentler (flatter) than the pre-project existing slope.

Goal 9.8 – Economic Development – Transportation System

Policy 9.8.5: Work with the Oregon Department of Transportation to preserve and improve the capacity of Highway 213 and its intersection with I-205.

Finding: Complies as Proposed. The variances requested are associated with the OR 213: I-205 to Redland Road O'xing transportation project. The City is working with the Oregon Department of Transportation to preserve and improve the capacity of OR 213 and its intersection with I-205.

Goal 11.1 – Provision of Public Facilities, Policy 11.1.2 and 11.1.5:
Provide public facilities and services consistent with the goals, policies and implementing measures of the Comprehensive Plan, if feasible.

Policy 11.1.5: Design the extension or improvement of any major public facility and service to an area to complement other public facilities and services at uniform levels.

Finding: Complies as Proposed. The OR 213: I-205 to Redland Road O'xing transportation project has been carefully planned to provide Oregon City residents with adequate public facilities that are consistent with the Comprehensive Plan. The project is improving the intersection of OR 213 and Washington Street with the Jughandle.

Complementary public facility improvements included with the project are a roundabout at the Clackamas River Drive intersection with the new Washington Street alignment, restoration of wetlands between the Union Pacific railroad tracks and I-205, redundancy for the existing waterline that crosses I-205 on the interchange bridge, stormwater quality improvements, improved pedestrian and bicycle connectivity, and a landscaped gateway to Oregon City.

Goal 11.6 – Transportation Infrastructure,

Policy 11.6.1: Make investments to accommodate multi-modal traffic as much as possible to include bike lanes, bus turnouts and shelters, sidewalks, etc., especially on major and minor arterial roads, and in regional and employment centers.

Policy 11.6.2: Advocate for local, state, and regional cooperation in achieving an integrated connected system such as for the Amtrak station, light rail, and bus transit.

Finding: Complies as Proposed. The OR 213: I-205 to Redland Road O'xing transportation project represents a local, state, and federal investment to accommodate multi-modal traffic, especially on arterial roads and in regional centers. The project represents local, state, and regional cooperation in achieving an integrated, connected system. The project will improve the link via OR 213 to the Oregon City South Metro Amtrak Station.

Goal 12.3 – Multi-Modal Travel Options – Policy 12.3.2: Provide an interconnected and accessible pedestrian system that links residential areas with major pedestrian generators such as employment centers, public facilities, and recreational areas.
Policy 12.3.8: Ensure that the multi-modal transportation system preserves, protects, and supports the environmental integrity of the Oregon City community.

Finding: Complies as Proposed. While the primary outcome of the OR 213: I-205 to Redland Road O'xing transportation project is improved capacity and safety and reduced congestion and delay for motorized vehicles, significant improvements will also result for pedestrian and bicycle safety and connection by replacing the existing Washington Street at-grade 7+lane crossing with the new Washington Street undercrossing. These improvements link to the Oregon City Regional Center. A bi-product of this project will preserve and improve environmental integrity by restoring the wetlands between I-205 and the Union Pacific Railroad.

Goal 12.5 – Safety, Policy 12.5.1: Identify improvements that are needed to increase the safety of the transportation system for all users.

Policy 12.5.2: Identify and implement ways to minimize conflict points between different modes of travel.

Policy 12.5.3: Improve the safety of vehicular, rail, bicycle, and pedestrian crossings.

Finding: Complies as Proposed. The OR 213: I-205 to Redland Road O'xing transportation project represents the development and maintenance of a safe transportation system. The identified improvements will increase safety for vehicles, bicycles, and pedestrians and improve the safety of vehicle, bicycle, and pedestrian crossings. The project has identified and will implement ways to minimize conflict points between different modes of travel.

OCMC CHAPTER 12.08 – PUBLIC AND STREET TREES

12.08.015 - Street tree planting and maintenance requirements.
All new construction or major redevelopment shall provide street trees adjacent to all street frontages. Species of trees shall be selected based upon vision clearance requirements, but shall in all cases be selected from the Oregon City Street Tree List or be approved by a certified arborist. If a setback sidewalk has already been constructed or the Development Services determines that the forthcoming street design shall include a setback sidewalk, then all street trees shall be installed with a planting strip. If existing street design includes a curb-tight sidewalk, then all street trees shall be placed within the front yard setback, exclusive of any utility easement.
A. One street tree shall be planted for every thirty-five feet of property frontage. The tree spacing shall be evenly distributed throughout the total development frontage. The community development director may approve an

alternative street tree plan if site or other constraints prevent meeting the placement of one street tree per thirty-five feet of property frontage.
B. The following clearance distances shall be maintained when planting trees:
1. Fifteen feet from streetlights;
2. Five feet from fire hydrants;
3. Twenty feet from intersections;
4. A minimum of five feet (at mature height) below power lines.
C. All trees shall be a minimum of two inches in caliper at six inches above the root crown and installed to city specifications.
D. All established trees shall be pruned tight to the trunk to a height that provides adequate clearance for street cleaning equipment and ensures ADA complaint clearance for pedestrians.

Finding: Complies with Conditions. In addition to the 195 regulated trees, the project will also require the removal of approximately 43 street trees. These trees are currently located along Washington Street and Clackamas River Drive. The removal of these trees is required to accommodate road widening and realignment activities. As a result, the Applicant is required to comply with OCMC Chapter 12.08. The following provides preliminary information regarding the number and caliper of the street trees that will be removed during construction activities. A complete tree survey will be conducted to accurately assess the total number, caliper, and location of street trees to be removed. This information will be provided to the City for approval prior to Planning Commission review.

According to OCMC § 12.08.035, existing street trees shall be retained and protected during construction unless removal is specified as part of a land use approval or in conjunction with a public facilities construction project. Because the Applicant cannot avoid removing the existing street trees, they must be replaced in accordance with OCMC Table 12.08.035. All new trees will have a minimum 2-inch caliper trunk measured 6 inches above the root crown. Replacement mitigation will be provided within existing or proposed rights-of-way (ROW), or within an approved off-site planting location. These replacement street trees shall be provided in addition to the required new street trees in accordance with OCMC § 12.08.015. A Preliminary Streetscape Plan has been provided.

The applicant shall provide a final Street Tree Plan for approval by the Planning Division prior to completion of the project. Street Trees shall not be counted toward any mitigation trees that are required to be replanted pursuant to OCMC 17.49 and OCMC 17.41. **Applicant can assure this standard is met through compliance with Condition of Approval 8.**

IV. CONCLUSION AND RECOMMENDATION:

In conclusion, the applicant is requesting approval of a Natural Resource Overlay District (NROD) review, Geologic Hazard Overlay District review, Floodplain Management Overlay District review and Variance application for the I-205 / 0R 213 "Jughandle" Transportation Improvement Project.

Based on the applicant's submitted proposal as documented in this report and subject to the recommended Conditions of Approval herein, The Community Development Director has determined that Planning Files WR 10-02, US 10-01 and VR 10-01 can meet the applicable requirements of Oregon City Municipal Code.

Therefore, the Community Development Director recommends that the Planning Commission approved Planning Files WR 10-02, US 10-01 and VR 10-01 with Conditions (Exhibit 1).

V. EXHIBITS

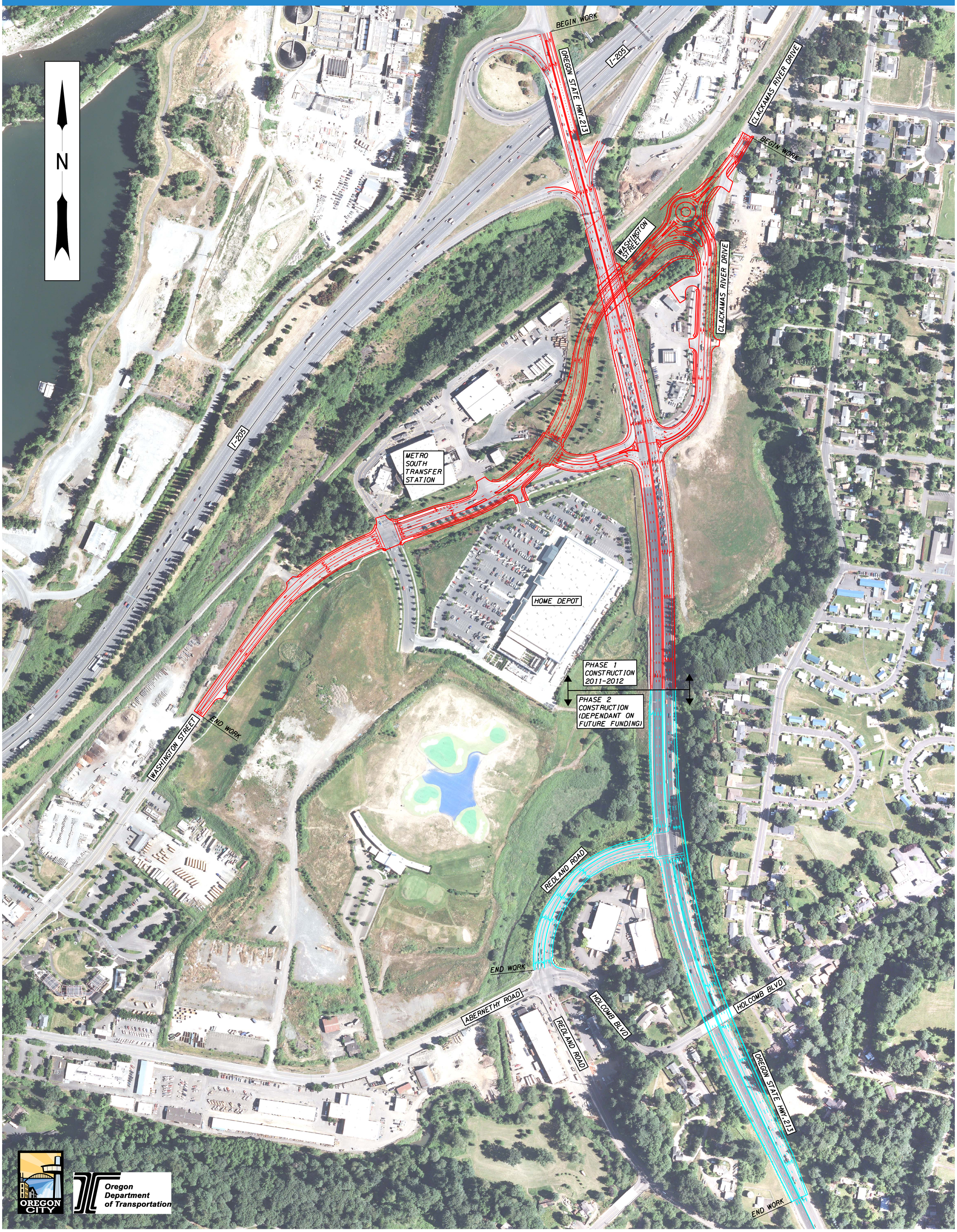
1. Recommended Conditions of Approval
2. Vicinity Map
3. 300' Mailing Labels Area
4. Newspaper Notice
5. Mailed Notice
6. Natural Resource Overlay District (NROD) Application Packet, by Mason Bruce and Girard (MBG)
    a. Applicant's NROD Report
    b. Wetland Delineation, Figures, Maps and Photographs
    c. Mitigation Plan
    d. Preliminary Erosion and Sediment Control Plan
    e. NROD Photos
    f. Alternative Designs
    g. Applicant Revised OCMC 17.49 Code Responses (Replaces Pages 16-27 of Applicant's NROD Report, (6a) above)
    h. Map of city-adopted NROD buffers versus applicant-delineated NROD buffers for Project Area
    i. Excerpt of ACOE / DSL Joint Permit Application (JPA) describing Wetland Mitigation Banking and Credits
7. Preliminary Tree Removal Permit and Mitigation Narrative, by OBEC Consulting Engineers, May 28, 2010
8. Flood Management Overlay Permit Narrative, by OBEC Consulting Engineers, June 3, 2010
9. Geologic Hazard and Variance Application and Narrative – US 10-01 / VR 10-1, by Nancy Kraushaar, P.E. City Engineer, June 18, 2010
    a. Narrative, Retaining Wall Locations and Figures
    b. Geologic Hazards Checklist – **On File**
    c. Retaining Wall Surface Examples
    d. Preliminary Geotechnical and Pavement Design Report, Shannon and Wilson, Inc., Sept 16, 2009 (attached to Variance application) – **On File**
10. David Evans and Associates (DEA) Review of NROD Report.
11. Pre-application Conference Summary.
12. Neighborhood Association meeting summary – **On File**
13. Copy of applicant's SHPO Archeological Permit application.
14. Department of State Lands Wetland Delineation Concurrence letter, May 27, 2010.
15. Comments from Ray Valone, Metro Planner, Email, August 11, 2010.
16. Additional Email and Figure regarding Utility Line Connection, August 13, 2010.

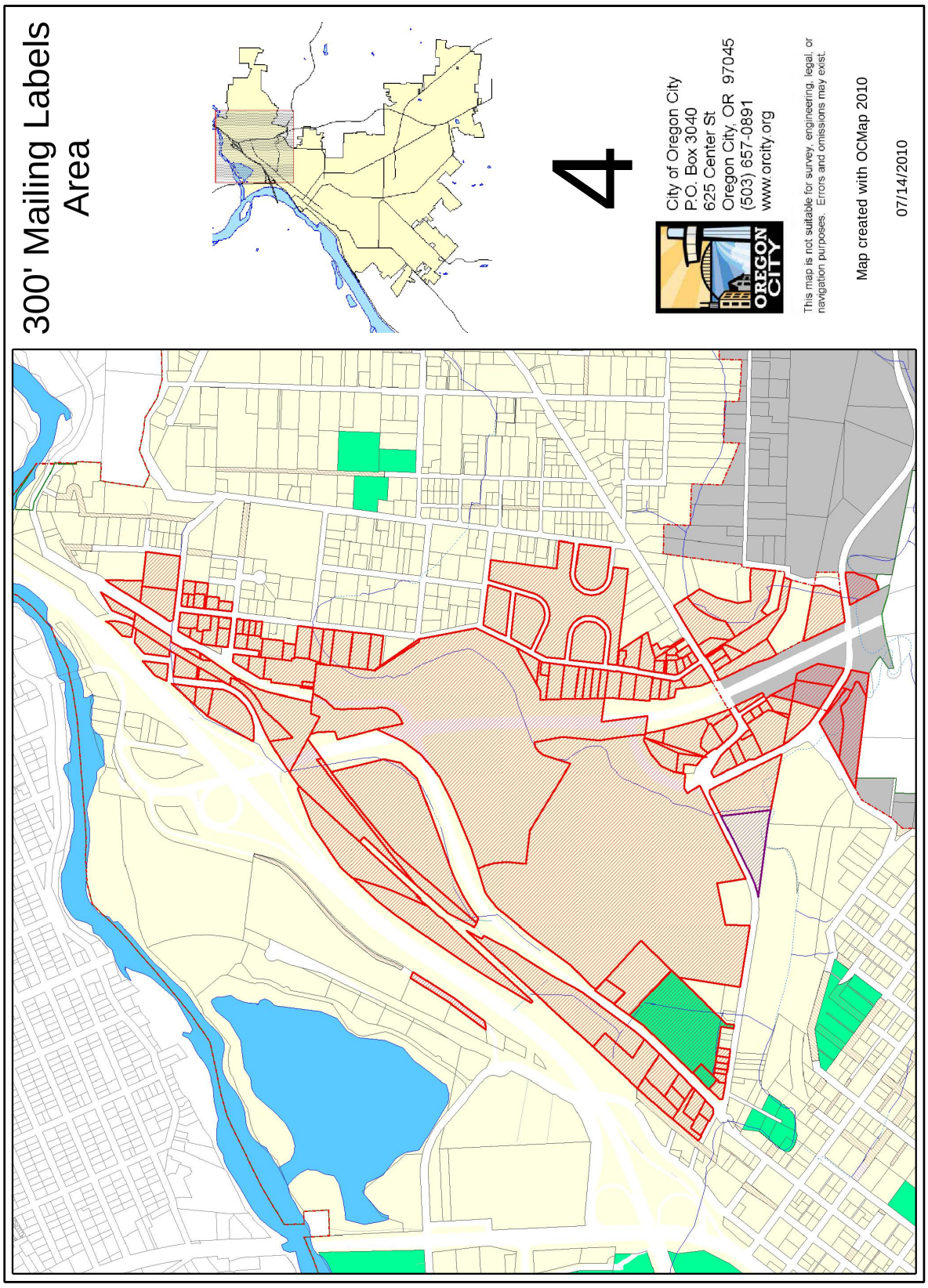
***** Items listed "**On File**" are part of the complete Land Use Files and may be reviewed upon request.

RECOMMENDED CONDITIONS OF APPROVAL
WR 10-02, VR 10-01, US 10-01
Planning Commission Hearing: August 23, 2010

1. The Applicant is responsible for this project's compliance with City of Oregon City Engineering Policy 00-01. The policy pertains to any land use decision requiring the Applicant to provide any public improvements.
2. Install tree protection measures prior to construction. no grading or construction activities shall commence prior to verification by the Planning Division that adequate tree protection fences and measures have been installed pursuant to OCMC 17.41.130(B). All contractors working on the site shall receive a copy of Section 17.41.130(B) and the tree protection plan at the city pre-construction meeting. If modifications to the site design result in the need to conduct activities within the critical root zone of a protected tree, the Applicant shall implement all necessary precautionary measures to avoid or minimize unauthorized impacts to protected trees.
3. Show DSL / ACOE /ODFW concurrence prior to construction approval. The Applicant shall provide the City correspondence with the Army Corps of Engineers, Oregon Department of State Lands and Oregon Dept of Fish and Wildlife to confirm the impacts associated with the project do not require additional mitigation to meet federal and state standards.
4. Install approved erosion control measures prior to grading or construction pursuant to OCMC 17.47.
5. Deed Restriction. The applicant shall record the proposed deed restriction, or other legal instrument in a form approved by the city, assuring compliance with the applicable mitigation requirements of OCMC 17.49. Said document shall run with the land, and assure that mitigation is completed and monitored for the required 5-year establishment period in accordance with the applicant's proposed mitigation plan.
6. Final Tree Removal, Protection and Mitigation Plan. The applicant shall provide a final tree removal and mitigation plan for approval by the Planning Division upon completion of the final tree inventory for the site and prior to any clearing and grading of the site that would affect trees greater than 6" in diameter. The tree removal, protection and mitigation plan shall take into account any opportunities to protect and replant trees both within and abutting the ROW of the project site pursuant to Priority One of this section, in addition to replanting off-site mitigation areas.
7. Final Replanting Plan for NROD Mitigation Area. Applicant shall provide a final re-planting plan for the NROD and Floodplain Mitigation Site indicating compliance with the applicant's proposed mitigation plan and mitigation plan report prior to completion of the project.
8. Street Trees in the Public Right-of-Way shall be provided in accordance with *OCMC 12.08 – Public and Street Trees*. Applicant shall provide a final Street Tree Plan for approval by the Planning Division prior to completion of the project. Street Trees shall not be counted toward any mitigation trees that are required to be replanted pursuant to OCMC 17.49 and OCMC 17.41.
9. Utility Lines. The applicant shall provide details of the utility line connection for irrigation purposes in the southern portion of the mitigation area, and provide appropriate additional mitigation for any such disturbance within the project area as part of the revised mitigation plan.

EXTENT OF PLANNED IMPROVEMENTS TO HIGHWAY 213




300' Mailing Labels Area
4
City of Oregon City
P.O. Box 3040
625 Center St
Oregon City, OR 97045
(503) 657-0891
www.orcity.org
OREGON CITY
This map is not suitable for survey, engineering, legal, or navigation purposes. Errors and omissions may exist.
Map created with OCMap 2010
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AFFIDAVIT OF PUBLICATION

State of Oregon, County of Clackamas, SS

I, Charlotte Allsop, being the first duly sworn, depose and say that I am Accounting Manager of *Clackamas Review/Oregon City News*, a newspaper of general circulation, published at Clackamas/Oregon City, in the aforesaid county and state, as defined by ORS 193.010 and 193.020, that

City of Oregon City
Notice of Public Hearing/NROD
CLK12084

a copy of which is hereto annexed, was published in the entire issue of said newspaper for
1
week in the following issue:
July 21, 2010

Charlotte Allsop

Charlotte Allsop (Accounting Manager)

Subscribed and sworn to before me this July 21, 2010.

Robin A. Burgess

NOTARY PUBLIC FOR OREGON
My commission expires

Acct #10048638
Attn: Laura Butler
City of Oregon City
PO Box 3040
Oregon City, OR 97045-0304

Size: 2 X 6"
Amount Due: $142.20*
*Please remit to the address above.

NOTICE OF PUBLIC HEARING

LAND USE APPLICATION: The applicant, City of Oregon City Public Works, is requesting approval of a Natural Resource Overlay District (NROD) review, Geologic Hazard Overlay District review, Floodplain Management Overlay District review and Variance application for the I-205 / OR 213 "Jughandle" Transportation Improvement Project.

LOCATION: Public Right-of-Way in Vicinity of I-205 / OR 213 / Washington Street / Clackamas River Drive Redland Road intersection in Oregon City.

HEARING DATE: On Monday, August 23, 2010 the City of Oregon City - Planning Commission will conduct a public hearing at 7:00 p.m. in the Commission Chambers at City Hall, 615 Center Street, Oregon City 97045 on this Type III Land Use Application. Any interested party may testify at the public hearing or submit written testimony at or prior to the close of the Planning Commission hearing. Written comments on this Type III Land Use Application must be received by the Oregon City Planning Division, no later than August 6, 2010 to be included in the Staff Report. Comments received after this date will be provided to the Planning Commission at the August 23, 2010 hearing. The public record will remain open until the Planning Commission closes the public hearing. The procedures that govern this hearing are set forth in OCMC 17.50 and ORS 197.763.

CONTACT PERSON: Peter Walter AICP, Associate Planner (503) 722-3789

APPLICABLE CRITERIA: OCMC 17.42, 17.44, 17.49, 17.50, 17.60. The City Code Book is available on-line at www.orcity.org.

The application and all documents submitted by or on behalf of the applicant are available for inspection at no cost at the Oregon City Planning Division, 221 Molalla Avenue, Oregon City, Oregon 97045, from 8:00 a.m. to 5:00 p.m. Monday thru Friday. The staff report, with all the applicable approval criteria, will also be available for inspection seven days prior to the hearing. Copies of these materials may be obtained for a reasonable cost in advance.

Please be advised that any issue that is intended to provide a basis for appeal must be raised before the close of the Planning Commission hearing, in person or by letter, with sufficient specificity to afford the Planning Commission and the parties an opportunity to respond to the issue. Failure to raise an issue with sufficient specificity will preclude any appeal on that issue.

A city-recognized neighborhood association requesting an appeal fee waiver pursuant to 17.50.290(C) must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal.

Publish 07/21/2010. CLK12084

OREGON CITY

Community Development – Planning

221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

NOTICE OF LIMITED LAND USE APPLICATION

Mailed on: Friday, July 23rd, 2010

COMMENT DEADLINE	On **Monday, August 23, 2010** the City of Oregon City - **Planning Commission** will conduct a **public hearing at 7:00 p.m.** in the Commission Chambers at **City Hall, 320 Warner-Milne Road, Oregon City 97045** on the following Type III Land Use Application. Any interested party may testify at the public hearing or submit written testimony at or prior to the close of the Planning Commission hearing. **Written comments** on this Type III Land Use Application must be received by the Oregon City Planning Division, **no later than August 6, 2010** to be included in the Staff Report. Comments received after this date will be provided to the Planning Commission at the August 23, 2010 hearing. The public record will remain open until the Planning Commission closes the public hearing.	
FILE NUMBER	WR 10-02: Natural Resource Overlay District Review (NROD) US 10-01: Geologic Hazards Overlay District Review VR 10-1: Variance	
OWNER/ APPLICANT	City of Oregon City Public Works, Attn: Aleta-Froman-Goodrich, P.E. 615 Center Street Oregon City, OR 97045	
REPRESENTATIVE(S)	Mason, Bruce and Girard, Inc. 707 SW Washington Street, Ste. 1300 Portland, OR 97205	OBEC Consulting Engineers 225 Mission Street, Ste. 100 Salem, OR 97302-1295
REQUEST	The applicant is requesting approval of a Natural Resource Overlay District (NROD) review, Geologic Hazard Overlay District review, Floodplain Management Overlay District review and Variance application for the I-205 / 0R 213 "Jughandle" Transportation Improvement Project.	
LOCATION	Public Right-of-Way in Vicinity of I-205 / OR 213 / Washington Street / Clackamas River Drive Redland Road intersection (See Map)	
CONTACT PERSON	Peter Walter AICP, Associate Planner (503) 722-3789	
NEIGHBORHOOD ASSOCIATION	Citizen Involvement Committee (CIC)	
CRITERIA	**Administration and Procedures** are set forth in Chapter 17.50**, Natural Resource Overlay District** in Chapter 17.49**, Unstable Slope / Geologic Hazards** in Chapter 17.44**, Flood Management Overlay District** in Chapter 17.42, and **Variances** in Chapter 17.60 of the Oregon City Municipal Code. The City Code Book is available on-line at www.orcity.org.	

The applicant and all documents submitted by or on behalf of the applicant are available for inspection at no cost at the Oregon City Planning Division, 221 Molalla Avenue, Oregon City, Oregon 97045, from 8:00 a.m. to 5:00 p.m Monday thru Friday. The staff report, with all the applicable approval criteria, will also be available for inspection seven days prior to the hearing. Copies of these materials may be obtained for a reasonable cost in advance.

Please be advised that any issue that is intended to provide a basis for appeal must be raised before the close of the Planning Commission hearing, in person or by letter, with sufficient specificity to afford the Planning Commission and the parties an opportunity to respond to the issue. Failure to raise an issue with sufficient specificity will preclude any appeal on that issue. The decision of the Planning Commission may be appealed to the City Commission by parties with standing within 10 days of the notice of decision. Any appeal will be based on the record. The procedures that govern the hearing will be posted at the hearing and are found in OCMC Chapter 17.50 and ORS 197.763.

A city-recognized neighborhood association requesting an appeal fee waiver pursuant to 17.50.290(C) must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal.

Natural Resource Overlay District Report
for the
OR 213: I-205 – REDLAND ROAD O'XING (OREGON CITY) PROJECT

Prepared for:

City of Oregon City Public Works Department
625 Center Street
Oregon City, OR 97045-0304

and

OBEC Consulting Engineers
2235 Mission Street,
Suite 100 Salem, OR 97302-1295

Prepared by:

Mason, Bruce & Girard, Inc.
707 SW Washington Street, Suite 1300
Portland, Oregon 97205
(503) 224-3445

MB&G Project # 1588

June 3, 2010

Table of Contents

1.0 Introduction

Report Purpose

The purpose of this report is to document the OR 213: I-205 – Redland Road O'xing (Oregon City) Project's compliance with the City of Oregon City (Oregon City) Municipal Code 17.49 – Natural Resource Overlay District (NROD). As the proposed project will not meet several of the applicable NROD standards, a Type III application review process is requested by the applicant, the Oregon City Public Works Department. Compliance with the adjustments from standards criteria (17.49.200) is provided in Section 8.0. Adjusted code is recommended for 17.49.30 to allow Oregon City, as the applicant, to provide a verifiable delineation of the true location of the natural resource features.

The following sections of this report document the project's purpose and need, description, existing conditions within the project footprint, methods used to determine NROD boundaries, NROD impacts, compliance with and adjustments to Municipal Code 17.49, and a mitigation plan to offset unavoidable NROD impacts. Separate documentation has been prepared to document impacts and associated mitigation for the Tree Protection Standards Municipal Code (17.41). As material for the proposed project will be placed within the flood management overlay, separate documentation has also been prepared to describe impacts and mitigation for the Flood Management Overlay District (17.42).

Location

The majority of the project is located within Oregon City limits (Township 2S, Range 2E Sections 20, 29), as such Oregon City has land use jurisdiction over the project. The southernmost portion of the project (south of South Holcomb Blvd) is located outside of the Oregon City limits, but within the City's urban growth boundary. The Oregon Department of Transportation maintains Oregon Highway 213 (OR 213), which is part of the State of Oregon Highway system. OR 213 is designated as an expressway and serves as an important southeast Portland Metropolitan Area north-south transportation facility (Attachment A, Figure 1).

1.1 Purpose and Need

The purpose of the proposed project is to improve operations and safety on OR 213 between the Union Pacific Railroad (UPRR) bridge and the OR 213 overcrossing of Redland Road. The project has been designed to avoid or minimize instances of traffic congestion on OR 213 from the Washington Street/Clackamas River Drive intersection into the Interstate 205 (I-205) interchange with OR 213. The proposed improvements have been designed to allow for continued development along this section of OR 213 and the surrounding area.

Current traffic demands frequently surpass the capacity of OR 213 throughout the project limits. In addition, this section of highway has a Safety Investment Program (SIP) rating of 3 (3-5 fatal and serious injury crashes from 2006-2008) on a scale of 1-5. The signalized intersections of Washington Street/Clackamas River Drive and Redland Road are in the top 10% of Safety Priority Index System (SPIS) sites (OBEC 2009). This area has capacity for continued development that will add to the current traffic demands on OR 213.

1.2 Project Description

The proposed project includes realignment of Washington Street and Clackamas River Drive under OR 213 through the construction of a new OR 213 overcrossing bridge. A roundabout will be constructed east of the new bridge where Washington Street and Clackamas River Drive will intersect. These modifications combine to create a jughandle intersection configuration that eliminates left-turn and east-west cross movements at the OR 213 intersection and reduces the signal phases from eight to two. The project also involves roadway widening and lane restriping on OR 213 to accommodate three travel lanes in each direction and both southbound (SB) and northbound (NB) right-turn lanes at the jughandle intersection. The OR 213 roadway and the new bridge will be constructed to accommodate 12-foot wide travel lanes, 10-foot wide shoulders (includes 2 feet shy distance), and an eight foot wide median.

Additional improvements involve roadway widening to accommodate the new NB left-turn lane at the Redland Road intersection, the construction of a SB right-turn lane at the Redland Road intersection, the addition of a third through travel lane in each direction along OR 213, the addition of a culvert in a portion of an unnamed tributary of Abernethy Creek (Stream 15) (Attachment A, Figure 2), and widening and channelization changes on Redland Road. Redland Road will be widened to provide two 12-foot wide travel lanes approaching OR 213, one 12-foot wide travel lane approaching Abernethy Road, one 14-foot wide median, and two 6-foot wide shoulders. Additional widening will be included at the Abernethy Road end of the alignment to provide a 12-foot wide right-turn lane. Stormwater facilities and landscaping will be added throughout the proposed project.

2.0 Conditions within the Project Footprint

2.1 Existing Conditions

The project is located in the northeastern portion of Oregon City, where the topography transitions from rolling terraces into a flat, floodplain of the Willamette and Clackamas Rivers. Portions of the project are located within Oregon City's existing Natural Resource Overlay District mapping.

Current land uses in the vicinity of the project include public right-of-way (ROW) (existing and proposed), residential, commercial and industrial developments. Specifically, a Home Depot warehouse, a 76 Gas Station, the Metro South Transfer Center (Transfer Center), and several small businesses are situated within and immediately adjacent to the northern portion of the project. In addition, several heavily disturbed, vacant lots are located within the proposed project. The southern portion of the project is primarily surrounded by residential development. Zoning in the vicinity of the project is General Industrial (GI), Mixed Use Downtown (MUD), General Commercial (C), Mixed Use Corridor 1 (MUC-1), Dwelling (R-3.5), and Single Family Dwelling (R-6, R-8, R-10) (Oregon City 2009).

2.2 Vegetation Communities

Five vegetation communities occur within the project: a disturbed/maintained herbaceous upland community, a disturbed/maintained herbaceous wetland community, an upland scrub-shrub community, a riparian forest community and a forested wetland community. These communities are described in detail below.

Disturbed/Maintained Herbaceous Upland Community

The disturbed/maintained herbaceous upland community inhabits the majority of the project, including the majority of the NROD buffers. This community is associated with the maintained ROW adjacent to all of the roadways, as well as areas adjacent to driveways, parking lots, and commercial buildings. This community is characterized by the following native and non-native plant species: bluegrass (*Poa* sp.), fescue (*Festuca* sp.), tall fescue (*Schedonorus phoenix*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), common yarrow (*Achillea millefolium*), hairy cat's ear (*Hypochaeris radicata*), and common dandelion (*Taraxacum officinale*). This community includes small patches of unidentified horticultural species mainly located in maintained lawns throughout the project.

Disturbed/Maintained Herbaceous Wetland Community

The disturbed/maintained herbaceous wetland community inhabits the wetlands and some of the stormwater ditches within the project. This community is characterized by the following native and non-native hydrophytic plant species: unidentified bluegrass species, tall fescue, velvetgrass (*Holcus lanatus*), bentgrass (*Agrostis* sp.), foul bluegrass (*Poa palustris*), meadow foxtail (*Alopecurus pratensis*), reed canarygrass (*Phalaris arundinacea*), broadleaf cattail (*Typha latifolia*), common rush (*Juncus effusus*), American speedwell (*Veronica americana*), and Fuller's teasel (*Dipsacus fullonum*).

Upland Scrub-Shrub Community

The upland scrub-shrub community inhabits several areas within the project, including a large area south of Wetland C and north of the 76 Gas Station; the ROW north of Clackamas River Drive extending to the eastern end of the project; a large patch within the ROW east of Clackamas River Drive and west of an unnamed tributary to Abernethy Creek (Stream 16); and an area between the intersections of Redland Road with Abernethy Road and OR 213. This community is characterized by mostly native vegetation dominated by sword fern (*Polystichum munitum*), trailing blackberry (*Rubus ursinus*), beaked hazelnut (*Corylus cornuta*), vine maple (*Acer circinatum*), redosier dogwood (*Cornus sericea*), and Himalayan blackberry (*Rubus armeniacus*).

Riparian Forest Community

The riparian forest community inhabits the portions of the project abutting the pond (Pond 18) and an unnamed tributary to Abernethy Creek (Stream 16). This community is characterized by the following plant species: black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) and red alder (*Alnus rubra*) in the tree layer; trailing blackberry, snowberry (*Symphoricarpos albus*), redosier dogwood, vine maple, salmonberry (*Rubus spectabilis*), thimbleberry (*Rubus parviflorus*), and Himalayan blackberry in the shrub layer; and a sparse ground cover of native herbaceous species dominated by sword fern, large leaved avens (*Geum macrophyllum*), and youth-on-age (*Tolmiea menziesii*).

Forested Wetland Community

The forested wetland community inhabits the northwestern portion of the project within the on-site portion of Wetlands K and L. This community is characterized by the following plant species: black cottonwood, Oregon ash (*Fraxinus latifolia*), black hawthorn (*Crataegus douglasii*), and willow species (*Salix* sp.).

2.3 Site Alterations

The area within the project has been, and continues to be, heavily influenced by frequent human disturbance. Based on its proximity to the floodplain of the Clackamas and Willamette Rivers and the presence of remnant populations of large deciduous and coniferous trees located outside the proposed project, the area was likely once a mixture of oak savannah, Douglas-fir (*Pseudotsuga menziesii*) forest, and riparian forest.

An aerial photograph from 1936 (Attachment B, Appendix A, Figure 5a) shows that the majority of the project had been cleared of native vegetation for agricultural uses prior to 1936. Since then, the addition of fill material for major transportation corridors, including OR 213, I-205 and the UPRR tracks, has altered drainage patterns, as evidenced by numerous drainage ditches located throughout the project. More recently, a landfill was created, filled, capped, and decommissioned near the intersection of OR 213 and Washington Street/Clackamas River Drive.

A lumber mill formally occupied a large portion of the project between the UPRR railway and I-205 west of OR 213 as evidenced by large amounts of decomposing bark and wood chip material within the soil, a condition typical for historical mill sites. The heavily disturbed vegetation community within this area is dominated by Himalayan blackberry, orchard grass (*Dactylis glomerata*) Scotch broom (*Cytisus scoparius*), and birch (*Betula* sp.).

As visible in 1936 aerial photograph (Attachment B, Appendix A Figure 5), a very large portion of the project and the adjacent lands have been covered with impervious surfaces since this photo was taken. This development has led to a hydrologic regime requiring the need for stormwater ponds, stormwater ditches, and dozens of culverts. Within much of the project, the soils have a high clay content. As such, there is substantial overland flow, the majority of which is concentrated into ditches and conveyed out of the project. Stormwater ultimately discharges into a stormwater pond, the Clackamas River, Abernethy Creek and its tributaries. The addition of stormwater treatment and detention facilities as part of the proposed project will help to alleviate the flashiness of the existing system.

The majority of the vegetation within the project has either been planted or is comprised of non-native naturalized and invasive species that have colonized the area due to transportation and other human disturbance. Small remnant pockets of native vegetation consisting of deciduous and coniferous trees exist near the outer extents of development; however, several of these areas have likely been planted for slope stabilization or aesthetics during original highway construction or property development.

3.0 Methodology

Mason Bruce and Girard (MB&G) biologists, Brian Cook, Christine Maynard, Kristen Currens and Brett Horton, conducted the wetland and waters delineation within the project footprint on February 23-25, 2009; March 26 and 27, 2009; August 24, 2009; and September 2, 2009. Wetlands were delineated using the criteria outlined in the U.S. Army Corps of Engineers (ACOE) Manual (Environmental Laboratory 1987) as supplemented by the Western Mountains, Valleys, and Coast Region Supplement (ACOE 2008).

MB&G biologists determined the regulatory boundary of all waters (i.e., streams, ditches and ponds) by flagging the limits of the ordinary high water line (OHWL) using field indicators as defined by the Oregon Department of State Lands (DSL) Administrative Rules (OAR 141-085-

00510(59)) (DSL 2009) and ACOE (33 CFR 323.8[e]) (ACOE 2007). The OHWL was determined in the field by noting physical indications of seasonal scour, flooding, deposition, ponding, and/or related active channel processes. Typical field indicators included the limits of litter, debris/drift lines, the deposition of fines, a distinct change in the vegetative community, textural changes in soils (e.g., change from sand, cobble or gravel to upland soils), and distinct changes in topography. Several stormwater ditches within the project exhibit some wetland characteristics and very indistinct OHWL indicators. The OHWL within these features was determined by changes in topography and vegetation.

Based on the lack of a definition for a natural resource feature in Oregon City municipal code, the following definition was utilized based on Clean Water Services (CWS) definition of a water quality sensitive feature (CWS 2007):

- Existing and created wetlands
- Rivers, streams, and springs, whether flow is perennial or intermittent (does not include ephemeral); or
- Natural lakes, ponds, and in-stream impoundments

Natural resource features not included in the verifiable delineation:

- Stormwater infrastructure
- The NROD buffer adjacent to the natural resource feature
- An off-stream recreational lake, wastewater treatment lagoon, fire pond or reservoir; or
- Drainage ditches (except those that are channelized natural streams).

All delineated features that met the natural resource feature definition were provided NROD buffers based on the adjusted 17.49.110 Width of Vegetated Corridor Table (refer to Section 8.0). MB&G biologists conducted an additional site visit March 31, 2010 to document NROD characteristics and the location of the top-of-ravine in areas that exceed 25% slope. Top-of-ravine was flagged at the break in 25% slope in those areas surrounding Stream 16 where slopes exceeded 25%. Slopes surrounding each feature were recorded and dominant vegetation within each NROD buffer was recorded during this field effort.

The wetland, water, and top-of-ravine boundary flagging was located and surveyed by Professional Land Surveyors (PLS) from OBEC Consulting Engineers. Survey accuracy is estimated to be ±0.2 foot. MB&G evaluated the areas slightly beyond the boundary of the project in order to ensure proper documentation and accurate delineation of existing wetlands and waters, and associated NROD buffers especially when the features extended beyond the edges of the project footprint.

4.0 Natural Resource Features

Oregon City, as the applicant for the proposed project, has chosen to provide a verifiable delineation of the true location of the natural resource features within the project (refer to the wetland/waters delineation report, Attachment B). MB&G biologists conducted a wetland and waters delineation of the proposed project area February 23-25, March 26-27, August 24 and September 2, 2009 and identified 12 wetlands and 21 waters including one pond, three streams, and 17 artificially created stormwater runoff ditches within the project. Historic aerial

photographs suggest that none of the stormwater ditches are channelized historic streams (Attachment B, Appendix A, Figure 5a).

Based on the definition of natural resource feature proposed for this project, the 12 wetlands, one pond, and three streams will be considered natural resource features. As such, NROD buffers have been designated around these features. Although the adopted NROD mapping provided by the City generally follows the field verified buffers, several stormwater ditches, whose locations were field verified by MB&G, appear to have been included in the City's mapping. These NROD buffers surrounding stormwater ditches were not included in the NROD buffers presented in this report. The NROD buffer widths were determined based on the following table, which is taken from planned revisions to the existing 17.49 code:

Table 1. Width of NROD Buffer

Protected Water Feature Type	Slope Adjacent to Protected Water Feature	Starting Point for Measurements from Water Feature	Width of NROD
Anadromous fish-bearing streams	Any slope	• Edge of bankfull flow	200 feet
Intermittent streams with slopes less than 25 percent and which drain less than 100 acres	< 25 percent	• Edge of bankfull flow	15 feet
All other protected water features	< 25 percent	• Edge of bankfull flow • Delineated edge of Title 3 wetland	50 feet
	≥ 25 percent for 150 feet or more		200 feet
	≥ 25 percent for less than 150 feet		Distance from starting point of measurement to top of ravine (break in ≥25 percent slope) plus 50 feet.

The location, extent, and characteristics of these delineated natural resource features and associated NROD buffers are described below. In order to maintain consistency between documents prepared for this project, natural resource feature naming conventions presented in this report are identical to those presented in the wetland/waters delineation report.

4.1 Stream/Pond Buffers

Stream 14

Stream 14 is a Riverine, Intermittent, Streambed, Mud (R4SB5) waterway located northeast of Clackamas River Drive just south of S. Melinda Street (Attachment A, Figure 2). This stream enters the project as a channelized stream occupying a ditch on the western shoulder of S. Melinda Street.

The channel of Stream 14 is slightly incised with a silty, sand substrate. At the OHWL, this feature is approximately three feet wide. Vegetation within the NROD boundary has been highly disturbed and includes Himalayan blackberry, Fuller's teasel, and reed canarygrass with several scattered willow and redosier dogwood.

Due to relatively higher flow volumes compared to adjacent stormwater ditches, this feature was determined to be a stream during the wetland delineation fieldwork. This feature was not visible on historic aerial photos. However, due to the small size of the feature and lower flow volumes than Streams 15 or 16, this feature was determined to be intermittent in nature.

Slopes surrounding this feature are less than 25%. Although the source for this stream could not be located in the field, it is apparent, due to its small size, that the stream drains less than 100 acres. Therefore, the NROD buffer around this feature is 15 feet.

Oregon Department of Fish and Wildlife (ODFW) has determined that native migratory fish do not and have not historically used this stream (Brick 2009).

Stream 15

Stream 15 is a Riverine, Upper Perennial, Unconsolidated Bottom, Mud (R3UB3) waters that enters into the project from a culvert under an industrial lot located south of Clackamas River Drive. This feature flows to the south for approximately 300 feet before entering a culvert within the project and eventually discharging into Stream 16.

The channel of Stream 15 exhibits moderate channel complexity including riffles, runs, and pools. The channel is approximately three feet wide and water depths were approximately one to two feet deep at the time of the February and March 2009 field investigations. The dominate bed substrates are silt and sand with several pieces of woody debris providing some additional channel complexity. Vegetation within the NROD boundary has been highly disturbed and includes Himalayan blackberry, reed canarygrass, and climbing nightshade (*Solanum dulcamara*). Wetland E abuts both banks near the mouth of the culvert where the stream originates.

Natural slopes surrounding this feature (excluding the adjacent road fill slope) are approximately 2%. Due to the high volume of water observed in this stream during the wetland delineation fieldwork in February and March 2009, this stream is considered perennial. Therefore, the NROD buffer extends 50 feet around this feature.

Oregon Department of Fish and Wildlife (ODFW) has determined that native migratory fish do not and have not historically used this stream (Brick 2009).

Stream 16

Stream 16 is an R3UB3 stream channel that originates northeast of the project footprint. This stream flows southeast where it passes under OR 213 and parallels the west side of OR 213 and the north side of Redland Road before it passes under Abernethy Road outside of the project. Stream 16 exhibits unique characteristics in three discrete locations within the vicinity of the project. For the purposes of this report, Stream 16 has been divided into three distinct reaches separated by two 48-inch culverts.

Within the first reach, Stream 16 enters the project on the east side of OR 213 and flows to the southwest where it abuts Wetland F and continues through a culvert under OR 213. The OHWL

within the first reach ranges between two to three feet wide and the substrate is dominated by sand and gravel. Substantial flow was observed during both the February 25, 2009 and March 27, 2009 field investigations. Slopes in this reach exceed 25% for less than 150 feet on the north side of the stream and extend for more than 150 feet on the south side of the stream. The buffer for the north side of the stream was established 50 feet beyond the top-of-ravine (TOR). Based on a conversation with Pete Walter, Oregon City Planner, the distance for the buffer on the south side of the stream is equal to that on the north side of the stream (Pete Walter, pers. comm., Planner, Oregon City, April 27, 2010). The vegetation within this reach is highly disturbed along the steep slope to the north and is dominated by Himalayan blackberry, Scotch broom, and non-native grasses. Vegetation within the NROD buffer on the south side of Stream 16 is much less disturbed and includes an assemblage of native species including Douglas fir and swordfern.

The second reach begins where Stream 16 exits the culvert on the west shoulder of OR 213. The second reach flows southwest for approximately 200 feet and enters a 48-inch culvert under a gravel access road. The stream bed within this reach is dominated by silt and clay. Substantial flow was also observed within an OHWL ranging between two to three feet wide. Natural slopes on the east side of this stream reach (excluding the roadfill slope) are greater than 25% for less than 150 feet. Therefore, the TOR was flagged by MB&G biologists in the field and the NROD buffer extends 50 feet from the TOR along this portion of stream. Vegetation within the NROD buffer is dominated by black cottonwood, red alder, snowberry, swordfern, Himalayan blackberry, and reed canarygrass.

The third reach begins where Stream 16 exits the 48-inch culvert on the west side of OR 213 and ends where Stream 16 flows south out of the project. The OHWL within the third reach ranges between 15 feet and 20 feet wide. The substrate within this reach is dominated by silt. Natural slopes on the east/southeast side of the stream within this reach (excluding the roadfill slope) varied between greater than 25% and less than 25%. Therefore, the TOR was flagged by MB&G biologists in the field along portions of the stream with greater than 25% slope and the NROD buffer extends 50 feet from the TOR along this portion of stream. In areas where the slope was less than 25%, the NROD buffer extends 50 feet from the OHWL. The vegetation on the east bank is dominated by black cottonwood, red alder, snowberry, swordfern, Himalayan blackberry, trailing blackberry, salmonberry, vine maple, and reed canarygrass. Vegetation on the west bank is dominated by Himalayan blackberry and reed canarygrass.

Oregon Department of Fish and Wildlife (ODFW) has determined that native migratory fish do not and have not historically used this stream (Brick 2009).

Pond 18

Pond 18 is a large, artificially created Lacustrine, Littoral, Unconsolidated Bottom, Mud, Excavated (L2UB3x) feature located to the northwest of Washington Street immediately west of the Metro Transfer Center. This pond collects stormwater from the surrounding impervious surfaces (Washington Street, various driveways, and parking lots) conveyed via two small (one- to two-foot) box culverts. The pond is drained by another culvert which eventually discharges into the Clackamas River.

Pond 18 appears to be approximately five to six feet deep, 100 feet wide and 300 feet long. The pond's substrate is composed primarily of fine, silty, muck. Dominant bank vegetation includes black cottonwood, various grasses including bluegrass species and tall fescue, common rush, and

Queen Anne's lace (*Daucus carota*). The slope surrounding this pond is less than 25%; therefore, the NROD buffer extends 50 feet around the feature.

4.2 Wetland Buffers

Wetland A

Wetland A is a Palustrine, Emergent (PEM) wetland located east of the Home Depot parking lot in the southwest corner of the intersection of Washington Street and OR 213. This wetland occupies a mowed field sloping slightly to the west from the adjacent roadways to the Home Depot parking lot.

Vegetation within the wetland is a mixture of reed canarygrass, tall fescue, and bluegrass species, with lesser amounts of Fuller's teasel, common rush, and American speedwell.

The NROD buffer extends 50 feet from the edge of the delineated wetland boundary. The NROD buffer is comprised of a disturbed, non-native grass community which is dominated by reed canarygrass and orchard grass.

Wetland B

Wetland B is an artificially constructed PEM wetland located between two large artificially constructed berms northwest of the OR 213 and Washington Street intersection.

Vegetation within Wetland B is regularly maintained through mowing. As a result, some of the vegetation could not be identified to the species level. Dominant vegetation within Wetland B includes common velvet grass, tall fescue, and an unidentified bluegrass species.

The NROD buffer extends 50 feet from the edge of the delineated wetland boundary. The NROD buffer is comprised of maintained lawn including non-native grass species and planted quaking aspen (*Populus tremuloides*) and giant redwood (*Sequoiadendron giganteum*).

Wetland C

Wetland C is a large PEM wetland situated within a slight depression in the north end of the project east of OR 213, south of the UPRR railway, and west of Clackamas River Drive.

Vegetation within Wetland C is dominated by mainly by non-native species including reed canarygrass and fuller's teasel with lesser amounts of foul bluegrass.

The NROD buffer extends 50 feet from the edge of the delineated wetland boundary. Vegetation within the NROD surrounding Wetland C is disturbed and is dominated by Himalayan blackberry and black cottonwood.

Wetland D

Wetland D is a long, narrow, artificially constructed PEM wetland located on the east side of OR 213 immediately north of the intersection of Clackamas River Drive and OR 213. Wetland D, similar to other ditches present throughout the project, is artificially created to detain and treat stormwater runoff from OR 213 and adjacent parking lots.

Vegetation within Wetland D is heavily disturbed and is composed of reed canarygrass, tall fescue, broadleaf cattail, and rush species. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary. The NROD buffer surrounding Wetland D is vegetated with reed canarygrass, willow species, and Himalayan blackberry.

Wetland E

Wetland E is a small, narrow, PEM wetland located within the northeast portion of the project in the southeast quadrant of the OR 213/Clackamas River Drive intersection along the margin of Stream 15.

Vegetation within Wetland E is primarily composed of reed canarygrass and climbing nightshade. A distinct vegetation boundary marked the edge of the wetland; the surrounding NROD buffer is dominated by Himalayan blackberry and climbing nightshade.

The NROD buffer extends 50 feet from the edge of the delineated wetland boundary.

Wetland F

Wetland F is a small, narrow PEM fringe wetland located on the banks of the first reach of Stream 16. This wetland is located to the east of OR 213 within the central portion of the project.

Vegetation with Wetland F is entirely dominated by reed canarygrass. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary and is included in the wider NROD buffer for Stream 16 as the natural slope in this area is greater than 25%. The NROD buffer is dominated by a highly disturbed vegetation community that includes Himalayan blackberry and reed canarygrass.

Wetland G

Wetland G is a PEM wetland located immediately west of the OR 213 roadway adjacent to the second reach of Stream 16 within the central portion of the project. This wetland occupies a hillslope descending from the Home Depot building and parking lot to the OHWL for Stream 16.

Vegetation within Wetland G is dominated by a disturbed vegetation community that includes reed canarygrass, tall fescue, and bentgrass and bluegrass species. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary and is dominated by a disturbed grass community consisting of bentgrass and bluegrass species.

Wetland H

Wetland H is an artificially created PEM wetland located immediately northwest of the OR 213 and Redland Road intersection. This wetland occupies a historical roadway at the base of the road fill slope for OR 213 and Redland Road.

Vegetation within Wetland H is dominated by various bluegrass species and tall fescue. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary. The NROD buffer is dominated by willow species, redosier dogwood, beaked hazelnut and Himalayan blackberry.

Wetland I

Wetland I is a Palustrine Forested (PFO) wetland located immediately west of the OR 213 roadway east of the OR 213/Redland Road intersection. This wetland occupies a depression at the toe of a hillslope descending toward OR 213. The eastern extent of Wetland I abuts a drainage ditch.

Vegetation within Wetland I is dominated by reed canarygrass and black cottonwood. Reed canarygrass is confined to the wetland boundary and, along with topographic breaks and soil changes, helped determine the wetland boundary.

The NROD buffer is disturbed and is dominated by reed canarygrass and Himalayan blackberry. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary.

Wetland J

Wetland J is a PEM wetland located between the UPRR railway and I-205 adjacent to the proposed flood management and NROD mitigation areas. This wetland occupies a depression forming the confluence of several ditches at the southwestern extent of the proposed project.

Vegetation within Wetland J is dominated by black cottonwood, black hawthorn, Himalayan blackberry, and Fuller's teasel. The adjacent NROD buffer is dominated by Himalayan blackberry. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary.

Wetland K

Wetland K is a large, PFO wetland located between the UPRR railway and I-205. Vegetation within Wetland K is dominated by black cottonwood, Oregon ash, Oregon crab apple (*Malus fusca*), rose spirea (*Spiraea douglasii*), Himalayan blackberry, and fringed willowherb (*Epilobium ciliatum*). Vegetation in the adjacent NROD buffer is disturbed and is dominated by black cottonwood, Oregon ash, English ivy, and Himalayan blackberry. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary.

Wetland L

Wetland L is a small, PFO wetland located north of the UPRR railway. This wetland occupies a small, deep depression with no outlet.

Vegetation within Wetland L is dominated by black cottonwood and Oregon ash. The adjacent upland areas are distinguished by an abrupt topographic rise and the dominance of Himalayan blackberry. The adjacent NROD buffer is dominated by rose species, black cottonwood, Oregon ash, English ivy and Himalayan blackberry.

5.0 Impacts within the NROD

Avoidance and minimization measures were employed as the first step in addressing impacts to NROD buffers. From June 2007 to August 2008, nine different project alternatives were evaluated as part of the environmentally sensitive area avoidance planning process (Attachment F). All nine alternatives focused on enhancement of traffic operations and facilitation of anticipated development in accordance with the Metro Region 2040 Plan and the Oregon City Comprehensive Plan. Key factors used to evaluate the alternatives include system safety and performance, driver expectancy, route continuity, freight mobility, right-of-way impacts, environmental impacts (including NROD impacts), construction impacts, construction cost and schedule, and need for/significance of design exceptions. The preferred improvement agreed to by all parties, including ODOT and Oregon City, is the Jughandle Improvement Alternative (Jughandle). This alternative will result in the fewest environmental impacts for the following reasons:

- Utilizes one of the smaller project footprints.
- Requires a small amount of new roadway compared to other alternatives.
- Does not require additional stream crossings.
- Does not permanently impact a large wetland (not delineated) or associated NROD buffer located immediately west of the UPRR bridge.
- Does not impact Stream 16 or Abernethy Creek and does not impact the NROD buffer for Abernethy Creek.

Jughandle design elements have been incorporated into the proposed project for the purpose of minimizing impacts to wetlands and waters. Such elements include construction of retaining walls in Wetland C to limit the footprint of the expanded road prism within the wetland. In addition, the proposed project will avoid permanent impacts to Wetlands A, F, G, J, K, and L, Streams 14 and 16, and Ditches 2, 6, 7, 8, 9, 10, 19, 20, and 21. In addition, NROD buffers surrounding Stream 14 will be completely avoided. Although avoidance and minimization measures were employed throughout the project to reduce environmental impacts, unavoidable impacts within some NROD buffer will be required.

Table 1 details the extent of impacts within the NROD buffer for each Oregon City-regulated natural resource feature. Portions of the NROD buffers surrounding Wetlands J, K, and L will be cleared of vegetation and utilized for flood management mitigation before being replanted. This action is considered an enhancement activity authorized by the City and is therefore considered a use allowed outright that will not require an NROD permit (17.49.80(A)). Therefore, these impacts have not been quantified nor will they require mitigation.

Table 2. NROD Buffer Impacts for the OR 213: I-205 – Redland Road O'xing (Oregon City) Project

Natural Resource Feature/NROD Buffer	Proposed Impact	Acreage of Impact
Stream 14	No Impact	No Impact
Stream 15/Wetland E	Culvert installation/Road widening (Clackamas River Drive)	0.451
Stream 16/Wetland F	Road widening (OR 213)	0.621
Pond 18	Road widening (Washington Street)	0.154
Wetland A	Road realignment (Washington Street)	0.098
Wetland B	Road realignment (Washington Street)	1.588
Wetland C	Road realignment (Clackamas River Drive)	0.855
Wetland D	Road realignment (Clackamas River Drive)	0.223
Wetland G	Road widening (OR 213)	0.019
Wetland H	Road widening (OR 213 and Redland Road)	0.354
Wetland I	Road widening (OR 213)	0.357
Wetland J	Exempt	Exempt
Wetland K	Exempt	Exempt
Wetland L	Exempt	Exempt
Total		**4.720**

6.0 NROD Mitigation

Approximately 4.72 acres of mitigation are proposed to compensate for the permanent impacts within the NROD buffers throughout the proposed project. Mitigation for unavoidable NROD buffer impacts is proposed at a large, City-owned site located southwest of the UPRR bridge between I-205 and Washington Street.

The proposed mitigation site will be used jointly for flood management mitigation and NROD mitigation. The mitigation site is located on a former log deck of the historic mill site. The site is dominated by Himalayan blackberry and Scotch broom with several birch trees scattered throughout. Several wetlands and ditches are located along the periphery of the mitigation site; these features will not be impacted by the proposed mitigation activities.

The site will first be excavated for the flood management mitigation. Since the site contains a deep layer of wood waste from the historic mill, the contractor will over-excavate the amount necessary for flood management mitigation to allow for the introduction of imported topsoil. After all flood management excavation is completed, topsoil will be introduced and irrigation will be constructed. An existing water main at the south end of the site will be used as the irrigation water source. Plants will be installed and seed will be spread at the appropriate time of year (first fall following flood management mitigation completion) according to the planting

plan. Plants will be installed in rows to facilitate riding lawnmower maintenance which also ensures the most efficient maintenance practices possible. All species were selected from the Oregon City Native Plant List.

Mitigation opportunities within the proposed project were evaluated, however, due to the benefits of utilizing one large mitigation site, no areas within the proposed project were large enough to accommodate the mitigation site. Therefore, the mitigation site is proposed approximately 230 feet northwest of the proposed project. The UPRR railway is located between the proposed project and the mitigation site.

One mitigation site is proposed as opposed to mitigating for each NROD buffer impact throughout the project area and/or within the ROW. This approach provides multiple ecological benefits, most notably providing a large, protected area of wildlife habitat. Providing larger areas of unbroken habitat is typically thought to allow for increased species diversity compared to an equal amount of disconnected areas. In addition, the chance of success for a larger mitigation site is greater as site conditions (such as soils and ground water levels) are more homogeneous for a single area and they can be more thoroughly reviewed during project planning phases. One large site will also be more economical to maintain during the monitoring period (i.e., one source for irrigation water, one site for maintenance crews to visit etc.). Additionally, NROD mitigation within highway or road ROW should be discouraged as these areas will attract wildlife to high traffic areas.

An equal ratio of mitigation to impact is proposed for this project for several reasons. The quality of the vegetation with the NROD buffers throughout the proposed project is very low and all of the buffers are highly disturbed. Several buffers are entirely composed of maintained lawn or highway or road ROW. All of the buffers contain noxious weed species and other non-native species. In addition, the proposed mitigation site is further degraded than the impacted NROD buffers throughout the project as the soils are composed of decomposed bark chips and the vegetation is composed almost entirely of noxious weeds. Therefore, the mitigation site will highly enhance a heavily degraded system. The functional value of the mitigation site will far outweigh the existing NROD buffers that will be impacted.

Details on how the proposed mitigation will meet the applicable requirements and additional design details are located in the Mitigation Report (Attachment C).

7.0 Applicable Regulations

A pre-application meeting was held on April 23, 2010 with the applicant, Oregon City Public Works Department, the consultants including MB&G; OBEC Consulting Engineers; GreenWorks; and Oregon City Planning Department. During this pre-application meeting, the Planning Department determined that the project must comply with Oregon City Municipal Code Chapter 17.49.

The proposed project, including proposed NROD impacts and conceptual mitigation, was presented to the Citizen Involvement Committee on March 1, 2010. The details presented at this meeting included documentation that the flood management and NROD impacts and conceptual mitigation had been proposed. No comments on NROD impacts or mitigation concepts were received.

Coordination with state and federal agencies is discussed in Section 3.0 of the Mitigation Report, Attachment C.

8.0 Compliance with Oregon City Municipal Code

In this section, italicized text comes directly from Oregon City Municipal Code, Chapter 17.49: Natural Resource Overlay District. Non-italicized text indicates the response to the code. Bold, italicized text within a response section indicates a request for an adjustment from standards.

17.49.20 How the NROD Works

The NROD protects as one connected system, the habitats and associated functions of the streams, riparian corridors, wetlands and the regulated upland habitats found in Oregon City. These habitats and functions are described in the following documents upon which the NROD is based:

The 1999 Oregon City Local Wetland Inventory
The Oregon City Water Quality Resource Area Map (Ord. 99-1013)
2004 Oregon City slope data and mapping (LIDAR)
Metro Regionally Significant Habitat Map (Aerial Photos taken 2002)
National Wetland Inventory (published 1992).
Beavercreek Road Concept Plan (adopted September 2008).
Park Place Concept Plan (adopted April 2008).

The NROD provisions apply only to properties within the NROD as shown on the NROD Map, as amended.

Properties on the NROD map which are smaller than two acres which are completely surrounded by the NROD shall be included within the NROD and subject to review under this code.

The NROD provisions do not affect existing uses and development, or the normal maintenance of existing structures, driveways/parking areas, public facilities, farmland and landscaped areas. New public facilities such as recreation trails, planned road and utility line crossings and stormwater facilities, are allowed within the overlay district under prescribed conditions as described in Section 17.49.90. In addition, provisions to allow a limited portion of the NROD to be developed on existing lots of record that are entirely or mostly covered by the NROD ("highly constrained") are described in Section 17.49.120.

Response: The NROD boundaries on the NROD map pass in and out of the project footprint (approximately 40 acres); therefore, the NROD provisions apply to the proposed project. The proposed project will entail new public road facilities, utility replacements and stormwater facilities.

17.49.30 Map as Reference

This chapter applies to all development within the Natural Resources Overlay District as shown on the NROD Map, which is a regulatory boundary mapped 10' beyond the required vegetated corridor width specified in section 17.49.110. The map can only be amended by the City Commission. Verification of the map shall be processed pursuant to Section 17.49.250.

Response: An adjustment is requested (replace 17.49.30 with the following based on Planning Department's future code revisions):

> *This chapter applies to all development within the Natural Resources Overlay District as shown on the NROD Map, which is a regulatory boundary mapped 10' beyond the required vegetated corridor width specified in section 17.49.110.* ***Notwithstanding changing field conditions or updated mapping approved by the City, the applicant may choose to either accept the adopted NROD boundary or provide a verifiable delineation of the true location of the natural resource feature.***

Oregon City, as the applicant for the proposed project, has chosen to provide a verifiable delineation of the true location of the natural resource features within the proposed project. MB&G biologists conducted a wetland and waters delineation of the proposed project area in 2009 and identified 12 wetlands and 21 waters including one pond, three streams, and 17 artificial ditches created for the purposes of conveying stormwater runoff within the project. Refer to Section 4 of this report and the Wetland/Waters Delineation Report, Attachment B for additional information regarding these features

17.49.35 Addition of Wetlands to Map following Adoption

The NROD boundary shall be expanded to include a wetland identified during the course of a development permit review if it is within or partially within the mapped NROD boundary and meets the State of Oregon's definition of a "Locally Significant Wetland". In such cases the entire wetland and its required vegetated corridor as defined in Table 17.49.110 shall be regulated pursuant to the standards of this Chapter. The NROD boundary shall be added to the NROD map by the Community Development Director after the development permit becomes final.

Response: All wetlands identified in the wetland delineation have been included as natural resource features and have been provided NROD buffers.

17.49.40 NROD Permit

An NROD permit is required for those uses regulated under Section 17.49.90, Uses Allowed under Prescribed Conditions. An NROD permit shall be processed under the Type II development permit procedure, unless an adjustment of standards pursuant to Section 17.49.87 is requested or the application is being processed in conjunction with a concurrent application or action requiring a Type III or Type IV development permit.

Response: An NROD permit is requested as the proposed project is a regulated use under prescribed conditions. A Type III review process is called for as adjustments from standards are requested.

17.49.60 Consistency and Relationship to Other Regulations

A. Where the provisions of the NROD are less restrictive or conflict with comparable provisions of the Oregon City Municipal Code, other City requirements, regional, state or federal law, the provisions that are more restrictive shall govern.

Response: No conflicts have been identified for the proposed project.

B. Compliance with Federal and State Requirements.

a. If the proposed development requires the approval of any other governmental agency, such as the Division of State Lands or the U.S. Army Corps of Engineers, the applicant shall make application for such approval prior to or simultaneously with the submittal of its development application to the City. The planning division shall coordinate City approvals with those of other agencies to the extent necessary and feasible. Any permit issued by the City pursuant to this chapter shall not become valid until other agency approvals have been obtained or those agencies indicate that such approvals are not required.

Response: Approval for the proposed project has been requested from the Oregon Department of State Lands (Joint Permit Application to comply with the State of Oregon's Removal/Fill Law) and the U.S. Army Corps of Engineers (Joint Permit Application to comply with section 404 of the Clean Water Act). The Joint Permit Application was submitted to both agencies May 25, 2010. A permit is expected to be issued by both agencies by September 25, 2010.

Prohibited, Exempted and Regulated Uses

17.49.70 Prohibited Uses

The following development and activities are not allowed within the NROD:

Any new gardens, lawns, structures, development, other than those allowed outright (exempted) by the NROD or that is part of a regulated use that is approved under prescribed conditions. Note: Gardens and lawns within the NROD that existed prior to the time the overlay district was applied to a subject property are allowed to continue but cannot expand further into the overlay district.

Response: Landscaping and/or site restoration may be necessary for maintenance of the new roadway within an NROD boundary and is permitted under 17.49.90(E).

New lots that would have their buildable areas for new development within the NROD are prohibited.

Response: Not applicable.

The dumping of materials of any kind is prohibited except for placement of fill as provided in (D) below. The outside storage of materials of any kind is prohibited unless they existed before the overlay district was applied to a subject property. Uncontained areas of hazardous materials as defined by the Oregon Department of Environmental Quality (ORS 466.005) are also prohibited.

Response: All fill placement will be part of an approved development activity and therefore allowed. No uncontained areas of hazardous materials are anticipated.

D. Grading, the placement of fill in amounts greater than ten cubic yards, or the removal of native vegetation within the NROD is prohibited, unless part of an approved development activity.

Response: All fill placement and vegetation removal will be part of an approved development activity and therefore allowed.

17.49.80 Uses Allowed Outright (Exempted)

The following uses are allowed within the NROD and do not require the issuance of an NROD permit:

A. Stream, wetland, riparian, and upland restoration or enhancement projects as authorized by the City.

Response: The NROD mitigation is considered an upland restoration project, therefore this use is allowed outright and impacts to NROD buffers surrounding Wetlands J, K, and L are exempt. Items B-K of this section do not apply to this project.

17.49.90 Uses Allowed Under Prescribed Conditions

The following uses within the NROD are subject to the applicable standards listed in Sections 17.49.100 through 17.49.190 pursuant to a Type II process:

E. New roadways, bridges/creek crossings, utilities or alterations to such facilities when not exempted by Section 17.49.80, subject to Section 17.49.150 (for roads, bridges/creek crossings) or Section 17.49.140 (for utility lines) or Section 17.49.100 (for stormwater detention or pre-treatment facilities).

Response: The proposed project includes a new roadway and alterations to existing roadways and is therefore an allowed use under prescribed conditions. Items A-D and F-G do not apply to this project.

Development Standards

17.49.100 General Development Standards

The following standards apply to all Uses Allowed under Prescribed Conditions within the NROD with the exception of rights of ways (subject to Section 17.49.150), trails (subject to Section 17.49.170), utility lines (subject to Section 17.49.140), land divisions (subject to Section 17.49.160), and mitigation projects (subject to Section 17.49.180 or 17.49.190):

Response: The proposed project will follow 17.49.150 standards, therefore the standards in this section do not apply.

17.49.110 Width of Vegetated Corridor

A. Calculation of Vegetated Corridor Width within City Limits. The NROD consists of a vegetated corridor measured from the top of bank or edge of a protected habitat or water feature. The minimum required width is the amount of buffer required on each side of a stream, or on all sides of a feature if non-linear. The width of the vegetated corridor necessary to adequately protect the habitat or water feature is specified in Table 17.49.110.

Table 17.49.110

Protected Feature Type (See Definitions)	*Anadromous Fish-bearing Stream*	*All Other Features*			
		Intermittent Stream < 25%, drains < 100 acres	*All Other Streams (Intermittent or Perennial)*		*Delineated Wetland*
Minimum Required Width	*200'*	*15'*	*50'*	*200'*	*50'*
Slope Adjacent to Feature	*Any*	*< 25 %*	*> 25 % for less than 150 feet (see Note 2)*	*> 25 % for 150 feet or more (see Note 2)*	*Any*
Starting Point for Measurements from Feature	*Top of Bank*	*Top of Bank*	*Top of Bank*	*Top of bank to break in > 25 % slope (See Note 3) + 50'*	*Delineated Edge of Title 3 Wetland*
Maximum Disturbance Allowance	*See Section 17.49.120*				
Mitigation Requirements	*See Section17.49.180 or 17.49.190*				

Notes:

Vegetated corridors in excess of fifty feet apply on steep slopes only in the uphill direction from the protected water feature.

Where the protected water feature is confined by a ravine or gully, the top of the ravine is the break in the ≥ 25 percent slope.

Response: An adjustment is requested (replace Table 17.49.110 and associated notes) with the following based on Planning Department's future code revisions:

Protected Water Feature Type	*Slope Adjacent to Protected Water Feature*	*Starting Point for Measurements from Water Feature*	*Width of NROD (see Note 1)*
Anadromous fish-bearing streams	*Any slope*	*• Edge of bankfull flow*	*200 feet*
Intermittent streams with slopes less than 25 percent and which drain less than 100 acres	*< 25 percent*	*• Edge of bankfull flow*	*15 feet*
All other protected water features	*< 25 percent*	*• Edge of bankfull flow* *• Delineated edge of Title 3 wetland*	*50 feet*
	≥ 25 percent for 150 feet or more (see Note 2)		*200 feet*
	≥ 25 percent for less than 150 feet (see Note 2)		*Distance from starting point of measurement to top of ravine (break in ≥25 percent slope) (See Note 3) plus 50 feet.*

Notes:

1. Required width (measured horizontally) of NROD unless reduced pursuant to the provisions of Section 17.49.050(I).

2. NROD in excess of fifty feet apply on steep slopes only in the uphill direction from the protected water feature.

3. Where the protected water feature is confined by a ravine or gully, the top of the ravine is the break in the ≥ 25 percent slope.

B. Habitat Areas within City Parks. For habitat and water features identified by Metro as regionally significant which are located within city parks, the NROD Boundary shall correspond to the Metro Regionally Significant Habitat Map.

Response: The proposed project is not located within a City Park.

C. Habitat Areas outside city limit / within UGB. For habitat and water features identified by Metro as regionally significant which are located outside of the city limits as of the date of

adoption of this ordinance, the minimum corridor width from any non-anadromous fish bearing stream or wetland shall be fifty feet (50').

Response: The southern portion of the project is located outside of the city limits, but within the UGB. All wetlands/waters have been delineated within the vicinity of the project and the appropriate buffers applied. Therefore, this section does not apply to this project.

17.49.120 Maximum Disturbance Allowance for Highly Constrained Lots of Record

Response: Not applicable to the proposed project.

17.49.130 Existing Development Standards

In addition to the General Development Standards of Section 17.49.100, the following standards apply to alterations of existing development within the NROD, except for trails, rights of way, utility lines, land divisions and mitigation projects

Response: As this is a rights of way project, this section does not apply.

17.49.150 Standards for Rights of Ways

The following standards apply to public rights of way within the NROD, including roads, bridges/stream crossings and pedestrian paths with impervious surfaces:

A. Stream crossings shall be limited to the minimum number necessary to ensure safe and convenient pedestrian, bicycle and vehicle connectivity, and shall cross the stream at an angle as close to perpendicular to the stream channel as practicable. Bridges shall be used instead of culverts wherever practicable.

Response: No new stream crossings are proposed for this project.

B. Where the right-of-way crosses a stream the crossing shall be by bridge or a bottomless culvert;

Response: An adjustment is requested (**replace section 17.49.150(B)**). The proposed project will cross an existing stream (Stream 16) that passes under OR 213 via a culvert. This culvert will not be disturbed, extended, or replaced for the proposed project. The culvert extension for Stream 15 is not part of a ROW crossing; instead, it is part of an existing ROW expansion.

> *Where the right-of-way* ***adds a stream crossing where native, migratory fish are present****, the crossing shall be by bridge or a bottomless culvert.* ***Where the right-of-way crosses an existing culvert crossing, there shall be no requirement to add a bridge or bottomless culvert.***

C. No fill or excavation shall occur within the ordinary high water mark of a stream;

Response: An adjustment is requested (**remove section 17.49.150(C)**). Fill and/or excavation will be required within the ordinary high water mark of Stream 15 and will be regulated by the Oregon Department of State Lands and U.S. Army Corps of Engineers.

D. If the Oregon Department of State Lands (DSL) has jurisdiction over any work that requires excavation or fill in a wetland, required permits or authorization shall be obtained from DSL prior to release of a grading permit;

Response: Approval for the proposed project has been requested from the Oregon Department of State Lands (Joint Permit Application to comply with the State of Oregon's Removal/Fill Law)

and the U.S. Army Corps of Engineers (Joint Permit Application to comply with section 404 of the Clean Water Act). A Joint Permit Application was submitted May 25, 2010 and a permit is expected to be issued by both agencies by September 25, 2010.

E. Any work that will take place within the banks of a stream shall be conducted between June 1 and August 31, or shall be approved by the Oregon Department of Fish and Wildlife; and

Response: An adjustment is requested (**replace section 17.49.150(E)**). Stream 15, where work will be conducted, is a tributary of Abernethy Creek. The ODFW in-water-work-window for Abernethy Creek is July 15-September 30 (ODFW 2008) and the project will comply with this timing.

> **Replacement:** *E. Any work that will take place within the banks of a stream shall be conducted between **July 15** and **September 30**, or shall be approved by the Oregon Department of Fish and Wildlife; and*

F. Mitigation is required, subject to Section 17.49.180 or 17.49.190.

Response: Mitigation will be provided for impacts to the NROD.

17.49.180-190 Mitigation Standards

Response: Refer to Section 1.0 in the Mitigation Report, Attachment C.

17.49.200 Adjustment from Standards

If a regulated NROD use listed in Section 17.49.90 cannot meet one or more of the applicable NROD standards then an adjustment may be issued if all of the following criteria are met. Compliance with these criteria shall be demonstrated by the applicant in a written report prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. At the applicant's expense, the City may require the report to be reviewed by an environmental consultant. Such requests shall be processed under the Type III development permit procedure. The applicant shall demonstrate:

A. There are no feasible alternatives for the proposed use or activity to be located outside the NROD area or to be located inside the NROD area and to be designed in a way that will meet all of the applicable NR-SW development standards;

Response:

Refer to Section 5.0 Impacts within the NROD for a discussion on avoidance and minimization measures employed to reduce impacts within NROD buffers.

B. The proposal has fewer adverse impacts on significant resources and resource functions found in the local NROD area than actions that would meet the applicable environmental development standards;

Response: The proposed project has fewer adverse impacts on NROD resources and their functions than an action that would meet the applicable environmental development standards. This is due to the heavily degraded nature of the NROD buffers and the suitable mitigation that will create a higher functioning NROD area than currently exists within the project. Refer to Section 5.0 Impacts within the NROD for details on the alternatives analysis conducted for the proposed project.

C. The proposed use or activity proposes the minimum intrusion into the NROD area that is necessary to meet development objectives;

Response: Refer to Section 5.0 Impacts within the NROD for a discussion on avoidance and minimization measures employed to reduce impacts within NROD buffers. The smallest project footprint possible has been developed to reduce impacts within the NROD buffers.

D. Fish and wildlife passage will not be impeded; and

Response: Native migratory fish are not known to occur within the proposed project (Brick 2009). In addition, ODFW has determined that native migratory fish that would require fish passage are not present within the project area. The proposed project will not cause additional wildlife passage impacts above those already present from the existing roadways.

E. With the exception of the standard(s) subject to the adjustment request, all other applicable NROD standards can be met.

Response: As demonstrated by the responses provided in this Section, all standards will be met with the exception of the standards where adjustments have been requested.

Application Requirements

17.49.210 Type II Development Permit Application

Unless otherwise directed by the NROD standards, proposed development within the NROD shall be processed as a Type II development permit application. All applications shall include the items required for a complete application by Sections 17.49.220-230, and Section 17.50.080 of the Oregon City Municipal Code as well as a discussion of how the proposal meets all of the applicable NROD development standards 17.49.100-170.

17.49.220 Required Site Plans

Site plans showing the following required items shall be part of the application:

A. For the entire subject property (NROD and non-NROD areas):

1. The NROD district boundary. This may be scaled in relation to property lines from the NROD Map;

Response: The buffers, based on a field-verifiable wetland/waters delineation, have been included in Attachment A, Figures 2a-e. Based on discussions with the City Planner for Oregon City, the NROD District Boundary is the same as the individual NROD buffers (Pete Walter, pers. comm., City Planner, Oregon City May 6, 2010).

2. 100 year floodplain and floodway boundary (if determined by FEMA);

Response: The City's Design Flood Boundary (50.7 feet) is shown in Attachment A, Figure 2 (Pete Walter, pers. comm., City Planner, Oregon City May 6, 2010).

3. Creeks and other waterbodies;

Response: Wetlands and waters boundaries, based on a field-verifiable wetland/waters delineation, are included in Attachment A, Figures 2a-e.

4. Any wetlands, with the boundary of the wetland that will be adjacent to the proposed development determined in a wetlands delineation report prepared by a professional wetland specialist and following the Oregon Division of State Lands wetlands delineation procedures;

Response: All wetlands within or adjacent to the proposed project are shown in Attachment A, Figures 2a-e. All wetlands were delineated by a wetland scientist following DSL wetland delineation procedures (Refer to Attachment B for the Wetland/Waters Delineation Report).

5. Topography shown by contour lines of 2 or 1 foot intervals for slopes less than 15% and by 10 foot intervals for slopes 15% or greater;

Response: An adjustment is requested (**replace section 17.49.220(5)**). Due to the large scale of the proposed project, greater spacing of contour lines is proposed.

> **Replacement:** *5. Topography shown by contour lines* ***at intervals appropriate for 1" = 200' scale figures (no greater than 5 foot intervals).***

6. Existing improvements such as structures or buildings, utility lines, fences, driveways, parking areas, etc.

Response: These features are shown in Attachment A, Figures 2a-e.

7. Extent of the required Vegetated Corridor required by Table 17.49.110.

Response: The NROD buffers are shown in Attachment A, Figures 2a-e.

B. Within the NROD area of the subject property:

1. The distribution outline of shrubs and ground covers, with a list of most abundant species;

Response: An adjustment is requested (**remove section 17.49.220(B)**). Due to the large scale of the project, showing the distribution outline of shrubs and ground covers is impractical. Based on discussions with the City Planner of Oregon City, it was agreed that a list of abundant species within each impacted NROD area would be shown instead (Attachment A, Figures 2a-e) (Pete Walter, pers. comm., City Planner, Oregon City May 6, 2010).

1. A list of most abundant species;

Response: A list of most abundant species within each impacted NROD buffer is included in Attachment A, Figures 2a-e and in Section 4.0 of this report.

2. Trees 6 inches or greater in diameter, identified by species. When trees are located in clusters they may be described by the approximate number of trees, the diameter range, and a listing of dominant species;

Response: A tree survey is currently being conducted. The tree locations, diameter, and species will be provided as soon as possible (as approved by Pete Walter) (Pete Walter, pers. comm., City Planner, Oregon City May 12, 2010).

3. An outline of the disturbance area that identifies the vegetation that will be removed. All trees to be removed with a diameter of 6 inches or greater shall be specifically identified as to number, trunk diameters and species;

Response: An outline of the disturbance area (area of potential impact) is shown in Attachment A, Figures 2a-e. Trees to be removed shall be provided on a plan sheet as soon as possible.

4. If grading will occur within the NROD, a grading plan showing the proposed alteration of the ground at 2 foot vertical contours in areas of slopes less than 15% and at 5 foot vertical contours of slopes 15% or greater.

Response: An adjustment is requested (**replace section 17.49.220(4)**). Due to the large scale of the proposed project, greater spacing of contour lines is proposed. Proposed grade elevations are shown in Attachment A, Figures 2a-e.

> **Replacement***: 4. If grading will occur within the NROD, a grading plan showing the proposed alteration of the ground* ***at intervals appropriate for 1" = 200' scale figures (no greater than 5 foot intervals).***

C. A construction management plan including:

1. Location of site access and egress that construction equipment will use;

Response: All construction access will utilize existing roadways. Mitigation site construction access is shown in Attachment A, Figure 2b.

2. Equipment and material staging and stockpile areas;

Response: All equipment and material staging and stockpiling will occur within the area of potential impact shown in Attachment A, Figures 2a-e.

3. Erosion control measures that conform to City of Oregon City erosion control standards;

Response: Refer to Attachment D, Preliminary Erosion and Sediment Control Plan.

4. Measures to protect trees and other vegetation located outside the disturbance area.

Response: Work exclusion zones will be established around sensitive areas, including protected trees. These areas will be fenced off to avoid damage, refer to Attachment D, sheet GA.

D. A mitigation site plan demonstrating compliance with Section 17.49.180 or 17.49.190, including:

1. Dams, weirs or other in-water features;

Response: Not applicable.

2. Distribution, species composition, and percent cover of ground covers to be planted or seeded;

Response: Refer to Attachment C.

3. Distribution, species composition, size, and spacing of shrubs to be planted;

Response: Refer to Attachment C.

4. Location, species and size of each tree to be planted;

Response: Refer to Attachment C.

5. Stormwater management features, including retention, infiltration, detention, discharges and outfalls;

Response: Not applicable.

6. Water bodies or wetlands to be created, including depth;

Response: Not applicable.

7. Water sources to be used for irrigation of plantings or for a water source for a proposed wetland.

Response: Irrigation source shown on Sheet 1a of Mitigation Report (Attachment C).

17.49.230 Mitigation Plan Report

A mitigation plan report that accompanies the above mitigation site plan is also required. The report shall be prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. The mitigation plan report shall, at a minimum, discuss:

Response: The mitigation plan report was written by Kristen Currens, Biologist, Mason, Bruce & Girard, Inc. The planting plan was prepared by Tim Strand, Landscape Architect Associate, GreenWorks, PC.

A. Written responses to each applicable Mitigation Standard 17.49.180 or 17.49.190 indicating how the proposed development complies with the mitigation standards;

B. The resources and functional values to be restored, created, or enhanced through the mitigation plan;

C. Documentation of coordination with appropriate local, regional, state and federal regulatory/resource agencies such as the Oregon Department of State Lands (DSL) and the United States Army Corps of Engineers (USACE);

D. Construction timetables;

E. Monitoring and Maintenance practices pursuant to Section 17.49.230 (F) and a contingency plan for undertaking remedial actions that might be needed to correct unsuccessful mitigation actions during the first 5 years of the mitigation area establishment.

Response: Refer to Attachment C.

Miscellaneous

Response: This section does not apply to the proposed project.

9.0 References

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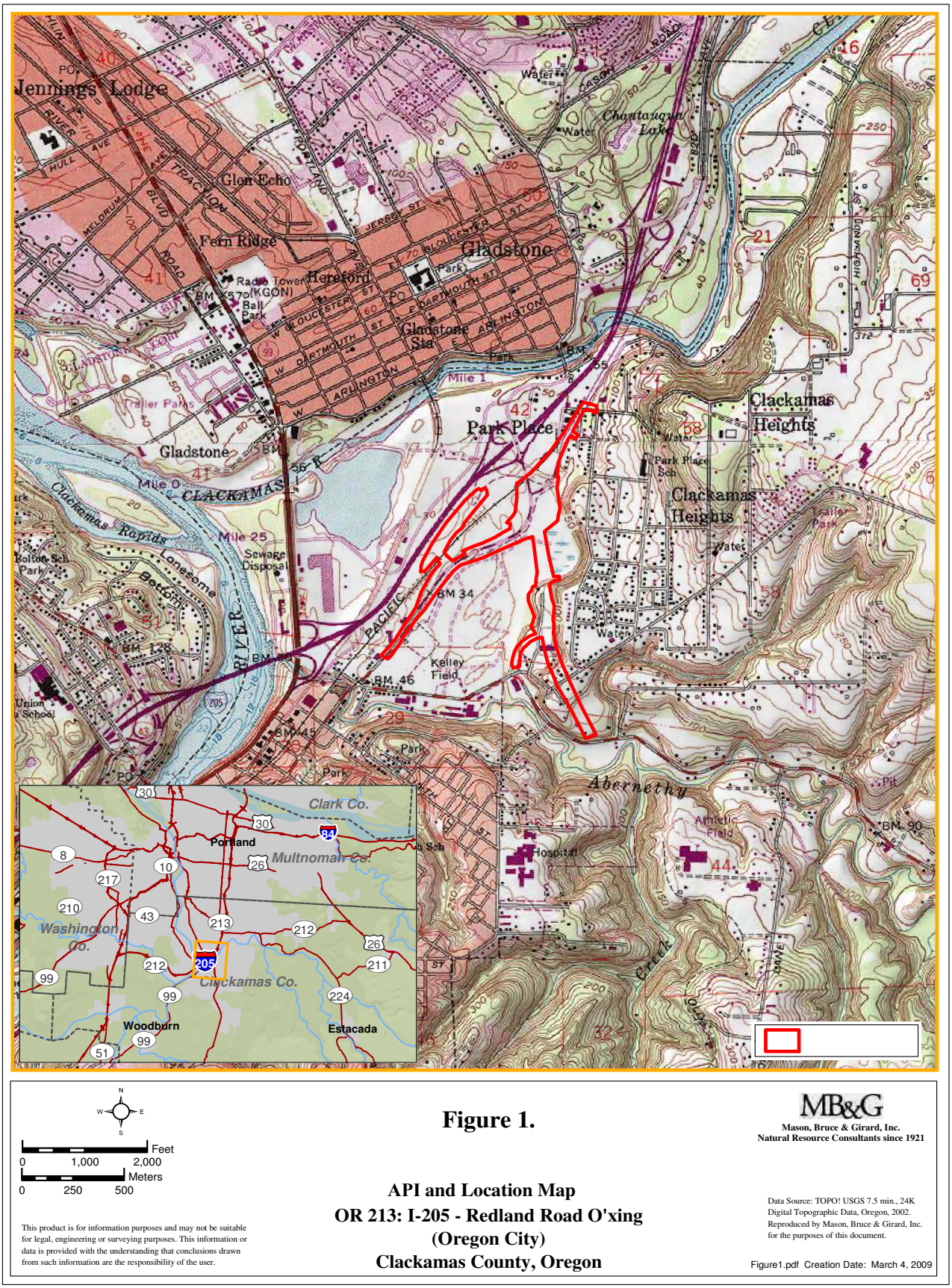
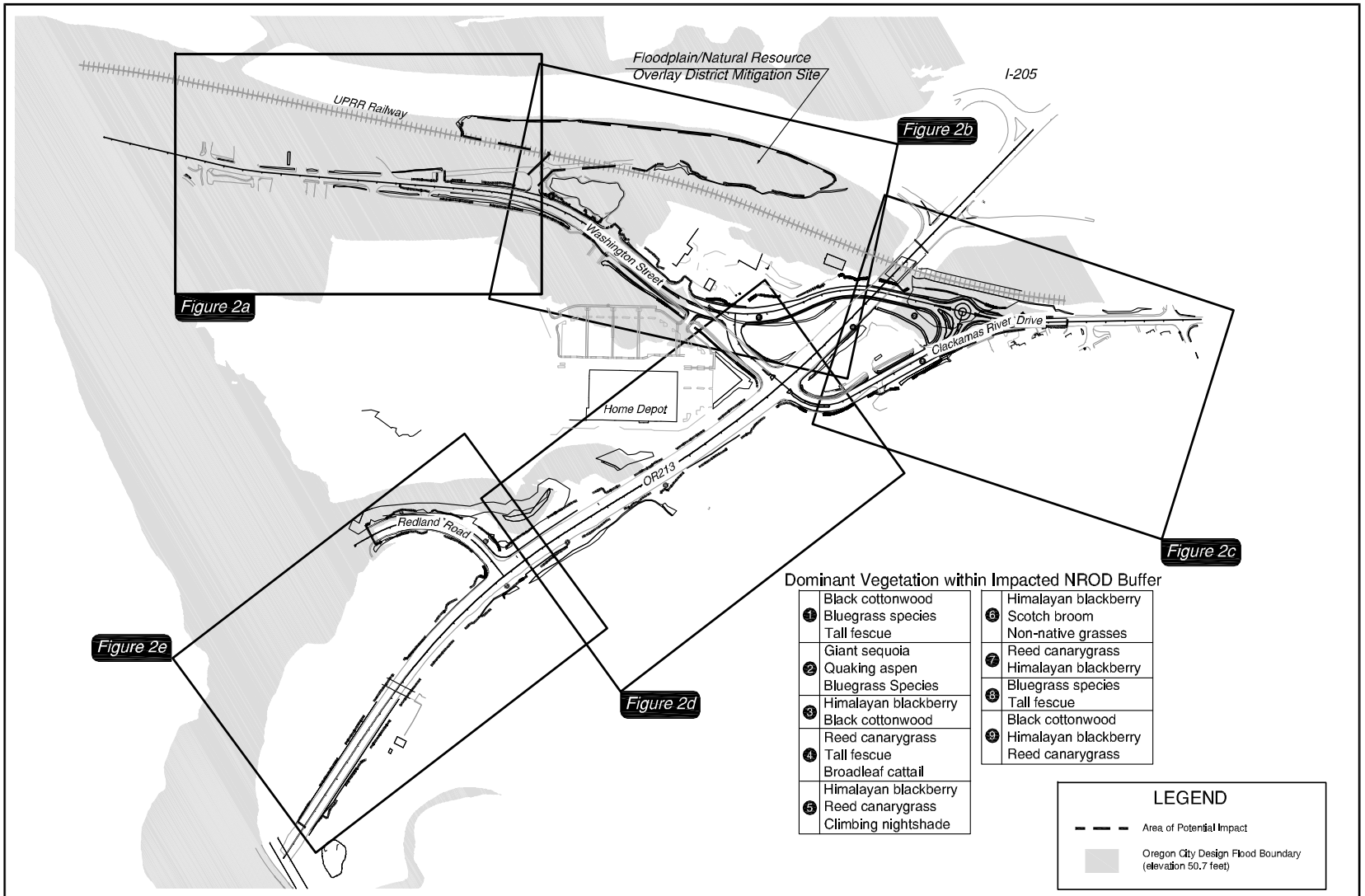
Walter, Pete. May 6, 2010. Personal Communication via a phone call with Kristen Currens, MB&G. Planner, Oregon City.

Walter, Pete. May 12, 2010. Personal Communication via an email to Kristen Currens, MB&G. Planner, Oregon City.

Attachment A: Location Map and NROD Site Plan


Jennings Lodge
Glen Echo
Fern Ridge
Gladstone
Hereford
Radio Tower (KGON)
Ball Park
Gladstone Sta
Park Place
Clackamas Heights
Mile 1
Mile 0
CLACKAMAS
Clackamas Rapids
Mile 25
Sewage Disposal
Bolton Sch
Lonesome Bottom
RIVER
PACIFIC
BM 34
BM 128
BM 46
BM 45
Kelley Field
Abernethy
Athletic Field
Hospital
Pit
BM 90
Creek
Clark Co.
Portland
Multnomah Co.
Washington Co.
Clackamas Co.
Woodburn
Estacada
84
205
Feet
0 1,000 2,000
Meters
0 250 500
This product is for information purposes and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.
Figure 1.
API and Location Map
OR 213: I-205 - Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
MB&G
Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921
Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon, 2002. Reproduced by Mason, Bruce & Girard, Inc. for the purposes of this document.
Figure1.pdf Creation Date: March 4, 2009



Source: OBEC Consulting Engineers

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(503) 224-3445 Phone
(503) 224-6524 Fax

OR 213: I-205 - Redland Road O'xing (Oregon City) Project

Clients: OBEC Consulting Engineers
Oregon City

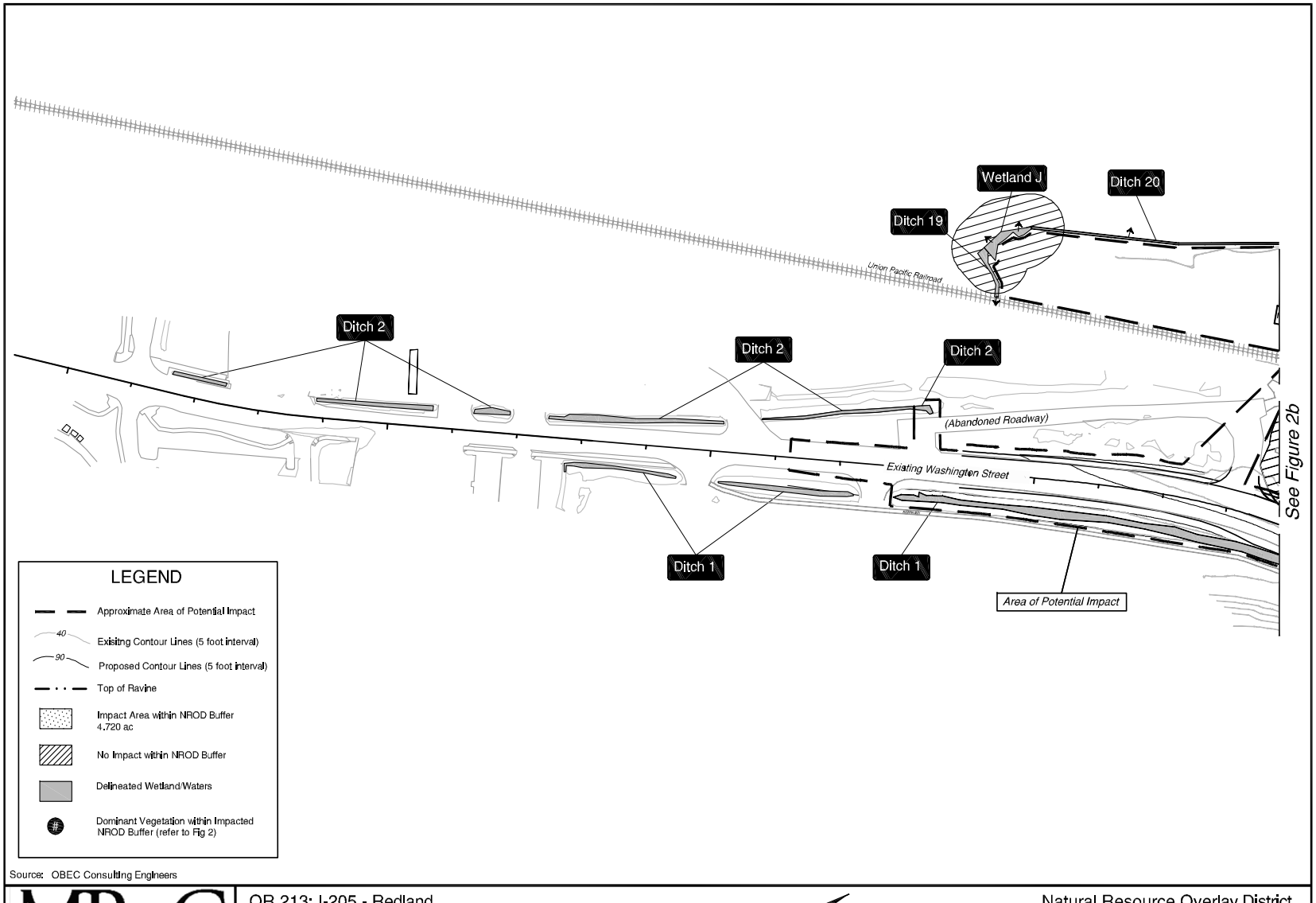
Approx. Scale: 1" = 700'-0"

350 0 700

Natural Resource Overlay District Impact Map

Figure 2
May 2010

1588_OR213\CAD\NROD\1588_nrodfig_042110 (1588_nrodbse_042110)05.27.10



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OR 213: I-205 - Redland
Road O'xing (Oregon City) Project

Clients: OBEC Consulting Engineers
Oregon City

Approx. Scale: 1" = 200'-0"

100 0 200

Natural Resource Overlay District
Impact Maps

Figure 2a
May 2010

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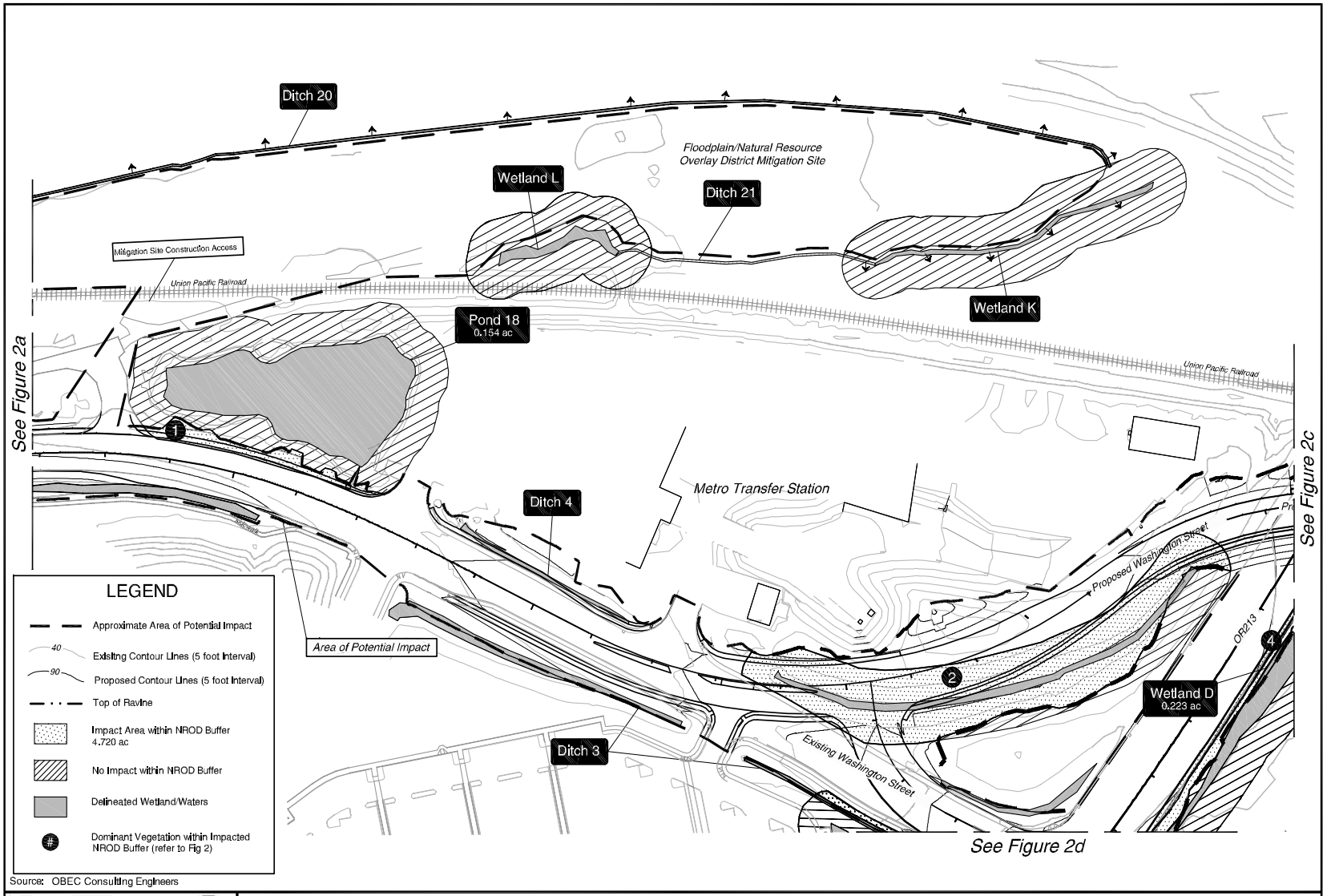

Source: OBEC Consulting Engineers

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OR 213: I-205 - Redland Road O'xing (Oregon City) Project

Approx. Scale: 1" = 200'-0"

100 0 200

N

Clients: OBEC Consulting Engineers
Oregon City

Natural Resource Overlay District
NROD Figure

Figure 2b
May 2010

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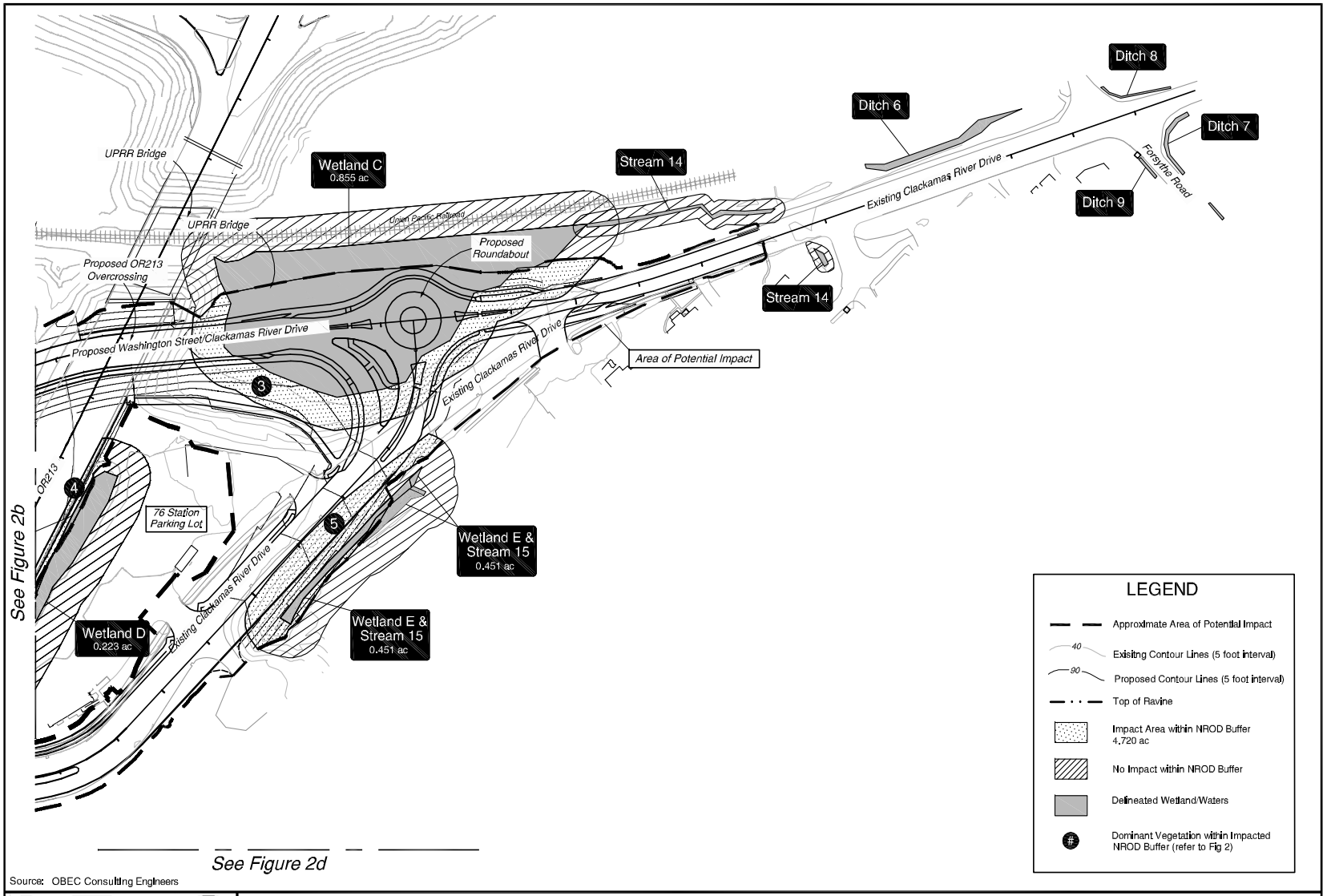

Source: OBEC Consulting Engineers

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OR 213: I-205 - Redland Road O'xing (Oregon City) Project

Clients: OBEC Consulting Engineers
Oregon City

Approx. Scale: 1" = 200'-0"

100 0 200

Natural Resource Overlay District
Impact Map

Figure 2c
May 2010

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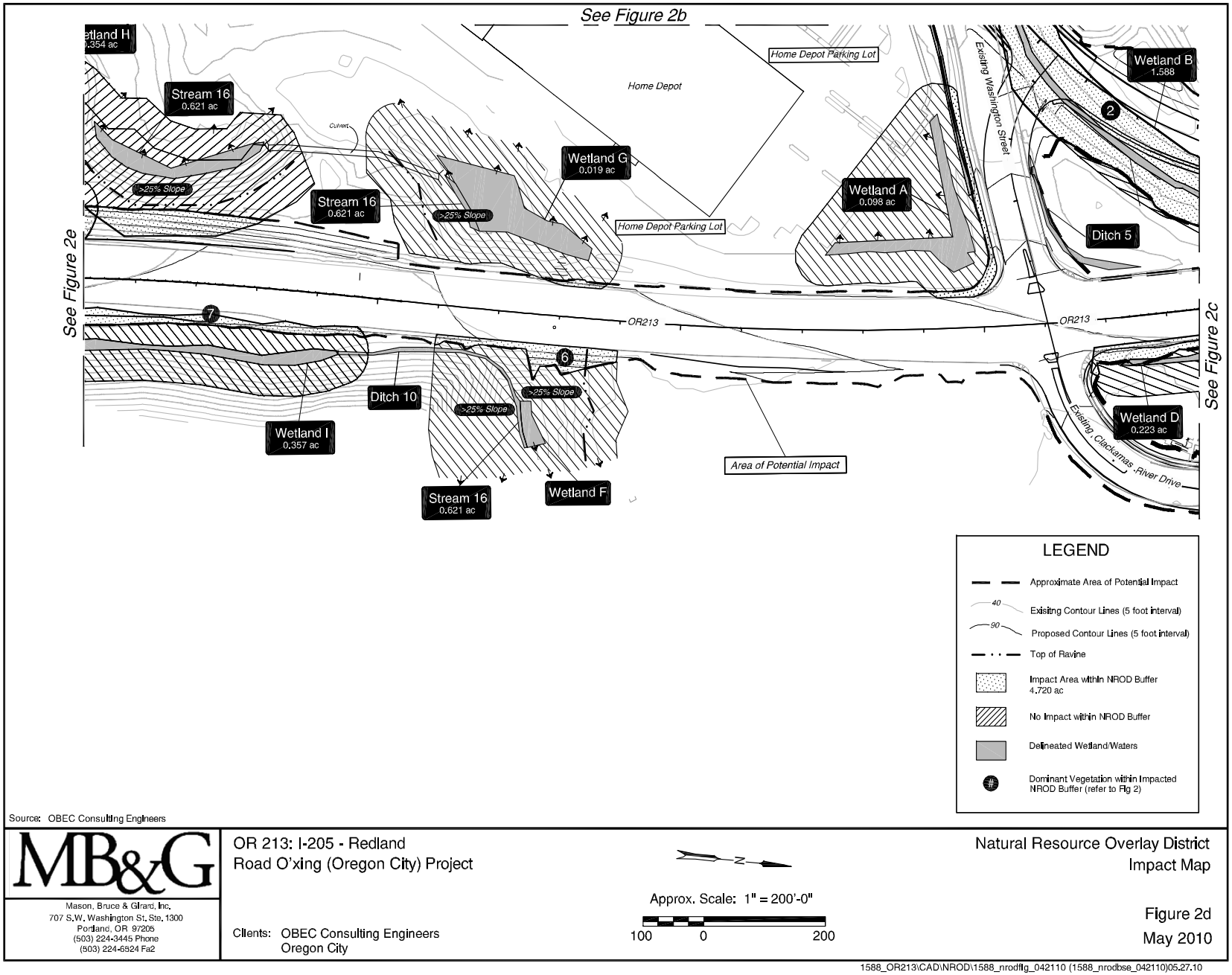

Source: OBEC Consulting Engineers

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OR 213: I-205 - Redland
Road O'xing (Oregon City) Project

Clients: OBEC Consulting Engineers
Oregon City

Approx. Scale: 1" = 200'-0"

100 0 200

Natural Resource Overlay District
Impact Map

Figure 2d
May 2010

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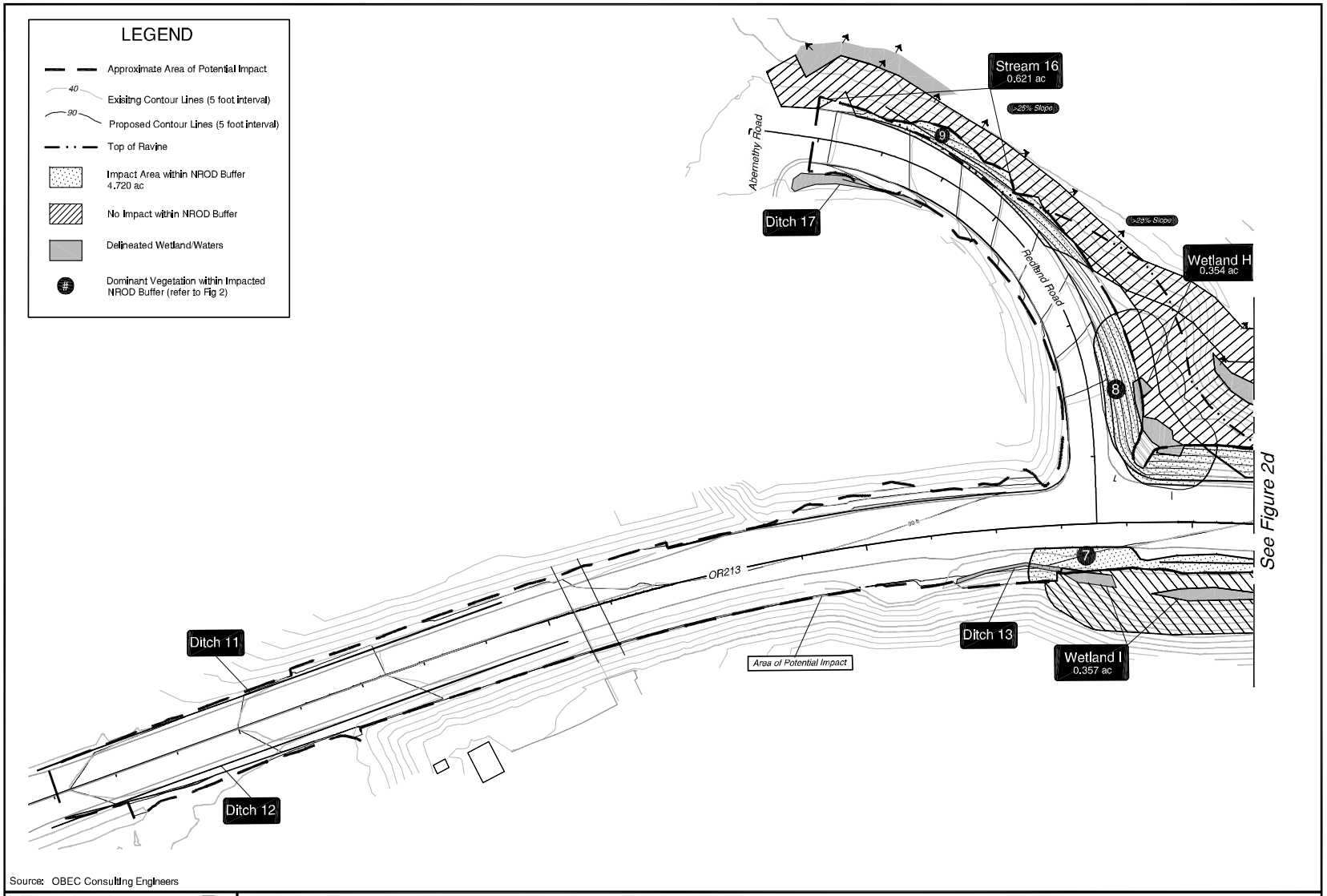

Source: OBEC Consulting Engineers

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OR 213: I-205 - Redland Road O'xing (Oregon City) Project

Clients: OBEC Consulting Engineers
Oregon City

N

Approx. Scale: 1" = 200'-0"

100 0 200

Natural Resource Overlay District
Impact Map

Figure 2e
May 2010

1588_OR213\CAD\NROD\1588_nrodfig_042110 (1588_nrodbse_042110)05.27.10

Attachment B: Wetland/Water Delineation Report

WETLAND AND WATERS OF THE STATE/U.S. DELINEATION REPORT

OR 213: I-205 – Redland Road O'xing (Oregon City) Project
ODOT Key #K16322
Oregon City, Clackamas County, Oregon

Prepared for:

OBEC Consulting Engineers
2235 Mission Street,
Suite 100 Salem, OR 97302-1295

Prepared by:

Mason, Bruce & Girard, Inc.
707 SW Washington Street, Suite 1300
Portland, Oregon 97205
(503) 224-3445

January 13, 2010
MB&G Project No. 010483

TABLE OF CONTENTS

TABLES

APPENDICES

i. SITE DATA SUMMARY

Data Summary	
Project Name:	OR 213: I-205 - Redland Road O'xing (Oregon City)
Location of Project:	The project study area (PSA) is located in Oregon City, Clackamas County, Oregon. The PSA begins south of the intersection of OR 213 and I-205, extending to the west along Washington Street and to the east along Clackamas River Drive. The PSA continues south along OR 213 to the bridge over Redland Road. A portion of the PSA extends west from OR 213 along Redland Road to Abernethy Road. A separate portion of the PSA is located approximately 50 feet north of Washington Street abutting the northern extent of the Union Pacific Railroad (UPRR) railway right-of-way (ROW). The PSA includes the following tax lots: Map: 22E29 Lots: CA00300, CA00400, CA00500, CA01000, 01200, 01400, 00400 01402, 01403, 00801, 00900, 00904, 00906, 02700, 00800, 00200, 00202 Map: 22E20 Lots: DD00600, DD01200, DD01600, DD01900, DD02000, DD05200, DD05300, DD05400, DD05500, DD05600, DD05700
Latitude/Longitude:	45.371°/-122.586° (center of the PSA)
Township/Range/Section:	Township: 2 South/Range: 2 East/Section 29 and the southern extent of Section 20.
Size of Study Area:	63.92 acres
City:	Oregon City
County:	Clackamas County
Project Staff:	Jonathon Belmont, Brian Cook, Christine Maynard, & Brett Horton (MB&G)
Field investigation(s):	February 23-25, 2009, March 26-27, 2009, August 24, 2009 and September 2, 2009
Site Access Permission:	Access to private lands and State Right-of-Way is granted.
Current Land Use(s):	Transportation (OR 213, Washington Street, Redland Road, and Clackamas River Drive right-of-ways [ROWs]); commercial (Home Depot, 76 Gas Station, and other businesses), and industrial (Metro South Transfer Center), including access roads, parking lots, heavily disturbed abandoned lots, driveways, and a stormwater treatment pond.
Waterways on Site:	21 waterways (1.45 total acres): 17 ditches (1.05 acres), 3 streams (0.30 acre), 1 Pond (0.10 acre)
Wetland Types (Cowardin classification & Size):	12 wetlands (3.11 total acres): 2.78 acres Palustrine Emergent (PEM) 0.33 acre Palustrine Forested (PFO)
Wetland/Riparian Hydrogeomorphic (HGM) Subclasses of Oregon:	Riverine Flow-through, Depressional Outflow, Flats, and Slope Valley 0.25 acre Riverine Upper Perennial Unconsolidated Bottom (R3UB) 1.10 acre Riverine Intermittent Stream Bed (R4SB) 0.10 acre Lacustrine Limnetic Unconsolidated Bottom (L1UB)
Corps Waterway Category:	Categories:3, 5, and 7
Soil Survey	The following soil map units have been identified within the PSA (Figure 4, Appendix A): 16- Chehalis silt loam; non-hydric with hydric inclusions (Wapato) 37C- Helvetia silt loam, 8 to 15 percent slopes; non-hydric with hydric inclusions (Delena & Aquolls) 56- McBee silty clay loam; non-hydric with hydric inclusions (Wapato & Aquolls). 67 - Newberg fine sandy loam; non-hydric with hydric inclusions (Wapato & Aquolls) 76B- Salem silt loam, 0 to 7 percent slopes; non-hydric, no hydric inclusions 82- Urban Land; non-hydric, no hydric inclusions. 84- Wapato silty clay loam; hydric with hydric inclusions (Cove & Humaquepts) 91B- Woodburn silt loam, 3 to 8 percent slopes; non-hydric with hydric inclusions (Huberly, Aquolls & Dayton) 92F- Xerochrepts and Haploxerolls, very steep; non-hydric, no hydric inclusions.

A. LANDSCAPE SETTING AND LAND USE

This delineation report documents the wetland and waters resources within the project study area (PSA) for the OR 213: I-205 - Redland Road O'xing (Oregon City) Project (project). This report will support project planning and compliance with state and federal wetland and waters removal/fill regulations.

The PSA is located within the City of Oregon City (City), Clackamas County, Oregon, which is situated in the northern part of the Willamette Valley, approximately 1 mile southeast of the confluence of the Willamette and Clackamas Rivers (Figure 1 [all figures are provided in Appendix A]). The PSA is located in the northeastern part of the City, where the topography transitions from rolling terraces into a flat, floodplain of the Willamette River and Clackamas River.

Current land uses in the vicinity of the PSA include residential, commercial and industrial developments. Specifically, a large Home Depot warehouse, a 76 Gas Station, the Metro South Transfer Center (Transfer Center), and numerous small businesses are situated within and immediately adjacent to the northern portion of the PSA. In addition, several heavily disturbed, vacant lots are located within the PSA. The southern portion of the PSA is primarily surrounded by residential development.

For descriptive purposes, the PSA has been divided into four segments (Figure 1a). These segments are described in detail below.

Segment 1 begins at the western extent of the PSA on Washington Street, extending northeast to the intersection of Washington Street and OR 213. Two additional areas to the north of Washington Street are included within the PSA, including a vacant lot to the north of the Union Pacific Railroad (UPRR) railway and a large maintained lawn and stormwater ditch located to the west of OR 213 and south of the UPRR railway. Within Segment 1, the PSA averages approximately 200 feet wide, ranging from 25 feet to 400 feet from the centerline of Washington Street. Several businesses are located along Washington Street, including the Transfer Center and a landscape supply business to the north and a Home Depot and the Rossman Landfill to the south. Narrow ditches parallel both sides of Washington Street and collect and convey stormwater runoff from adjacent impervious surfaces to a large stormwater collection/detention pond situated immediately west of the Transfer Center. Only a portion of this stormwater pond is situated within the PSA. Wetlands and stormwater ditches are also present within this segment of the PSA, as described in detail in Section E.

Segment 2 occupies the area east of OR 213, extending approximately 50 feet south from the Clackamas River Drive centerline and approximately 400 feet north to the UPPR railway. The eastern extent of this segment terminates at Forsythe Road, approximately 1,800 feet east of OR 213. Several land uses exist along Clackamas River Drive, including an excavation company and residential development to the south and a 76 Gas Station and the UPRR railway to the north. This segment is adjacent to large areas of impervious surface used for parking and storage areas for heavy equipment, trucks, and cars. Stormwater ditches, an unnamed tributary to Abernethy Creek and associated wetlands, and a large mapped wetland are present within this segment of the PSA, as described in Section E.

Segment 3 begins at the intersection of OR 213 and Washington Street – Clackamas River Drive, and extends southward along the OR 213 ROW to within 100 feet of the OR 213 Bridge over Redland Road and Abernethy Creek. Within this segment of the project, the PSA extends from

150 feet to 300 feet on either side of the centerline of OR 213. The northern extent of this segment consists of a portion of the Home Depot property. Across from the Home Depot and east of OR 213 is a large, heavily disturbed, rocky, and sparsely vegetated area. An unnamed tributary to Abernethy Creek traverses the central portion of Segment 3. South of this tributary, the PSA follows OR 213 through an incised hillside road cut that descends toward the OR 213 bridge over Redland Road and Abernethy Creek. Stormwater ditches, an unnamed tributary to Abernethy Creek, and three associated wetlands are located within this segment. These features are described in further detail in Section E.

Segment 4 extends southwest approximately 750 feet from the Redland Road intersection with OR 213 and occupies an area approximately 75 feet to either side of the Redland Road centerline. This segment terminates at the Redland Road intersection with Abernethy Road. A stormwater ditch located within this segment is described in further detail in Section E.

A.1 Vegetation Communities

Five vegetation communities were observed within the PSA: a disturbed/maintained herbaceous upland community, a disturbed/maintained herbaceous wetland community, an upland scrub-shrub community, a riparian forest community and a forested wetland community. These communities are described in detail below. Dominant vegetation associated with each of the on-site wetland features is described in greater detail on the wetland determination data forms (Appendix B).

A.1.1 Disturbed/Maintained Herbaceous Upland Community

The disturbed/maintained herbaceous upland community inhabits the majority of the PSA. This community is associated with the maintained ROW adjacent to all of the roadways and roadside ditches. This community also dominates the areas adjacent to driveways, parking lots, and commercial buildings. This community is characterized by the following native and non-native grasses and forbs: bluegrass (*Poa* sp. FAC [est.]), fescue (*Festuca* sp. FAC [est.]), tall fescue (*Schedonorus phoenix* FAC), white clover (*Trifolium repens* FAC), red clover (*Trifolium pratense* FACU), common yarrow (*Achillea millefolium* FACU), hairy cat's ear (*Hypochaeris radicata* FACU), and common dandelion (*Taraxacum officinale* FACU). This community includes small patches of unidentified horticultural species in several areas throughout the PSA.

A.1.2 Disturbed/Maintained Herbaceous Wetland Community

The disturbed/maintained herbaceous wetland community inhabits the wetlands and stormwater ditches that exhibit some wetland characteristics. This community is characterized by the following native and non-native facultative and wetter species: unidentified bluegrass species, tall fescue, velvetgrass (*Holcus lanatus* FAC), bentgrass (*Agrostis* sp. FAC [est.]), foul bluegrass (*Poa palustris* FAC), meadow foxtail (*Alopecurus pratensis* FACW), reed canarygrass (*Phalaris arundinacea* FACW), broadleaf cattail (*Typha latifolia* OBL), common rush (*Juncus effusus* FACW), American speedwell (*Veronica americana* OBL), and Fuller's teasel (*Dipsacus fullonum* FAC).

A.1.3 Upland Scrub-Shrub Community

The upland scrub-shrub community inhabits several areas within the PSA. These areas include a large area south of a wetland and north of the 76 Gas Station (Segment 2); the ROW north of

Clackamas River Drive extending to the eastern extent of the PSA (Segment 2); a large patch within the ROW to the east of Clackamas River Drive and west of an unnamed tributary to Abernethy Creek (Segment 3); and an area between the intersections of Redland Road with Abernethy Road and OR 213. This community is characterized by native vegetation dominated by sword fern (*Polystichum munitum* FACU), trailing blackberry (*Rubus ursinus* FACU), beaked hazelnut (*Corylus cornuta* FACU), vine maple (*Acer circinatum* FAC), red-osier dogwood (*Cornus sericea* FACW), and Himalayan blackberry (*Rubus armeniacus* FACU).

A.1.4 Riparian Forest Community

The riparian forest community inhabits the majority of the PSA abutting the on-site portions of a stormwater pond (Segment 1) and an unnamed tributary to Abernethy Creek (Segment 3). This community is characterized by the following species: black cottonwood (*Populus balsamifera* ssp. *trichocarpa* FAC) and red alder (*Alnus rubra* FAC) in the tree layer; trailing blackberry, snowberry (*Symphoricarpos albus* FACU), red-osier dogwood, vine maple, salmonberry (*Rubus spectabilis* FAC), thimbleberry (*Rubus parviflorus* FACU), and Himalayan blackberry in the shrub layer; and a sparse ground cover of native herbaceous species dominated by sword fern, large leaved avens (*Geum macrophyllum* FACW), and youth on age (*Tolmiea menziesii* FAC).

A.1.5 Forested Wetland Community

The forested wetland community inhabits the northwestern portion of the PSA within the on-site portion of Wetlands K and L (Segment 1). This community is characterized by the following species: black cottonwood, Oregon ash (*Fraxinus latifolia* FACW), black hawthorn (*Crataegus douglasii* FAC), and willow species (*Salix* sp. FACW [est.]).

B. SITE ALTERATIONS

As described in the preceding section, the PSA has been, and continues to be, heavily influenced by frequent human disturbance. Based on its proximity to the floodplain of the Clackamas River and the presence of remnant populations of large deciduous and coniferous trees located outside the PSA, the area was once likely a mixture of oak savannah, Douglas-fir (*Pseudotsuga menziesii*) forest, and mixed riparian forest.

An aerial photograph from 1936 (Figure 5a) shows that the majority of the PSA had been cleared of native vegetation for agricultural uses prior to 1936. Since then, the addition of fill material for major transportation corridors, including OR 213, I-205 and the Union Pacific Railroad tracks, has altered drainage patterns, as evidenced by the numerous drainage ditches throughout the PSA. More recently, a landfill was capped near the intersection of OR 213 and Washington Street/Clackamas River Drive.

A lumber mill formally occupied a large portion of the PSA north of the UPRR railway east of Wetland J (Figure 6b) and west of Wetland K (Figure 6o). This area is currently elevated approximately 15 feet above the surrounding topography. Based on soil samples within this area, a large proportion of decomposing bark and wood chip material was observed which is typical for historical mill sites. The vegetation community within this area is dominated by Himalayan blackberry, orchardgrass (*Dactylis glomerata*, FACU), and Scotch broom (*Cytisus scoparius* UPL).

As visible in Figure 5, a very large portion of the PSA and the adjacent lands have been converted to impervious surfaces. This conversion has created a “flashy” hydrologic regime

resulting in the need for stormwater ponds, stormwater ditches, and dozens of culverts. Within the majority of the PSA, the soils have high clay contents. As such, there is substantial overland flow, the majority of which is concentrated in ditches and conveyed out of the PSA. Stormwater ultimately discharges into a stormwater pond, the Clackamas River, Abernethy Creek, or unnamed tributaries to Abernethy Creek. Current flow patterns within the PSA, as observed during the field investigations, are included on Figure 5.

The majority of the vegetation within the PSA has either been planted or is comprised of non-native, non-native naturalized, and invasive species that have colonized the area due to transportation and other human development. Small remnant pockets of deciduous and coniferous trees exist near the outer extents of development; however, several of these areas have likely been planted for slope stabilization or aesthetics during original highway construction or property development.

Throughout the years of development within and adjacent to the PSA, much of the soil has been historically altered. Preliminary research and in-field investigations indicate that an extensive amount of fill material containing angular gravels and sand has been placed within and near the road prisms of all roads within the PSA. In addition, artificially constructed berms are located throughout the PSA, which appear to be part of the series of stormwater ditches. It appears that berms are comprised of soil excavated (side-cast) from ditch construction. These berms have been planted with ornamental and native species. Due to the large amount of excavation and movement of soil within the PSA, many of the soils observed near the surface are likely historic sub-surface horizons exhibiting relict hydric soil characteristics. Lastly, many sample plots that were excavated within the PSA exhibit very distinct stratified horizons comprised of angular rocky material or even matting that has been used to stabilize soils or treat stormwater. All of these characteristics indicate that the majority of the PSA has experienced extensive clearing, grading, and soil translocation.

C. PRECIPITATION DATA AND ANALYSIS

In the Willamette Valley, the majority of precipitation falls between November and March. The spring, fall, and winter months are cool and wet, and the summer months are typically warm and dry. The climate for the region is classified as modified marine influenced by the Coast Range to the west and the Cascade Mountains to the east. Precipitation totals average approximately 41 inches per year in the northern Willamette Valley (Gerig 1985). Since the delineation consisted of four separate field investigations (February 23-25, 2009, March 26-27, 2009, August 24, 2009, and September 2, 2009), Table 1 summarizes precipitation data from the Aurora, Oregon National Oceanic and Atmospheric Administration (NOAA) weather station for the four months prior to the March field investigation and Table 2 summarizes precipitation data from the Aurora, NOAA weather station for the four months prior to the September field investigation. Although this weather station is located approximately ten miles from the PSA, it is the only weather station that provides accurate daily recorded precipitation values in the vicinity of the project.

During the three months preceding the February field investigation and four months preceding the March field investigations, precipitation was below the normal range for the months of December, February, and March, with precipitation records within the normal range for the month of January (Table 1). (NOAA 2009, NRCS 2002).

Recorded precipitation for the 14 days preceding the February field investigations was 0.67 inch, 23 percent of the normal average amount of precipitation (2.86 inches). This amount was below the normal 30-70 percentile range for the 14 days preceding the field investigations (2.43-4.03 inches) (Table 1) . During the February 23-25, 2009 field investigations, 1.38 inches of precipitation were recorded (NOAA 2009, NRCS 2002).

Recorded precipitation for the 14 days preceding the March field investigations was 2.11 inches, 62 percent of the normal average amount of precipitation (3.38 inches). This amount was below the normal 30-70 percentile range for the 14 days preceding the field investigation (2.14-3.57 inches). No precipitation was recorded during the March 26 and 27, 2009 field investigations.

Table 1: Summary of Precipitation from December 1, 2008 to March 26, 2009 at Aurora, Oregon

Period	Recorded Precipitation[1] (inches)	30 – 70 % Range[2] (inches)	Within Normal Range?
December	4.36	5.60-9.64	No
January	5.69	4.84-8.90	Yes
14 Days prior to the February 23, 24, & 25, 2009 field investigation	0.67	2.43-4.03	No
February	2.14	4.86-8.05	No
March 1-26	3.37	3.82-5.75	No
14 Days prior to the March 26 & 27, 2009 field investigation	2.11	2.14-3.57	No
Water Year Totals[3]	21.86	17.02-33.81	No

[1]*Source: NOAA 2009*
[2]*Source: NRCS 2002*
[3]*Water year from October 1, 2008 – March 26, 2009.*

As mentioned above, 1.38 inches of precipitation were recorded during the February field investigations, which was 64 percent of the total precipitation recorded for the entire month of February (2.14 inches). Due to the heavy precipitation during the February field investigations and extensive amount of impervious surface within the PSA, the majority of wetlands, streams, and stormwater ditches were either flooded or near bankfull levels. Furthermore, many distinctly upland sample plots that were excavated within steep embankments of planting pads or fillslopes demonstrated saturated soils and/or free water in the pit. During the February field investigations, MB&G biologists observed water flowing laterally through the soil, travelling to the lowest topographic positions in the landscape. This was evidenced by seepage of water on the uphill sides of soil pits, with little to no seepage on the downhill side of soil pits. Despite the very wet and flooded conditions, MB&G determined that an accurate delineation of wetlands was possible through the use of soils and vegetation parameters (cross-referenced with geomorphic position and potential for abnormal conditions) as the key indicators to determine wetland presence or absence and coinciding wetland boundaries.

For the three months preceding the August and September field investigations, precipitation was below the normal range for the months of June, and July, with precipitation records within the

normal range for the month of August and for September 1 (Table 2). (NOAA 2009, NRCS 2002).

Recorded precipitation for the 14 days preceding the August field investigation (0.20 inch) was within the normal 30-70 percentile range (0.11-0.55 inch). No precipitation was recorded during the August 24, 2009 field investigation.

Recorded precipitation for the 14 days preceding the September field investigation (0.09 inch) was below the normal 30-70 percentile range (0.13-0.59 inch). No precipitation was recorded during the September 2, 2009 field investigation.

Table 2: Summary of Precipitation from June 1, 2009 to September 1, 2009 at Aurora, Oregon

Period	Recorded Precipitation[1] (inches)	30 – 70 % Range[2] (inches)	Within Normal Range?
June	0.59	1.12-2.18	No
July	0.25	0.32-1.01	No
14 Days prior to the August 24, 2009 field investigation	0.20	0.11-0.55	Yes
August	0.36	0.25-1.22	Yes
September 1	0.08	0.03-0.08	Yes
14 Days prior to the September 2, 2009 field investigation	0.09	0.13-0.59	No
Water Year Totals[3]	29.44	34.16-60.70	No

[1]*Source: NOAA 2009*
[2]*Source: NRCS 2002*
[3]*Water year from October 1, 2008 – September1, 2009.*

The August and September field investigations occurred during the normal dry season for the site, (see WebWIMP table in Appendix D) (WebWIMP 2003). Although precipitation volumes for the 14 day period prior to the August field investigation were within the normal range, the total volume of precipitation for the water year was below normal for the site. As such, where positive indicators of hydrology were absent in suspect locations, MB&G determined that an accurate delineation of wetlands was possible through the use of soils and vegetation parameters (cross-referenced with geomorphic position) as the key indicators to determine wetland presence or absence and coinciding wetland boundaries.

D. METHODS

The following describes the methodology used for this wetland delineation, including site-specific soils and hydrology conditions and assumptions. MB&G biologists, Brian Cook, Christine Maynard, Kristen Currens and Brett Horton, conducted the field investigations on February 23-25, 2009, March 26 and 27, 2009, August 24, 2009, and September 2, 2009. Wetlands were delineated using the criteria outlined in the U.S. Army Corps of Engineers (ACOE) Manual (Environmental Laboratory 1987) as supplemented by the Western Mountains, Valleys, and Coast Region Supplement (ACOE 2008).

Potential wetlands were identified prior to the field investigation using U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (USGS 1979), U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping (USFW 2009) (Figure 3), Local Wetland Inventory (LWI) mapping records for Oregon City (Shapiro 1999) (Figure 3a), the Soil

Survey of Clackamas County, Oregon (NRCS 2009, Gerig 1985, NRCS 1999) (Figure 4), and aerial photographs (Figure 5).

Wetland determination data forms provided by the Oregon Department of State Lands (DSL) were used to record soils, vegetation, and hydrology data at 85 representative sample plots located within the PSA (see Data Forms, Appendix B). Several additional plots along wetland boundaries and throughout upland areas in the PSA were also evaluated to confirm soil and hydrology characteristics; however, these plots were not recorded. All of the sample plots were established in representative areas where the best data on soils, hydrology, and vegetation could be obtained within the PSA. Plots were typically paired to evaluate representative samples of each wetland and adjacent non-wetland areas. Paired plots were established where distinct changes in vegetation community, topography, soils, and/or hydrological characteristics occurred along the wetland/non-wetland boundary to substantiate the wetland boundary location. Paired plots were established as close as possible, typically five to 15 feet apart along the wetland/non-wetland boundaries. Twenty individual plots (SP-X1 to SP-X9 and SP-X11 to SP-X21) were recorded in suspect areas that resulted in negative wetland determinations.

Due to below normal precipitation preceding the February field investigations and heavy precipitation during the field investigation, MB&G biologists concluded that primary indicators of wetland hydrology were not necessarily indicative of wetland conditions. In many instances vegetation and soil parameters were relied upon more heavily for determining wetland presence and extent. Due to the below normal precipitation preceding the March, August and September field investigations, MB&G biologists concluded that the lack of primary indicators of wetland hydrology did not exclude an area from wetland classification, and secondary indicators were scrutinized where hydric soil and hydrophytic vegetation were present.

Flow patterns were noted during the field investigations based on observations of flowing water and gradient direction. Flow patterns are included in Figure 5.

Additionally, due to the timing of both the February and March field investigations and recent vegetation maintenance (*i.e.*, mowing) within portions of the PSA, not all vegetation was identified to the species level. When plants could not be fully identified, their wetland indicator statuses were estimated based on their topographic position and species associates. Furthermore, based on a post-field review of commercial lawn seed mixes and the heartiness of these grasses in very wet areas, it was estimated that these grasses consist primarily of fescue and bluegrass species (Scottslawn.com 2009) which tend to have a Facultative wetland indicator status. Where identifiable, the wetland indicator status for plant species was determined based on the National List of Vascular Plant Species that Occur in Wetlands (Reed 1988) and the 1993 Supplement to National List of Plant Species that Occur in Wetlands: Northwest (Region 9)(ACOE 1994).

Where sample plots were located in close proximity to the wetland/upland boundary, the plot area for vegetation analysis was modified to reflect the representative vegetation relative to the topographic position of the soil pit. In most cases, instead of evaluating dominant vegetation within a typical circular plot, MB&G biologists evaluated vegetation inhabiting the same elevation contour as the sample plot using long linear plot areas.

MB&G biologists attempted to record soil profiles at each representative wetland sample point to a minimum depth of 20 inches to determine the presence or absence of hydric soils with soil color and/or wetland hydrology. However, if the subsoil was very compact, or contained enough angular gravel (likely representative of fill material from road construction) to limit the depth of

excavation, sample plots were often limited to a depth of eight to 12 inches. Additionally, plot depths were limited to 16 inches where positive indicators of hydric soil and wetland hydrology were observed close to the soil surface.

MB&G biologists determined the regulatory boundary of all waters features by flagging the limits of the ordinary high water line (OHWL) using field indicators as defined by the Oregon Department of State Lands (DSL) Administrative Rules (OAR 141-085-00510(59)) (DSL 2009a) and ACOE (33 CFR 323.8[e]) (ACOE 2007). The OHWL was determined in the field by noting physical indications of seasonal scour, flooding, deposition, ponding, and/or related active channel processes. Typical field indicators included the limits of litter, debris lines, drift lines, the deposition of fines, a distinct change in the vegetative community, textural changes in soils (e.g., change from sand, cobble or gravel to upland soils), and distinct changes in topography. Several stormwater ditches within the PSA exhibit some wetland characteristics and very indistinct OHWL indicators. The OHWL within these features was determined by changes in topography and vegetation.

All wetlands and waters were classified according to the USFWS classification system (Cowardin et al. 1979); wetlands were also classified using the Hydrogeomorphic (HGM) classification system (Adamus 2001).

Oregon Department of Fish and Wildlife (ODFW) biologist, Jim Brick, conducted a field investigation on June 22, 2009, and determined that native migratory fish are not currently or historically present within Stream 16 at the OR 213 crossing (Brick 2009). Fish presence data for Stream 16 is not available on StreamNet (StreamNet 2009).

E. DESCRIPTIONS OF ALL WETLANDS AND OTHER NON-WETLAND WATERS

MB&G biologists identified 12 wetlands and 21 waters including: one stormwater detention pond, three streams, and 17 artificial ditches within the PSA. The location, extent, and characteristics of these delineated features are described below. Where appropriate, features exhibiting similar topography, vegetation, soil, and hydrology characteristics have been grouped.

E.1 Waters

Stormwater ditches occur within excavated depressions within the PSA. However, due to the flat topography within the majority of the PSA, the low permeability of the soil, and the shallow gradient of many of the stormwater ditches, many of these ditches have developed hydric soils and now support hydrophytic plant species.

The stormwater ditches observed within the PSA will not likely be regulated by the DSL as waters of the state because: they are artificially created, created wholly in upland, are less than ten feet wide, do not contain food or game fish, and are not authorized as mitigation sites. However, stormwater ditches that convey a relatively permanent flow of surface hydrology to a traditional navigable water (TNW) and/or exhibit wetland characteristics and have a significant nexus to a TNW will likely be deemed jurisdictional by the ACOE as waters of the U.S. The anticipated jurisdictional status for each wetland and waters feature is summarized in Table 3.

E.1.1 Ditches 1, 2, 3, 4, and 5 (Figures 6a, 6b, 6c & 6d)

Ditches 1, 2, 3, 4 and 5, are Riverine, Intermittent, Streambed, Vegetated, Excavated (R4SB7x) waters (Cowardin et al. 1979) located on the north and south sides of Washington Street within Segment 1 of the PSA. Each ditch is artificially created and excavated entirely out of uplands for the purpose of conveying and treating stormwater from adjacent roadways and other impervious surfaces. Due to the low gradient and low permeability of the soils, these ditches exhibit wetland characteristics as recorded in Sample Plots SP-A1 to SP-A4, SP-B1 to SP-B4, SP-D1 to SP-D6, SP-E1 to SP-E2, SP-H1 to SP-H3, and SP-X6. These ditches range between approximately two feet and six feet wide at the OHWL and are approximately two to three feet deep from upper bank to bottom of channel. Water levels do not appear to exceed more than one-foot in depth.

The vegetation within Ditches 1, 2, and 5 is primarily comprised of a variety of grasses and herbaceous species. More specifically, these ditches contain a mixture of reed canarygrass, tall fescue, and bluegrass species, with lesser amounts of Fuller's teasel, common rush, and American speedwell. Ditches 3 and 4 appear to have been originally planted with a commercial lawn seed mixture that is present throughout large portions of the PSA. The upland areas surrounding these ditches are routinely mowed and appear to be composed of a similar commercial lawn seed mix.

These ditches are located within the Urban Land soil mapping unit (82 – non hydric) (NRCS 2009). Despite differences in soil textures and matrix colors, redoximorphic feature frequency is similar within these wetland swales. Soils within Ditch 1 are composed of several stratified horizons ranging in color from very dark grayish brown (10YR 3/2- Munsell Notation) to very dark brown (10YR 2/2) silty clay loam with prominent strong brown (7.5YR 4/6) redoximorphic features within the upper 5 inches. The soil within Ditch 3 is variable and includes diagnostic horizons from dark grayish brown (2.5YR 2.5/1) loamy sand to dark grayish brown (10YR 4/2) clay loam. Prominent redoximorphic concentrations are present throughout each individual diagnostic profile and range from brown (7.5YR 4/4) to strong brown (7.5YR 4/6). The soils within Ditch 3 meet numerous hydric soil indicators, including Sandy Redox (S5), Depleted Matrix (F3) and Redox Dark Surface (F6). Ditches 2, 4, and 5 contain similar variable matrix colors and redoximorphic features. Refer to Data Forms in Appendix B for further information pertaining to the soils within these ditches.

Hydrology for these ditches is provided by up-gradient runoff from adjacent parking lots and other impervious surfaces, as well as direct precipitation. Each ditch exhibited areas of ponded water or soils that were saturated to the surface of the sample plot. Water conveyed by these features likely discharges into the Clackamas River at an unknown location west of the PSA. The OHWL marks within these features were barely discernable, as the channel bottoms of these features were generally vegetated. As such, the OHWL was determined by changes in topography and vegetation.

As mentioned above, these ditches will likely not be regulated by the DSL as roadside ditches or wetlands pursuant to OAR 141-085-0515(6)(a-c) & (10)(a-d) (DSL 2009a). However, despite the degraded and artificial nature of these ditches, the ACOE will potentially take jurisdiction over them based on the presence of positive wetland characteristics and surface water connections (significant nexus) to the Clackamas River (a TNW) west of the PSA (ACOE 2007).

E.1.2 Ditch 6 (Figure 6h)

Ditch 6 is Riverine, Intermittent, Streambed, Mud, Excavated (R4SB5x) water (Cowardin et al. 1979) located on the north side of Clackamas River Drive within Segment 2 of the PSA. This feature is artificially created, likely excavated entirely out of uplands for the purpose of conveying and treating stormwater from adjacent UPRR access roads and other impervious surfaces. This ditch ranges between approximately two and six feet wide at the OHWL and is approximately one to two feet deep from top of bank to bottom of channel. Water levels do not appear to exceed more than one-foot in depth.

The channel is comprised of silt, sand, and gravel, with a large portion of the bed and banks vegetated with tall fescue, reed canarygrass, Fuller's teasel, and Himalayan blackberry. This ditch is located within the McBee silty clay loam soil mapping unit (non-non hydric with hydric inclusions) (NRCS 2009). Refer to Data Forms in Appendix B for details on soil characteristics.

Hydrology for this ditch is primarily provided by runoff originating east of the PSA, flow from Ditches 7, 8, and 9, as well as up-gradient runoff delivered from adjacent roadways. Flow was observed within the feature during the March 26, 2009 field investigation with a wetted width of approximately one-foot wide and a depth averaging two to three inches. Water within this feature is conveyed under the adjacent roadway and an industrial site north of the PSA. This water likely discharges into the Clackamas River at an unknown location north of the PSA. See Sample Plot SP-X9 (Appendix B) for information regarding the areas immediately adjacent to Ditch 6.

This ditch will likely not be regulated by the DSL as a roadside ditch or wetland pursuant to OAR 141-085-0515(6)(a-c) & (10)(a-d). However, despite the degraded and artificial nature of this ditch, the ACOE will likely take jurisdiction over it based on a surface water connection (significant nexus) to the Clackamas River (a TNW) west of the PSA (ACOE 2007).

E.1.3 Ditches 7, 8, and 9 (Figure 6h)

Ditches 7, 8, and 9 are Riverine, Intermittent, Streambed, Sand, Excavated (R4SB4x) (Cowardin et al. 1979) waters located along the north and south sides of Clackamas River Drive and the east and west sides of Forsythe Road within Segment 2 of the PSA. These features are artificially created and likely excavated entirely out of uplands for the purpose of conveying and treating stormwater from adjacent UPRR access roads and other impervious surfaces associated with the Clackamas River Drive and Forsythe Road.

The channels are comprised of silt, sand, and gravel with occasional patches of unidentified grasses. The dominant bank vegetation is comprised of a variety of bluegrass and bentgrass, with lesser amounts of tall fescue and Himalayan blackberry.

Hydrology for these ditches is provided by ephemeral up-gradient runoff from adjacent parking lots and other impervious surfaces to the southwest during storm events; however, due to the steep gradient within the features, this water is quickly conveyed as surface flow to areas outside of the PSA. All of these ditches convey ephemeral water to Ditch 6. The width of these ditches ranges between approximately six to 12 inches wide at the OHWL and convey water to depths of three to six inches. Water within these features likely discharges into the Clackamas River at an unknown location north of the PSA.

These ditches will likely not be regulated by the DSL as roadside ditches pursuant to OAR 141-085-0515(10)(a-d). Additionally, due to the artificial and ephemeral nature of these ditches, the

ACOE will likely not take jurisdiction over them based on the lack of relatively permanent flow or adjacent wetlands (ACOE 2007).

E.1.4 Ditch 10 (Figures 6i & 6j)

Ditch 10 is a Riverine, Intermittent, Streambed, Rubble, Excavated (R4SB2x) water (Cowardin et al. 1979) located on the east shoulder of OR 213 within Segment 3 of the PSA. This feature is artificially created, excavated entirely out of uplands for the purpose of conveying and treating stormwater from adjacent roadways and hydrology from Wetland I. This ditch is approximately two feet wide at the OHWL and approximately two to three feet deep from top of bank to bottom of channel. Water levels do not appear to exceed more than one-foot in depth.

The vegetation within this ditch is dominated by English Ivy (*Hedera helix* FACU), black cottonwood, and Himalayan blackberry. The ditch was excavated from Salem silt loam mapping unit (76B – non hydric) (NRCS 2009). Sample Plot SP-X13 indicated the soils within Ditch 10 are composed of two stratified horizons with matrix colors of dark brown (10YR 3/3) and brown (10YR 4/3) gravelly silty clay loam. Distinct dark reddish brown (2.5YR 3/4) redoximorphic concentrations are located within four inches of the surface. At the northern extent of the ditch, the surface has been armored with cobbles and boulders, thereby limiting observations of the underlying soil profile.

Hydrology for this ditch is provided by up-gradient runoff from OR 213 and ephemeral overflow discharge from Wetland I during high precipitation years. No water was observed within the ditch during the March 27, 2009 field investigation. Water within this feature discharges into Stream 16, a tributary of Abernethy Creek, which eventually discharges into the Willamette River west of the PSA. The OHWL within this feature was barely discernable. As such, the OHWL was determined by changes in topography and vegetation.

This ditch will likely not be regulated by the DSL as roadside ditch pursuant to OAR 141-085-0515(10)(a-d). Conversely, despite the artificial and ephemeral nature of this ditch, the ACOE will likely take jurisdiction over this feature based on proximity to (abutting) Wetland I and having a surface water connection (significant nexus) with Stream 16 which flows to the Willamette River (a TNW) (ACOE 2007).

E.1.5 Ditches 11, 12, and 13 (Figures 6j, 6k & 6l)

Ditches 11, 12, and 13 are R4SB5x water features located on the east and west shoulder of OR 213 within Segment 3 of the PSA. These features are artificially created, excavated entirely out of uplands for the purpose of conveying and treating stormwater from OR 213. These ditches average one-foot wide at the OHWL and are approximately six to 12 inches deep from top of bank to bottom of channel.

Channels are comprised of silt, sand, and gravel with occasional patches of unidentified grasses. The bank vegetation is dominated by bluegrass and bentgrass species with lesser amounts of tall fescue and Himalayan blackberry.

Hydrology for these ditches is primarily provided by runoff from OR 213 and secondarily by ephemeral up-gradient runoff and groundwater discharge from the steep slopes to the east and west of OR 213. However, due to the steep gradient within the features, this water is quickly conveyed out of the PSA as surface runoff. Ditch 11 conveys ephemeral flow from OR 213 to the southern extent of Wetland I. Ditches 12 and 13 convey ephemeral water to Abernethy Creek

which eventually discharges into the Willamette River west of the PSA. The width of these ditches ranges between approximately six to 12 inches wide at the OHWL and convey water to depths of three to six inches. See Sample Plots SP-X14 through SP-X17 and SP-R6 (Appendix B) for information regarding the areas immediately adjacent to the ditch.

These ditches will likely not be regulated by the DSL as roadside ditches pursuant to OAR 141-085-0515 (10)(a-d). Additionally, due to the artificial and ephemeral nature of these ditches, the ACOE will potentially not take jurisdiction over them based on the lack of relatively permanent flow or adjacent wetlands (ACOE 2007).

E.1.6 Stream 14 (Figures 6g & 6h)

Stream 14 is a Riverine, Intermittent, Streambed, Mud (R4SB5) water located in Segment 2 of the PSA. This stream enters the PSA in the eastern portion of Segment 2 as a channelized stream occupying a ditch on the western shoulder of Melinda Street.

The channel of Stream 14 is slightly incised, with a silty sand substrate. At the OHWL, this feature is approximately three feet wide. Dominant bank vegetation includes Himalayan blackberry, Fuller's teasel, and reed canarygrass.

Hydrology for this feature is unknown since this feature originates well outside of the PSA. Stream 14 held approximately five inches of flowing water at the time of the field investigation. The majority of this flow discharges from a culvert extending east under Melinda Street. Additional hydrology is provided by a ditch (out of the PSA) on the southern shoulder of Melinda Street. Stream 14 flows under Clackamas River Drive via a culvert and continues west along Clackamas River Drive and connects to Wetland C. Wetland C is likely hydrologically connected to the Clackamas River via a series of culverts to the northwest of the PSA.

Stream 14 will likely be regulated by the DSL based on the definition of what constitutes an intermittent stream (OAR 141-085-0510[41]) (DSL 2009a). Similarly, the ACOE will likely exert jurisdiction on this feature, based on the definition of a relatively permanent waterway (RPW) with a significant nexus to the Clackamas River (a TNW) (ACOE 2007).

E.1.7 Stream 15 (Figure 6g)

Stream 15 is a Riverine, Upper Perennial, Unconsolidated Bottom, Mud (R3UB3) waters (Cowardin et al. 1979) that originates from a culvert under an industrial lot in the northeastern portion of Segment 2. This feature flows to the south, eventually flowing into a culvert under a private drive to the east of the PSA and discharging into Stream 16.

The channel of Stream 15 exhibits moderate channel complexity; riffles, runs, and pools were observed within the stream channel. The channel is approximately three feet wide and water depths are approximately one to two feet deep. The dominate bed substrate is silt and sand with several pieces of woody debris providing some channel complexity. Dominant bank vegetation consists of Himalayan blackberry, reed canarygrass, and climbing nightshade (*Solanum dulcamara* FAC). Wetland E was observed abutting both banks near the mouth of the culvert where the stream originates.

Stream 15 is likely regulated by the DSL based on OAR 141-085-0515(3) and the definition of what constitutes a perennial stream (OAR 141-085-0510[62]) (DSL 2009a). Similarly, the ACOE will likely exert jurisdiction on this feature, based on the definition of an RPW with a significant nexus to the Willamette River (a TNW) (ACOE 2007).

E.1.8 Stream 16 (Figures 6i & 6j)

Stream 16 is an R3UB3 stream channel that originates from a culvert under Apperson Road to the northeast of the PSA. This feature flows south, meandering just out of the PSA to the east, and reentering the central portion of the PSA within Segment 3. Stream 16 exhibits unique characteristics in three discrete locations within the PSA. As such, within the PSA Stream 16 has been divided into three distinct reaches separated by two 48-inch culverts.

Within the first reach, Stream 16 enters the PSA on the east side of OR 213 and flows to the southwest where it abuts Wetland F and continues through a culvert under OR 213. The OHWL within the first reach ranges between two to three wide and the substrate is dominated by sand and gravel. Substantial flow was observed during both the February 25, 2009 and March 27, 2009 field investigations.

The second reach begins where Stream 16 exits the culvert on the west shoulder of OR 213. The second reach flows southwest for approximately 200 feet and enters a second 48-inch culvert under a gravel access road. The stream bed within this reach is dominated by silt and clay. Substantial flow was also observed within an OHWL ranging between two to three feet wide.

The third reach begins where Stream 16 exits the second culvert on the west side of OR 213 and ends approximately 100 feet to the south where Stream 16 flows west out of the PSA. The stream channel OHWL within the third reach ranges between 15 feet and 20 feet wide. The substrate within this reach is dominated by silt. The vegetation on the left bank is dominated by black cottonwood, red alder, snowberry, swordfern, Himalayan blackberry, trailing blackberry salmonberry, vine maple, and reed canarygrass.

Stream 16 flows to the southwest out of the PSA, eventually flowing into Abernethy Creek which discharges into the Willamette River to the west of the PSA. This feature is mapped on the Oregon City LWI as a Palustrine, Scrub-Shrub (PSS) wetland; for more information, see Section F of this report.

Stream 16 is likely regulated by the DSL based on OAR 141-085-0515(3) and the definition of what constitutes a perennial stream (OAR 141-085-0510[62]). Similarly, the ACOE will likely exert jurisdiction on this feature, based on the definition of an RPW with a significant nexus to Willamette River (a TNW) (ACOE 2007). A small, unknown fish was observed in Segment 3 of Stream 16 during the field investigation. ODFW has determined that native migratory fish do not and have not historically used this stream. Due to the steep gradient surrounding this stream, non-migratory fish do not have access to features that flow into Stream 16.

E.1.9 Ditch 17 (Figure 6m)

Ditch 17 is an R4SB7x water located on the south shoulder of Redland Road within Segment 4 of the PSA. This feature is artificially created, excavated entirely out of uplands for the purpose of conveying and treating stormwater from OR 213, Redland Road and other impervious surfaces within the PSA. The topography within this segment of the PSA slopes gradually to the southwest from the intersection of Redland Road and OR 213 toward the intersection of Redland Road and Abernethy Road. The gradient of the ditch decreases and the bed widens as it approaches a culvert under Abernethy Road. As such, seasonal hydrology is detained at this location and the ditch exhibits wetland characteristics as recorded in Sample Plots SP-P1 and SP-P2 (see Data Forms, Appendix B). However, this portion of the ditch remains less than ten feet

wide, occupies less than one acre in size, was created in upland, and was not created for mitigation.

The vegetation within the northern portion of the ditch is dominated by a mixture of reed canarygrass, tall fescue, bluegrass species, and bentgrass species. The area associated with Ditch 17 appears to have been originally planted with a commercial lawn seed mixture that is present throughout large portions of the PSA. As described in the methods section (Section D), unidentified vegetation within these planted areas was assumed to have a Facultative (FAC) indicator status due to landscape positioning and background research of commercial lawn seed mixes (Scottsgrass.com 2009). The upland areas surrounding these ditches are routinely mowed and appear to be composed of the same commercial lawn seed mix.

This ditch is located within the Salem silt loam mapping unit (76B – non hydric) (NRCS 2009). Soils within Ditch 17 are composed of two stratified horizons with matrix colors of black (10YR 2/1) to gray (5Y 5/1) silty clay with prominent strong brown (7.5YR 5/6) redoximorphic concentrations below 7 inches.

Hydrology for Ditch 17 is primarily provided by up-gradient runoff from an industrial facility located to the southeast and by up-gradient runoff from OR 213 and Redland Road. No inundation was observed within the ditch during the March 26, 2009 field investigation. However, saturation was observed to within seven inches of the surface. Water within Ditch 17 eventually discharges into Abernethy Creek south of the PSA via a series of culverts. An OHWL within this feature was barely discernable given the bed for this feature was vegetated. As such, wetland sample plots and topography were used to determine the likely pattern of local hydrology.

This ditch is likely not regulated by the DSL as a roadside ditch or a wetland pursuant to OAR 141-085-0515(6)(a-c) & (10)(a-d). However, despite the artificial nature and ephemeral surface hydrology of this ditch, the ACOE will likely have jurisdiction based on the presence of positive wetland characteristics and likely significant nexus to Willamette River (a TNW) west of the PSA (ACOE 2007).

E.1.10 Pond 18 (Figure 6c)

Pond 18 is a large, artificially created Lacustrine, Limnetic, Unconsolidated Bottom, Mud, Excavated (L1UB3x) water (Cowardin et al. 1979) located to the northwest of Washington Street immediately west of the Transfer Center in Segment 1 of the PSA. This pond collects stormwater from the surrounding impervious surfaces (e.g. Washington Street, various driveways, and parking lots) conveyed via two small (one- to two-foot) box culverts. The pond is drained by another culvert which appears to flow towards the culvert draining Ditch 1. Ditch 1 subsequently discharges into the Clackamas River. Pond 18 is mapped on the Oregon City LWI as a Palustrine Emergent (PEM) and a Palustrine Forested (PFO) wetland (Cowardin et al. 1979 & Shapiro 1999); for more information see Section F.

Pond 18 is appears to be approximately five to six feet deep, 100 feet wide and 300 feet long. The pond's substrate is composed primarily of fine, silty, muck. Dominant bank vegetation includes black cottonwood, various grasses including bluegrass species and tall fescue, common rush, and Queen Anne's lace (*Daucus carota* FACU).

Pond 18 is likely regulated by the DSL, based on OAR 141-085-0515(3) (DSL 2009a). Similarly, the ACOE will likely exert jurisdiction on this feature, based on the definition of an RPW with a significant nexus to the Clackamas River (a TNW) (ACOE 2007).

E.1.11 Ditches 19, 20, & 21 (Figure 6b, 6n & 6o)

Ditches 19, 20, and 21 are R4SB5x waters located north of the UPRR railway within Segment 1 of the PSA. The OHWL for Ditches 19, 20, and 21 average six, seven, and three feet wide, respectively. Although Ditches 20 and 21 pass through a mapped hydric soil unit (84 - Wapato Silt Loam), all three ditches appear to be artificially created from upland for the purpose of conveying water from Wetland K and Ditch 1. The topography within this segment of the PSA slopes gradually to the southwest. The gradient along Ditches 19 and 20 decreases and the beds widen at their confluence in the northwestern corner of the PSA. As such, seasonal hydrology is detained at the location of Wetland J. Ditch 21 conveys seasonal hydrology from Wetland K into Wetland L.

The bed of these ditches is sparsely vegetated with Fullers' teasel and reed canarygrass dominating near the OHWL. The upland areas surrounding these ditches are primarily dominated by reed canarygrass and Himalayan blackberry with some communities of Oregon ash, black cottonwood, willow, and black hawthorn.

Ditch 19 is located within the Urban Land mapping unit (82 – non hydric) (NRCS 2009). Soils within Ditch 19 are composed of two stratified horizons with matrix colors of very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silty clay loam and sandy loam, respectively. Two percent prominent dark reddish brown (5YR 3/4) redoximorphic concentrations were observed to within eight inches of the surface and ten percent prominent strong brown (7.5YR 4/6) redoxomorphic features were observed from eight inches to 16 inches (see Sample Plot SP-X18).

Ditch 20 passes through the Wapato silty clay loam (84 –hydric), Urban Land mapping unit (82 – non hydric), and the Chehalis silt loam (16 –non hydric) mapping units (NRCS 2009). Soils within Ditch 20 are composed of a single horizon with a matrix color of very dark brown (10YR 2/2) silt loam lacking redoximorphic features within 16 inches of the surface (see Sample Plot SP-X19)

Ditch 21 is located within the Wapato silty clay loam mapping units (84 –hydric) (NRCS 2009). Soils within Ditch 21 are composed of two horizons with a matrix color of very dark brown (10YR 2/2) silt loam and silty clay loam lacking redoximorphic features within 16 inches of the surface (see Sample Plot SP-X20).

Ditch 19 likely receives stormwater from Ditch 1 conveyed via a culvert under Washington Street and a bridge under the UPRR. No direct observations of hydrology were made within Ditch 19, 20, or 21 during the August 24, 2009 field investigation. Water within Ditch 20 is likely provided by Wetland K and up-gradient runoff from the surrounding upland area. Water from Ditch 20 is conveyed to Wetland J which abuts Ditch 19. Water within Ditch 19 is conveyed north out of the PSA and under I-205 via a box culvert. Water within Ditch 21 is received from Wetland K and is conveyed to Wetland L which does not have an above-ground outlet.

Ditches 19, 20, and 21 will not likely be regulated by the DSL pursuant to OAR 141-085-0515(8) & (10) given that they are artificially created, do not contain food or game fish, and are

less than ten feet wide. However, the ACOE will likely take jurisdiction over Ditches 19, 20 and 21 based on the presence of a relatively permanent flow and connection the Clackamas River (a TNW) (ACOE 2007).

E.2 Wetlands

E.2.1 Wetland A (Figure 6d)

Wetland A is a PEM wetland located east of the Home Depot parking lot in the southwest corner of the intersection of Washington Street and OR 213. This wetland occupies a mowed field sloping slightly to the west from the adjacent roadways to the Home Depot parking lot.

Vegetation composition and soil profiles within this wetland are similar to those described for Ditches 2, 3 and 4 (above). Soil textures include silty clay, gravely loamy clay, and gravely clay loam. For specific information regarding the vegetation and soils within this wetland, please see Sample Plots SP-G1 through SP-G4 in Appendix B – Data Forms.

Wetland hydrology within this Flats class wetland (Adamus 2001) is primarily supplied by direct precipitation perched above the heavy clay soils and secondarily from stormwater sheet flow off the adjacent Home Depot parking lot and the OR 213 roadway.

Wetland A is likely regulated by the DSL pursuant to OAR 141-085-0515(4) (DSL 2009a). Additionally, the ACOE will potentially take jurisdiction over Wetland A based on a significant nexus to Ditch 3 (an RPW) which drains to the Willamette River (a TNW) via the Clackamas River west of the PSA (ACOE 2007).

E.2.2 Wetland B (Figure 6d & 6f)

Wetland B is an artificially constructed PEM wetland located between two large artificially constructed berms northwest of the OR 213 and Washington Street intersection.

Vegetation within Wetland B is regularly maintained through mowing. As a result, some of the vegetation could not be identified to the species level. Dominant vegetation within Wetland B includes common velvetgrass, tall fescue, and an unidentified bluegrass species (FAC [est.]).

This Depressional Outflow class wetland (Adamus 2001) occupies a depression that appears to have been excavated in order to create berms to the east of this feature. As a result, Wetland B captures up-gradient runoff from the berms along its length. Wetland B also receives hydrology from direct precipitation.

Sample plots were excavated at three locations within Wetland B and soil profiles were quite similar. All three exhibited distinct horizons ranging from sandy loam very dark brown (10YR 2/2) and very dark grayish brown (10YR 3/2) to gray (5Y 5/1) loam, sandy loam and gravely sandy loam. Prominent dark gray (10YR 4/1) redox depletions and strong brown (7.5YR 4/6) redox concentrations (ranging in area from five to 20%) were present within both the upper and lower portions of the soil profiles. The soil profiles within Wetland B meet the Redox Dark Surface (F6) and Depleted Matrix (F8) hydric soil indicators. Wetland B is located in the Urban Land soil mapping unit (82 – non hydric) (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, please see Sample plots SP-i1 through SP-i8 in Appendix B – Data Forms.

This swale is likely not regulated by the DSL pursuant to OAR 141-085-0515(6)(a-c) (DSL 2009a), as it appears to have been artificially created, is less than an acre in size and was not created for mitigation. Conversely, the ACOE will potentially take jurisdiction over Wetland B based on a nexus to a RPW, described in this report as Pond 18 (ACOE 2007). As discussed above, Pond 18 has a connection to the Clackamas River and the Willamette River, both of which are TNWs.

E.2.3 Wetland C (Figure 6g)

Wetland C is a large PEM wetland situated within a slight depression. This wetland is located within Segment 2 in the north end of the PSA east of OR 213, south of the UPRR railway and west of Clackamas River Drive. Wetland C is mapped on the Oregon City LWI as a PEM wetland (Shapiro 1999); for more information see Section F.

Vegetation within Wetland C is dominated by reed canarygrass and fuller's teasel with lesser amounts of foul bluegrass, and common rush. Distinct topographic and vegetative breaks were used to determine the boundary of this wetland. Upland vegetation surrounding Wetland C is dominated by Himalayan blackberry and black cottonwood.

Primary hydrology for this Riverine Flow-through class wetland (Adamus 2001) is provided by flow from Stream 14, groundwater, up-gradient runoff, and direct precipitation. At the time of the field investigation, braided flow and standing water (three to seven inches) was observed throughout the wetland. During the February 24 and 25, 2009 field investigations, flowing water was observed exiting the wetland through a culvert at the western extent of the PSA. This culvert extends to the west under the UPRR railway and discharges into a large PFO wetland to the northeast and outside of the PSA.

Soils within Wetland C are generally composed of several distinct horizons, with multiple matrix colors, including dark grey (10YR 4/1 and 2.5 Y 4/1), grayish brown (10YR 5/2), brown (7.5 YR 4/3), and black (N 2.5/0) silty loam, clay loam, and silty clay. Distinct redox concentrations ranging from yellowish red (5YR 4/6 and 5/8) to strong brown (7.5YR 4/6) were observed throughout the soil profiles. Additionally, gray (N 5/0) redox depletions were observed within several plots. The soils within this wetland meet the Depleted Matrix (F3) and Redox Dark Surface (F6) hydric soil indicators. Wetland C is located within the Wapato silty clay loam soil mapping unit (84 – hydric) (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, see Sample Plots SP-K1 through SP-K8 in Appendix B – Data Forms.

Wetland C is likely jurisdictional to the DSL based on OAR 141-085-0515(4). Similarly, Wetland C is likely jurisdictional to the ACOE based on a significant nexus to Stream 14 (an RPW) and the Willamette River (a TNW) (ACOE 2007).

E.2.4 Wetland D (Figures 6e & 6f)

Wetland D is a long, narrow, artificially constructed PEM wetland located on the east side of OR 213 immediately north of the intersection of Clackamas River Drive and OR 213 within Segment 2. Wetland D, similar to the ditches described above, is artificially created to detain and treat stormwater runoff from OR 213 and adjacent parking lots.

Vegetation within Wetland D is composed of reed canarygrass, tall fescue, broadleaf cattail, and rush species. The vegetation community within Wetland D is distinct from the surrounding uplands which are vegetated by commercial lawn seed mix.

Primary hydrology for this Depressional Outflow class wetland is provided by surface runoff from the adjacent impervious surfaces. Secondary hydrology is provided by direct precipitation. Water within Wetland D drains to the north and under heavy precipitation years over flow is conveyed out of the wetland through a culvert. The soil profile within Wetland D consists of a horizon of very dark grayish brown (10YR 3/2) above a horizon of grey (N 5/0) silty clay and silty clay loam. Yellowish-brown (10YR 5/6) redoximorphic concentrations were observed within both horizons to within six inches of the surface. The soil profiles within Wetland D meet the Redox Dark Surface (F6) hydric soil indicator. Wetland D is located within the Wapato silty clay loam (84 –hydric) (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, see Sample Plots SP-L1 through SP-L4 in Appendix B – Data Forms

Wetland D is likely not regulated by the DSL pursuant to OAR 141-085-0515(6)(a-c) (DSL 2009a) as this wetland appears to have been artificially created, is less than an acre in size and was not created for mitigation. Conversely, Wetland D is likely jurisdictional to the ACOE based on a likely significant nexus to the Clackamas River (a TNW) (ACOE 2007).

E.2.5 Wetland E (Figure 6g)

Wetland E is a small, narrow, PEM wetland located within Segment 2 in of the PSA.

Vegetation within Wetland E is primarily composed of reed canarygrass, with climbing nightshade also present. A distinct vegetation boundary marked the edge of the wetland; the surrounding upland area is dominated by Himalayan blackberry.

Wetland E is located on the banks of Stream 15. Primary hydrology for this Riverine Flow-through class wetland is provided by subsurface flow and flooding from Stream 15. Secondary hydrology is provided by direct precipitation. During the field investigation, this wetland was inundated with two inches of water.

Soils within Wetland E are composed of a very dark grey (10YR 3/1) silt loam with dark grey (N 5/0) redox depletions. The Redox Dark Surface (F6) hydric soil indicator is met by this soil profile. Wetland E is located within the Salem Silt Loam (0-7% slopes) soil mapping unit (76B – non-hydric) (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, please see Sample Plots SP-M1 and SP-M2 in Appendix B – Data Forms.

Wetland E is likely jurisdictional to the DSL based on OAR 141-085-0515(4). Similarly, Wetland E is likely jurisdictional to the ACOE based on its connection to Stream 15 (an RPW) which flows to Stream 16, Abernethy Creek and ultimately the Willamette River (a TNW) (ACOE 2007).

E.2.6 Wetland F (Figure 6i)

Wetland F is a small, narrow PEM fringe wetland located on the banks of Stream 16. This wetland is located to the east of OR 213 within Segment 3 of the PSA.

Vegetation with Wetland F is entirely dominated by reed canarygrass. Distinct topographic and vegetative breaks determined the edge of this wetland; upland vegetation surrounding Wetland F is composed primarily of Himalayan blackberry.

Hydrology for this Slope Valley class wetland (Adamus 2001) is supplied primarily through hillside seeps discharging at the toe of slope to the north of the wetland and secondarily by flooding events associated with Stream 16 and direct precipitation. This feature is mapped on the

Oregon City LWI as a Palustrine Scrub-Shrub (PSS) wetland (Cowardin et al. 1979 & Shapiro 1999); for more information see Section F.

Soils within Wetland F are composed of two distinct horizons. The first horizon has a matrix color of dark grayish brown (10YR 4/2) silty clay loam, with strong brown (7.5YR 4/6) redoximorphic concentrations. The lower layer has a matrix color of grey (10YR 5/1), with no redoximorphic features. The soils within Wetland F meet the Depleted Matrix (F3) hydric soil indicator. Wetland F is located within the Xerochrepts and Haploxerolls, very steep soil mapping unit (92F – non-hydric) (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, see Sample Plots SP-N1 and SP-N2 in Appendix B – Data Forms.

Wetland F is likely jurisdictional based on OAR 141-085-0515(4). Similarly, it is likely jurisdictional to the ACOE given its connection to Stream 16 (an RPW), which connects to Abernethy Creek and the Willamette River (a TNW) (ACOE 2007).

E.2.7 Wetland G (Figure 6i)

Wetland G is a PEM wetland located immediately west of the OR 213 roadway within Segment 3 of the PSA. This wetland occupies a hillslope descending from within 100 feet of the Home Depot building and parking lot to the OHWL for Stream 16. The wetland continues west along the hillslope out of the PSA.

Vegetation within Wetland G is dominated by reed canarygrass, tall fescue, and bentgrass and bluegrass species. Reed canarygrass is confined to the wetland boundary and along with topographic breaks and soil changes and helped determine the wetland boundary.

This relatively large Slope Valley class wetland receives primary hydrologic inputs from groundwater seeps distributed across the hillslope. Secondary hydrologic inputs are provided by up-gradient runoff and direct precipitation.

Soils within Wetland G are composed of several horizons, with matrix colors ranging from dark grayish brown (10YR 4/2) to black (10YR 2/1) silty clay loam. Redoximorphic concentrations were present throughout the soil profiles, with colors including strong brown (7.5YR 4/6) and yellowish red (5YR 4/6). Soils within this wetland meet the Redox Dark Surface (F6) hydric soil indicator. Wetland G is located within the Xerochrepts and Haploxerolls, very steep soil mapping unit (92F – non-hydric) (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, see Sample Plots SP-O1 through SP-O4 in Appendix B – Data Forms.

Wetland G is likely jurisdictional to the DSL based on OAR 141-085-0515(4). Similarly, Wetland G is also likely jurisdictional to the ACOE based on its connection to a Stream 16 (an RPW) which drains to a TNW (Willamette River) (ACOE 2007).

E.2.8 Wetland H (Figure 6j)

Wetland H is an artificially created PEM wetland located immediately northwest of the OR 213 and Redland Road intersection within Segments 3 and 4 of the PSA. This wetland occupies a historical roadway at the base of the road fill slope for OR 213 and Redland Road.

Vegetation within Wetland H is dominated by various bluegrass species and tall fescue. The dominance of Himalayan blackberry surrounding the wetland was used to determine the wetland boundary given hydric soils and saturated soils were present throughout the area.

This Slope Valley class wetland receives primary hydrologic inputs from groundwater seeping out of the road fill slope and collecting on the flat, compact soil within the vicinity of the historical roadway. Secondary hydrologic inputs are provided by up-gradient runoff and direct precipitation.

Soils within Wetland H are composed of several horizons, with matrix colors ranging from gray (10YR 5/1) to black (10YR 2/1) silty clay loam. Prominent yellowish red (5YR 5/8) redoximorphic concentrations were present to the surface. Soils within this wetland met the Redox Dark Surface (F6) hydric soil indicator. Wetland G is located within the Salem silt loam, 0 to 7 percent slopes soil mapping unit (76b – non-hydric) (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, please see Sample Plots SP-Q1 and SP-Q2 in Appendix B – Data Forms.

Wetland H is likely not jurisdictional to the DSL based on OAR 141-085-0515(6)(a-c). However, it is likely jurisdictional to the ACOE based on a significant nexus Stream 16 (an RPW) which drains to the Willamette River (a TNW) (ACOE 2007).

E.2.9 Wetland I (Figure 6j)

Wetland I is a PFO wetland (Cowardin et al. 1979) located immediately west of the OR 213 roadway within Segment 4 of the PSA. This wetland occupies a depression at the toe of a hillslope descending from the east toward OR 213. The eastern extent of Wetland I abuts Ditch 13. The vast majority of Wetland I remains within the PSA continuing north where it abuts Ditch 10.

Vegetation within Wetland I is dominated by reed canarygrass and black cottonwood. Reed canarygrass is confined to the wetland boundary and, along with topographic breaks and soil changes, helped determine the wetland boundary.

This relatively large Depressional Outflow class wetland receives primary hydrologic inputs from groundwater from the adjacent hillslope impounded by the roadbed for OR 213. Secondary hydrologic inputs are provided by up-gradient runoff from the adjacent roadway conveyed through Ditch 13 and direct precipitation. During years of high precipitation, overflow from Wetland I is conveyed through Ditch 10 to Stream 16.

Soils within Wetland I are composed of several horizons, with matrix colors ranging from dark grayish brown (10YR 5/2) to black (10YR 2/1) silty clay loam. Redoximorphic concentrations were present throughout the soil profiles, with colors including strong brown (7.5YR 4/6) and yellowish red (5YR 4/6). Soils within Wetland I meet the Redox Dark Surface (F6) hydric soil indicator. Wetland I is located within the Salem silt loam, 0 to 7 percent slopes soil mapping unit (76B- non-hydric, no hydric inclusions) (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, see Sample Plots SP-R1 through SP-R5 in Appendix B – Data Forms.

Wetland I is likely jurisdictional to the DSL based on OAR 141-085-0510(95) (DSL 2009a), the definition of a wetland, and OAR 141-085-0515(4) (DSL 2009a). Similarly, it is likely jurisdictional to the ACOE based on the significant nexus to Abernethy Creek (an RPW) and the Willamette River (a TNW) (ACOE 2007).

E.2.10 Wetland J (Figure 6b)

Wetland J is a PEM wetland located immediately north of the UPRR railway within Segment 1 of the PSA. This wetland occupies a depression forming the confluence of Ditches 19 and 20 at the northwestern extent of the PSA. The majority of Wetland J continues to the north out of the PSA.

Vegetation within Wetland J is dominated by black cottonwood, black hawthorn, Himalayan blackberry, and Fuller's teasel. The adjacent upland is distinguished by an abrupt topographic rise and the dominance of Himalayan blackberry.

This Riverine Flow-through class wetland receives primary hydrologic inputs from Ditches 19 and 20 with secondary inputs from groundwater and up-gradient runoff. Although positive indicators of wetland hydrology were not observed during the August 2008 field investigation, (attributable to the low precipitation for the water year), a lack of positive primary wetland hydrology indicators could not be used to rule out a positive wetland determination for the plot. As, such, geomorphic position, the dominant vegetation community, and the presence of positive hydric soil indicators were used to determine the likely presence of wetland hydrology during the early part of the growing season.

Soils within Wetland J are composed of two horizons with matrix colors of very dark grayish brown (10YR 3/2) silt loam. Below five inches, two percent strong brown (7.5YR 4/6) and seven percent dark yellowish brown (10YR 3/6) redoxomorphic concentrations were observed. Soils within Wetland J meet the Redox Dark Surface (F6) hydric soil indicator. Wetland J is located within the Urban Land mapping unit (82 – non hydric) (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, see Sample Plots SP-S1 and SP-S2 in Appendix B – Data Forms.

Wetland J is likely jurisdictional to the DSL based on OAR 141-085-0515(4). Similarly, it is likely jurisdictional to the ACOE because it abuts an RPW, Ditch 19, which likely discharges into the Clackamas River, a TNW (ACOE 2007).

E.2.11 Wetland K (Figure 6o)

Wetland K is a large, PFO wetland (Cowardin et al. 1979) located north of the UPRR railway within Segment 1 of the PSA. This wetland occupies a large depression, the majority of which is located east of the PSA.

Vegetation within Wetland K is dominated by black cottonwood, Oregon ash, Oregon crab apple (*Malus fusca* FACW), rose spiraea (*Spiraea douglasii* FACW), Himalayan blackberry, and fringed willowherb (*Epilobium ciliatum* FACW). The adjacent upland is distinguished by an abrupt topographic rise and the dominance of Himalayan blackberry.

This Depressional class wetland (Adamus 2001) receives primary hydrologic inputs from subsurface flow from Wetland C (Figure 6g) with secondary inputs from groundwater and direct precipitation. Wetland K abuts Ditch 20 immediately north of the PSA. As such, hydrology from Wetland K is likely conveyed to Wetland J, Ditch 19 and eventually the Clackamas River. Wetland K also abuts Ditch 21which conveys hydrology from Wetland K to Wetland L within the PSA.

Soils within Wetland K are composed of two horizons with matrix colors of very dark grayish brown (10YR 3/2) silt loam. Ten percent strong brown (7.5YR 4/6) redoxomorphic

concentrations were observed starting four inches below the surface. Soils within Wetland K meet the Redox Dark Surface (F6) hydric soil indicator. Wetland K is located within the Chehalis silt loam (16 –non hydric) and Wapato silt loam (84 –hydric) map units (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, see Sample Plots SP-T1 and SP-T2 in Appendix B – Data Forms.

Wetland K is likely jurisdictional to the DSL based on OAR 141-085-0515(4). Similarly, it is likely jurisdictional to the ACOE based because it abuts Ditch 20 and Ditch 21 (RPWs) which are tributaries of to the Clackamas River (a TNW) (ACOE 2007).

E.2.12 Wetland L (Figures 6n & 6o)

Wetland L is a small, PFO wetland (Cowardin et al. 1979) located north of the UPRR railway within Segment 1 of the PSA. This wetland occupies a small, deep depression, the majority of which occurs within the PSA.

Vegetation within Wetland L is dominated by black cottonwood and Oregon ash. The adjacent upland is distinguished by an abrupt topographic rise and the dominance of Himalayan blackberry.

This Depressional class wetland receives primary hydrologic inputs from Ditch 21 and Wetland K with secondary inputs from groundwater. MB&G biologists did not observe an outlet from Wetland L; however, based on proximity to the Clackamas River, hydrology within the wetland likely has a significant nexus with this TNW.

Soils within Wetland L are composed of three horizons with matrix colors of very dark brown (10YR 2/2) with two percent strong brown (7.5YR 4/6) redoxomorphic concentrations from six to eight inches and gray (10YR 5/1) silt loam with five percent strong brown (7.5YR 4/6) redoxomorphic concentrations from eight to 16 inches. Soils within Wetland K meet the Depleted Matrix (F3) hydric soil indicator. Wetland L is located within the Wapato silty clay loam (84 –hydric) soil map units (NRCS 2009). For specific information regarding the vegetation and soils within this wetland, see Sample Plots SP-U1 and SP-U2 in Appendix B – Data Forms.

Wetland L is likely jurisdictional to the DSL based on OAR 141-085-0515(4). Similarly, it is likely jurisdictional to the ACOE because it has a likely significant nexus to the Clackamas River (a TNW) (ACOE 2007).

F. DEVIATION FROM LWI OR NWI

According to NWI mapping, there is one Palustrine, Unconsolidated Bottom, Artificially Flooded/Permanently Flooded, Diked/Impounded (PUBKHh) wetland (Cowardin et al. 1979) located west of OR 213 within Segment 3 of the PSA (NWI 2009). MB&G biologists did not observe this feature within the PSA and documented the observed upland conditions within Sample Plot SP-X12. Several other large wetlands, the Clackamas River and the Willamette River are mapped outside of, but in close proximity to, the PSA. These mapped wetlands primarily occur to the north and west of the PSA.

The LWI for Oregon City identifies five wetlands within the PSA (Shapiro 1999). The majority of the wetland boundaries that were delineated for the LWI mapping generally correspond to MB&G's delineated boundaries for Pond 18, Wetland C, Wetland K, Wetland L, Stream 16, Ditch 20 and Ditch 21. However, MB&G recorded numerous wetlands that were not included on

the LWI mapping. A brief description of features that correspond to the LWI delineation is presented below.

Pond 18 corresponds to the LWI mapped Wetland CL-2, a Palustrine, Open Water (POW) wetland (Cowardin et al. 1979). MB&G excavated SP-X2 near the vicinity of this wetland and did not document hydric soils or hydrophytic vegetation. This area appears to be an artificially created pond for the purpose of stormwater retention.

Wetland C corresponds to the LWI mapped location of Wetland CL-4, a PEM wetland. The wetland boundary delineated by MB&G is nearly identical to the one mapped in the LWI. The wetland boundary corresponds to distinct changes in topography associated with fill slopes and artificially constructed berms.

Wetland J, Wetland K, Wetland L, Ditch 20 and Ditch 21 together correspond to portions of the LWI mapped location of Wetland CL-3, a PEM/PFO wetland. The combination of wetland and ditch boundaries delineated by MB&G biologists is nearly identical to the boundary delineated for Wetland CL-3; however, the eastern extent of the upland peninsula delineated in the center of LWI mapped Wetland CL-3 extends further east than the field observed upland extent recorded by MB&G biologists. The boundary as delineated by MB&G biologists corresponds to distinct changes in topography associated with several artificially constructed berms and a shift in the vegetation community composition from upland dominated to facultative wetland dominated species.

Stream 16 corresponds to the LWI mapped location of Wetland PP-1 and PP-2. This feature meanders in and out of the PSA and the MB&G recorded boundaries are similar to the boundary as delineated on the LWI mapping.

G. MAPPING METHOD

The wetland and water boundaries were flagged in the field by MB&G biologists. Each flag was then located and surveyed by Professional Land Surveyors (PLS) from OBEC Consulting Engineers. Survey accuracy is estimated to be ±0.2 foot. MB&G evaluated the areas slightly beyond the boundary of the PSA in order to ensure proper documentation and accurate delineation of existing wetlands, especially when wetlands extended beyond the edges of the PSA. As such, is several locations wetland maps display information regarding features outside of the PSA.

H. ADDITIONAL INFORMATION

H.1 Previous Wetland Delineations and Documentation

In 2001, Pacific Habitat Services, Inc. (PHS) submitted a Wetland Delineation Report (DSL #: WD2001-0574) for an area near the center of the PSA (in the vicinity of the Washington Street/OR 213 Intersection) on the west shoulder of OR 213. This delineation was conducted to facilitate the development of the Home Depot; this report also identified the wetlands described in this report as Ditch 5 and Wetland G. The wetland boundaries delineated by PHS appear to generally correspond to the boundaries delineated by MB&G for this report. Differences in potential jurisdictional status are noted; however, DSL and ACOE regulations have changed since the PHS report was released in 2001.

In 2007, PHS submitted a Wetland Delineation Report (DSL #: WD2007-0737) for a large area, most of which was west of the PSA. This report was conducted to facilitate the Rivers Project, a

proposed retail shopping center. A portion of the PSA north of Redland Road and west of OR 213 corresponds to the eastern extent of the PHS Rivers Project report study area. The PHS report identified a large PEM, Riverine Flow-through wetland (Park Place Creek/Phillips Creek). The boundary for this feature appears to generally correspond to the vicinity of Stream 16.

H.2 Summary Table

Table 3 provides a summary of each feature delineated within the PSA, including feature name, Cowardin and HGM classification, acreage, sample plot documentation, general characteristics, and anticipated jurisdictional determination based on MB&G's best professional judgment.

Table 3: Anticipated Jurisdictional Determination for all Features Located within the Project Study Area

Wetland/ Waters Feature NWI/LWI Code	Dominant HGM class/ Cowardin class	Size within PSA, Sample Plot(s), Photo Number(s) and Figure Number(s)	Basis for Potential DSL Jurisdiction[1]	Corps Category (1-7) and Basis for Corps Jurisdiction[2]
Ditch 1 Upland	N/A R4SB7x	0.24 acre SP-A1 to SP-A4, SP-X6 Photos: 1, 2, 3, 4 Figures: 6a, 6b, 6c	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d): artificially created, less than 10 feet wide, not connected or contiguous with wetlands, no fish; (6)(a-c) less than one acre, created in upland, and not identified as mitigation.	Likely jurisdictional based on evidence of relatively permanent flow with assumed significant nexus to the Clackamas River, a traditional navigable water (TNW). Category 5 33 CFR 328.3
Ditch 2 Upland	N/A R4SB7x	0.11 acre SP-B1 to SP-B4 Photos: 5, 6 Figures: 6a, 6b	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d): artificially created, less than 10 feet wide, not connected or contiguous with wetlands, no fish; (6)(a-c) less than one acre, created in upland, and not identified as mitigation.	Likely jurisdictional based on significant nexus to a relatively permanent waterbody (RPW) and eventually to the Clackamas River (a TNW). Category 5 33 CFR 328.3
Ditch 3 Upland	N/A R4SB7x	0.19 acre SP-D1 to SP-D6 Photos: 9, 10 Figures: 6c, 6d	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d): artificially created, less than 10 feet wide, not connected or contiguous with wetlands, no fish; (6)(a-c) less than one acre, created in upland, and not identified as mitigation.	Likely jurisdictional based on significant nexus to an RPW and eventually to the Clackamas River (a TNW). Category 5 33 CFR 328.3

Wetland/ Waters Feature NWI/LWI Code	Dominant HGM class/ Cowardin class	Size within PSA, Sample Plot(s), Photo Number(s) and Figure Number(s)	Basis for Potential DSL Jurisdiction[1]	Corps Category (1-7) and Basis for Corps Jurisdiction[2]
Ditch 4 Upland	N/A R4SB7x	0.04 acre SP-E1 & SP-E2 Photos: 11, 12 Figures: 6c, 6d	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d): artificially created, less than 10 feet wide, not connected or contiguous with wetlands, no fish; (6)(a-c) less than one acre, created in upland, and not identified as mitigation.	Likely jurisdictional based on significant nexus to an RPW and eventually to a TNW (Clackamas River). Category 5 33 CFR 328.3
Ditch 5 Upland	N/A R4SB7x	0.05 acre SP-H1 to SP-H3 Photos: 15, 16 Figure: 6d	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d): artificially created, less than 10 feet wide, not connected or contiguous with wetlands, no fish; (6)(a-c) less than one acre, created in upland, and not identified as mitigation.	Likely jurisdictional based on significant nexus to an RPW and eventually to a TNW (Clackamas River). Category 5 33 CFR 328.3
Ditch 6 Upland	N/A R4SB5x	0.07 acre Photos: 29, 30 Figure: 6h	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d): artificially created, less than 10 feet wide, not connected or contiguous with wetlands, no fish; (6)(a-c) less than one acre, created in upland, and not identified as mitigation.	Likely jurisdictional based on evidence of relatively permanent flow with assumed significant nexus to the Clackamas River, a traditional navigable water (TNW). Category 5 33 CFR 328.3
Ditch 7 Upland	N/A R4SB4x	0.02 acre Photo: 33 Figure: 6h	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d). artificially created, less than 10 feet wide, not connected or contiguous with wetlands.	**Not** likely jurisdictional based on being a roadside ditch lacking relatively permanent flow or adjacent wetlands.
Ditch 8 Upland	N/A R4SB4x	0.01 acre Photo: 34 Figure: 6h	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d). artificially created, less than 10 feet wide, not connected or contiguous with wetlands.	**Not** likely jurisdictional based on being a roadside ditch lacking relatively permanent flow or adjacent wetlands.

Wetland/ Waters Feature NWI/LWI Code	Dominant HGM class/ Cowardin class	Size within PSA, Sample Plot(s), Photo Number(s) and Figure Number(s)	Basis for Potential DSL Jurisdiction[1]	Corps Category (1-7) and Basis for Corps Jurisdiction[2]
Ditch 9 Upland	N/A R4SB4x	0.01 acre Photo: 33 Figure: 6h	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d). artificially created, less than 10 feet wide, not connected or contiguous with wetlands.	**Not** likely jurisdictional based on being a roadside ditch lacking relatively permanent flow or adjacent wetlands. (ACOE 2007).
Ditch 10 Upland	N/A R4SB2x	0.04 acre SP-X13 Photos: 35, 36, 41 Figures: 6i, 6j	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d). artificially created, less than 10 feet wide, not connected or contiguous with wetlands.	Likely jurisdictional based on abutting a wetland with significant nexus to an RPW and eventually a TNW. Category 5 33 CFR 328.3
Ditch 11 Upland	N/Al R4SB5x	0.02 acre Photo: 37 Figures: 6k, 6l	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d). artificially created, less than 10 feet wide, not connected or contiguous with wetlands.	**Not** likely jurisdictional based on being a roadside ditch lacking relatively permanent flow or adjacent wetlands.
Ditch 12 Upland	N/A R4SB5x	0.02 acre Photo: 38 Figures: 6k, 6l	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d). artificially created, less than 10 feet wide, not connected or contiguous with wetlands.	**Not** likely jurisdictional based on being a roadside ditch lacking relatively permanent flow or adjacent wetlands.
Ditch 13 Upland	N/A R4SB5x	0.02 acre SP-R6 Photo: 39 Figures: 6j, 6k	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d). artificially created, less than 10 feet wide, not connected or contiguous with wetlands.	**Not** likely jurisdictional based on being a roadside ditch lacking relatively permanent flow or adjacent wetlands.
Stream 14 Upland	N/A R4SB5	0.05 acre Photos: 19, 20 Figures: 6g, 6h	Likely jurisdictional based on OAR 141-085-0515(3) and OAR 141-085-0510(41) definition of an intermittent stream.	Likely jurisdictional based on the definition of an RPW with significant nexus to a TNW (Clackamas River). Category 5 33 CFR 328.3

Wetland/ Waters Feature NWI/LWI Code	Dominant HGM class/ Cowardin class	Size within PSA, Sample Plot(s), Photo Number(s) and Figure Number(s)	Basis for Potential DSL Jurisdiction[1]	Corps Category (1-7) and Basis for Corps Jurisdiction[2]
Stream 15 Upland	N/A R3UB3	0.06 acre Photo: 40 Figure: 6g	Likely jurisdictional based on OAR 141-085-0515(3) and OAR 141-085-0510(62) definition of a perennial stream.	Likely jurisdictional based on the definition of an RPW with significant nexus to a TNW (Willamette River). Category 5 33 CFR 328.3
Stream 16 PSS	N/A R3UB3	0.19 acre Photos: 35, 41, 42, 43, 44 Figures: 6i, 6j	Likely jurisdictional based on OAR 141-085-0515(3) and OAR 141-085-0510(62) definition of a perennial stream.	Likely jurisdictional based on the definition of an RPW with significant nexus to the Willamette River (a TNW) (ACOE 2007). Category 5 33 CFR 328.3
Ditch 17 Upland	N/A R4SB7x	0.04 acre SP-P1, SP-P2 Photos: 25, 26 Figure: 6m	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d): artificially created, greater than 10 feet wide.	Likely jurisdictional based on a significant nexus with an RPW to the Clackamas River (a TNW). Category 5 33 CFR 328.3
Pond 18 Upland/POW	N/A L1UB3	0.10 acre SP-X2 Photos: 7, 8 Figure: 6c	Likely jurisdictional based on OAR 141-085-0515(3).	Likely jurisdictional based on the definition of an RPW with significant nexus to the Clackamas River (a TNW). Category 5 33 CFR 328.3
Ditch 19 Upland	N/A R4SB5x	0.01 acre SP-X18 Photo: 49 Figure: 6b	**Not** likely jurisdictional based on OAR 141-085-0515(8)(a-b): no habitat for food or game fish and no free and open connection with waters of the state..	Likely jurisdictional - RPW tributary of the Clackamas River (a TNW). Category 5 33 CFR 328.3
Ditch 20 Upland/PEM & PFO	N/A R4SB5x	0.13 acre SP-X19 Photo: 51 Figures: 6b, 6n, 6o	**Not** likely jurisdictional based on OAR 141-085-0515(10a-d): artificially created, less than 10 feet wide, not fish bearing.	Likely jurisdictional - RPW tributary of the Clackamas River (a TNW). Category 5 33 CFR 328.3

Wetland/ Waters Feature NWI/LWI Code	Dominant HGM class/ Cowardin class	Size within PSA, Sample Plot(s), Photo Number(s) and Figure Number(s)	Basis for Potential DSL Jurisdiction[1]	Corps Category (1-7) and Basis for Corps Jurisdiction[2]
Ditch 21 Upland/PEM & PFO	N/A R4SB5x	0.03 acre SP-X20 Photos: 52, 53 Figures: 6n, 6o	**Not** likely jurisdictional based on OAR 141-085-0515(10)(a-d): artificially created, less than 10 feet wide, not fish bearing.	Likely jurisdictional based on likely significant nexus with the Clackamas River (a TNW). Category 5 33 CFR 328.3
Wetland A Upland	Flats PEM	0.23 acre SP-G1 to SP-G4 Photos: 13, 14 Figure: 6d	Likely jurisdictional based on OAR 141-085-0510(95), the definition of a wetland, and OAR 141-085-0515(4)	Likely jurisdictional based on a significant nexus to an RPW and eventually to the Clackamas River (a TNW). Category 7 33 CFR 328.3
Wetland B Upland	Depressional Outflow PEM	0.17 acres SP-I1 to SP-I8 Photos: 17, 18 Figures: 6d, 6f	**Not** likely jurisdictional based on OAR 141-085-0515(6)(a-c) artificially created, less than one acre, created in upland, and not identified as mitigation (DSL 2009a).	Likely jurisdictional based on a significant nexus to an RPW and eventually to the Clackamas River (a TNW). Category 7 33 CFR 328.3
Wetland C Upland	Riverine Flow-through PEM	1.85 acres SP-K1 to SP-K8 Photos: 21, 22 Figure: 6g	Likely jurisdictional based on OAR 141-085-0510(95), the definition of a wetland, and OAR 141-085-0515(4).	Likely jurisdictional based on a significant nexus to an RPW and eventually to the Clackamas River (a TNW). Category 7 33 CFR 328.3
Wetland D Upland	Depressional Outflow PEM	0.20 acre SP-L1 to SP-L4 Photos: 23, 24 Figures: 6e, 6f	**Not** likely jurisdictional based on OAR 141-085-0515(6)(a-c) artificially created, less than one acre, created in upland, and not identified as mitigation.	Likely jurisdictional based on a potential significant nexus to an RPW and eventually to the Clackamas River (a TNW). Category 7 33 CFR 328.3

Wetland/ Waters Feature NWI/LWI Code	Dominant HGM class/ Cowardin class	Size within PSA, Sample Plot(s), Photo Number(s) and Figure Number(s)	Basis for Potential DSL Jurisdiction[1]	Corps Category (1-7) and Basis for Corps Jurisdiction[2]
Wetland E Upland	Riverine Flow-through PEM	0.05 acre SP-M1 & SP-M2 Photo: 40 Figure: 6g	Likely jurisdictional based on OAR 141-085-0510(95), the definition of a wetland, and OAR 141-085-0515 (4).	Likely jurisdictional based on the location abutting an RPW eventually discharging to the Willamette River (a TNW). Category 7 33 CFR 328.3
Wetland F Upland	Slope Valley PEM	0.04 acre SP-N1 & SP-N2 Photo: 41 Figure: 6i	Likely jurisdictional based on OAR 141-085-0515(4).	Likely jurisdictional based on the location abutting an RPW eventually discharging to the Willamette River (a TNW). Category 7 33 CFR 328.3
Wetland G Upland	Slope Valley PEM	0.15 acre SP-O1 to SP O4 Photos: 27, 28, 42, 43 Figure: 6i	Likely jurisdictional based on OAR 141-085-0515(4)	Likely jurisdictional based on the location abutting an RPW eventually discharging to the Willamette River (a TNW). Category 7 33 CFR 328.3
Wetland H Upland	Slope Valley PEM	0.07 acre SP-Q1 & SP-Q2 Photos: 47, 48 Figure: 6j	**Not** likely jurisdictional based on OAR 141-085-0515(6)(a-c) less than one acre, created in upland, and not identified as mitigation.	Likely jurisdictional based on a potential significant nexus to an RPW and eventually to the Willamette River (a TNW). Category 7 33 CFR 328.3
Wetland I Upland	Depressional Outflow PFO	0.19 acre SP-R1 to SP-R6 Photos: 45, 46 Figure: 6j	Likely jurisdictional based on OAR 141-085-0515(4).	Likely jurisdictional based on a significant nexus to an RPW and eventually to the Willamette River (a TNW). Category 33 CFR 328.37

Wetland/ Waters Feature NWI/LWI Code	Dominant HGM class/ Cowardin class	Size within PSA, Sample Plot(s), Photo Number(s) and Figure Number(s)	Basis for Potential DSL Jurisdiction[1]	Corps Category (1-7) and Basis for Corps Jurisdiction[2]
Wetland J Upland/PEM & PFO	Riverine Flow-through PEM	0.02 acre SP-S1 to SP-S2 Photo: 50 Figure: 6b	Likely jurisdictional based on OAR 141-085-0515(4).	Likely jurisdictional - wetland directly abutting an RPW tributary of the Clackamas River (a TNW). Category 7 33 CFR 328.3
Wetland K Upland/PEM & PFO	Depressional Outflow PFO	0.07 acre SP-T1 & SP-T2 Photo: 53 Figure: 6o	Likely jurisdictional based on OAR 141-085-0515(4).	Likely jurisdictional - wetland directly abutting an RPW tributary of the Clackamas River (a TNW). Category 7 33 CFR 328.3
Wetland L Upland/PEM & PFO	Depressional PFO	0.07 acre SP-R1 to SP-R6 Photo: 54 Figures: 6n, 6o	Likely jurisdictional based on OAR 141-085-0515(4).	Likely jurisdictional based on a significant nexus to an RPW and eventually to the Clackamas River (a TNW).). Category 7 33 CFR 328.3

[1] *Source (DSL 2009a)*
[2] *Source (ACOE 2007)*

I. CONCLUSIONS

Based on the results of the field investigations conducted on February 24-26, 2009, March 26-27, 2009, August 24, 2009 and September 2, 2009, the 63.92-acre PSA contains a total of 12 wetland features and 21 waters features including one artificially constructed detention pond, three streams, and 17 man-made ditches (Table 4).

Table 4: Summary of Acreages for All Features within the Project Study Area

Resource Type	Total Area (acres)	Number of Features	Area Potentially Jurisdictional – DSL (acres)	Area Potentially Jurisdictional – ACOE (acres)
Wetlands	3.11	12	2.67	3.11
Waters	1.45	21	0.40	1.35
Ponds	0.10	1		
Streams	0.30	3		
Roadside Ditches	1.05	17		

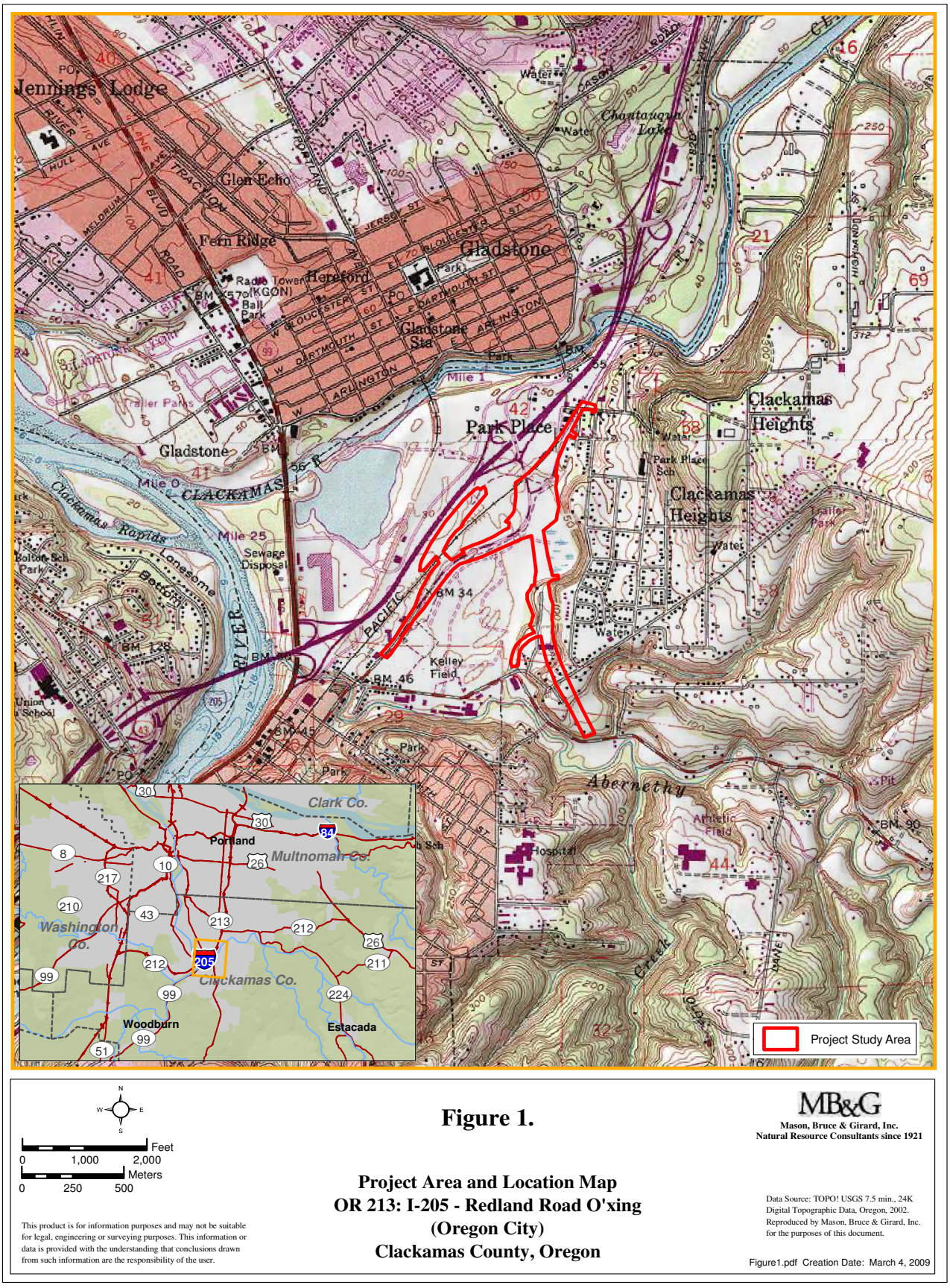
J. DISCLAIMER

This report documents the investigation, best professional judgment, and conclusions of the investigator. It is correct and complete to the best of my knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters to be used at your own risk until it has been reviewed and approved in writing by the DSL in accordance with OAR 141-090-0005 through 141-090-0055 (DSL 2009).

APPENDIX A

Maps

OR 213: I-205 – Redland Road O'xing (Oregon City) Project
ODOT Key #K16322
Oregon City, Clackamas County, Oregon



Feet
0 1,000 2,000
Meters
0 250 500

This product is for information purposes and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.

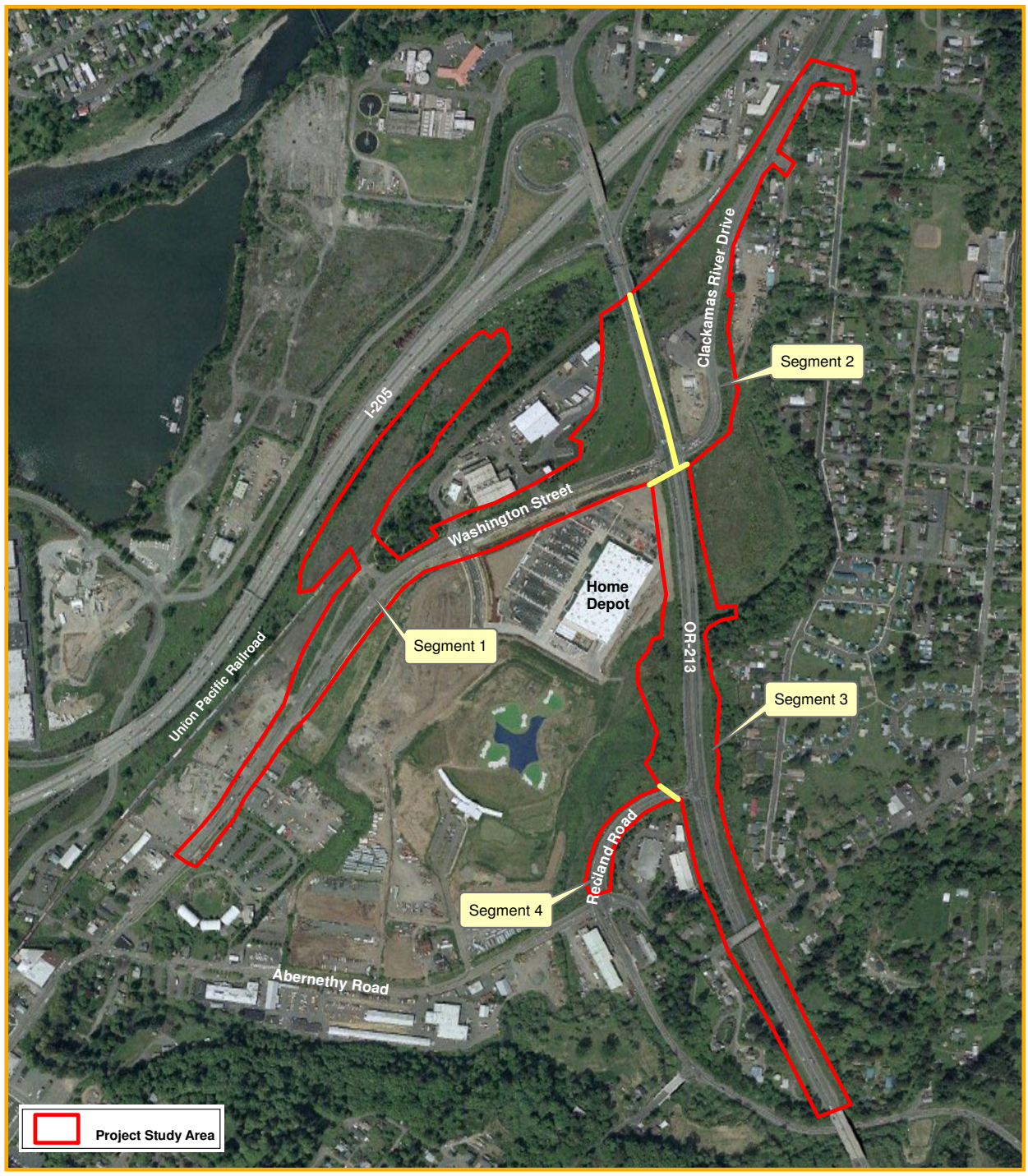
Figure 1.

Project Area and Location Map
OR 213: I-205 - Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

MB&G
Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921

Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon, 2002. Reproduced by Mason, Bruce & Girard, Inc. for the purposes of this document.

Figure1.pdf Creation Date: March 4, 2009



N
W E
S

Feet
0 250 500

Meters
0 100 200

This product is for information purposes and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.

Figure 1a.

Segment Map
OR 213: I-205 - Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

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Data Source: Aerial Photo from NAIP 2005 imagery. Tax lots data from RLIS Lite 2009. Reproduced by Mason, Bruce & Girard, Inc. for the purposes of this document.

Figure1a.pdf Creation Date: March 4, 2009

N
W E
S

Feet
0 250 500

Meters
0 100 200

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Figure 2.

Tax Lot Map
OR 213: I-205 - Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

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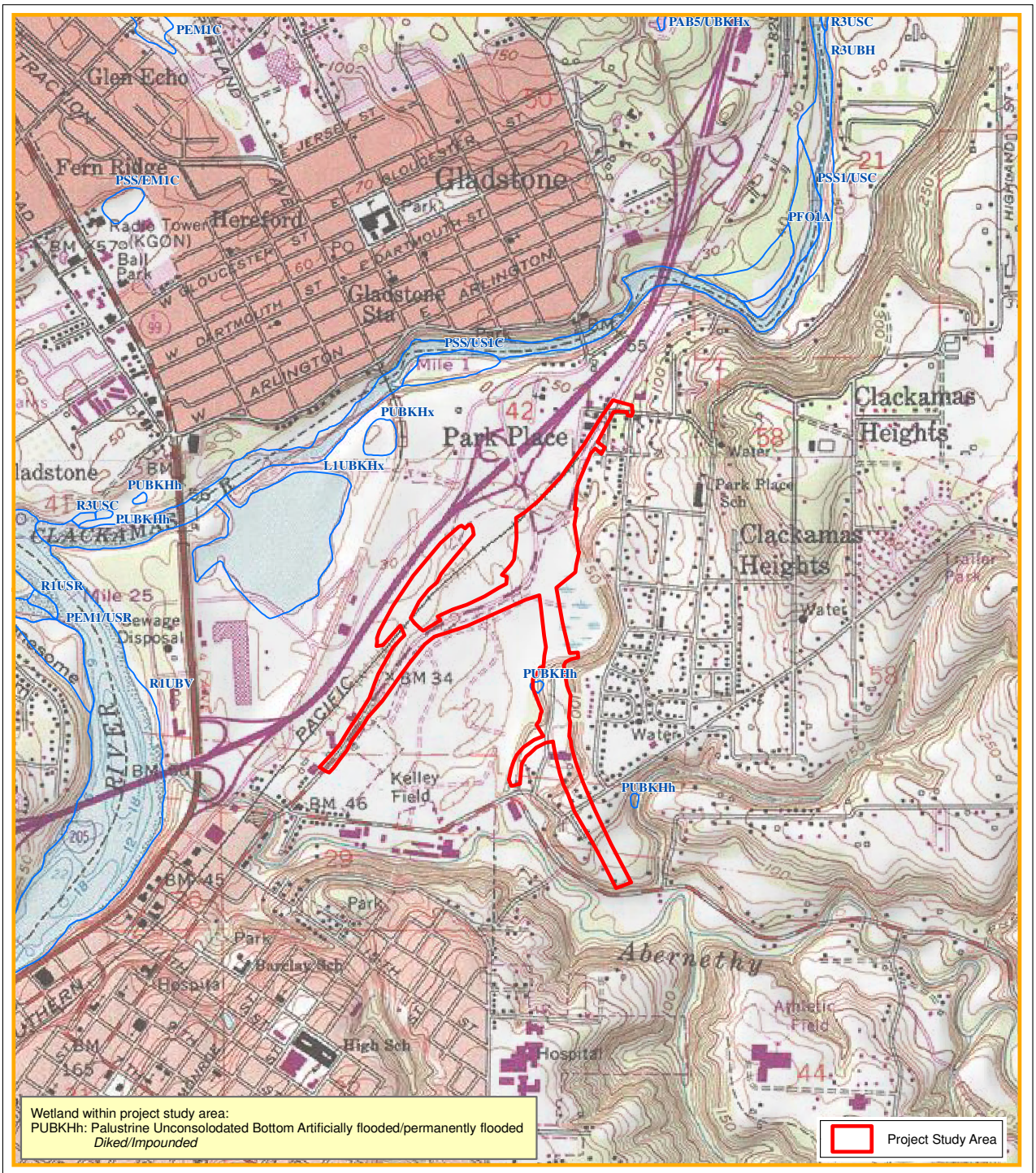
Natural Resource Consultants since 1921

Data Source: Aerial Photo from NAIP 2005 imagery. Tax lots data from RLIS Lite 2009. Reproduced by Mason, Bruce & Girard, Inc. for the purposes of this document.

Figure2.pdf Creation Date: March 4, 2009



N
W E
S

Feet
0 1,000 2,000
Meters
0 250 500

This product is for information purposes and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.

Figure 3.

NWI Map
OR 213: I-205 - Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

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Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon, 2002. NWI data from USGS. Reproduced by Mason, Bruce & Girard, Inc. for the purposes of this document.

Figure3.pdf Creation Date: March 4, 2009

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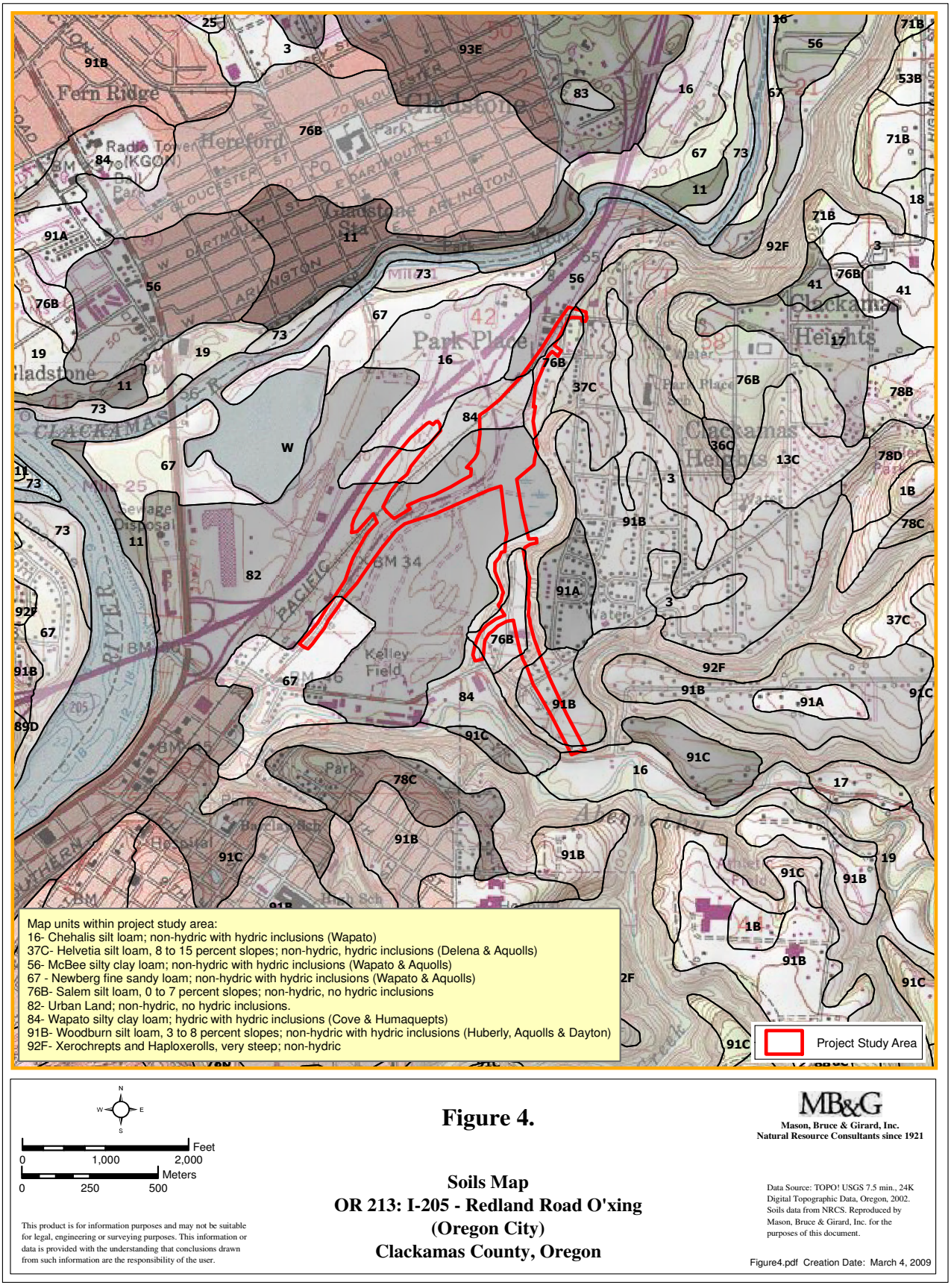
Figure 3a.

LWI Map
OR 213: I-205 - Radland Road O'xing
(Oregon City)
Clackamas County, Oregon

MB&G
Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921

Data Source: Wetland data from City of Oregon City Local Wetland Inventory by Shapiro, Inc. in 1999. Data registered and digitized from paper map by Mason, Bruce & Girard, Inc. in April 2009. Aerial photo from NAIP 2005 imagery. Reproduced by MB&G for the purposes of this document.

Figure3a.pdf Creation Date: March 13, 2009


Map units within project study area:
16- Chehalis silt loam; non-hydric with hydric inclusions (Wapato)
37C- Helvetia silt loam, 8 to 15 percent slopes; non-hydric, hydric inclusions (Delena & Aquolls)
56- McBee silty clay loam; non-hydric with hydric inclusions (Wapato & Aquolls)
67 - Newberg fine sandy loam; non-hydric with hydric inclusions (Wapato & Aquolls)
76B- Salem silt loam, 0 to 7 percent slopes; non-hydric, no hydric inclusions
82- Urban Land; non-hydric, no hydric inclusions.
84- Wapato silty clay loam; hydric with hydric inclusions (Cove & Humaquepts)
91B- Woodburn silt loam, 3 to 8 percent slopes; non-hydric with hydric inclusions (Huberly, Aquolls & Dayton)
92F- Xerochrepts and Haploxerolls, very steep; non-hydric
Project Study Area
Feet
0 1,000 2,000
Meters
0 250 500
This product is for information purposes and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.
Figure 4.
Soils Map
OR 213: I-205 - Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
MB&G
Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921
Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon, 2002. Soils data from NRCS. Reproduced by Mason, Bruce & Girard, Inc. for the purposes of this document.
Figure4.pdf Creation Date: March 4, 2009

N
W E
S

Feet
0 250 500

Meters
0 100 200

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Figure 5.

Aerial Photo and Hydrology Flow Patterns
OR 213: I-205 - Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

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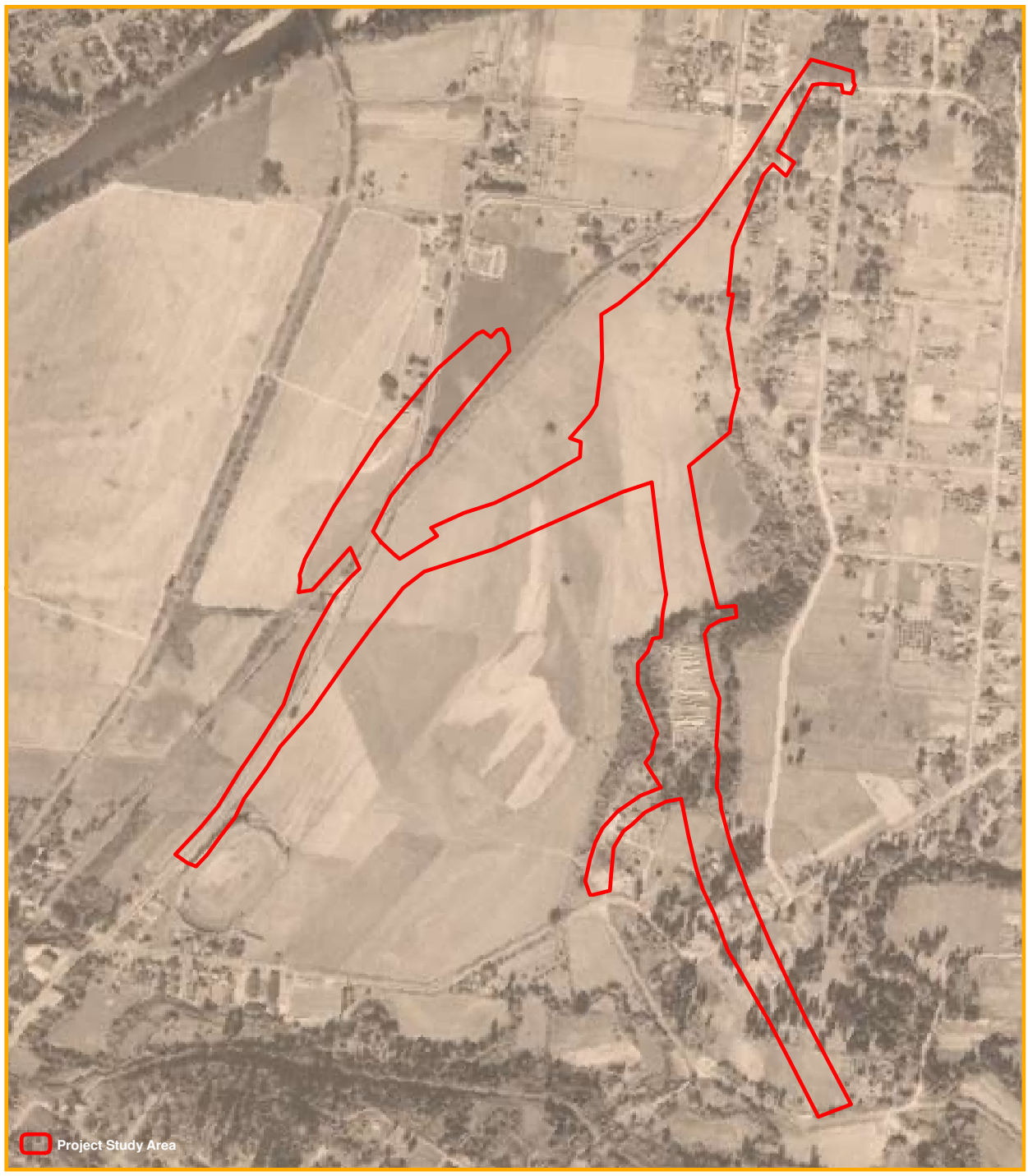
Data Source: Aerial Photo from NAIP 2005 imagery. Reproduced by Mason, Bruce & Girard, Inc. for the purposes of this document.

Figure5.pdf Creation Date: March 4, 2009



N
W E
S

Feet
0 250 500

Meters
0 100 200

This product is for information purposes and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.

Figure 5a.

1936 Aerial Photo
OR 213: I-205 - Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

MB&G
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Natural Resource Consultants since 1921

Data Source: Aerial Photo from Oregon City 1936 imagery. Reproduced by Mason, Bruce & Girard, Inc. for the purposes of this document.

Figure5a.pdf Creation Date: Dec 16, 2009

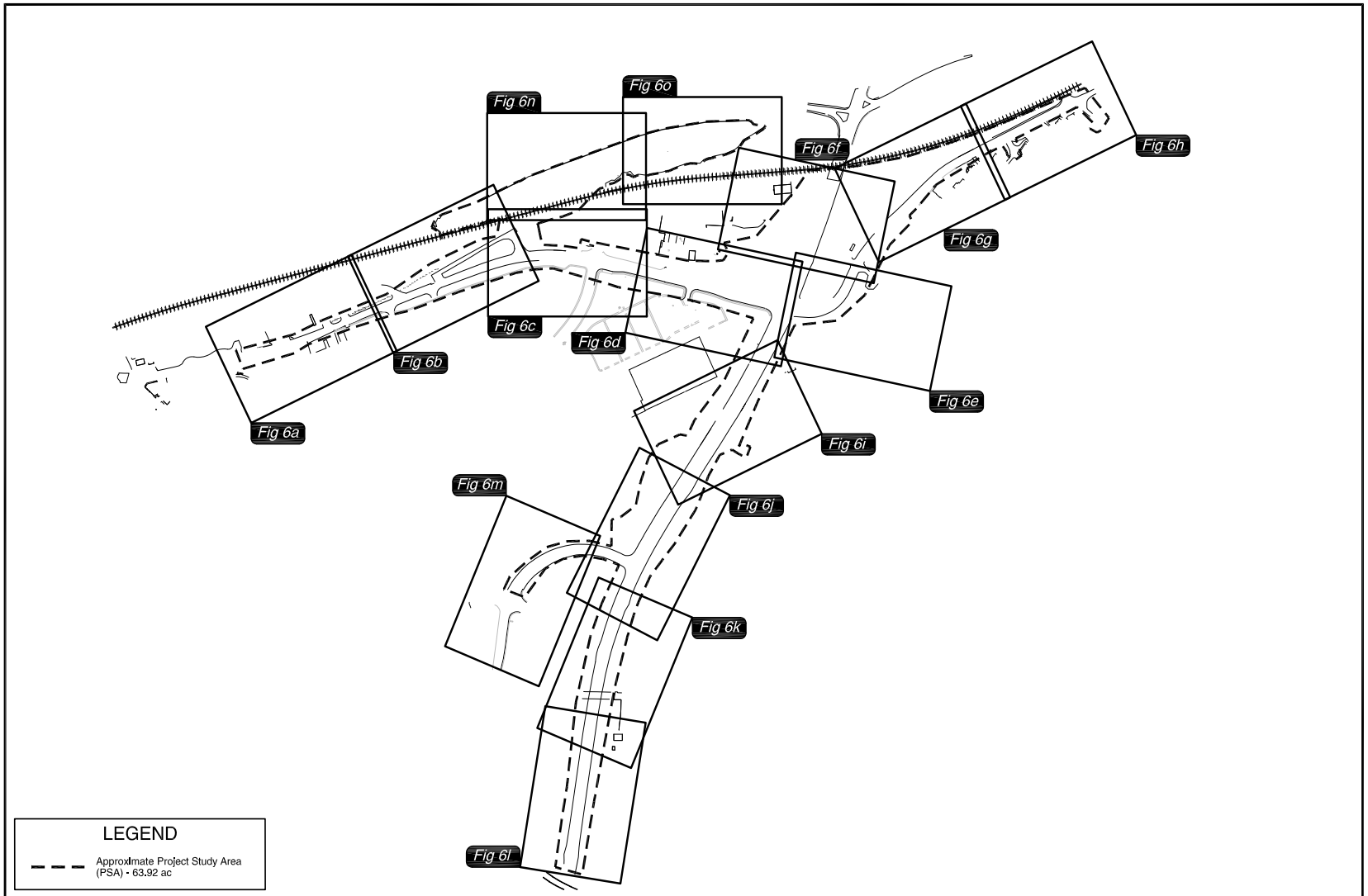
Fig 6n
Fig 6o
Fig 6f
Fig 6h
Fig 6g
Fig 6c
Fig 6d
Fig 6b
Fig 6e
Fig 6a
Fig 6i
Fig 6m
Fig 6j
Fig 6k
Fig 6l
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
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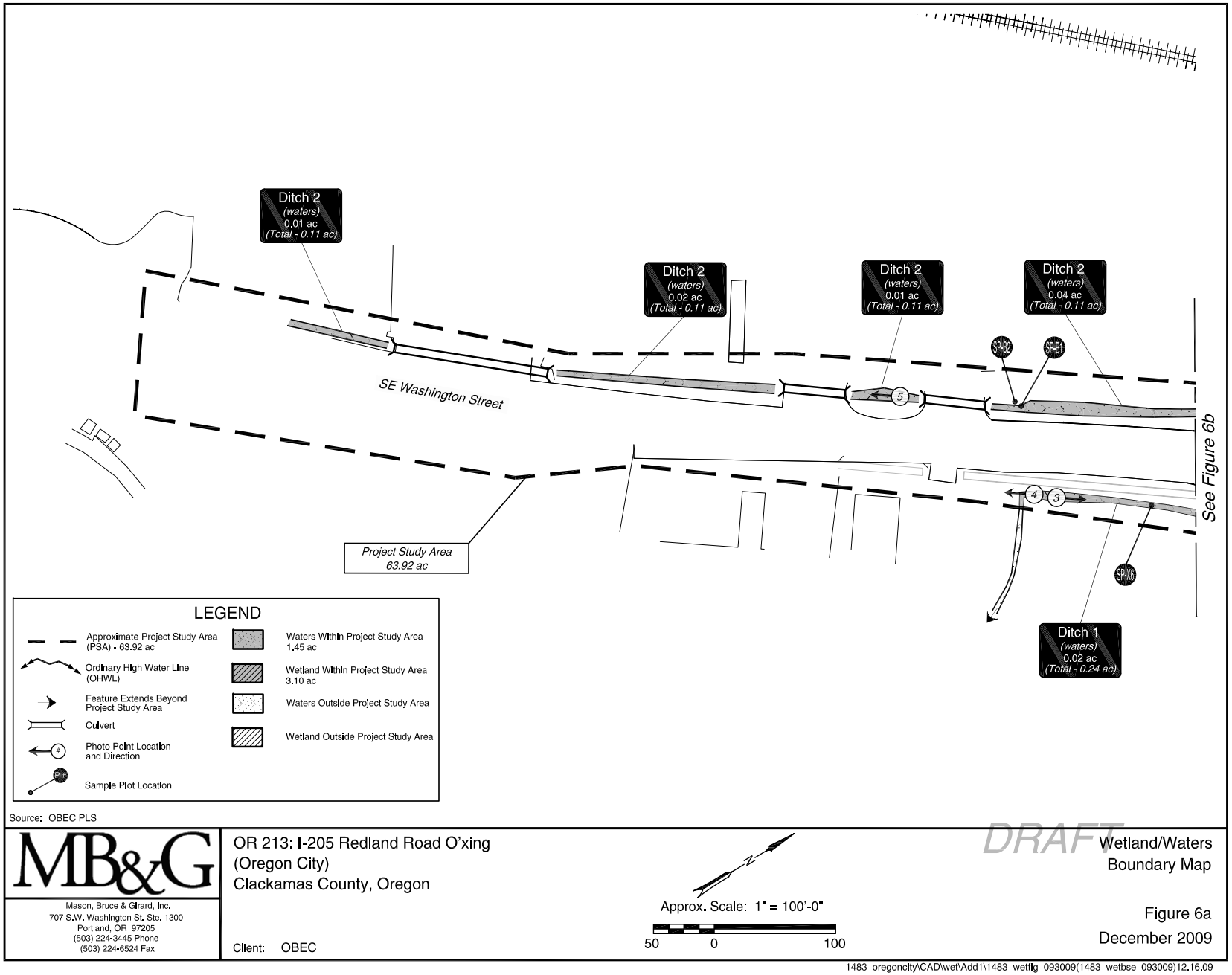
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 800'-0"
400 0 800
N
DRAFT
Wetland/Waters Boundary Map
Figure 6
December 2009
1483_oregoncity\CAD\Add1\1483_wetfig_092809(1483_wetbse_092809)10.09


Ditch 2
(waters)
0.01 ac
(Total - 0.11 ac)
Ditch 2
(waters)
0.02 ac
(Total - 0.11 ac)
Ditch 2
(waters)
0.01 ac
(Total - 0.11 ac)
Ditch 2
(waters)
0.04 ac
(Total - 0.11 ac)
SE Washington Street
SP-B2
SP-S1
SP-N6
5
4
3
Project Study Area
63.92 ac
See Figure 6b
Ditch 1
(waters)
0.02 ac
(Total - 0.24 ac)
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Source: OBEC PLS
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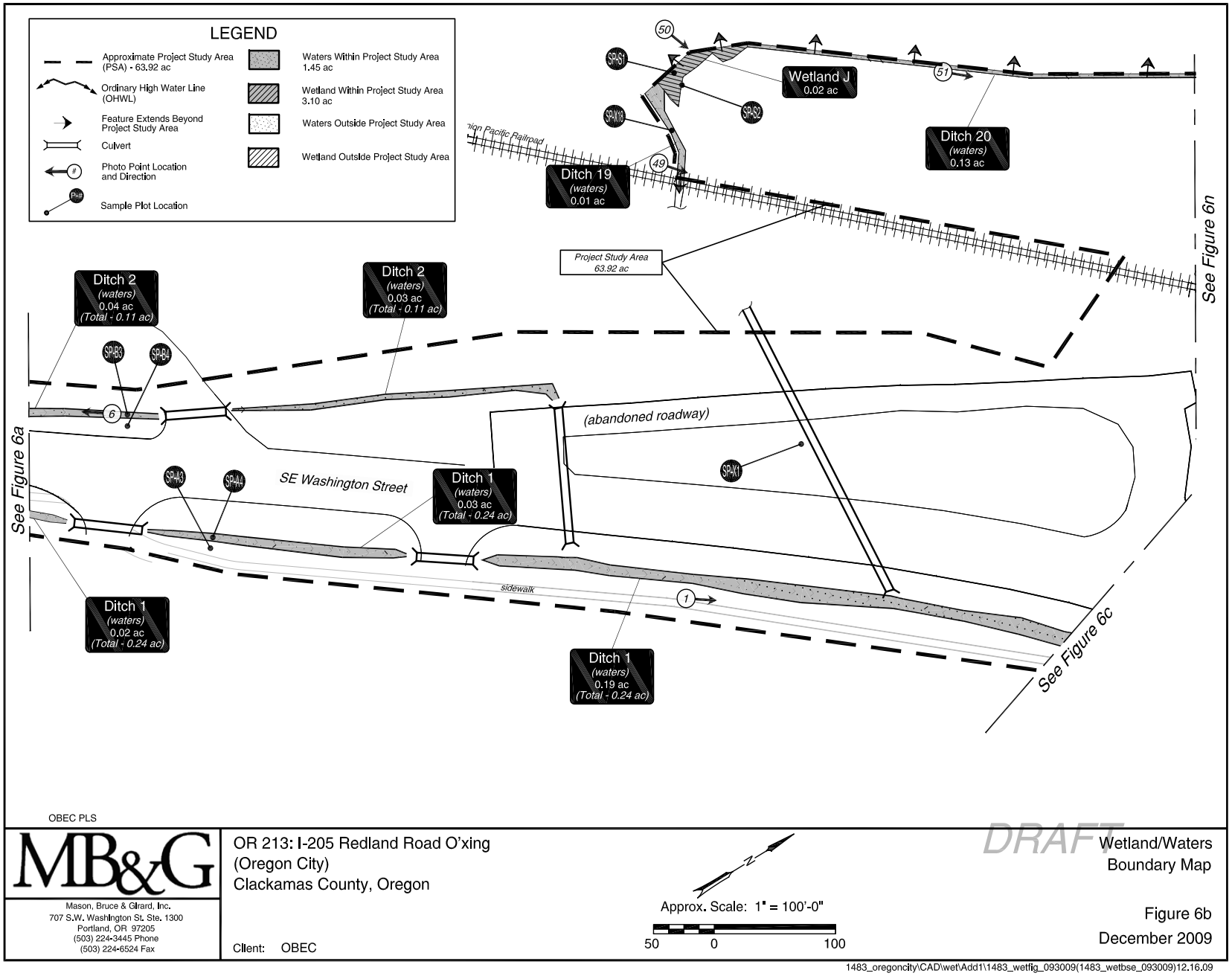
(Oregon City)
Clackamas County, Oregon
Client: OBEC
N
Approx. Scale: 1" = 100'-0"
50 0 100
DRAFT
Wetland/Waters
Boundary Map
Figure 6a
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09



OBEC PLS

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Clackamas County, Oregon

Client: OBEC

Approx. Scale: 1" = 100'-0"

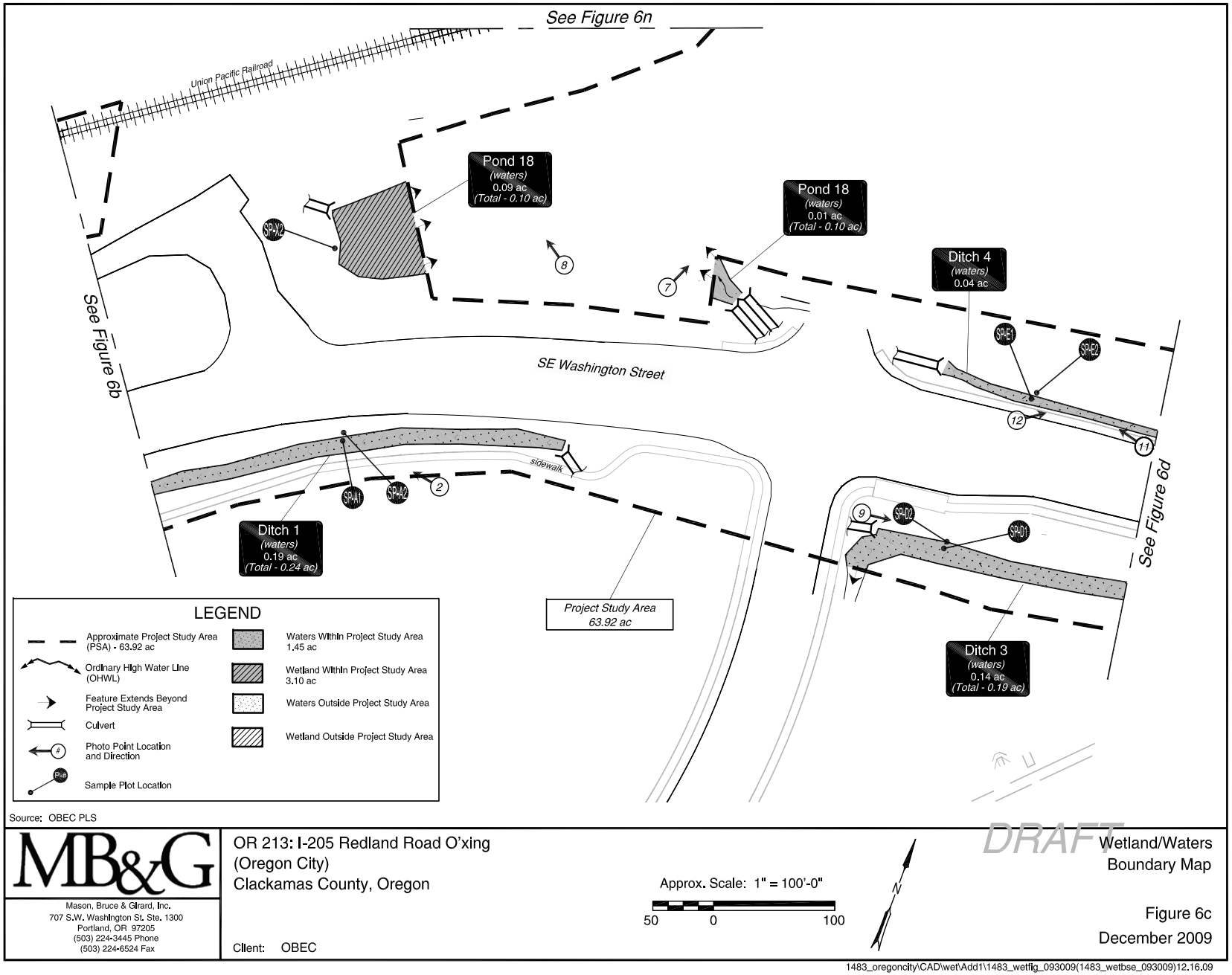
50 0 100

DRAFT

Wetland/Waters Boundary Map

Figure 6b
December 2009

1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09


See Figure 6n
Union Pacific Railroad
Pond 18
(waters)
0.09 ac
(Total - 0.10 ac)
Pond 18
(waters)
0.01 ac
(Total - 0.10 ac)
Ditch 4
(waters)
0.04 ac
SP-W2
SP-E1
SP-E2
8
7
12
11
See Figure 6b
SE Washington Street
sidewalk
SP-A1
SP-A2
2
Ditch 1
(waters)
0.19 ac
(Total - 0.24 ac)
9
SP-D2
SP-D1
See Figure 6d
Project Study Area
63.92 ac
Ditch 3
(waters)
0.14 ac
(Total - 0.19 ac)
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Source: OBEC PLS
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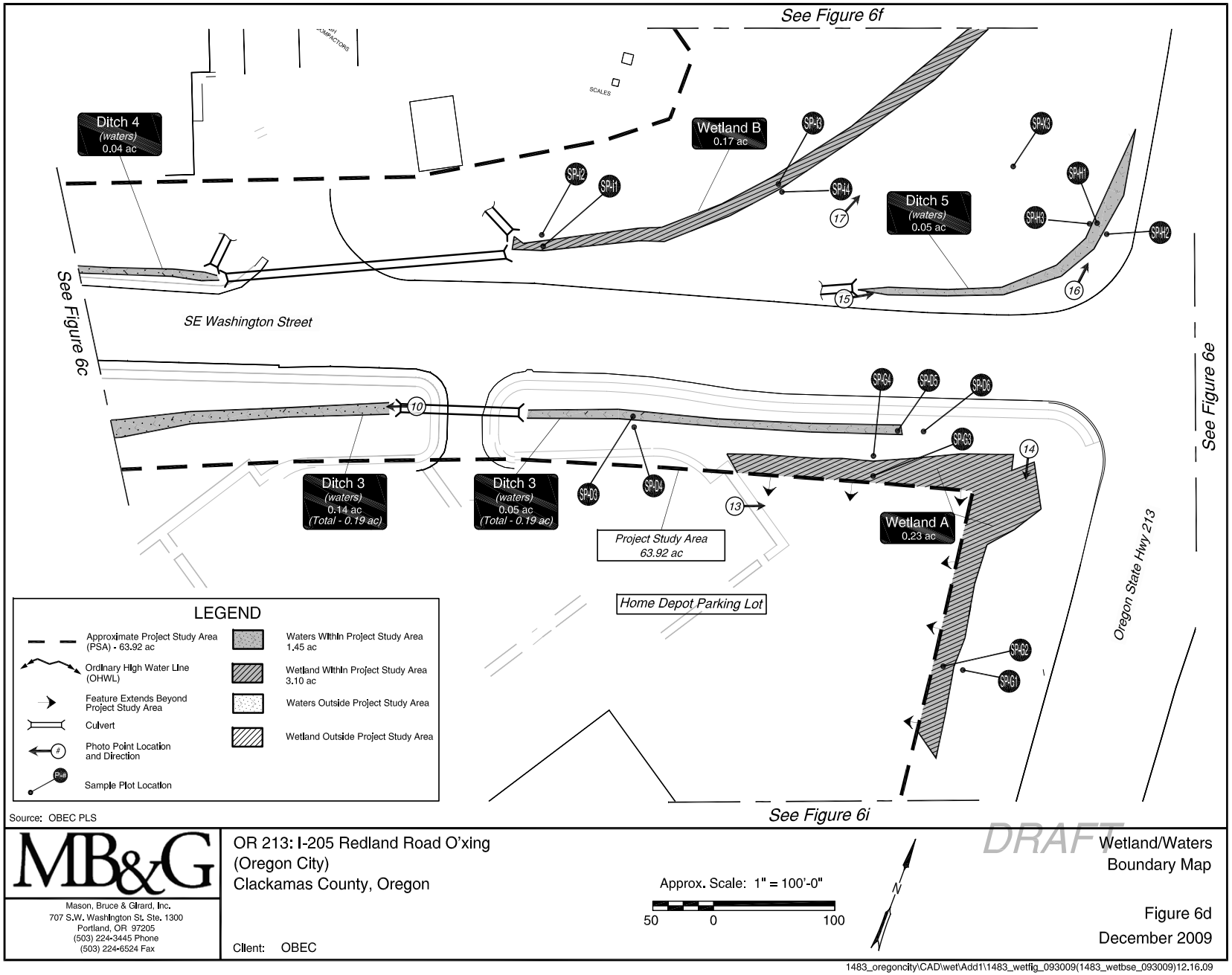
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
N
DRAFT
Wetland/Waters Boundary Map
Figure 6c
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09


See Figure 6f
Ditch 4
(waters)
0.04 ac
Wetland B
0.17 ac
Ditch 5
(waters)
0.05 ac
SP-I3
SP-K3
SP-I2
SP-I1
SP-I4
SP-H1
SP-H3
SP-H2
17
16
15
SE Washington Street
See Figure 6c
See Figure 6e
10
SP-G4
SP-D5
SP-D6
SP-G3
14
13
Ditch 3
(waters)
0.14 ac
(Total - 0.19 ac)
Ditch 3
(waters)
0.05 ac
(Total - 0.19 ac)
SP-D3
SP-D4
Project Study Area
63.92 ac
Wetland A
0.23 ac
Home Depot Parking Lot
Oregon State Hwy 213
SP-G2
SP-G1
See Figure 6i
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Source: OBEC PLS
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OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
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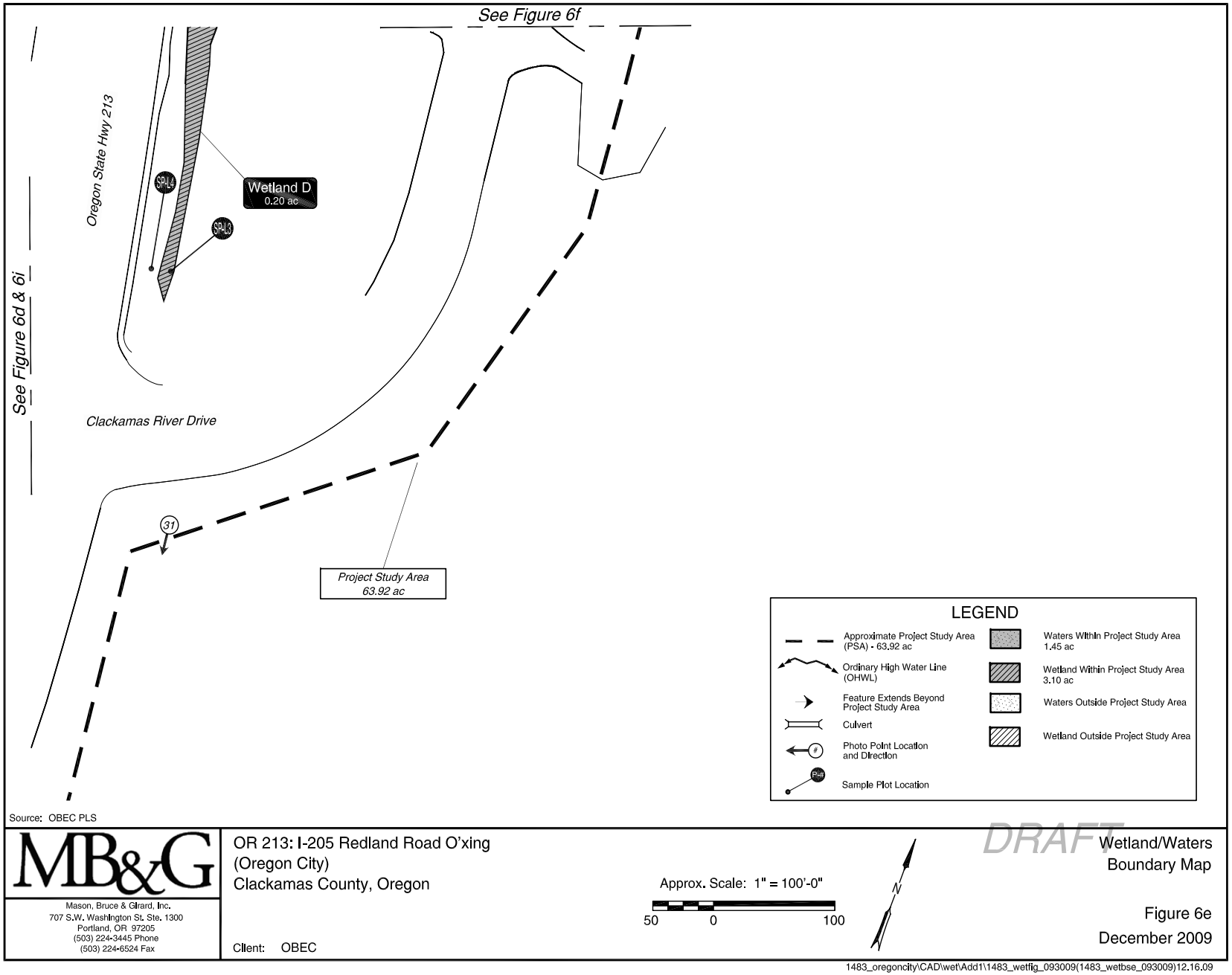
N
Wetland/Waters Boundary Map
Figure 6d
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09


See Figure 6f
Oregon State Hwy 213
Wetland D
0.20 ac
SP-L4
SP-L3
See Figure 6d & 6i
Clackamas River Drive
31
Project Study Area
63.92 ac
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Source: OBEC PLS
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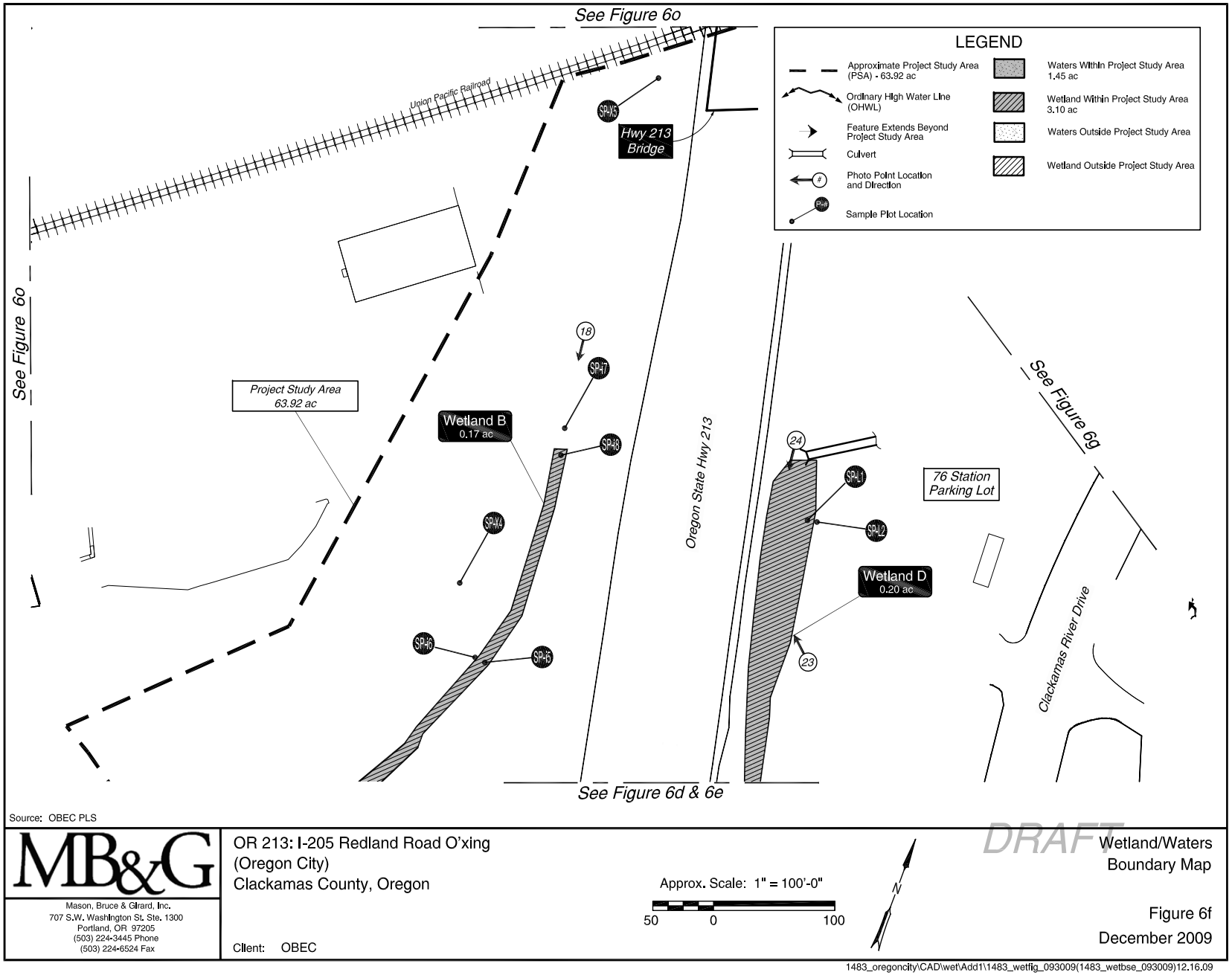
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
N
DRAFT
Wetland/Waters Boundary Map
Figure 6e
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09


See Figure 6o
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Union Pacific Railroad
Hwy 213 Bridge
SP-V5
See Figure 6o
Project Study Area 63.92 ac
Wetland B 0.17 ac
18
SP-47
SP-48
SP-V4
SP-I6
SP-I5
Oregon State Hwy 213
24
SP-L1
SP-L2
Wetland D 0.20 ac
23
76 Station Parking Lot
See Figure 6g
Clackamas River Drive
See Figure 6d & 6e
Source: OBEC PLS
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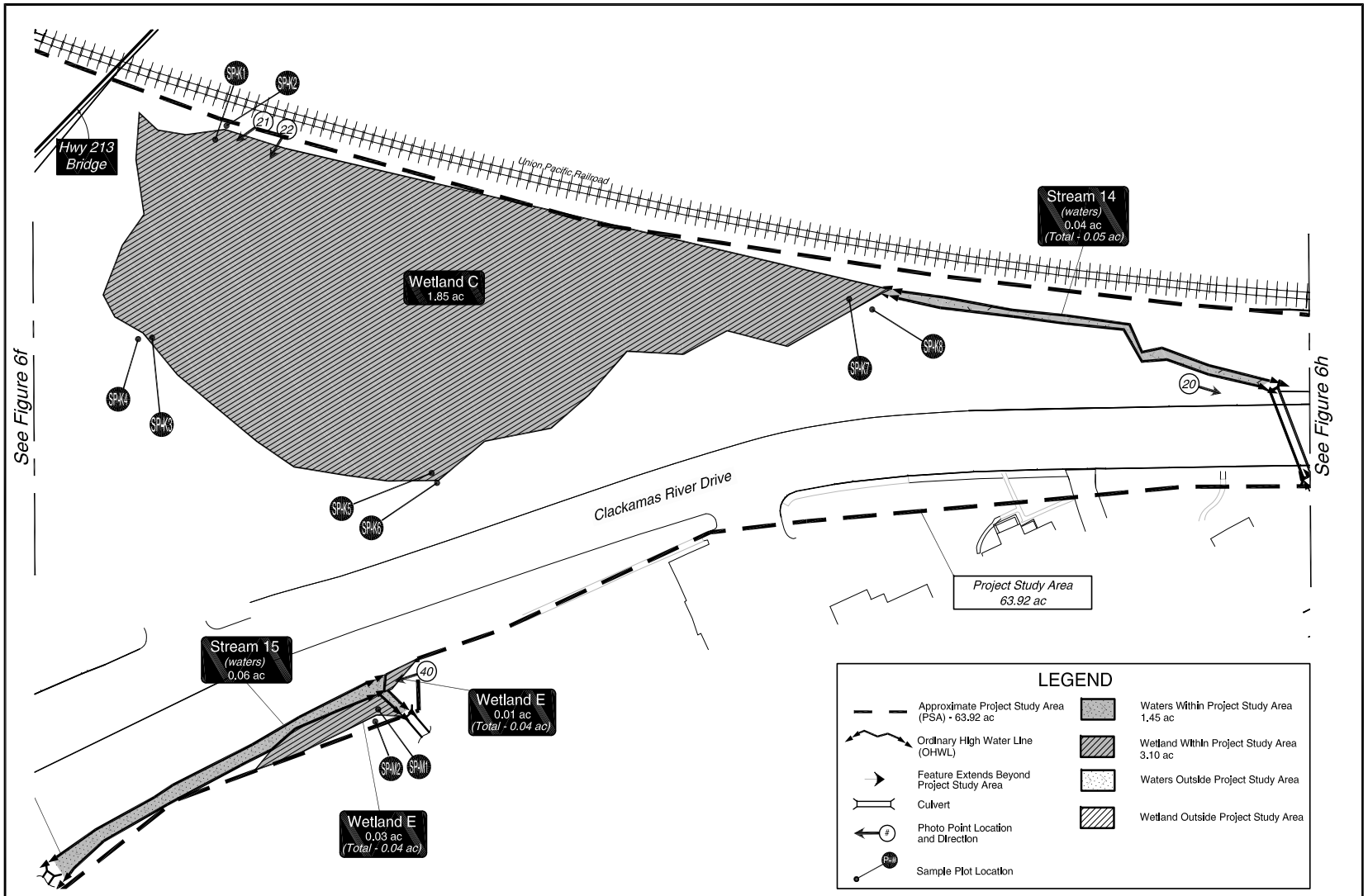
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
N
DRAFT
Wetland/Waters Boundary Map
Figure 6f
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09



Source: OBEC PLS

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Clackamas County, Oregon

Client: OBEC

Approx. Scale: 1" = 100'-0"

50 0 100

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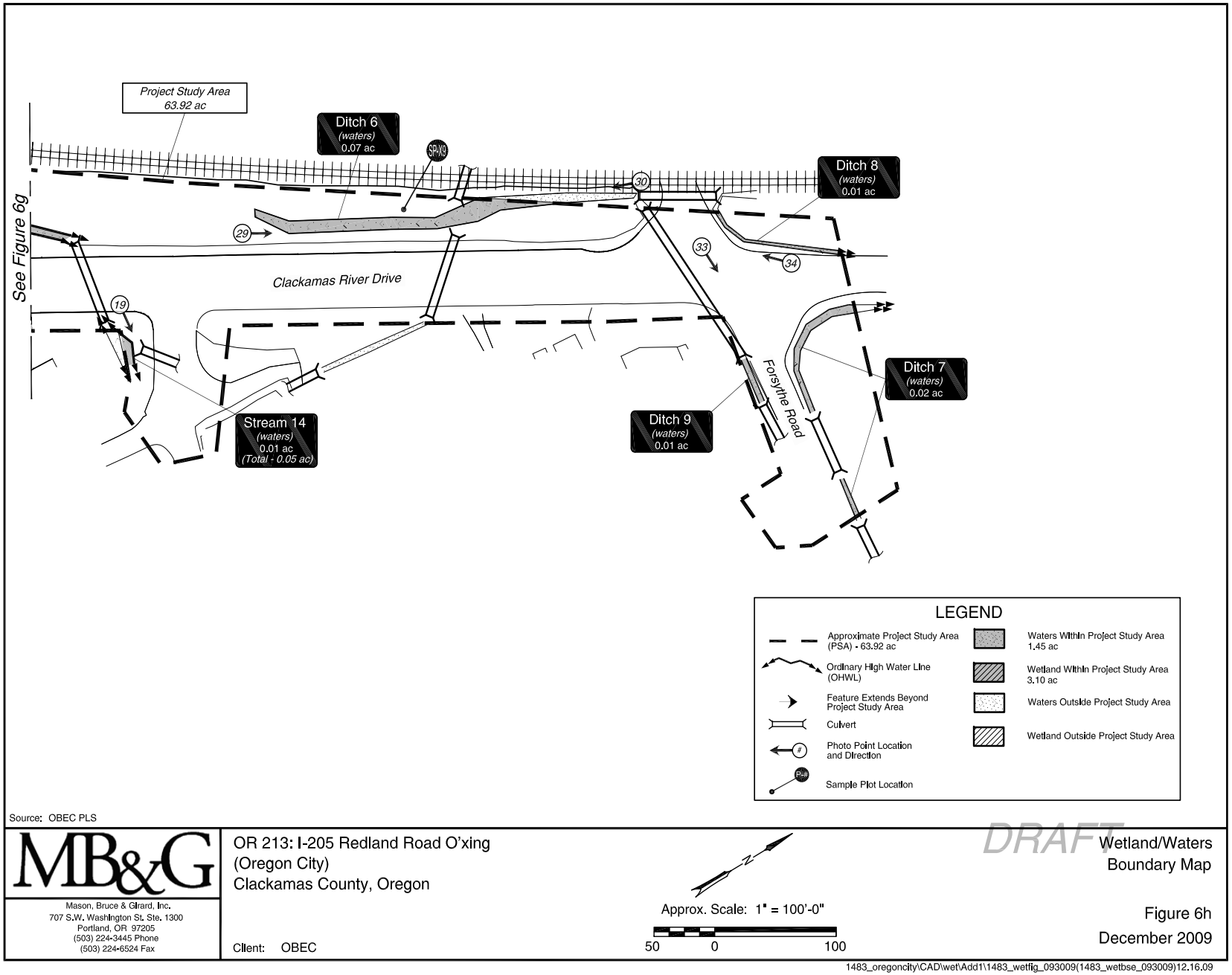
Wetland/Waters Boundary Map

Figure 6g
December 2009

1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09



Source: OBEC PLS

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Clackamas County, Oregon

Client: OBEC

Approx. Scale: 1" = 100'-0"

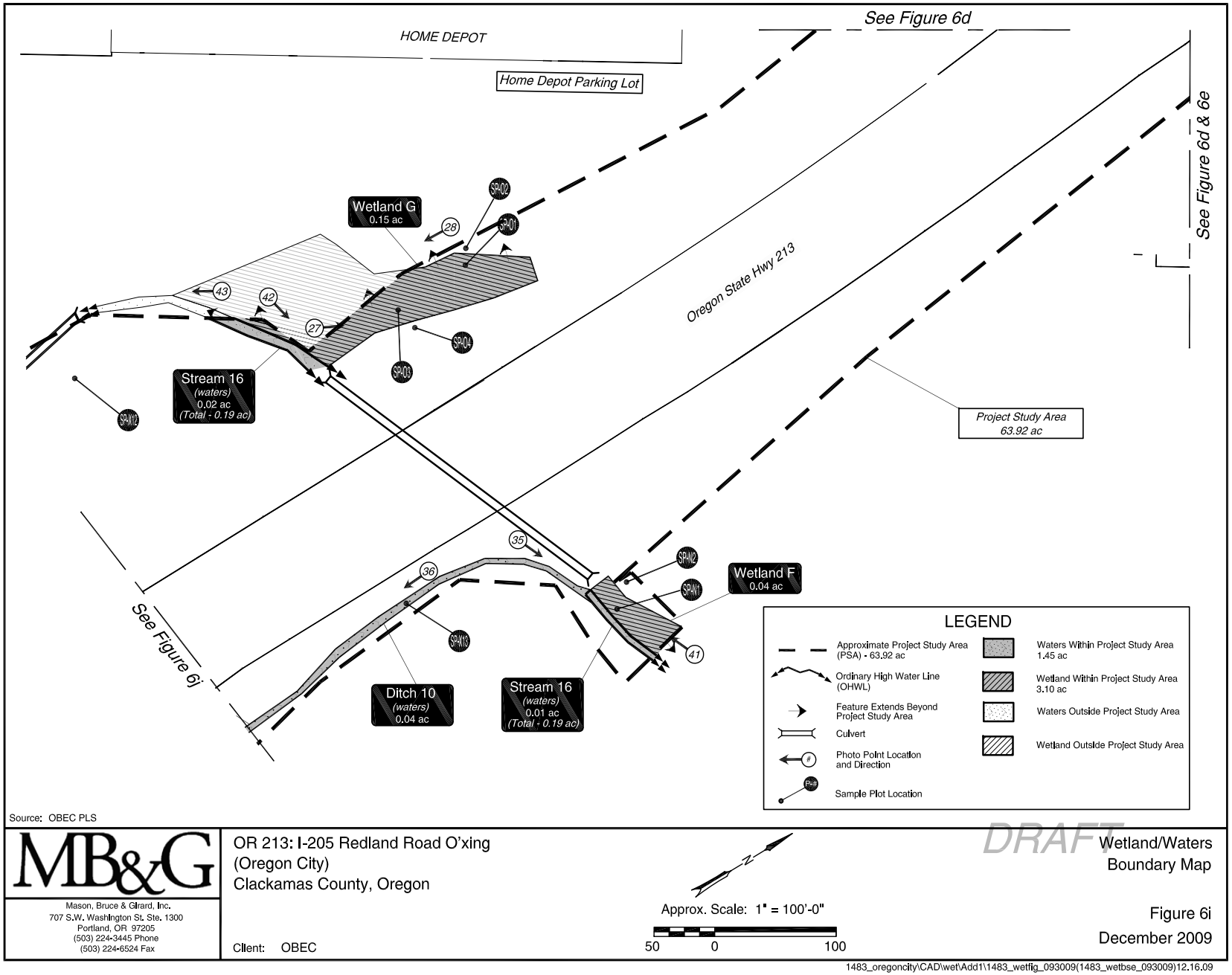
50 0 100

DRAFT

Wetland/Waters
Boundary Map

Figure 6h
December 2009

1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09



Source: OBEC PLS

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(503) 224-6524 Fax

OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

Client: OBEC

Approx. Scale: 1" = 100'-0"

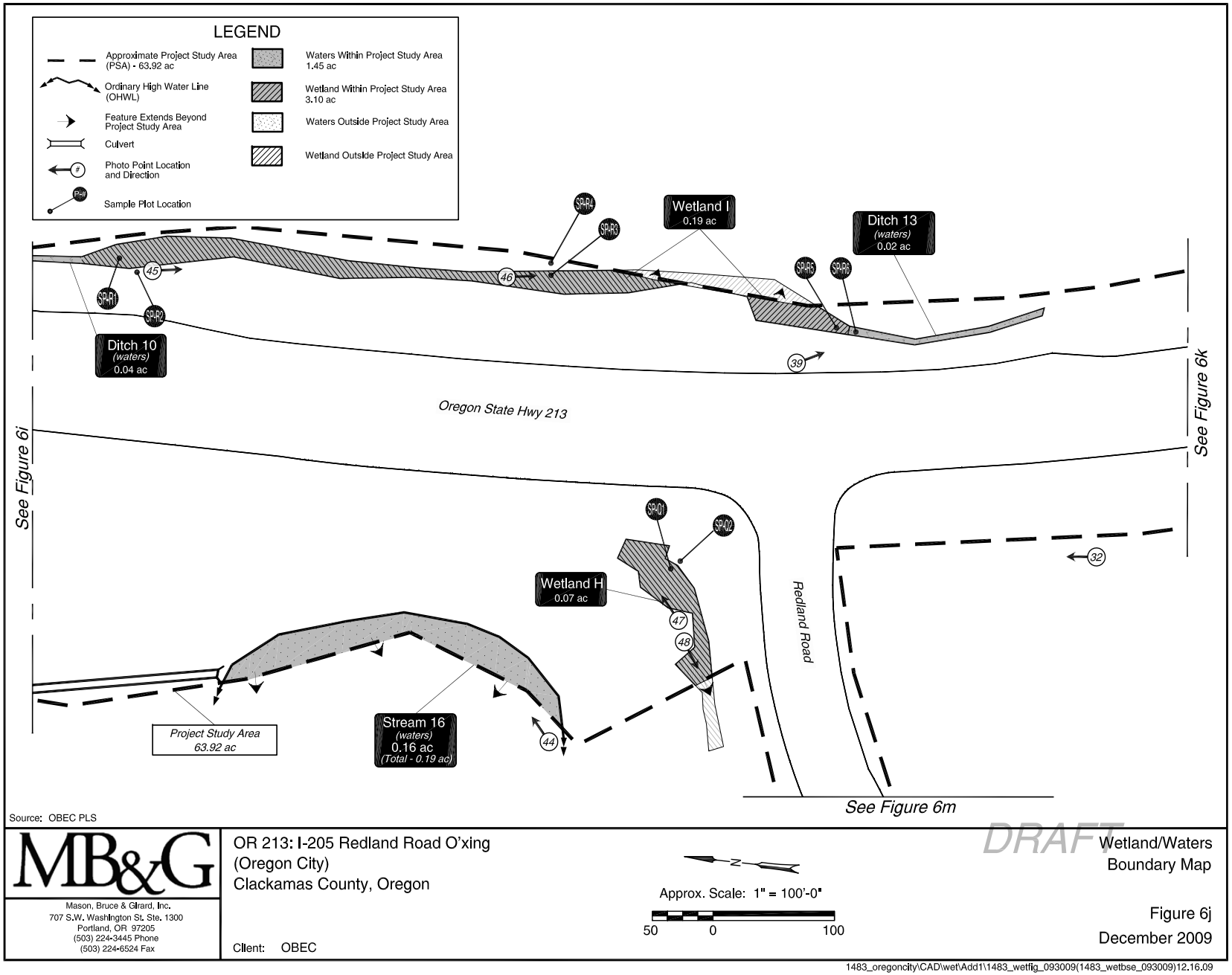
50 0 100

DRAFT

Wetland/Waters Boundary Map

Figure 6i
December 2009

1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09



Source: OBEC PLS

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Portland, OR 97205
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(503) 224-6524 Fax

OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

Client: OBEC

Approx. Scale: 1" = 100'-0"

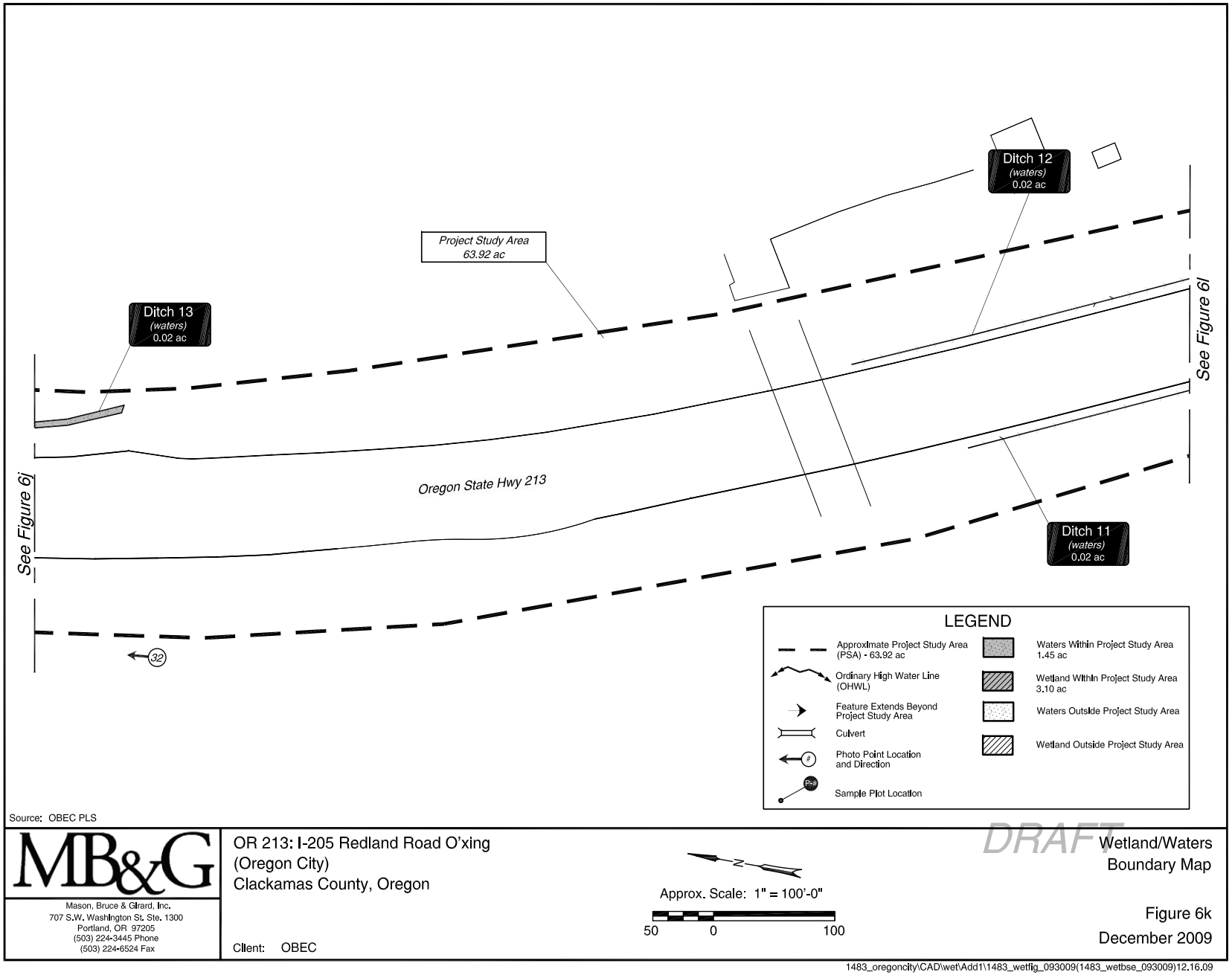
50 0 100

DRAFT

Wetland/Waters Boundary Map

Figure 6j
December 2009

1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09


Ditch 12
(waters)
0.02 ac
Project Study Area
63.92 ac
Ditch 13
(waters)
0.02 ac
See Figure 6l
See Figure 6j
Oregon State Hwy 213
Ditch 11
(waters)
0.02 ac
32
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
DRAFT
Wetland/Waters
Boundary Map
Figure 6k
December 2009
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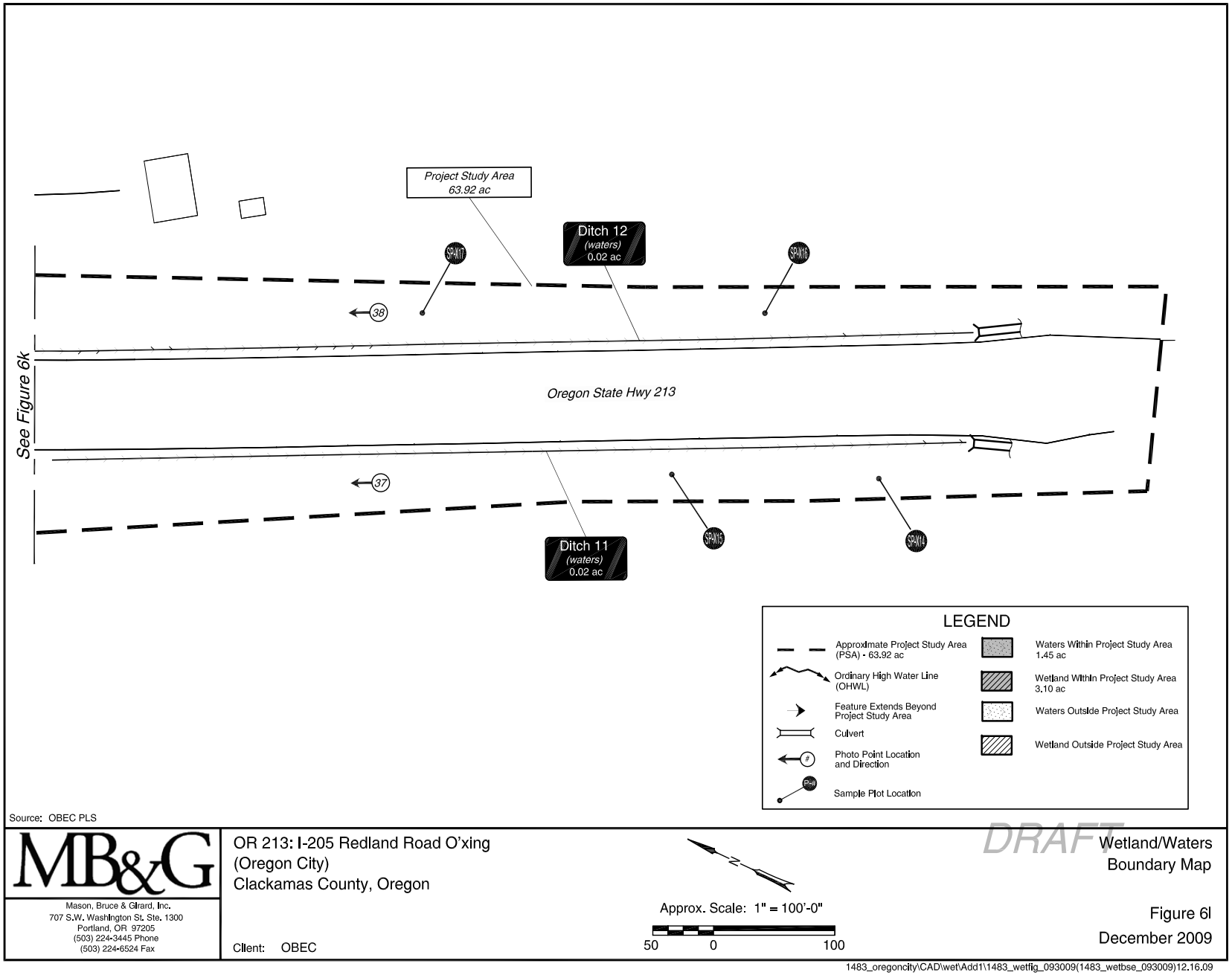

Source: OBEC PLS

MB&G
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OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

Client: OBEC

Approx. Scale: 1" = 100'-0"

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DRAFT

Wetland/Waters Boundary Map

Figure 6l
December 2009

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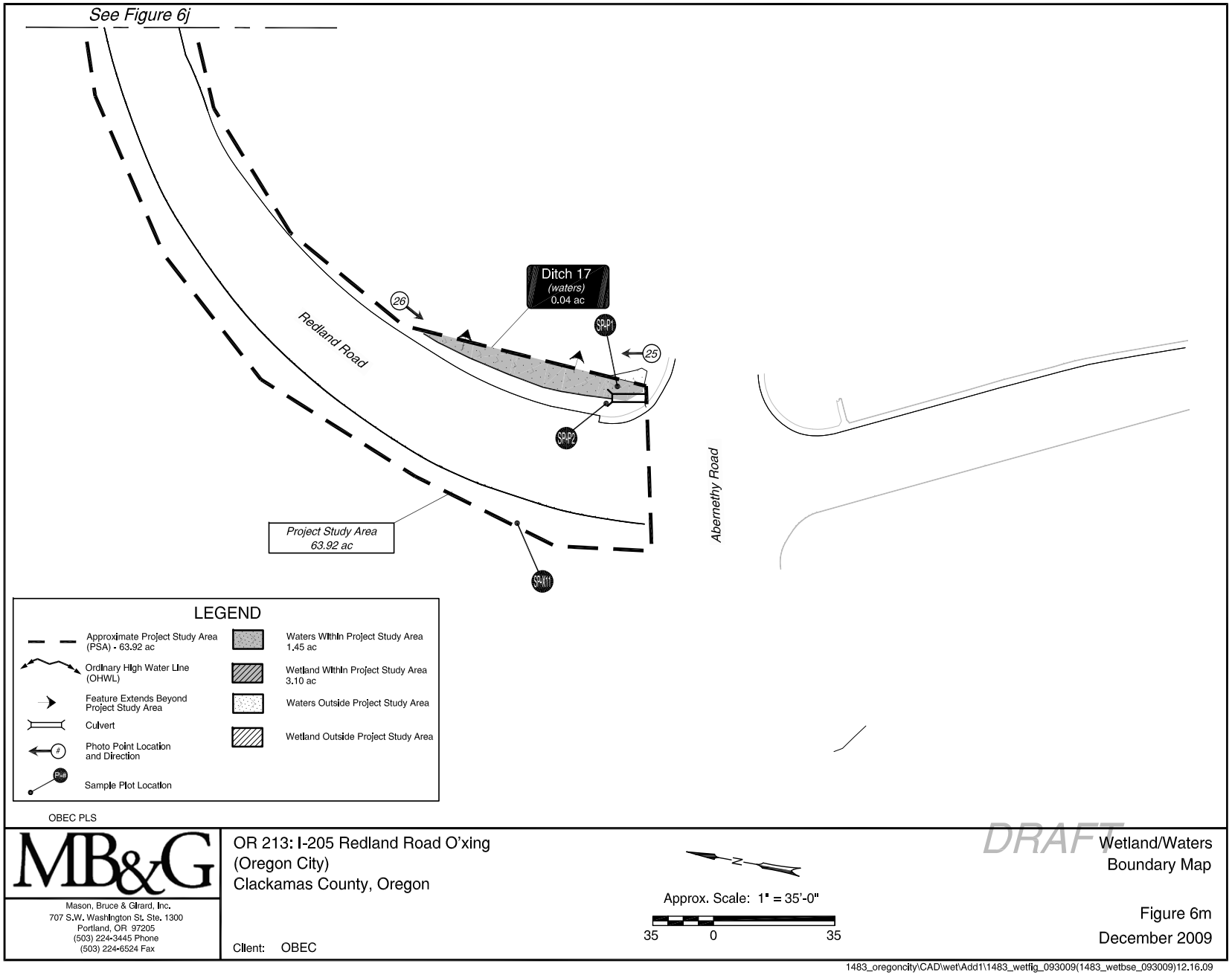
See Figure 6j
Ditch 17
(waters)
0.04 ac
SP-P1
SP-P2
SP-K1
26
25
Redland Road
Abernethy Road
Project Study Area
63.92 ac
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
OBEC PLS
MB&G
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707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
N
Approx. Scale: 1" = 35'-0"
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DRAFT
Wetland/Waters
Boundary Map
Figure 6m
December 2009
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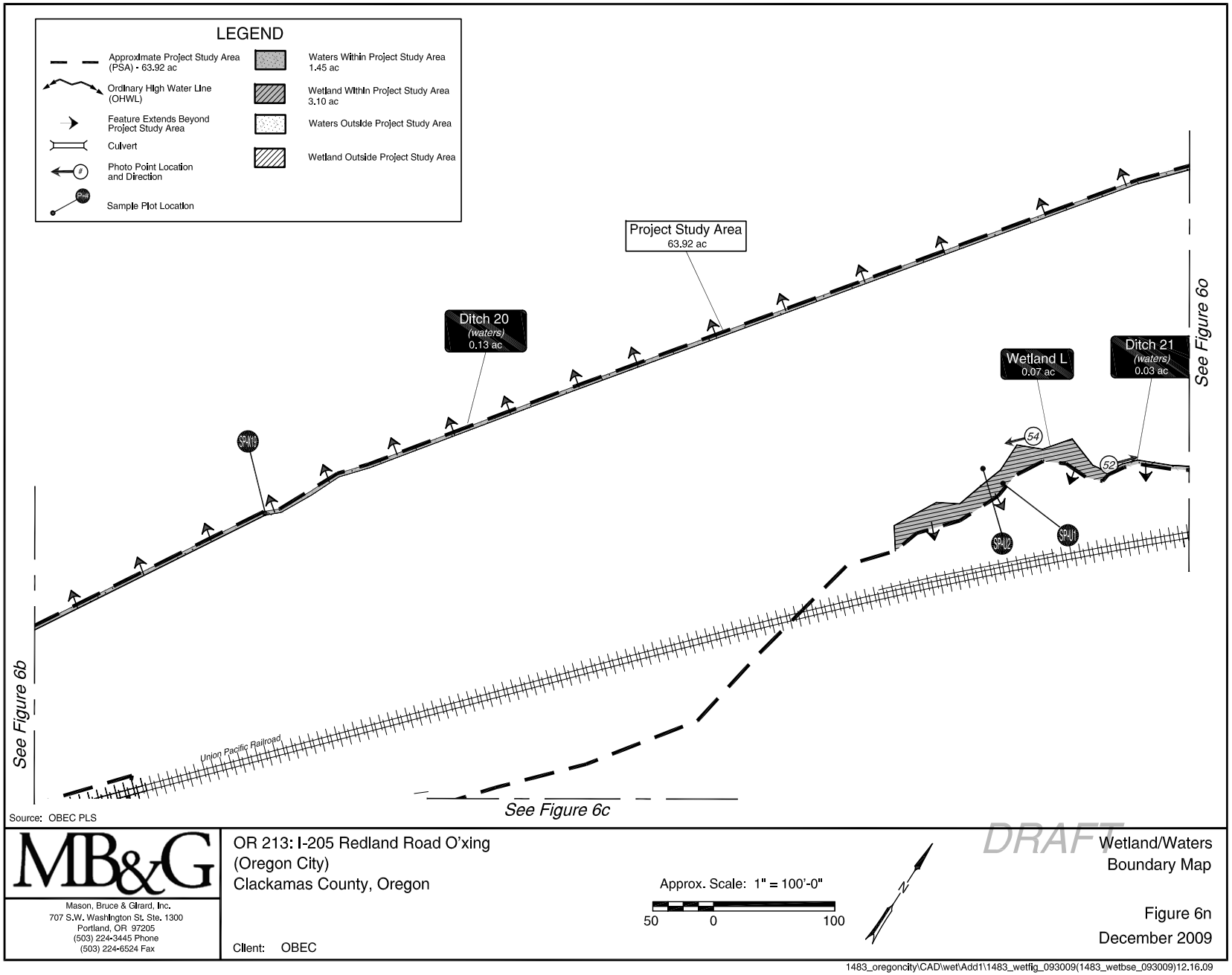
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Project Study Area
63.92 ac
Ditch 20
(waters)
0.13 ac
Wetland L
0.07 ac
Ditch 21
(waters)
0.03 ac
See Figure 6b
See Figure 6c
See Figure 6o
Union Pacific Railroad
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
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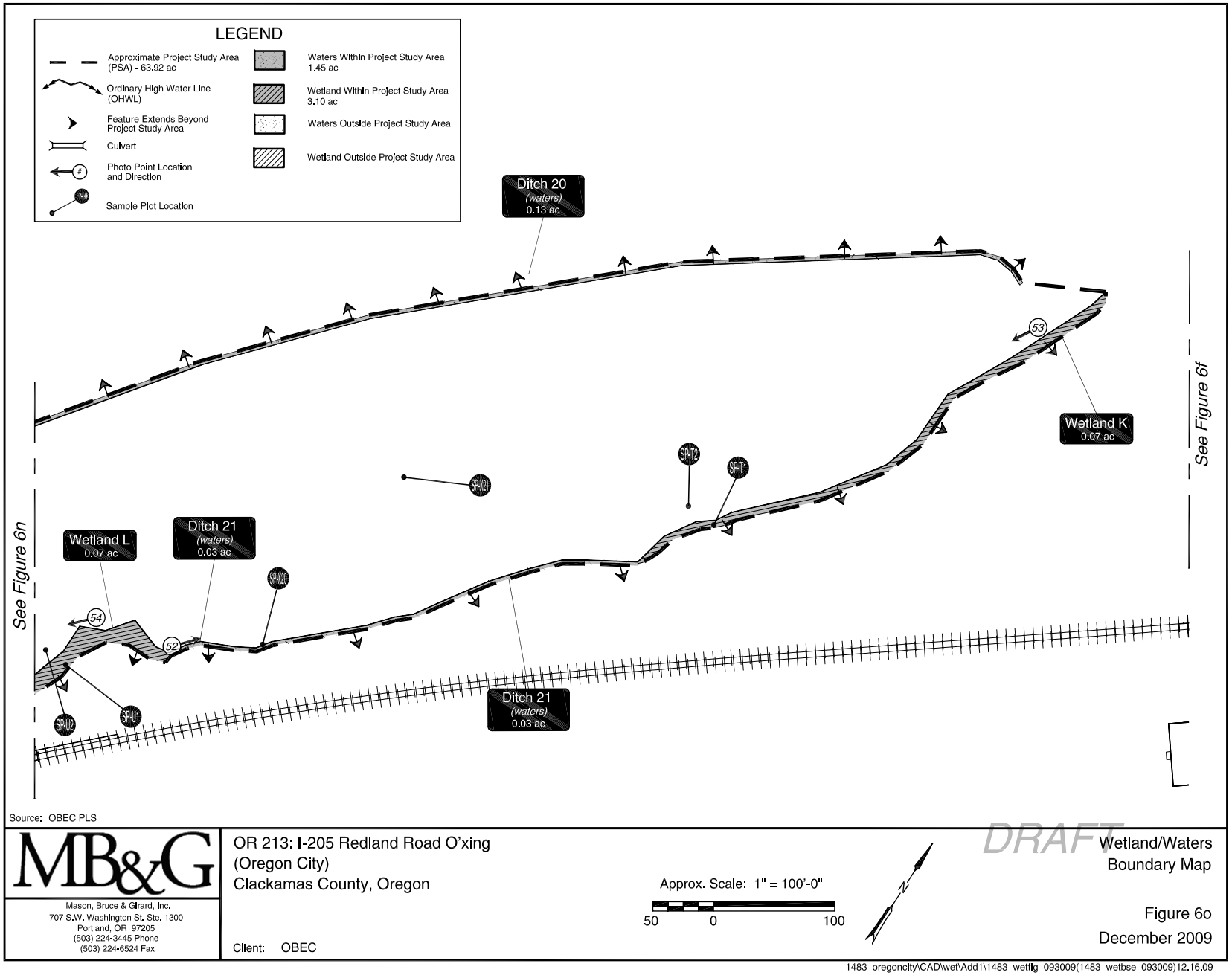
DRAFT
Wetland/Waters Boundary Map
Figure 6n
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09


LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Ditch 20 (waters) 0.13 ac
Wetland K 0.07 ac
Wetland L 0.07 ac
Ditch 21 (waters) 0.03 ac
Ditch 21 (waters) 0.03 ac
SP-T2
SP-T1
SP-U2
SP-U1
SP-U2
SP-U1
53
54
52
See Figure 6n
See Figure 6f
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
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OR 213: I-205 Redland Road O'xing
(Oregon City)
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Approx. Scale: 1" = 100'-0"
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DRAFT
Wetland/Waters Boundary Map
Figure 6o
December 2009
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APPENDIX B

Data Forms

OR 213: I-205 – Redland Road O'xing (Oregon City) Project
ODOT Key #K16322
Oregon City, Clackamas County, Oregon

Wetland Delineation Data Forms Available Upon Request (169 pages)

APPENDIX C

Ground Level Color Photographs

OR 213: I-205 – Redland Road O'xing (Oregon City) Project
ODOT Key #K16322
Oregon City, Clackamas County, Oregon

1

2

MB&G Mason, Bruce & Girard, Inc. February 23, 2009	1. View to the northwest of Ditch 1. Note dominance of reed canarygrass (*Phalaris arundiancea* FACW) throughout the swale. This swale conveys stormwater runoff from Washington Street (photo background). 2. View to the west of Ditch 1. Note black cottonwood (*Populus balsmifera* ssp. *trichocarpa* FAC) in foreground. Due to heavy precipitation at the time of the field survey, this feature was at bankfull stage.

3

4

MB&G Mason, Bruce & Girard, Inc. February 23, 2009	3. View to the northeast of the western extent of Ditch 1. Banks were dominated by Himalayan blackberry (*Rubus armeniacus* FACU). Mature black cottonwood can be seen flanking this feature in the background of the photo. 4. View to the southwest of the western extent of Ditch 1. As seen in the photo background, this feature curves to the southeast, and outside of the PSA. The sidewalk in photo right is directly adjacent to Washington Street.

5

6

MB&G Mason, Bruce & Girard, Inc. February 23, 2009	5. View to the southwest of Ditch 2. This roadside swale collects stormwater from Washington Street (photo left). Note landscape supply company located adjacent to the swale, as seen in photo right. . 6. View to the northwest of Ditch 2. This wetland swale is dominated by reed canarygrass. Note planted vegetation on berm, in photo right and the Washington Street roadway in photo left.

7

8

MB&G Mason, Bruce & Girard, Inc. February 23, 2009	7. Pond 18, as seen from the southeast. This man-made pond collects and stores stormwater from adjacent impervious surfaces. Vegetation primarily consists of black cottonwood. Note footpath and bridge in photo right. 8. View to the west of Pond 18. This feature contains a relatively large amount of standing water, approximately 4-6 feet deep. Pink flags represent the OHWM.

9

10

MB&G Mason, Bruce & Girard, Inc. February 23, 2009	9. View to the northeast of Ditch 3. Note stormwater inlet in photo foreground. Washington street is in photo left. 10. View to the southwest of Ditch 3. Ditch 3 collects stormwater from Washington Street (photo right). Note landscaped vegetation on the berms surrounding Ditch 3. Note stormwater outlet in photo foreground.

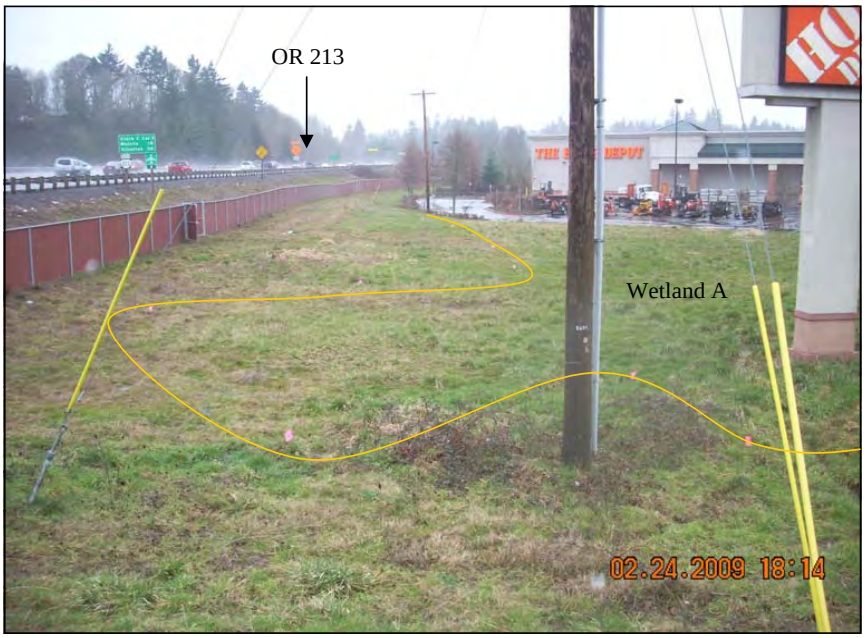
11

12

MB&G Mason, Bruce & Girard, Inc. February 23, 2009	11. View to the west of Ditch 4. This artificially created roadside ditch collects stormwater from Washington Street (photo left). 12. View to the northeast of Ditch 4. During the time of the field investigation, this feature contained several inches of flowing water, due to recent heavy rains. The Metro South Station Transfer Center can be seen in the background, at photo left.

13

14



MB&G Mason, Bruce & Girard, Inc. February 24, 2009	13. View to the east of Wetland A from the Home Depot parking lot. The intersection of Washington Street and OR 213 is in upper photo left. 14. View to the south of Wetland A. This feature encompasses the open area adjacent to the Home Depot parking lot (photo background), OR 213 (photo left) and Washington Street (not shown, behind photographer). Note pink wetland boundary flags.

15

16

MB&G Mason, Bruce & Girard, Inc. February 24, 2009	15. View to the northeast of Ditch 5. This artificially created roadside ditch collects storm-water from Washington Street (photo right) and OR 213 (photo background). 16. View to the north of Ditch 5. OR 213 can be seen in the photo background, at right. Note standing water and broadleaf cattail (*Typha latifolia* FACW). Pink flags demar-cate boundary of Ditch 5.

17

18

MB&G Mason, Bruce & Girard, Inc. February 24, 2009	17. View to the north of Wetland B. Wetland B is located between two berms and captures sheet flow from these upland areas. The south end of this feature collects stormwater runoff from Washington Street. 18. View to the south of Wetland B, near it's northern terminus. In the vicinity of this photo, topography begins to gently rise to the north, and upland vegetation begins to encroach Wetland B. Note stand of an unknown cultivated tree in photo center.

19

20

MB&G Mason, Bruce & Girard, Inc. February 25 & 26, 2009	19. View to the south of Stream 14 as seen from the Clackamas River Drive roadway where flow was observed discharging from a culvert. Note the flowing water within the feature. 20. View to the southeast of Stream 14 and duel discharge culverts. View of stream flow was limited at this location; however, flow is present below organic litter and bed cobble.

21

22

MB&G Mason, Bruce & Girard, Inc. February 25, 2009	21. View to the south of Wetland C, as seen from the BNSF railroad tracks (photo foreground). Note dense reed canarygrass within wetland boundary, and Himalayan blackberry in upland areas (photo foreground). 22. View to the southeast of Wetland C. This feature is dominated by reed canarygrass, common rush, and teasel. The wetland feature extends throughout this broad, open area.

23

24

MB&G Mason, Bruce & Girard, Inc. February 25, 2009	23. View to the northwest of Wetland D. Wetland D, dominated by reed canarygrass and tall fescue, contained a large amount of standing water at the time of the field investigation (due to recent heavy rainfall). This feature collects stormwater from adjacent impervious surfaces (such as OR 213, visible in photo left. 24. View to the southeast of Wetland D. Note 76 station and parking lot adjacent to and upslope of the swale.

25

26

MB&G Mason, Bruce & Girard, Inc. February 26, 2009	25. View to the northeast of Ditch 17 within Segment 4 on the south shoulder of Redland Road within a artificially created vegetated swale. 26. View to the southwest of Ditch 17 within Segment 4 on the south shoulder of Redland Road. Note the culvert outlet in the foreground providing the majority of the hydrology for the ditch.

27

28

MB&G Mason, Bruce & Girard, Inc. February 25, 2009	27. View to the northeast of Wetland G. This slopes, PEM wetland is fed by seeps and overflow from a stormwater facility (photo background, behind fence). Pink flags represent wetland boundary. 28. View to the south of Wetland G. Seeps (providing the primary source of hydrology for this feature) are located within the photo foreground near shovel.

29

30

MB&G Mason, Bruce & Girard, Inc. February 26, 2009	29. View to the northeast of Ditch 6. The flow within this portion of the ditch is slowing and infiltrating into the soil. No evidence of bed and bank were observed behind the photographer. 30. View to the southwest of Ditch 6. Flow from out of the PSA behind the photographer is the primary source of hydrology. The main flow passes through a culvert under the rail way approximately 50 feet southwest of the photographer.

31

32

MB&G Mason, Bruce & Girard, Inc. February 26, 2009	31. View to the south of the disturbed upland area southeast of the intersection of OR 213 and Clackamas River Drive. 32. View to the northwest of the OR 213 shoulder north of Ditch 11 and southeast of Ditch 17. Note the steep topography within the vicinity of the plot. The intersection of OR 213 and Redland Road is in the background.

33

34

MB&G Mason, Bruce & Girard, Inc. February 26, 2009	33. View to the southeast of Ditches 7 and 9. No flow was observed within these features and the bed substrate is dominated by sand and gravel. 34. View to the southwest of Ditch 8. Note the lack of flow and weekly discernable OHWL. Ditch 9 connects to Ditch 6 at the road crossing of the railway in the photo background. Note the pink flagging delineating the ditch boundary.

35

36

MB&G Mason, Bruce & Girard, Inc. February 26, 2009	35. View to the east of the confluence of Ditch 10 and Stream 16 . No flow was observed within this feature during the site investigation. The bed substrate at this location is dominated by cobble and boulders placed to armor the hillside. 36. View to the south of Ditch 10. Note the weekly discernable OHWL and heavy leaf litter. Note the ditch boundary demarcated with pink ribbon.

37

38

MB&G Mason, Bruce & Girard, Inc. February 26, 2009	37. View to the north of Ditch 11 to the west of the OR 213 roadway. No flow was observed within this feature during the site investigation. The bed substrate at this location is dominated by silt and sand. 38. View to the north of Ditch 12 to the east of the OR 213 roadway. No flow was observed within this feature during the site investigation. The bed substrate at this location is dominated by silt and sand.

39

40

MB&G Mason, Bruce & Girard, Inc. February 26, 2009	39. View to the south of Ditch 13 on the east shoulder of OR 213. No flow was observed within this feature during the site investigation. The bed substrate at this location is dominated by silt and sand. 40. View to the southwest of Stream 15 and Wetland E on the southeast side of Clackamas River Drive. Stream 15 was at flood stage during the site investigation and had inundated Wetland E. Stream 15 originates from a culvert immediately east of the photographer.

41

42

MB&G Mason, Bruce & Girard, Inc. February 26, 2009	41. View to the west of the first reach of Stream 16, Wetland F, and Ditch 10 on the east side of OR 213. Note the pooling water on the slope within wetland F. 42. View to the east of the second reach of Stream 16 and Wetland G on the west side of OR 213. Note the pooling water on the slope within Wetland G.

43

44

MB&G Mason, Bruce & Girard, Inc. February 26, 2009	43. View to the southwest of the second reach of Stream 16 on the west side of OR 213 (immediately behind the photographer). Note the pink flagging delineating the stream OHWL. 44. View to the east of the third reach of Stream 16 on the west side of OR 213 (photo background), north of Redland Road.

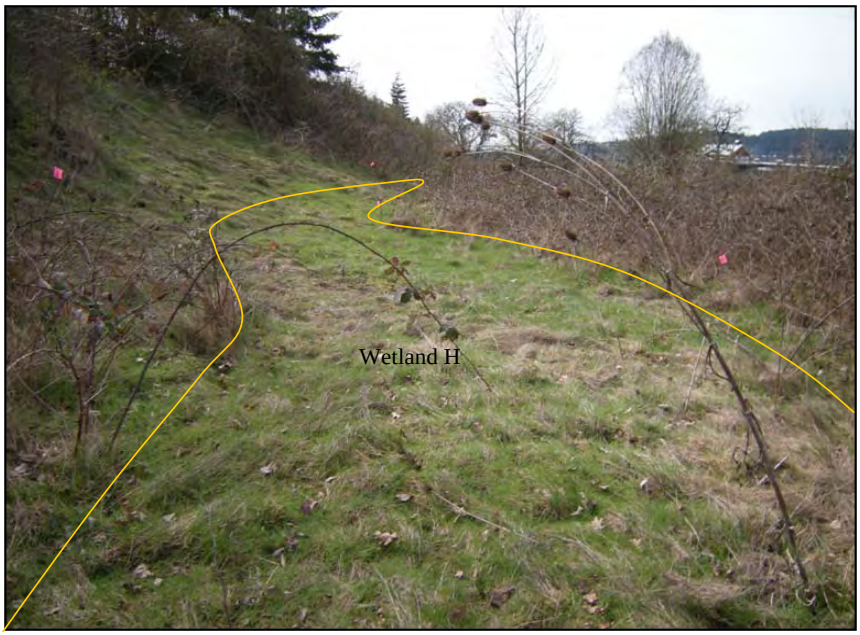
45

46

MB&G Mason, Bruce & Girard, Inc. February 26, 2009	45. View to the south of Wetland I on the east side of OR 213 (photo right). This photo is taken at the location of Sample Plots SP-R1 and SP-R2. 46. View to the south of Wetland I on the east side of OR 213. This photo is taken at the location of Sample Plots SP-R3 and SP-R4.

47

48



MB&G Mason, Bruce & Girard, Inc. February 26, 2009	47. View to the northeast of Wetland H on a historical road bed northeast of the intersection of OR 213 (photo background) and Redland Road. 48. View to the southwest of Wetland H on a historical road bed northeast of the intersection of OR 213 and Redland Road.

49

50

MB&G Mason, Bruce & Girard, Inc. August 24, 2009	49. View to the northeast of Ditch 19. SP-X12 was excavated in the lowest topographic position of this ditch (to the left of this photograph). 50. View to the east of Wetland J. Note the surface soil cracking and lack of Himalayan blackberry which dominates the uplands. The biologist is standing at the location of SP-S2.

51

52

MB&G Mason, Bruce & Girard, Inc. August 24 and September 2, 2009	51. View to the northeast of Ditch 20. 52. View to the northeast of Ditch 21. Channel is difficult to discern, but is located at the bottom of the linear topographic depression located in the approximate center of this photo.

53

54

MB&G Mason, Bruce & Girard, Inc. August 24 and September 2, 2009	53. View to the southwest of Wetland K. Note the obvious wetland boundary as determined by the steep hill slope and Himalayan blackberry. 54. View to the southwest of Wetland L. No discernable outlet was observed by MB&G biologists.

APPENDIX D

Additional Tables and Information

OR 213: I-205 – Redland Road O'xing (Oregon City) Project
ODOT Key #K16322
Oregon City, Clackamas County, Oregon

Precipitation Data Available Upon Request (14 pages)

APPENDIX E

Literature Citations

OR 213: I-205 – Redland Road O'xing (Oregon City) Project
ODOT Key #K16322
Oregon City, Clackamas County, Oregon

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Attachment C: Mitigation Plan

Natural Resource Overlay District Mitigation Plan

for the

OR 213: I-205 – REDLAND ROAD O'XING (OREGON CITY) PROJECT

Prepared for:

City of Oregon City Public Works Department
625 Center Street
Oregon City, OR 97045-0304

and

OBEC Consulting Engineers
2235 Mission Street,
Suite 100 Salem, OR 97302-1295

Prepared by:

Mason, Bruce & Girard, Inc.
707 SW Washington Street, Suite 1300
Portland, Oregon 97205
(503) 224-3445

MB&G Project # 1588

June 3, 2010

Table of Contents

1.0 Compliance with Applicable Code

The proposed project is located within mapped Natural Resource Overlay District (NROD) boundaries. A verifiable wetland/waters delineation has been conducted and the applicant has chosen to determine buffers based on the delineated feature boundaries. The proposed project will impact 4.702 acres of NROD buffer. Based on Municipal Code 17.49 – Natural Resource Overlay District, mitigation for these unavoidable impacts is required. This report addresses mitigation requirements set forth in this code.

In this section, italicized text comes directly from Oregon City Municipal Code, Chapter 17.49: Natural Resource Overlay District. Non-italicized text indicates the response to the code. Bold, italicized text within a response section indicates a request for an adjustment from standards.

17.49.180 Mitigation Standards

The following standards (or the alternative standards of Section 17.49.190) apply to required mitigation:

A. Mitigation shall occur at a 2:1 ratio of mitigation area to proposed disturbance area;

Response: An adjustment is requested (**replace section 17.49.180(A)**). 4.7 acres of NROD impacts will be required for the proposed project. Due to the low quality of the existing NROD buffers, the heavily degraded nature of the mitigation site (refer to Section 5.0) that will be highly improved by the mitigation action, and the large acreage of mitigation that would be required at a 2:1 replacement, mitigation at a ratio of 1:1 is proposed.

> **Replacement:** *A. Mitigation shall occur at a **1:1** ratio of mitigation area to proposed disturbance area;*

B. Mitigation shall occur on the site where the disturbance occurs, except as follows:

1. The mitigation is required for disturbance associated with a right-of-way or utility in the right-of-way;

Response: An adjustment is requested (**remove section 17.49.180(B)**). All proposed impacts will permanently remove vegetation within the NROD, not allowing for mitigation at the site of the impact. Investing resources to restore NROD buffers in highway or road rights-of-way will encourage wildlife to utilize areas adjacent to roadways, which will lead to a potential increase in wildlife and vehicle collisions. In addition, the right-of-way space is confined and does not provide adequate acreage for NROD mitigation. Due to the large size of the required mitigation, locating the mitigation in one large area will be the best ecological option for the project, by providing a large, contiguous expanse of habitat within an otherwise developed landscape. This large area will be protected by an easement or deed restriction which will protect the mitigation site in perpetuity. In addition, one large mitigation area will provide the most cost efficient means to maintain and monitor the site.

2. The mitigation shall occur first on the same stream tributary, secondly in the Abernethy, Newell or Livesay Creek or a tributary thereof, or thirdly as close to the impact area as possible within the NROD; and

Response: Due to the large size of the required mitigation, the mitigation site will be located approximately 225 feet northwest of the proposed project.

3. An easement that allows access to the mitigation site for monitoring and maintenance shall be provided as part of the mitigation plan.

Response: An access agreement is being established with UPRR for the construction and planting work and for the monitoring period.

C. Mitigation shall occur within the NROD area of a site unless it is demonstrated that this is not feasible because of a lack of available and appropriate area. In such cases, the proposed mitigation area shall be contiguous to the existing NROD area so the NROD boundary can be easily extended in the future to include the new resource site.

Response: The mitigation will be contiguous to the NROD buffer of Wetlands J, K, and L, and is currently mapped as NROD according to the City's NROD map.

D. Invasive and nuisance vegetation shall be removed within the mitigation area;

Response: All vegetation including invasive and nuisance species will be cleared during removal of the 20,000 cubic yards of wood waste and bark chips.

E. Required Mitigation Planting. An applicant shall meet Mitigation Planting Option 1 or 2 below, whichever option results in more tree plantings, except that where the disturbance area is one acre or more, Mitigation Option 2 shall be required. All trees, shrubs and ground cover shall be selected from the Oregon City Native Plant List.

Response: As the impacted NROD area is greater than one acre, Option 2 will be required. The mitigation site will be planted and seeded with species on the Oregon City Native Plant List.

2. Mitigation Planting Option 2.

Option 2 - Planting Quantity. In this option the required number of plantings is calculated based on the size of the disturbance area within the NROD. The ratio of native trees and shrubs to be planted is 820 trees and 820 shrubs per acre for every acre of HCA disturbance. This amount shall be adjusted for smaller disturbance areas. For example, 410 trees and 410 shrubs shall be planted per acre for every half-acre of HCA disturbance. Bare ground shall be planted or seeded with native grasses and ground cover species.

Response: An adjustment is requested (replace section 17.49.180(2a)). Planting 820 trees and 820 shrubs per acre of mitigation will allow the shrubs to outcompete the trees, creating an undesirable condition within the mitigation site. Based on the proposed planting strategy to allow for planting in rows at 7 foot on-center spacing to facilitate maintenance, 762 trees and 436 shrubs per acre are recommended. Irrigation and imported, high quality topsoil will be used at the mitigation site to ensure planting success to achieve the functional equivalent of the planting densities set forth in the current municipal code.

Option 2 - Plant Size. Plantings may vary in size dependent on whether they are live cuttings, bare root stock or container stock, however, no initials plantings may be shorter than 12 inches in height.

Response: All tree and shrub plantings will be at least 12 inches in height when initially planted.

Option 2 - Plant Spacing. Trees shall be planted at average intervals of seven (7) feet on center. Shrubs may be planted in single-species groups of no more than four (4) plants, with clusters planted on average between 8 and 10 feet on center.

Response: Trees and shrubs will be planted in triangular spacing at 7 feet on-center. Clusters of shrubs and groundcovers will be planted in clusters of two plants spaced at 18 inches on-center.

Option 2 – Mulching and Irrigation shall be applied in the amounts necessary to ensure 80% survival at the end of the required 5-year monitoring period.

Response: Irrigation will be installed throughout the mitigation site to ensure 80% survival after 5 years.

Option 2 – Plant Diversity. Shrubs shall consist of at least three (3) different species. If 20 trees or more are planted, no more than one-third of the trees may be of the same genus.

Response: Nine species of trees and nine species of shrubs will be installed at the mitigation site. There will be less than one third of the trees in the same genus. Refer to Appendix A, Mitigation Plan Sheets for additional details on species diversity.

F. Monitoring and Maintenance. The mitigation plan shall provide for a 5-year monitoring and maintenance plan with annual reports in a form approved by the Director of Community Development. Monitoring of the mitigation site is the on-going responsibility of the property owner, assign, or designee, who shall submit said annual report to the City's Planning Division, documenting plant survival rates of shrubs and trees on the mitigation site. Photographs shall accompany the report that indicate the progress of the mitigation. A minimum of 80% survival of trees and shrubs of those species planted is required at the end of the 5-year maintenance and monitoring period. Any invasive species shall be removed and plants that die shall be replaced in kind. Bare spots and areas of invasive vegetation larger than ten (10) square feet that remain at the end the 5 year monitoring period shall be replanted or reseeded with native grasses and ground cover species.

Response: An adjustment is requested (**replace section 17.49.180(F)**). Due to the large size of the mitigation site, alternative mitigation success criteria are proposed.

> **Replacement:** *F. The mitigation plan shall provide for a 5-year monitoring and maintenance plan with annual reports in a form approved by the Director of Community Development. Monitoring of the mitigation site is the on-going responsibility of the property owner, assign, or designee, who shall submit said annual report to the City's Planning Division, documenting plant survival rates of shrubs and trees on the mitigation site. Photographs shall accompany the report that indicate the progress of the mitigation.* ***A minimum of 80% survival of trees and shrubs of the species planted is required at the end of the 5-year maintenance and monitoring period. If woody plant mortality rises above 20%, those plants shall be replaced in kind. Invasive species, as defined by the Oregon Department of Agriculture (ODA 2010), cover shall not exceed 10%.***

G. Covenant or Conservation Easement. Applicant shall record a restrictive covenant or conservation easement, in a form provided by the City, requiring the owners and assigns of properties subject to this section to comply with the applicable mitigation requirements of this section. Said covenant shall run with the land, and permit the City to complete mitigation work in the event of default by the responsible party. Costs borne by the City for such mitigation shall be borne by the owner.

Response: The applicant has elected to provide a deed restriction as a long-term protection instrument for the mitigation site. Upon completion, this deed restriction will be provided to the Planning Department.

H. Financial Guarantee. A financial guarantee for establishment of the mitigation area, in a form approved by the City, shall be submitted before development within the NROD disturbance area commences. The City will release the guarantee at the end of the five-year monitoring period, or before, upon its determination that the mitigation plan has been satisfactorily implemented pursuant to this section.

Response: An adjustment is requested (**remove section 17.49.180(H)**). As the City is the applicant for the land use permit, a financial guarantee is not necessary.

17.49.190 Alternative Mitigation Standards

In lieu of the above mitigation standards of Section 17.49.180, the following standards may be used. Compliance with these standards shall be demonstrated in a mitigation plan report prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. At the applicant's expense, the City may require the report to be reviewed by an environmental consultant.

Response: As a Type III development permit procedure is requested, alternative mitigation standards will not be required. 17.49.190 (A, C, D, and E) are addressed above.

B. The proposed mitigation shall result in a significant improvement of at least one functional value listed in section 17.49.10, as determined by a qualified environmental professional;

Response: The proposed mitigation will improve the following functional values:

B. Protect floodplains and wetlands, and restore them for improved hydrology, flood protection, aquifer recharge, and habitat functions.

C. Protect upland habitats, and enhance connections between upland and riparian habitats.

This will be accomplished through the native plant revegetation effort, soil replacement, and long-term protection of the site which will prevent future development at the mitigation site. Refer to Section 2.0 for further details.

2.0 Functional Values

The resources and functional values to be restored, created, or enhanced through the mitigation plan;

According to 17.49.10, *"The NROD contributes to the following functional values:*

A. Protect and restore streams and riparian areas for their ecologic functions and as an open space amenity for the community.

B. Protect floodplains and wetlands, and restore them for improved hydrology, flood protection, aquifer recharge, and habitat functions.

C. Protect upland habitats, and enhance connections between upland and riparian habitat.

D. Maintain and enhance water quality and control erosion and sedimentation through the revegetation of disturbed sites and by placing limits on construction, impervious surfaces, and pollutant discharges.

E. Conserve scenic, recreational, and educational values of significant natural resources."

The purpose of the proposed mitigation is to address functional values B and C as described below.

B. Protect floodplains and wetlands, and restore them for improved hydrology, flood protection, aquifer recharge, and habitat functions.

The proposed mitigation is located entirely within the Oregon City Design Flood Boundary. Approximately 21,000 cubic yards of wood waste material will be removed from the mitigation site for floodplain mitigation for the proposed project and an additional 25,000 cubic yards of wood waste material will be removed for future floodplain impacts. NROD mitigation will occur after all floodplain mitigation has occurred. This site will be protected from future development, further aiding in the floodplain protection. The floodplain will be restored with native vegetation within the mitigation area.

C. Protect upland habitats, and enhance connections between upland and riparian habitat.

The proposed mitigation site is located within upland habitat. The site will serve to enhance the connections between Wetlands J, K, and L and Ditches 20 and 21.

3.0 Coordination with Appropriate Local, State, Federal Agencies

Documentation of coordination with appropriate local, regional, state and federal regulatory/resource agencies such as the Oregon Department of State Lands (DSL) and the United States Army Corps of Engineers (USACE);

Local Agencies

A pre-application meeting was held on April 23, 2010 with the applicant; Oregon City Public Works Department; the consultants including MB&G, OBEC Consulting Engineers, and GreenWorks; and Oregon City Planning Department. The Planning Department determined that the project must comply with Oregon City Municipal Code Chapter 17.49, which is addressed below.

The proposed project, including documentation that floodplain and NROD impacts are proposed and conceptual mitigation, was presented to the Citizen Involvement Committee on March 1, 2010. No comments on NROD impacts or mitigation concepts were received.

State and Federal Agencies

Approval for the proposed project has been requested from the Oregon Department of State Lands (Joint Permit Application to comply with the State of Oregon's Removal/Fill Law) and the U.S. Army Corps of Engineers (Joint Permit Application to comply with Section 404 of the Clean Water Act). A Joint Permit Application was submitted May 25, 2010 and a permit is expected to be issued by both agencies by September 25, 2010.

4.0 Construction Timetable

The proposed project is scheduled to begin construction April 2011 and will be completed in 2017. The floodplain mitigation work is scheduled to be conducted during summer 2011. The new topsoil will be imported following removal of the wood waste for floodplain mitigation; irrigation will be installed after the topsoil is placed on the site. Planting and seeding for the NROD mitigation will occur in mid-October to mid-November 2011, depending on weather conditions. The five year monitoring period will extend from 2012 to 2016.

5.0 Monitoring and Maintenance Plan

Monitoring and Maintenance practices pursuant to Section 17.49.230 (F) and a contingency plan for undertaking remedial actions that might be needed to correct unsuccessful mitigation actions during the first 5 years of the mitigation area establishment.

Monitoring will occur over the course of five growing seasons. The purpose of the monitoring will be to document the site's progress towards meeting the success criteria. Monitoring visits will focus on invasive species cover and planting survival. Permanent monitoring plots will be established throughout the mitigation site and planting survival and invasive species cover will be recorded at each plot every year. Permanent photo points will be established to document change at the site over the 5 year monitoring period. The monitoring results and photos will be included in a brief memorandum to be provided to the Planning Department every year.

Monitoring visits will also be conducted to determine recommended maintenance measures. It is anticipated that the site will need to be mowed twice per year for the first two years to ensure that plantings are not outcompeted by grasses and other herbaceous species. It is also anticipated that invasive species will need to be controlled at the site up to twice per year (in addition to the mowing efforts) throughout the monitoring period. Periodic trash removal is also anticipated. The required maintenance will be determined on a yearly basis based on monitoring visits.

If it is anticipated that greater than 20% mortality of planted trees and shrubs will occur by the end of the fifth year of monitoring based on monitoring inspections, an additional planting effort will be conducted to replace dead trees and shrubs.

6.0 References

Oregon Department of Agriculture. 2010. Noxious Weed Policy and Classification System 2010. http://www.oregon.gov/ODA/PLANT/WEEDS/docs/weed_policy.pdf. Accessed May 25, 2010.

Appendix A
Mitigation Plan Sheets

GreenWorks, P.C.
Landscape Architecture
Environmental Design
24 NW 2nd Avenue, Suite 100
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Ph503.222.6018F503.222.2283
Email hello@greenworks.com

project:
NATURAL RESOURCE OVERLAY DISTRICT MITIGATION PLANS
OR 213: I-205 - Redland Road O'xing (Oregon City)

sheet title:
NROD Mitigation Plan
Preliminary Planting Plan

Drawn By: CM
Checked By: TS
Job No. 109258
Approved
Date 05.18.10
Revisions

SHEET 1

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NATURAL RESOURCE OVERLAY DISTRICT MITIGATION PLANS
OR 213: I-205 - Redland Road O'xing (Oregon City)

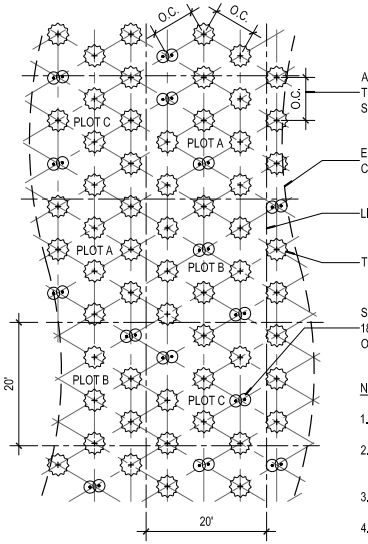
sheet title:
NROD Mitigation Plan
Preliminary Planting Plan

Date: 05.18.10
Revisions:
Drawn By: CM
Checked By: TS
Job No.: 109258
Scale: 1" = 50'

SHEET 1a

MASTER PLANT LIST - PRELIMINARY

QTY.	BOTANICAL NAME	COMMON NAME	FORM
TREES			
306	*ACER CIRCINATUM*	VINE MAPLE	1 GAL. CONT.
153	*ACER MACROPHYLLUM*	BIGLEAF MAPLE	1 GAL. CONT.
339	*ALNUS RUBRA*	RED ALDER	1 GAL. CONT.
379	*CRATAEGUS SUKSDORFII*	SUKSDORF'S HAWTHORN	1 GAL. CONT.
339	*FRAXINUS LATIFOLIA*	OREGON ASH	1 GAL. CONT.
306	*PSEUDOTSUGA MENZIESII*	DOUGLAS FIR	1 GAL. CONT.
379	*POPULUS BALSAMIFERA SSP. TRICHOCARPA*	BLACK COTTONWOOD	1 GAL. CONT.
1,077	*SALIX LASIANDRA*	PACIFIC WILLOW	1 GAL. CONT.
306	*THUJA PLICATA*	WESTERN RED CEDAR	1 GAL. CONT.
SHRUBS/ GROUNDCOVER			
291	*CORNUS SERICEA*	RED-OSIER DOGWOOD	1 GAL. CONT.
102	*MAHONIA REPENS*	CREEPING MAHONIA	1 GAL. CONT.
189	*LONICERA INVOLUCRATA*	TWINBERRY	1 GAL. CONT.
102	*POLYSTICHUM MUNITUM*	WESTERN SWORDFERN	1 GAL. CONT.
102	*PTERIDIUM AQUILINUM*	BRACKEN FERN	1 GAL. CONT.
272	*ROSA NUTKANA*	NOOTKA ROSE	1 GAL. CONT.
170	*ROSA PISOCARPA*	CLUSTERED WILD ROSE	1 GAL. CONT.
170	*RUBUS PARVIFLORUS*	THIMBLEBERRY	1 GAL. CONT.
170	*RUBUS SPECTABILIS*	SALMONBERRY	1 GAL. CONT.
379	*SPIRAEA DOUGLASII*	DOUGLAS SPIREA	1 GAL. CONT.
102	*SYMPHORICARPOS ALBUS*	SNOWBERRY	1 GAL. CONT.



ALL PLANTS SHALL BE PLANTED AT EQUAL TRIANGULAR ON CENTER SPACING AS SPECIFIED IN PLANTING LEGEND

EDGE OF PLANT BED OR ADJACENT PLANT COMMUNITY TYPE

LIMITS OF PLOT

TREE, TYP.

SHRUB CLUSTER (2), TYP. SPACE APART 18" AND CENTER CLUSTER AT SPECIFIED O.C. SPACING

NOTES:

1. REFER TO PLANTING LEGEND FOR PLANT SPECIES FOR EACH PLOT TYPE.
2. RANDOMLY MIX TREES AND SHRUBS WITHIN EACH PLOT AND MAINTAIN QUANTITIES AS SHOWN IN PLANTING LEGEND.
3. ALTERNATE PLOT TYPES SO NO TWO SIMILAR PLOTS ARE ADJACENT TO EACH OTHER.
4. MAINTAIN O.C. SPACING SO ROWS OF PLANTS CONTINUE FROM ONE COMMUNITY TYPE TO ANOTHER. REFER TO PLANS.

1 TRIANGULAR PLANT SPACING
Plan NOT TO SCALE

PRELIMINARY PLANT COMMUNITIES

UPLAND COMMUNITY (TOTAL OF 1.407 ACRES)

PLANT THE FOLLOWING TREES AND SHRUS IN TRIANGULAR SPACING AT 7' O.C. TYPICAL PLOT IS 400 SQ FT. ALTERNATE PLOTS A, B, & C IN FIELD. REFER TO DETAIL 1/SHEET 1B.
TOTAL QUANTITY: 762 TREES/ACRE, 436 SHRUBS/ACRE.

PLOT 'A'	QTY. PER PLOT
TREES	
ACER CIRCINATUM	2
ACER MACROPHYLLUM	1
PSEUDOTSUGA MENZIESII	2
THUJA PLICATA	2
SHRUBS/ GROUNDCOVER	
POLYSTICHUM MUNITUM	1 CLUSTER
PTERIDIUM AQUILINUM	1 CLUSTER

PLOT 'B'	QTY. PER PLOT
TREES	
ACER CIRCINATUM	2
ACER MACROPHYLLUM	1
PSEUDOTSUGA MENZIESII	2
THUJA PLICATA	2
SHRUBS/ GROUNDCOVER	
CORNUS SERICEA	1 CLUSTER
SYMPHORICARPOS ALBUS	1 CLUSTER

PLOT 'C'	QTY. PER PLOT
TREES	
ACER CIRCINATUM	2
ACER MACROPHYLLUM	1
PSEUDOTSUGA MENZIESII	2
THUJA PLICATA	2
SHRUBS/ GROUNDCOVER	
MAHONIA REPENS	1 CLUSTER
ROSA NUTKANA	1 CLUSTER

SEED MIX *(APPLY TO ALL PLOT TYPES)*
NATIVE UPLAND SEED MIX: APPLY AT A RATE 1-LBS./1,000 SF. (APPROX. 40 LBS. / ACRE)

SEED MIX

20%	*ACHNATHARUM LEMMONI*	LEMON'S NEEDLEGRASS
20%	*BROMUS CARINATUS*	CALIFORNIA BROME
20%	*DESCHAMPSIA CAESPITOSA*	TUFTED HAIRGRASS
20%	*ELYMUS GLAUCUS*	BLUE WILDRYE
10%	*FESTUCA ROEMERI*	ROMER'S FESCUE
10%	*KOELARIA MACRANTHA*	PRARIE JUNEGRASS

TRANSITION COMMUNITY (TOTAL OF 1.556 ACRES)

PLANT THE FOLLOWING TREES AND SHRUS IN TRIANGULAR SPACING AT 7' O.C. TYPICAL PLOT IS 400 SQ FT. ALTERNATE PLOTS A & B IN FIELD. REFER TO DETAIL 1/SHEET 1B.
TOTAL QUANTITY: 762 TREES/ACRE, 436 SHRUBS/ACRE

PLOT 'A'	QTY. PER PLOT
TREES	
ALNUS RUBRA	*2*
FRAXINUS LATIFOLIA	*2*
SALIX LASIANDRA	*3*
SHRUBS/ GROUNDCOVER	
ROSA NUTKANA	1 CLUSTER
RUBUS PARVIFLORUS	1 CLUSTER

PLOT 'B'	QTY. PER PLOT
TREES	
ALNUS RUBRA	*2*
FRAXINUS LATIFOLIA	*2*
SALIX SCOULERIANA	*3*
SHRUBS/GROUNDCOVER	
ROSA PISOCARPA	1 CLUSTER
RUBUS SPECTABILIS	1 CLUSTER

SEED MIX *(APPLY TO ALL PLOT TYPES)*
NATIVE TRANSITION SEED MIX: APPLY AT A RATE 1-LBS./1,000 SF. (APPROX. 40 LBS. / ACRE)

SEED MIX

20%	*ACHNATHARUM LEMMONI*	LEMON'S NEEDLEGRASS
20%	*BROMUS CARINATUS*	CALIFORNIA BROME
20%	*DESCHAMPSIA CAESPITOSA*	TUFTED HAIRGRASS
20%	*ELYMUS GLAUCUS*	BLUE WILDRYE
10%	*FESTUCA ROEMERI*	ROMER'S FESCUE
10%	*KOELARIA MACRANTHA*	PRARIE JUNEGRASS

WET/ DRY COMMUNITY (TOTAL OF 1.739 ACRES)

PLANT THE FOLLOWING TREES AND SHRUS IN TRIANGULAR SPACING AT 7' O.C. TYPICAL PLOT IS 400 SQ. FT. ALTERNATE PLOTS A & B IN FIELD. REFER TO DETAIL 1/SHEET 1B.
TOTAL QUANTITY: 762 TREES/ACRE, 436 SHRUBS/ACRE

PLOT 'A'	QTY. PER PLOT
TREES	
CRATAEGUS SUKSDORFII	2
POPULUS BALSAMIFERA SSP. TRICHOCARPA	2
SALIX LASIANDRA	*3*
SHRUBS/ GROUNDCOVER	
CORNUS SERICEA	1 CLUSTER
SPIRAEA DOUGLASII	1 CLUSTER

PLOT 'B'	QTY. PER PLOT
TREES	
CRATAEGUS SUKSDORFII	2
POPULUS BALSAMIFERA SSP. TRICHOCARPA	2
SALIX LASIANDRA	*3*
SHRUBS/ GROUNDCOVER	
LONICERA INVOLUCRATA	1 CLUSTER
SPIRAEA DOUGLASII	1 CLUSTER

NATIVE SEED MIX
NATIVE WET/DRY SEED MIX: *APPLY AT A RATE 1-LBS./1,000 SF. (APPROX. 40 LBS. / ACRE)*

SEED MIX

20%	*CAREX OBNUPTA*	SLOUGH SEDGE
20%	*AGROSTIS EXARATA*	SPIKEGRASS
20%	*DESCHAMPSIA CAESPITOSA*	TUFTED HAIRGRASS
10%	*ELYMUS GLAUCUS*	BLUE WILDRYE
5%	*HORDEUM BRACHYANTHERUM*	MEADOW BARLEY
20%	*JUNCUS PATENS*	SPREADING RUSH
5%	*SCIRPUS MICROCARPUS*	SMALL FRUITED BULRUSH

GREENWORKS

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project:
NATURAL RESOURCE OVERLAY DISTRICT MITIGATION PLANS
OR 213: I-205 - Redland Road Oxing (Oregon City)

sheet title:
NROD Mitigation Plan
Preliminary Plant List & Detail

Date: 05.18.10
Revisions:
Drawn By: CM
Checked By: TS
Job No. 109258
Approved:

SHEET 1b

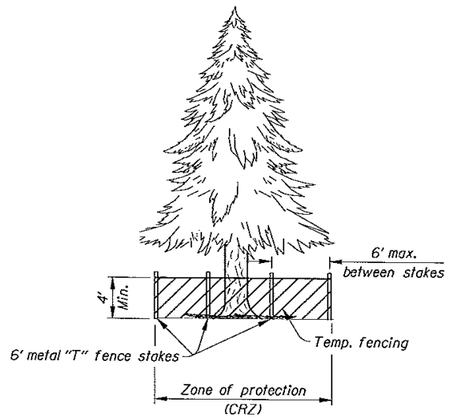
Appendix B
Mitigation Site Photos

1

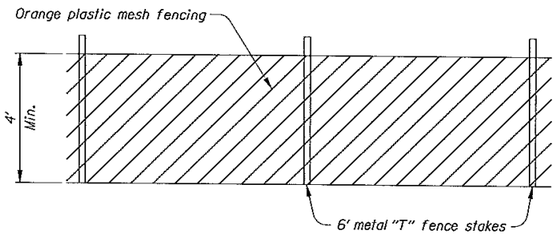
2

MB&G Mason, Bruce & Girard, Inc. Photo Dates August 24, 2009 September 2, 2009	1. View to the west of the southern portion of the NROD mitigation site. Note that this portion of the mitigation site is dominated by Himalayan blackberry (*Rubus armeniacus*). 2. View to the northeast of the northern portion of the mitigation site. This area is dominated by non-native birch (*Betula* sp.) and Scotch broom (*Cytisus scoparius*).

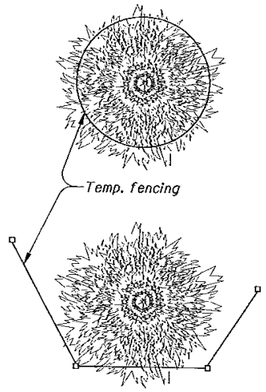
Attachment D: Preliminary Erosion and Sediment Control Plan



FENCING DETAIL



TEMP. TYPE ORANGE PLASTIC MESH FENCE DETAIL



TYPICAL TREE PROTECTION

NOTES:
1. Trees adjacent to designated clearing limits shall be protected within the critical root zone (CRZ) as directed.
2. The CRZ for trees 4" dia. or smaller shall be an area with a radius at least 5' from the trunk.
3. The CRZ for trees over 4" dia. shall be an area with a radius of at least 18" from the trunk for every 1" of dia. size.
4. No soil grade changes or compaction shall take place within the CRZ, except as directed.
5. If work is done within the CRZ, care must be taken to minimize root disturbance. Special care shall be taken during excavation.
6. Additional protective fencing may be required when the work area is within the CRZ of trees.

GENERAL NOTES:

The construction, adjustment, maintenance and upgrading of these erosion control measures is the responsibility of the Contractor for the duration of the project.

Erosion control measures shown on this plan are for anticipated site conditions. Adjust or upgrade these measures for unexpected storm events to ensure that sediment and sediment-laden water does not leave the site.

Develop a revised plan of the erosion control measures shown as required by Section 00280, Oregon Standard Specifications for Construction. Implement this plan for all clearing and grading activities and in segments applicable to each staging phase. Construct in such a manner so as to ensure that sediment and sediment-laden water does not enter the roadway or drainage system, or violate applicable water standards.

Install measures within the right-of-way unless directed otherwise.

Install stabilized construction entrances at the beginning of construction and maintain for the duration of the project. Additional measures may be required to ensure that all paved areas are kept clean.

Construct sediment fence 5 feet downslope from the toe of fill slopes where sediment-laden water has a potential of entering waterways or leaving the right-of-way.

Protect all inlets during surface grinding, paving and earthwork operations to prevent pollutants from entering storm water systems.

STANDARD DRAWINGS

■	RD1000	Construction entrance
■	RD1005	Check dam
■	RD1010	Inlet protection type 1,2,3
□	RD1015	Inlet protection type 4
□	RD1020	Inlet protection type 5
□	RD1025	Sediment barrier type 1
□	RD1030	Sediment barrier type 2,4
■	RD1035	Sediment barrier type 3
■	RD1040	Sediment fence supported/unsupported
□	RD1045	Temporary slope drain
□	RD1050	Temporary scour basin
□	RD1055	Matting
□	RD1060	Tire wash type 1

ADVANCE PLANS

OREGON DEPARTMENT OF TRANSPORTATION

OBEC CONSULTING ENGINEERS
www.obec.com
Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 1028 EUGENE, OREGON 97401-8289
5005 SW MEADOWS ROAD, SUITE 130 LAKE OSWEGO, OREGON 97035-4288
2235 MISSION STREET SE, SUITE 120 SALEM, OREGON 97302-1285
831 CHAPEL PARKWAY MEDFORD, OREGON 97504-4026

OR213: I-205 - REDLAND ROAD O'XING. (OREGON CITY)
CASCADE HWY. SOUTH
CLACKAMAS COUNTY

Design Team Leader - John Kalvelage
Designed By - Chris Bores
Drafted By - Serban Dinca

EROSION CONTROL DETAILS

SHEET NO.
GA

File No.

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(1) Const. inlet protection (Type 3) (See drg. no. RD1010)

N

R/W

NB I-205 ON-RAMP

I-205

"OR" 60+00

Proposed R.R. R/W

UNION PACIFIC RAILROAD

"W" LINE

"JE" LINE

"OR" 65+00

Proposed R/W

Proposed slope easement

"OR" LINE

OREGON STATE HWY. 213

BEGIN WORK STA. "OR" 55+60

Extg. I-205 bridge

Extg. U.P.R.R. bridge

SB I-205 OFF-RAMP

NB I-205 OFF-RAMP

LEGEND

- Fill slope
- Cut slope
- Sediment fence, unsupported
- Sediment barrier (Type 3)
- Inlet protection (Type 3)
- Check dam

ADVANCE PLANS

OREGON DEPARTMENT OF TRANSPORTATION

OBEC CONSULTING ENGINEERS
www.obec.com
Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 1009 EUGENE, OREGON 97401-6099
9005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035-4289
2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1286
831 CRAIGE PARKWAY MEDFORD, OREGON 97504-4005

OR213: I-205 - REDLAND ROAD O'XING. (OREGON CITY)

CASCADE HWY. SOUTH

CLACKAMAS COUNTY

Design Team Leader - John Kalvelage
Designed By - Chris Bores
Drafted By - Serban Dinca

"OR" LINE EROSION CONTROL PLAN

SHEET NO. GA-2

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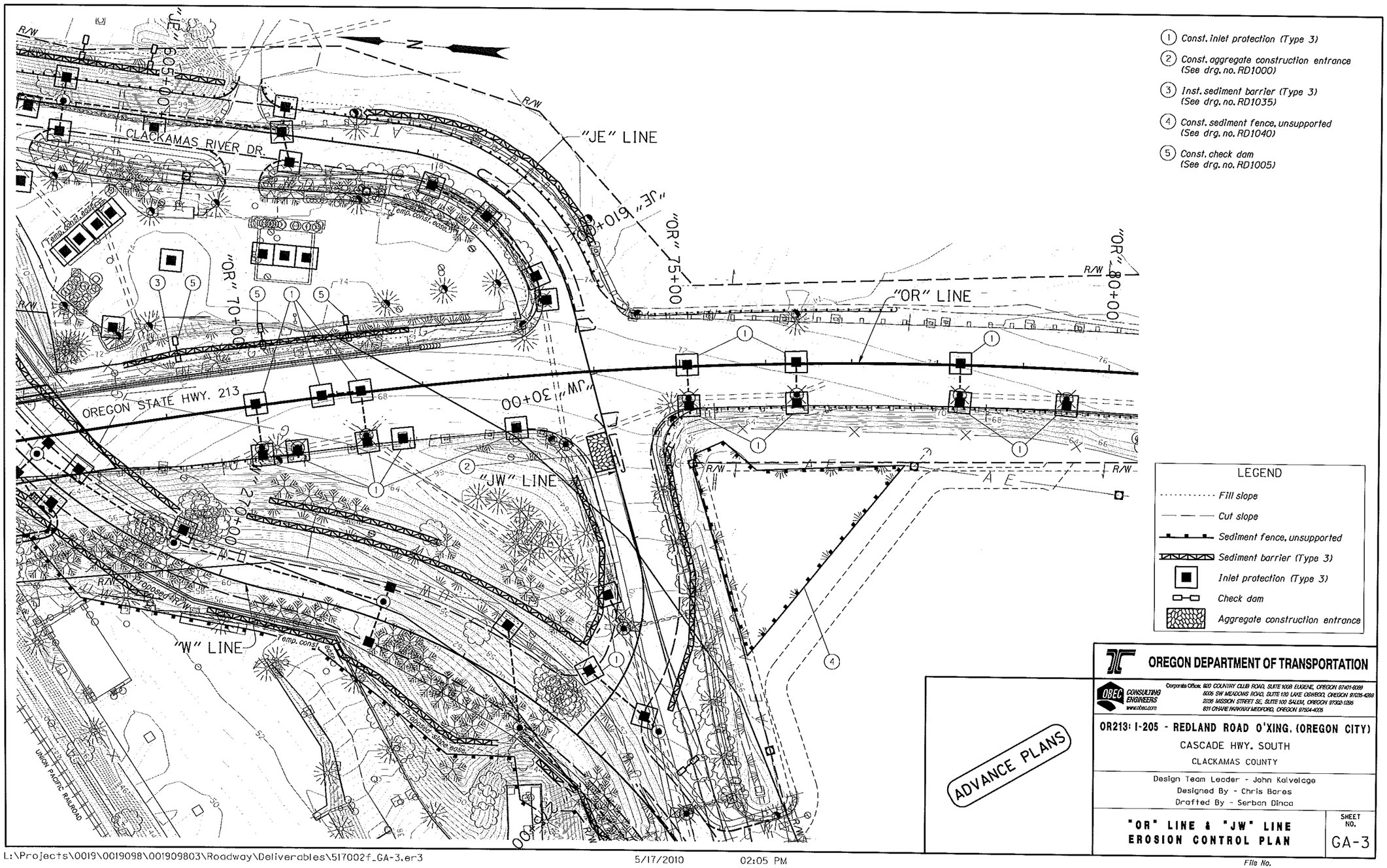
N
R/W
"JE" LINE
"JE" 610+00
"OR" 75+00
"OR" 80+00
"OR" LINE
"OR" 70+00
CLACKAMAS RIVER DR.
OREGON STATE HWY. 213
"JW" 30+00
"JW" LINE
"W" LINE
Temp. const. access
Proposed R/W
Proposed slope stake
UNION PACIFIC RAILROAD
A E
1 Const. inlet protection (Type 3)
2 Const. aggregate construction entrance (See drg. no. RD1000)
3 Inst. sediment barrier (Type 3) (See drg. no. RD1035)
4 Const. sediment fence, unsupported (See drg. no. RD1040)
5 Const. check dam (See drg. no. RD1005)
LEGEND
Fill slope
Cut slope
Sediment fence, unsupported
Sediment barrier (Type 3)
Inlet protection (Type 3)
Check dam
Aggregate construction entrance
ADVANCE PLANS
OREGON DEPARTMENT OF TRANSPORTATION
OBEC CONSULTING ENGINEERS
Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-8099
3205 SW MEADOWS ROAD, SUITE 150 LAKE OSWEGO, OREGON 97035-4288
2205 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1286
831 CHAPE PARKWAY MEDFORD, OREGON 97504-4005
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CASCADE HWY. SOUTH
CLACKAMAS COUNTY
Design Team Leader - John Kalvelage
Designed By - Chris Bores
Drafted By - Serban Dinca
"OR" LINE & "JW" LINE EROSION CONTROL PLAN
SHEET NO. GA-3
File No.
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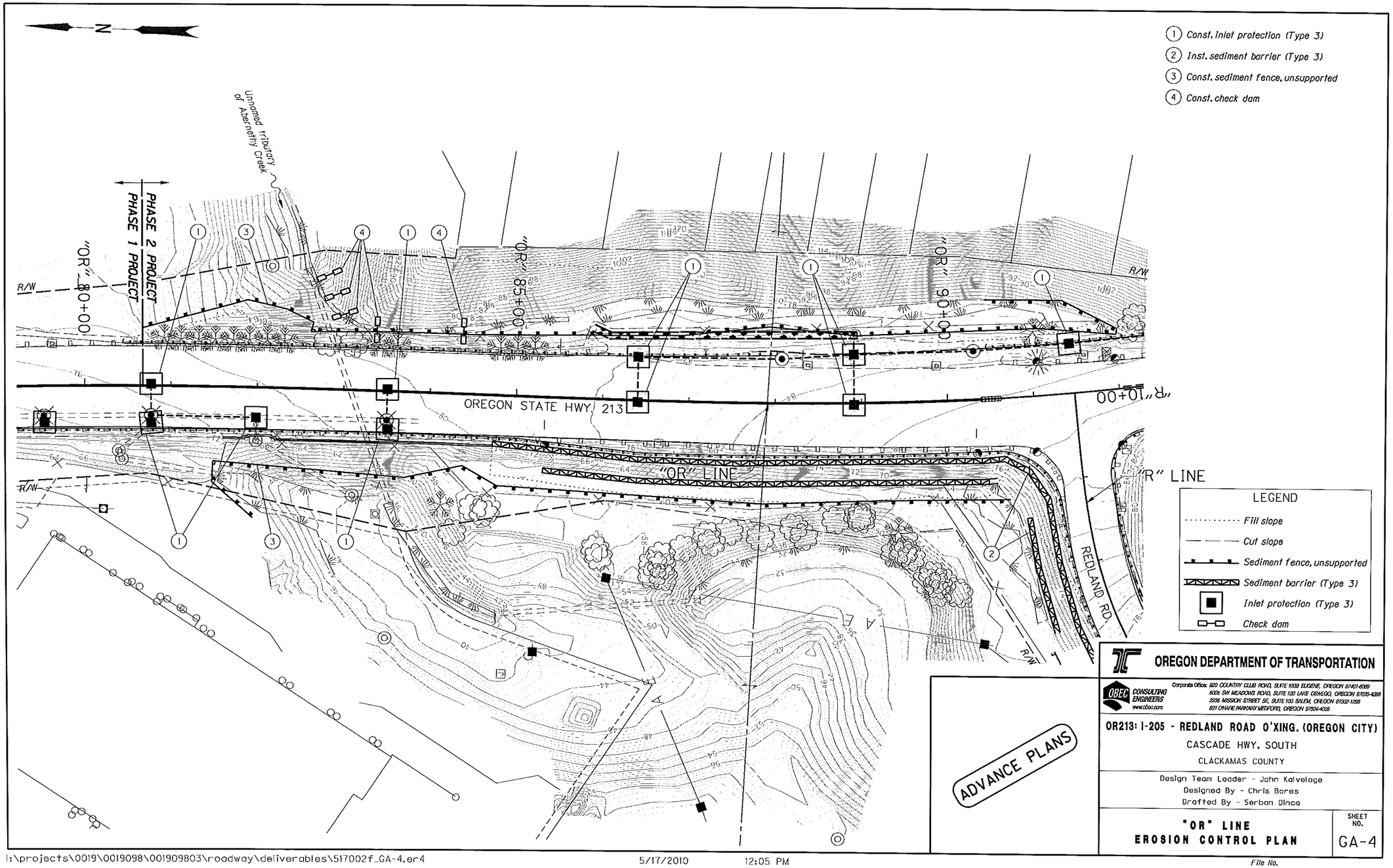
N
1 Const. inlet protection (Type 3)
2 Inst. sediment barrier (Type 3)
3 Const. sediment fence, unsupported
4 Const. check dam
Unnamed tributary of Abernethy Creek
PHASE 2 PROJECT
PHASE 1 PROJECT
"OR" 80+00
"OR" 85+00
"OR" 90+00
"R" 10+00
R/W
OREGON STATE HWY. 213
"OR" LINE
"R" LINE
REDLAND RD.
LEGEND
Fill slope
Cut slope
Sediment fence, unsupported
Sediment barrier (Type 3)
Inlet protection (Type 3)
Check dam
OREGON DEPARTMENT OF TRANSPORTATION
OBEC CONSULTING ENGINEERS
Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 1009 EUGENE, OREGON 97401-6089
6005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035-4389
2286 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1256
831 O'HARE PARKWAY MEDFORD, OREGON 97504-4005
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CASCADE HWY. SOUTH
CLACKAMAS COUNTY
Design Team Leader - John Kalvelage
Designed By - Chris Bores
Drafted By - Serban Dinca
"OR" LINE
EROSION CONTROL PLAN
SHEET NO.
GA-4
File No.
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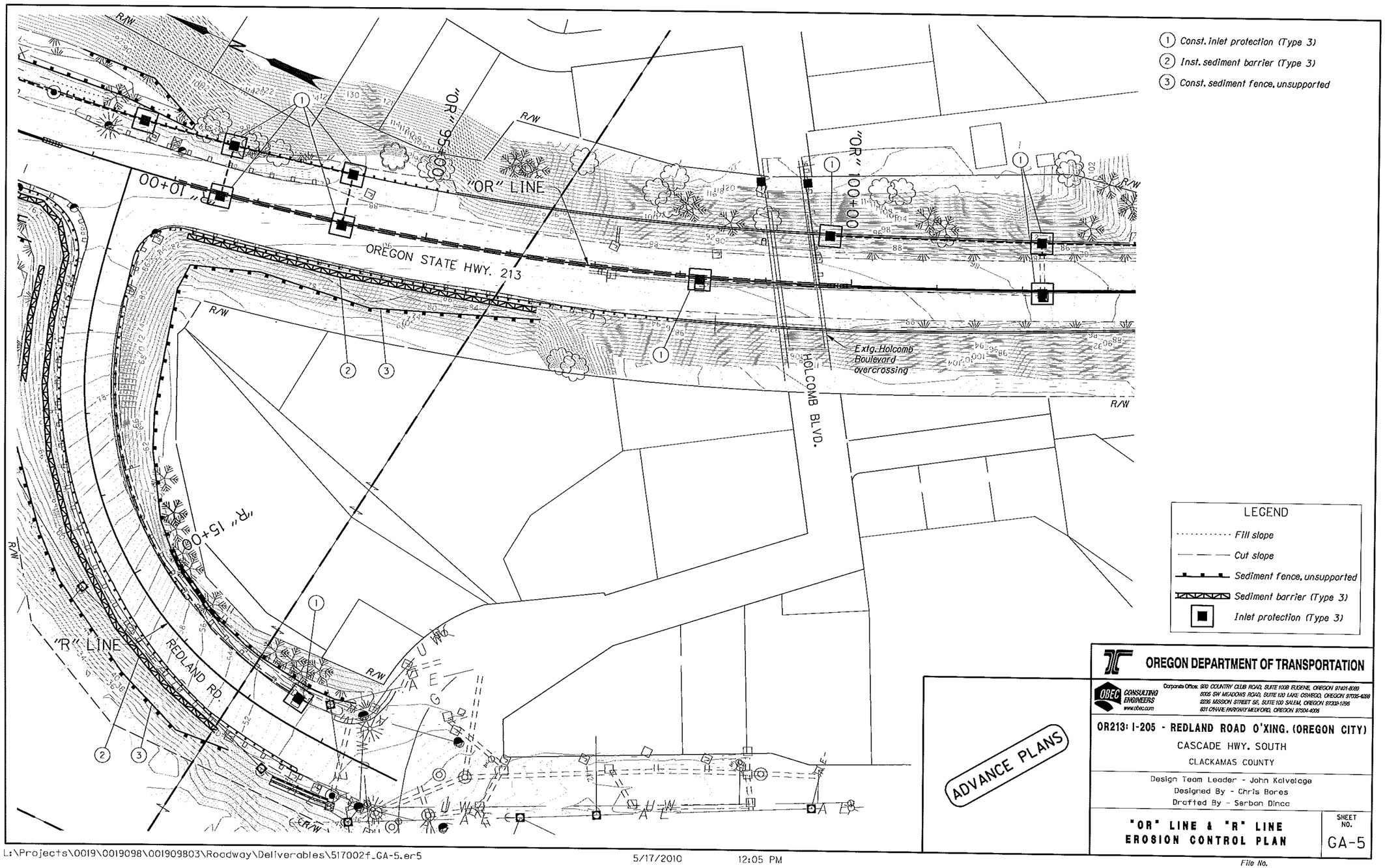
R/W
"OR" 95+00
"OR" LINE
"OR" 100+00
"OR" 10+00
OREGON STATE HWY. 213
Exist. Holcomb Boulevard overcrossing
HOLCOMB BLVD.
"R" 15+00
"R" LINE
REDLAND RD.
WATER LINE
1 Const. inlet protection (Type 3)
2 Inst. sediment barrier (Type 3)
3 Const. sediment fence, unsupported
LEGEND
Fill slope
Cut slope
Sediment fence, unsupported
Sediment barrier (Type 3)
Inlet protection (Type 3)
ADVANCE PLANS
OREGON DEPARTMENT OF TRANSPORTATION
OBEC CONSULTING ENGINEERS
Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-8039
5005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035-6289
2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1256
631 OHAVE PARKWAY MEDFORD, OREGON 97504-4005
OR213: I-205 - REDLAND ROAD O'XING. (OREGON CITY)
CASCADE HWY. SOUTH
CLACKAMAS COUNTY
Design Team Leader - John Kalvelage
Designed By - Chris Bores
Drafted By - Serban Dinca
"OR" LINE & "R" LINE EROSION CONTROL PLAN
SHEET NO. GA-5
File No.
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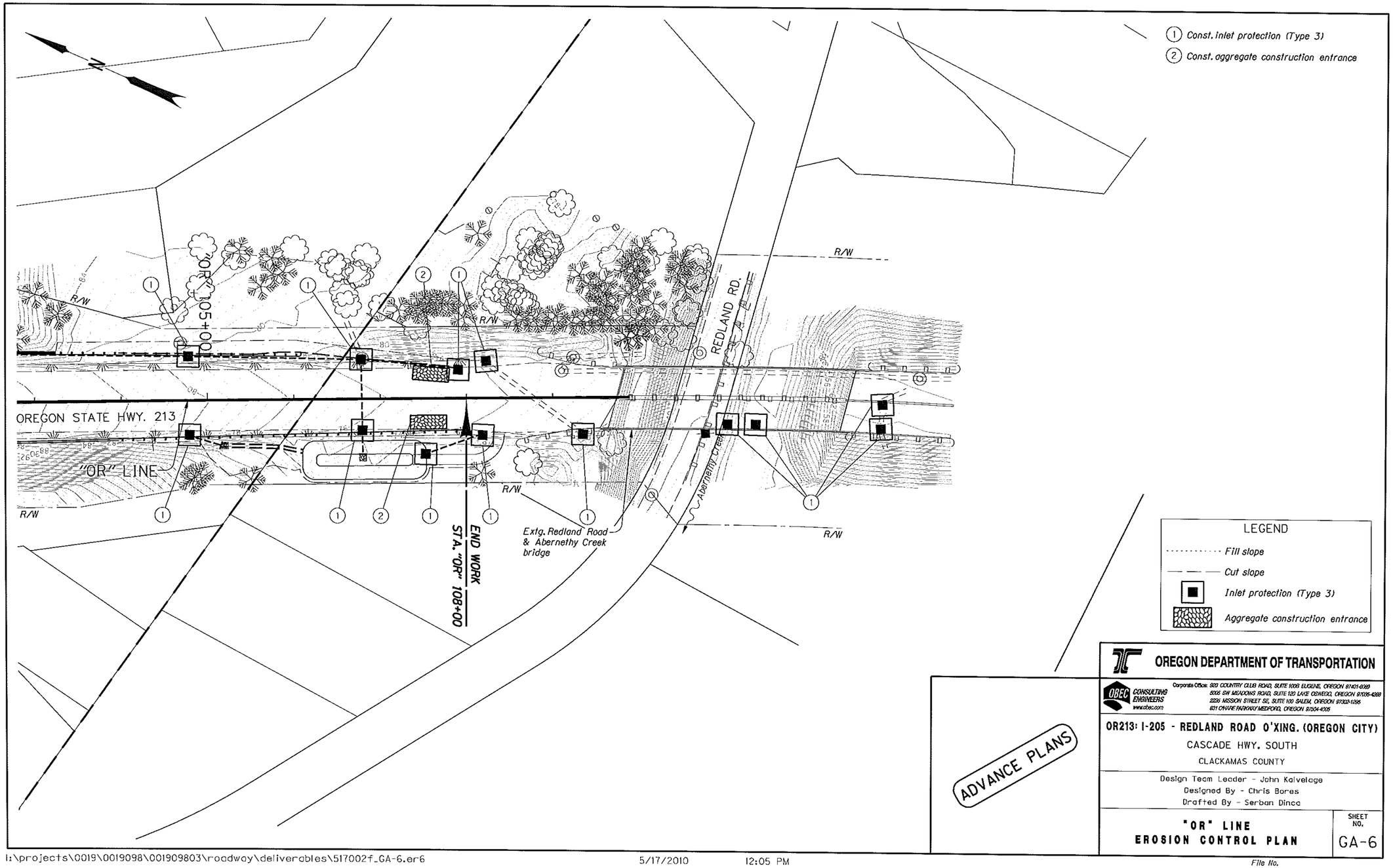
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2 Const. aggregate construction entrance
N
OREGON STATE HWY. 213
"OR" LINE
R/W
REDLAND RD.
Abernethy Creek
"OR" 105+00
STA. "OR" 108+00
END WORK
Extg. Redland Road & Abernethy Creek bridge
LEGEND
Fill slope
Cut slope
Inlet protection (Type 3)
Aggregate construction entrance
OREGON DEPARTMENT OF TRANSPORTATION
OBEC CONSULTING ENGINEERS
Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 1008 EUGENE, OREGON 97401-6389
5006 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035-4289
2225 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1285
831 CHARLE PARKWAY MEDFORD, OREGON 97504-4065
ADVANCE PLANS
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CASCADE HWY. SOUTH
CLACKAMAS COUNTY
Design Team Leader - John Kalvelage
Designed By - Chris Bores
Drafted By - Serban Dinca
"OR" LINE
EROSION CONTROL PLAN
SHEET NO.
GA-6
File No.
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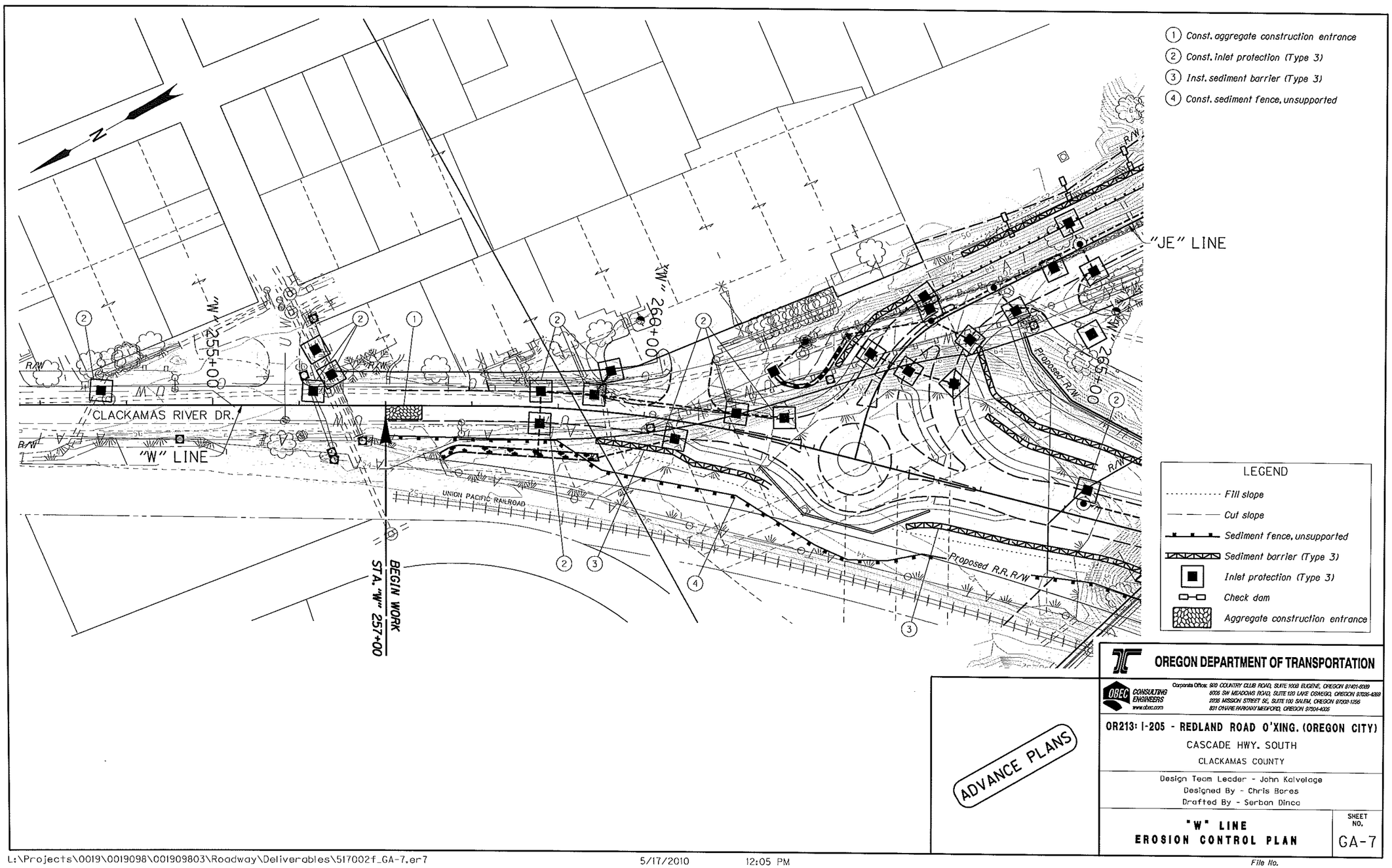
1 Const. aggregate construction entrance
2 Const. inlet protection (Type 3)
3 Inst. sediment barrier (Type 3)
4 Const. sediment fence, unsupported
"JE" LINE
"W" LINE
CLACKAMAS RIVER DR.
UNION PACIFIC RAILROAD
BEGIN WORK
STA. "W" 257+00
255+00
260+00
265+00
Proposed R/W
Proposed R.R. R/W
R/W
LEGEND
Fill slope
Cut slope
Sediment fence, unsupported
Sediment barrier (Type 3)
Inlet protection (Type 3)
Check dam
Aggregate construction entrance
ADVANCE PLANS
OREGON DEPARTMENT OF TRANSPORTATION
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Corporate Office: 609 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-8209
6005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035-4289
2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1256
831 CHAFFEE PARKWAY MEDFORD, OREGON 97504-8205
OR213: I-205 - REDLAND ROAD O'XING. (OREGON CITY)
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CLACKAMAS COUNTY
Design Team Leader - John Kalvelage
Designed By - Chris Bores
Drafted By - Serban Dinca
"W" LINE
EROSION CONTROL PLAN
SHEET NO.
GA-7
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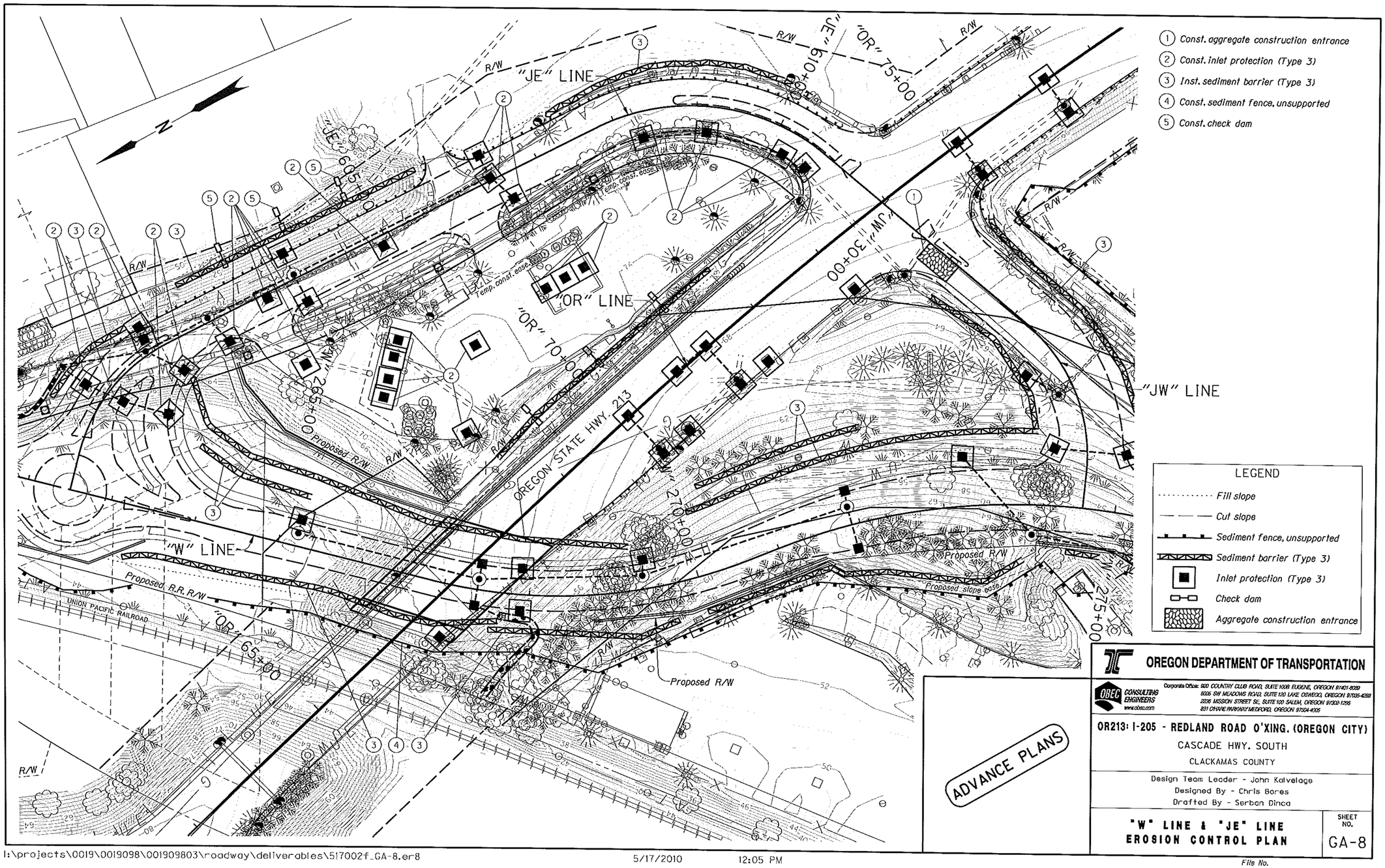
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2 Const. inlet protection (Type 3)
3 Inst. sediment barrier (Type 3)
4 Const. sediment fence, unsupported
5 Const. check dam
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"JE" 605+00
"JE" 610+00
"OR" 75+00
"OR" LINE
"OR" 70+00
"JW" 30+00
"JW" LINE
"W" LINE
"OR" 65+00
"OR" 55+00
"OR" 275+00
OREGON STATE HWY. 213
UNION PACIFIC RAILROAD
Proposed R/W
Proposed R.R. R/W
Proposed slope edge
Temp. const. edge
R/W
LEGEND
Fill slope
Cut slope
Sediment fence, unsupported
Sediment barrier (Type 3)
Inlet protection (Type 3)
Check dam
Aggregate construction entrance
ADVANCE PLANS
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OR213: I-205 - REDLAND ROAD O'XING. (OREGON CITY)
CASCADE HWY. SOUTH
CLACKAMAS COUNTY
Design Team Leader - John Kalvelage
Designed By - Chris Bores
Drafted By - Serban Dinca
"W" LINE & "JE" LINE
EROSION CONTROL PLAN
SHEET NO.
GA-8
File No.
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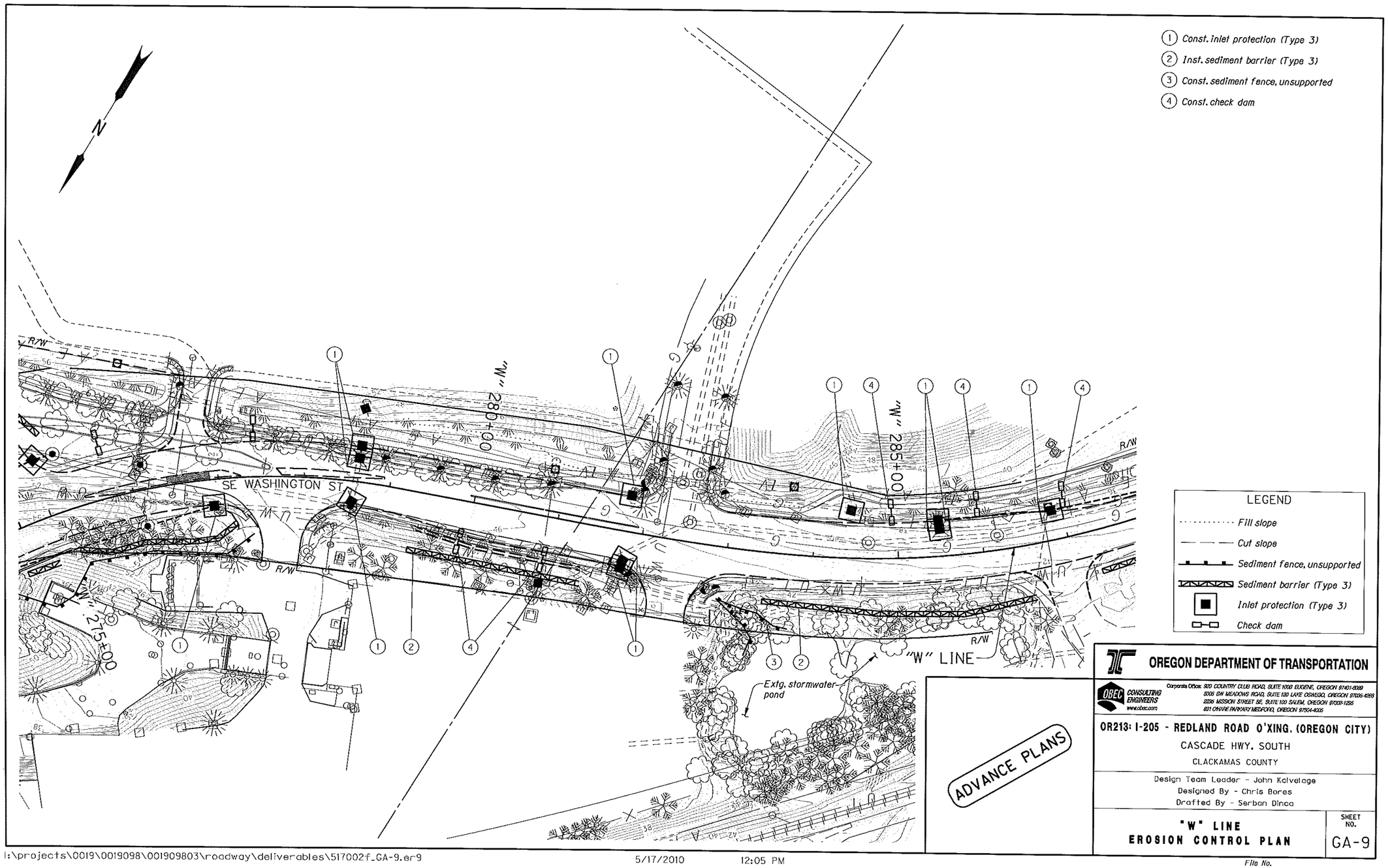

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2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1255
821 CRATER PARKWAY MEDFORD, OREGON 97504-4005

OR213: I-205 - REDLAND ROAD O'XING. (OREGON CITY)

CASCADE HWY. SOUTH

CLACKAMAS COUNTY

ADVANCE PLANS

Design Team Leader - John Kalvelage
Designed By - Chris Bores
Drafted By - Serban Dinca

"W" LINE
EROSION CONTROL PLAN

SHEET NO.
GA-9

File No.

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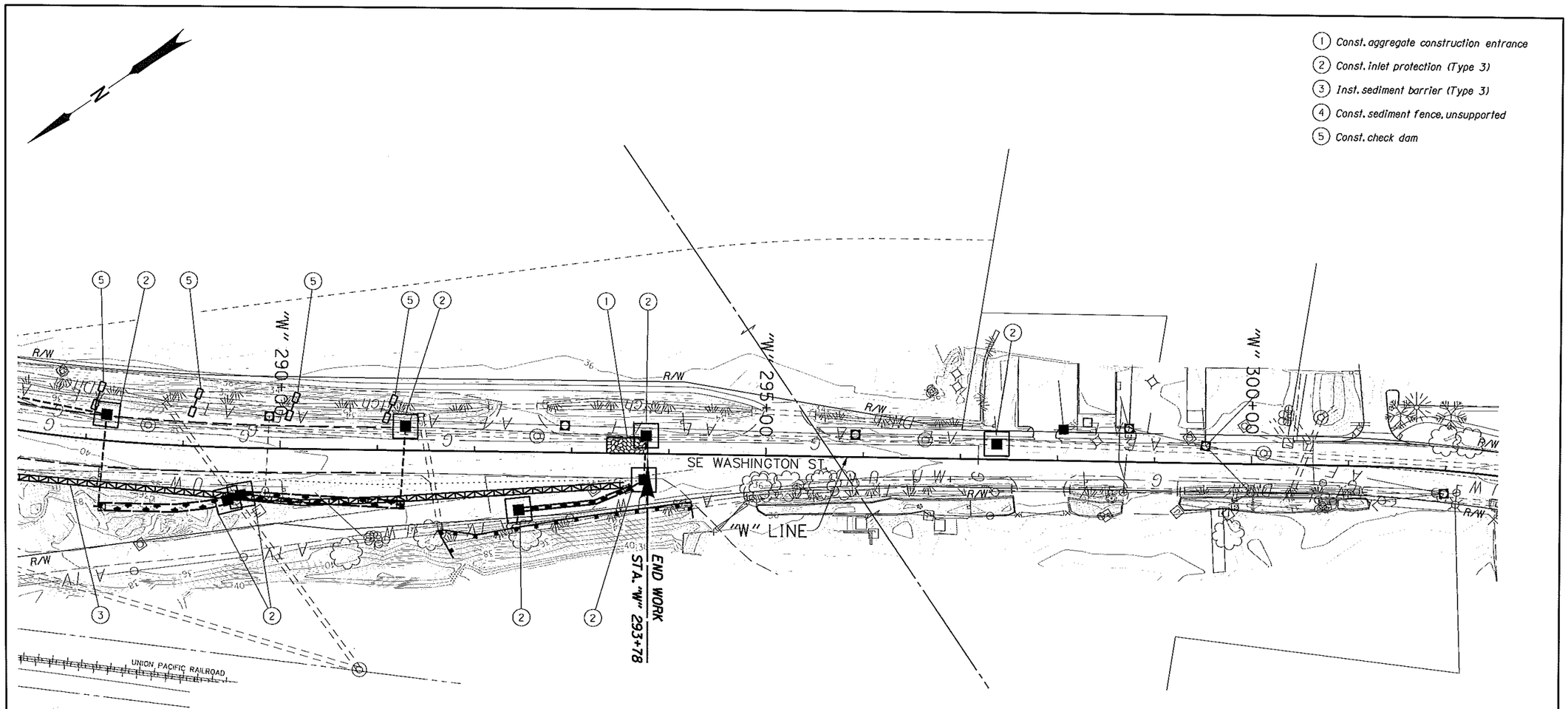

LEGEND

- Fill slope
- Cut slope
- Sediment fence, unsupported
- Sediment barrier (Type 3)
- Inlet protection (Type 3)
- Check dam
- Aggregate construction entrance

ADVANCE PLANS

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2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1286
831 OHARE PARKWAY MEDFORD, OREGON 97504-8005

OR213: I-205 - REDLAND ROAD O'XING. (OREGON CITY)
CASCADE HWY. SOUTH
CLACKAMAS COUNTY

Design Team Leader - John Kalvelage
Designed By - Chris Bores
Drafted By - Serban Dinca

"W" LINE
EROSION CONTROL PLAN

SHEET NO. GA-10

File No.

I:\projects\0019\0019098\001909803\roadway\deliverables\517002f_GA-10.er10 5/17/2010 12:05 PM

Attachment E: NROD Photos

1

2

MB&G Mason, Bruce & Girard, Inc. Photo Date February 24, 2009	1. View to the east of Wetland A and the surrounding NROD buffer. 2. View to the east of Wetland B and the surrounding NROD buffer.

3

4

MB&G Mason, Bruce & Girard, Inc. Photo Date February 25, 2009	3. View to the south of Wetland C and the surrounding NROD buffer. 4. View to the southeast of Wetland D and the surrounding NROD buffer.

5

6

MB&G Mason, Bruce & Girard, Inc. Photo Date February 25, 2009	5. View to the north of Stream 15 and the surrounding NROD buffer. 6. View to the south of Stream 15,Wetland E, and the surrounding NROD buffer.

7

8

MB&G Mason, Bruce & Girard, Inc. Photo Date March 26, 2009	7. View to the north within Wetland G. The surrounding NROD buffer is visible in the background. 8. View to the north within Wetland H.

9

10

MB&G Mason, Bruce & Girard, Inc. Photo Date March 26 & 27, 2009	9. View to the northwest within Wetland I. 10. View tot the northeast within Stream 14.

11

12

MB&G Mason, Bruce & Girard, Inc. Photo Date March 26, 2009	11. View to the east of Stream 16 and Wetland G. The area within the NROD that will be impacted is visible along the roadway fill slope. 12. View to the west of Stream 16 and Wetland F. The area within the NROD that will be impacted is visible along the roadway fill slope.

Attachment F: Alternative Designs


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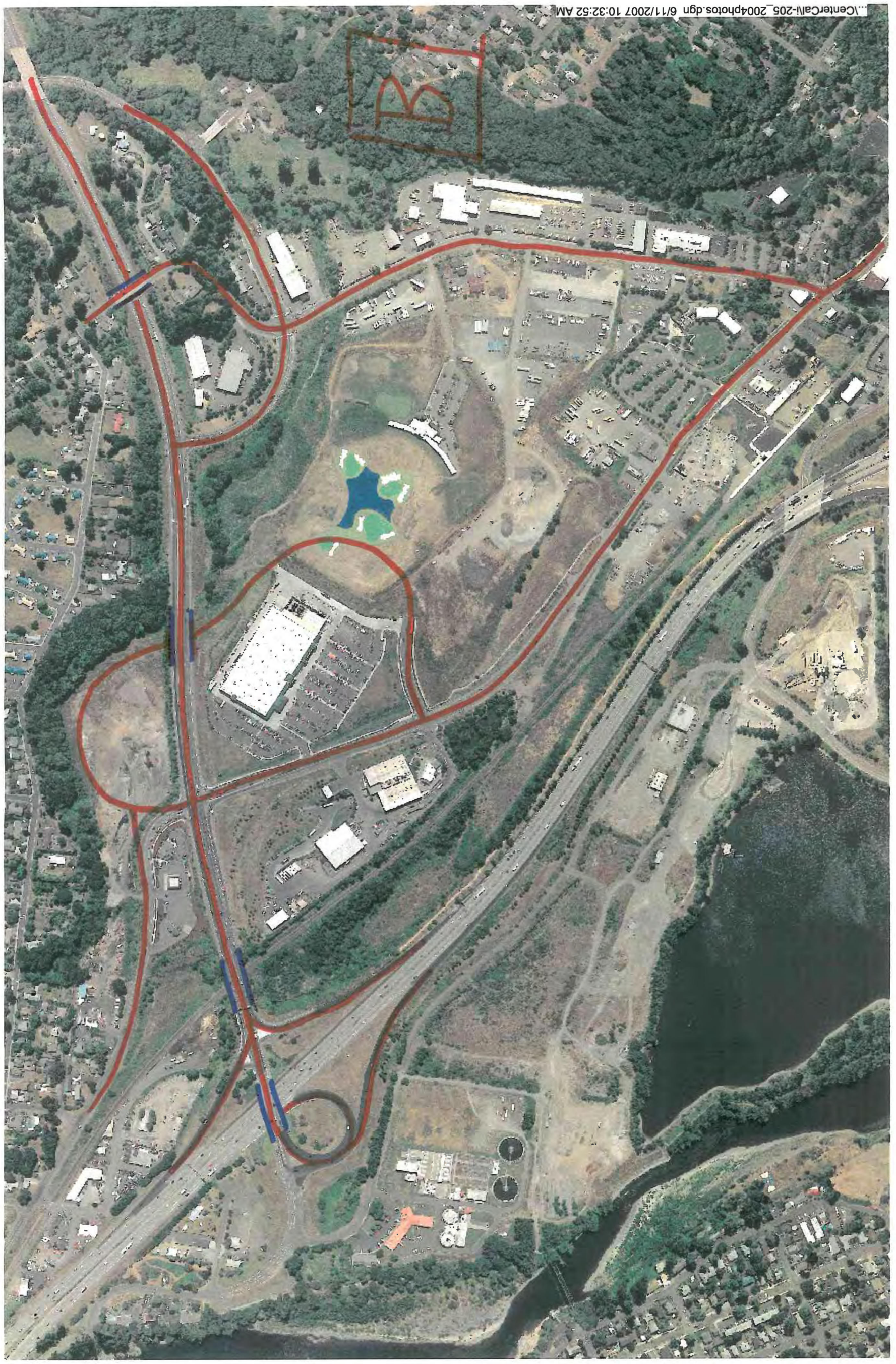
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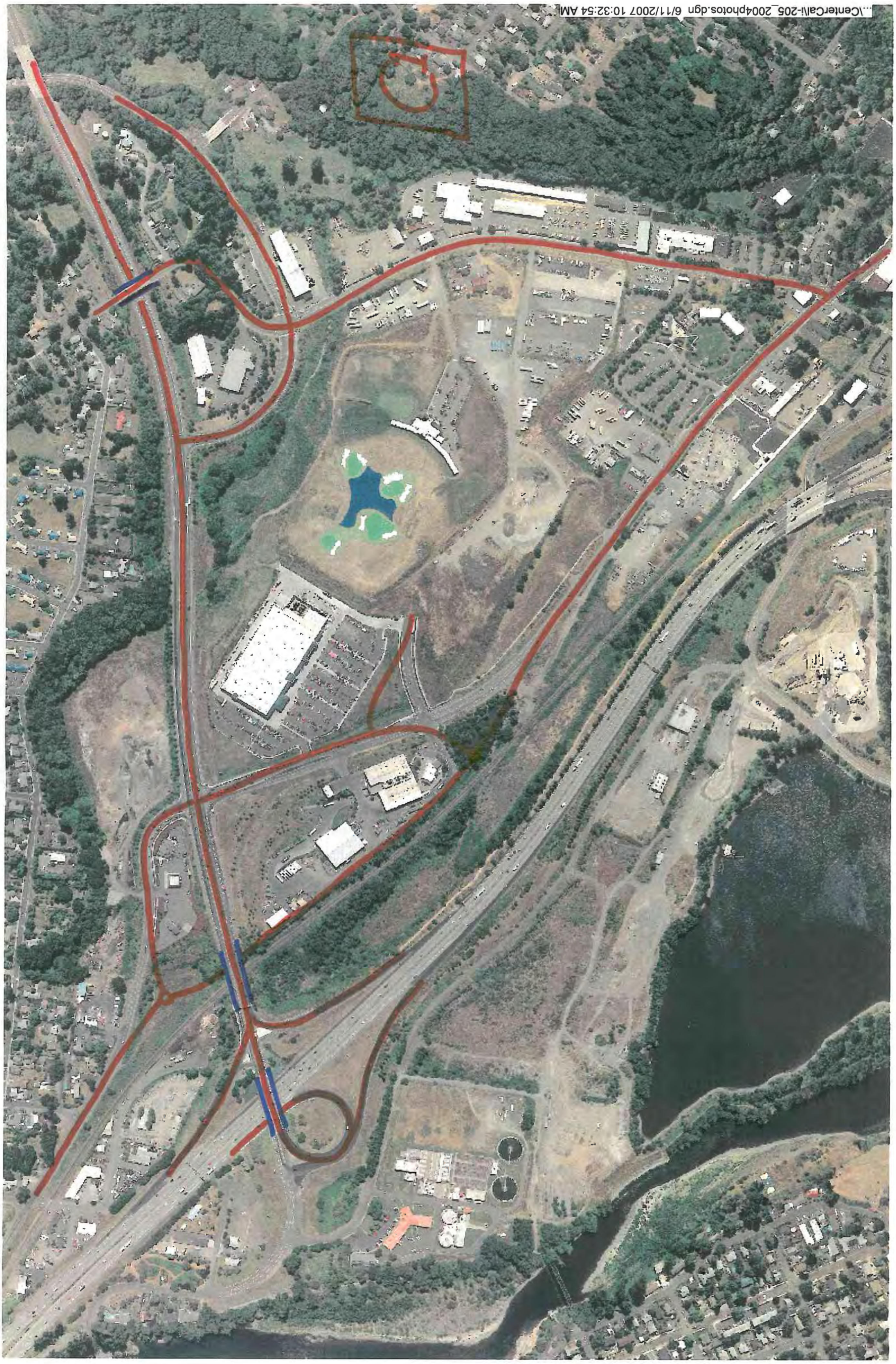
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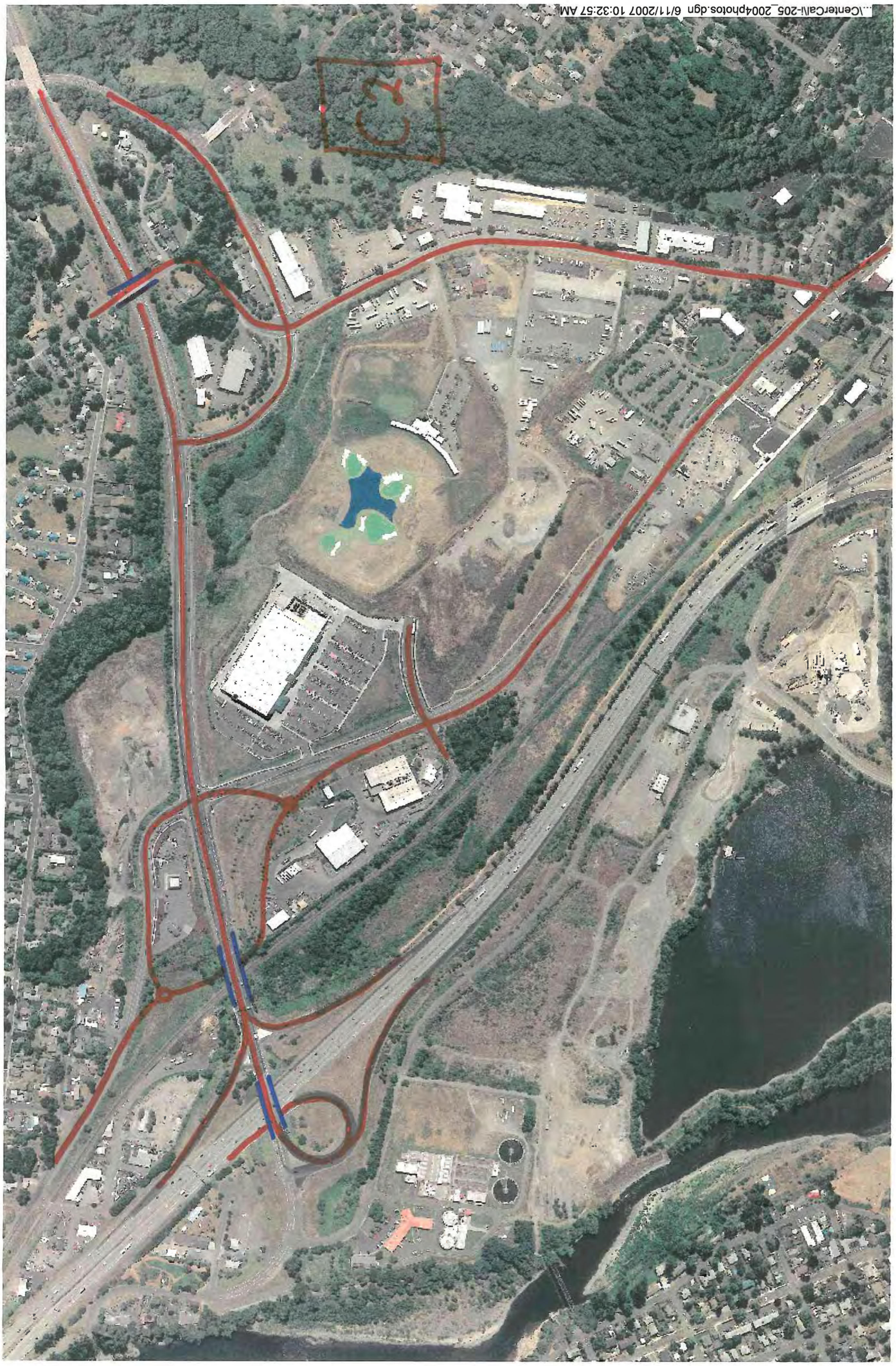
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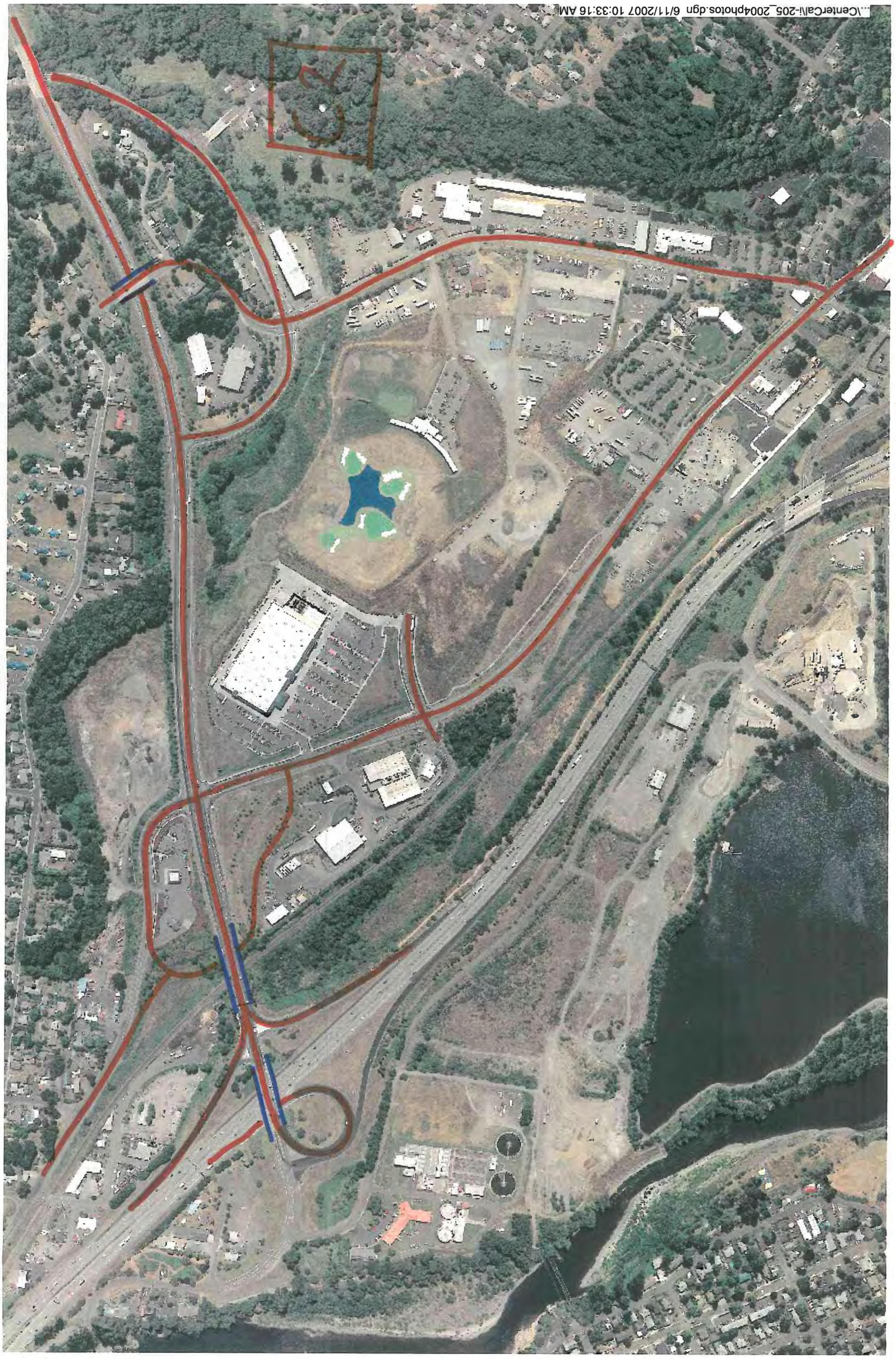
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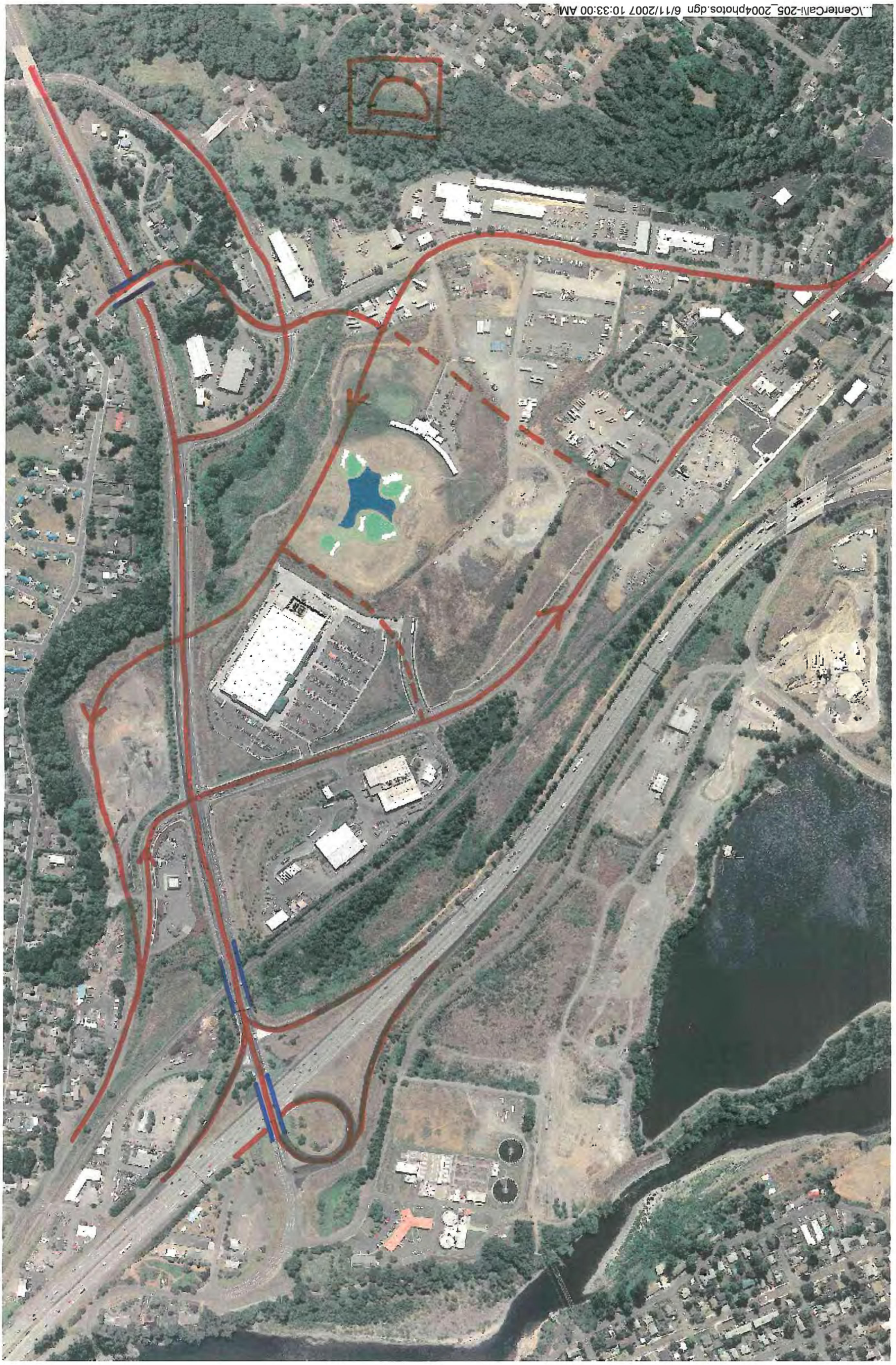
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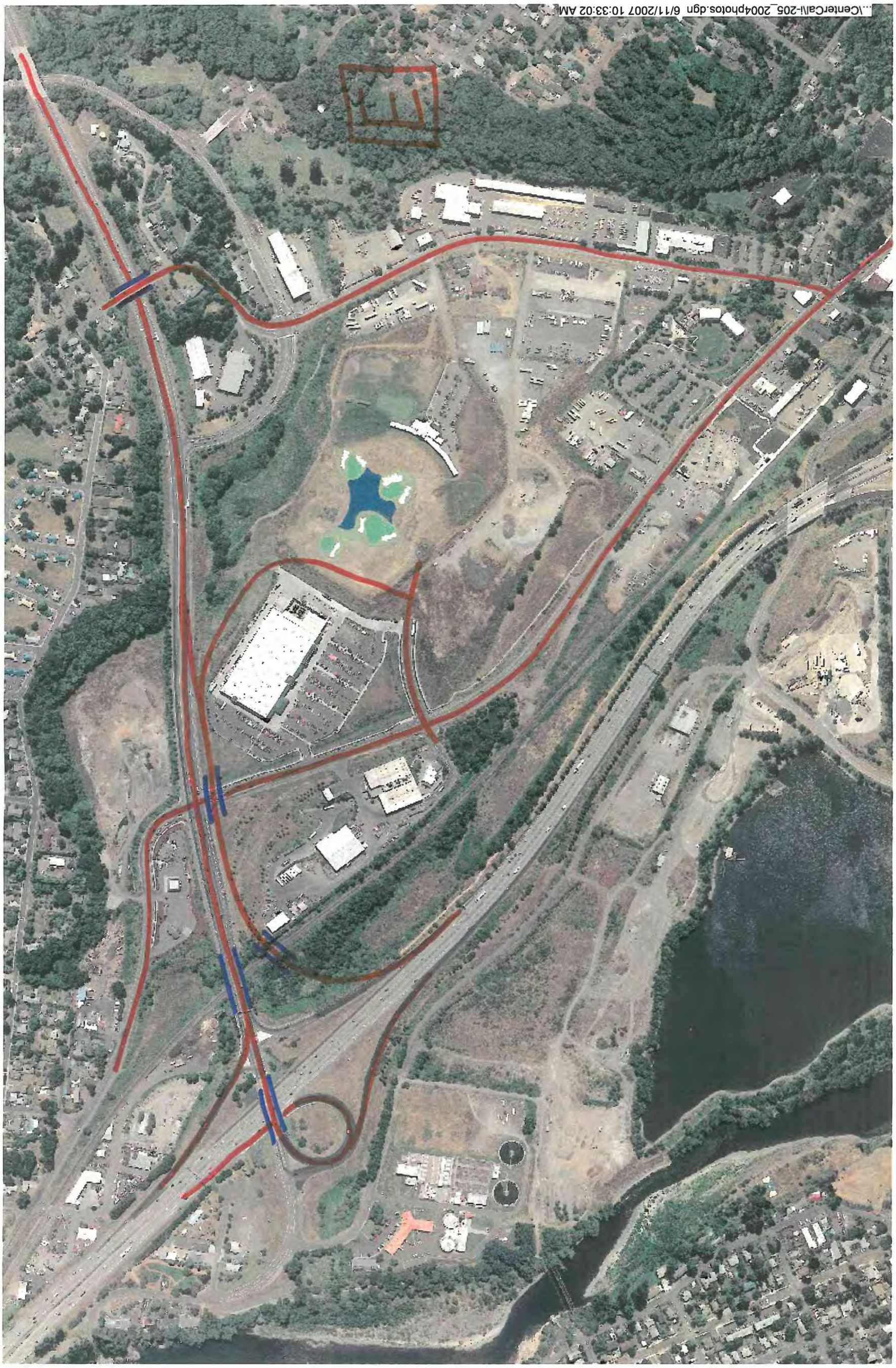
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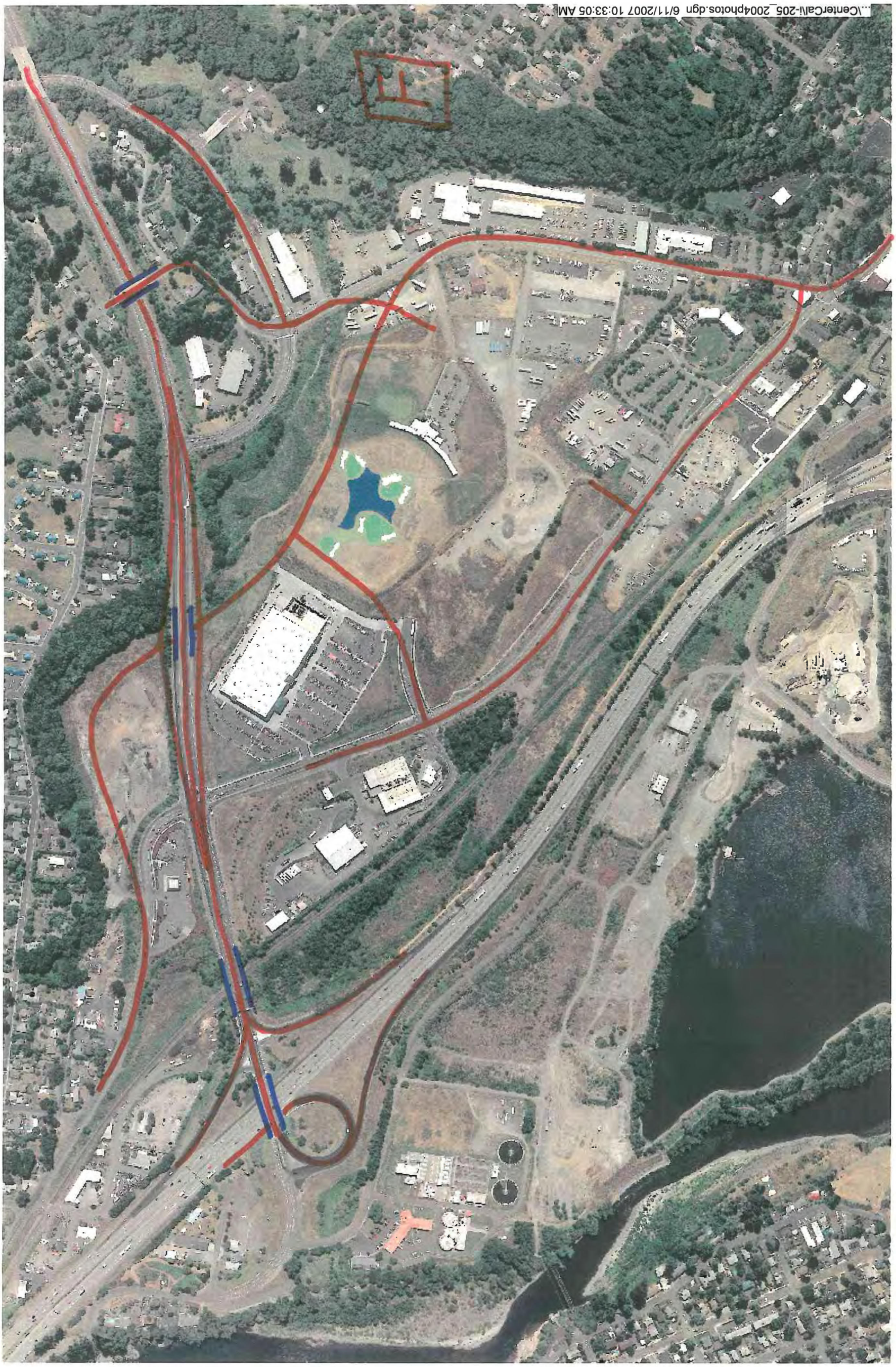
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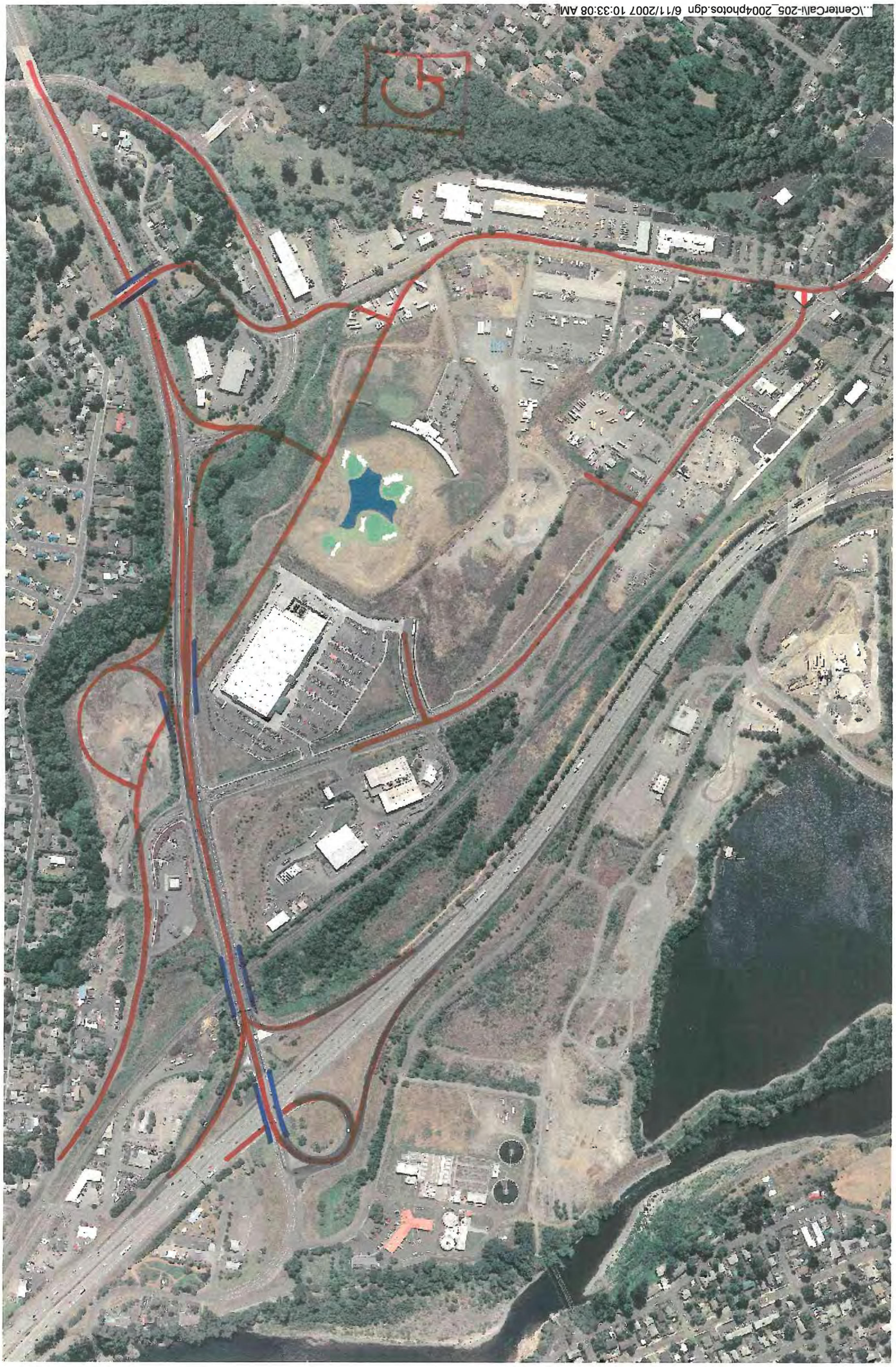
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17.49 Natural Resource Overlay District Code Responses For the OR 213: I-205 – Redland Road O'xing (Oregon City) Project

Revised June 29, 2010

8.0 Compliance with Oregon City Municipal Code

In this section, italicized text comes directly from Oregon City Municipal Code, Chapter 17.49: Natural Resource Overlay District. Non-italicized text indicates the response to the code.

17.49.20 How the NROD Works

The NROD protects as one connected system, the habitats and associated functions of the streams, riparian corridors, wetlands and the regulated upland habitats found in Oregon City. These habitats and functions are described in the following documents upon which the NROD is based:

The 1999 Oregon City Local Wetland Inventory
The Oregon City Water Quality Resource Area Map (Ord. 99-1013)
2004 Oregon City slope data and mapping (LIDAR)
Metro Regionally Significant Habitat Map (Aerial Photos taken 2002)
National Wetland Inventory (published 1992).
Beavercreek Road Concept Plan (adopted September 2008).
Park Place Concept Plan (adopted April 2008).

The NROD provisions apply only to properties within the NROD as shown on the NROD Map, as amended.

Properties on the NROD map which are smaller than two acres which are completely surrounded by the NROD shall be included within the NROD and subject to review under this code.

The NROD provisions do not affect existing uses and development, or the normal maintenance of existing structures, driveways/parking areas, public facilities, farmland and landscaped areas. New public facilities such as recreation trails, planned road and utility line crossings and stormwater facilities, are allowed within the overlay district under prescribed conditions as described in Section 17.49.90. In addition, provisions to allow a limited portion of the NROD to be developed on existing lots of record that are entirely or mostly covered by the NROD ("highly constrained") are described in Section 17.49.120.

Response: The NROD boundaries on the NROD map pass in and out of the project footprint (approximately 40 acres); therefore, the NROD provisions apply to the proposed project. The proposed project will entail new public facilities, which are allowed under prescribed conditions.

17.49.30 Map as Reference

This chapter applies to all development within the Natural Resources Overlay District as shown on the NROD Map, which is a regulatory boundary mapped 10' beyond the required vegetated corridor width specified in section 17.49.110. The map can only be amended by the City Commission. Verification of the map shall be processed pursuant to Section 17.49.250.

Response: An adjustment is requested. The buffers provided by Oregon City were determined to be inaccurately located and much larger than boundaries based on 17.49.110 and a field delineation. The Oregon City Public Works Department, as the applicant for the proposed project, has chosen to provide a verifiable delineation of the true location of the natural resource features within the proposed project. This course of action will protect the true locations of the NROD buffers and will account for actual impacts within these buffers.

17.49.35 Addition of Wetlands to Map following Adoption

The NROD boundary shall be expanded to include a wetland identified during the course of a development permit review if it is within or partially within the mapped NROD boundary and meets the State of Oregon's definition of a "Locally Significant Wetland". In such cases the entire wetland and its required vegetated corridor as defined in Table 17.49.110 shall be regulated pursuant to the standards of this Chapter. The NROD boundary shall be added to the NROD map by the Community Development Director after the development permit becomes final.

Response: All wetlands identified in the wetland delineation have been included as natural resource features and have been provided NROD buffers.

17.49.40 NROD Permit

An NROD permit is required for those uses regulated under Section 17.49.90, Uses Allowed under Prescribed Conditions. An NROD permit shall be processed under the Type II development permit procedure, unless an adjustment of standards pursuant to Section 17.49.87 is requested or the application is being processed in conjunction with a concurrent application or action requiring a Type III or Type IV development permit.

Response: An NROD permit is requested as the proposed project is a regulated use under prescribed conditions. A Type III review process is called for as adjustments from standards are requested.

17.49.60 Consistency and Relationship to Other Regulations

A. Where the provisions of the NROD are less restrictive or conflict with comparable provisions of the Oregon City Municipal Code, other City requirements, regional, state or federal law, the provisions that are more restrictive shall govern.

Response: No conflicts have been identified for the proposed project.

B. Compliance with Federal and State Requirements.

a. If the proposed development requires the approval of any other governmental agency, such as the Division of State Lands or the U.S. Army Corps of Engineers, the applicant shall make application for such approval prior to or simultaneously with the submittal of its development application to the City. The planning division shall coordinate City approvals with those of other agencies to the extent necessary and feasible. Any permit issued by the City pursuant to this chapter shall not become valid until other agency approvals have been obtained or those agencies indicate that such approvals are not required.

Response: Approval for the proposed project has been requested from the Oregon Department of State Lands (Joint Permit Application to comply with the State of Oregon's Removal/Fill Law) and the U.S. Army Corps of Engineers (Joint Permit Application to comply with section 404 of

the Clean Water Act). The Joint Permit Application was submitted to both agencies May 25, 2010. A permit is expected to be issued by both agencies by September 25, 2010.

Prohibited, Exempted and Regulated Uses

17.49.70 Prohibited Uses

The following development and activities are not allowed within the NROD:

Any new gardens, lawns, structures, development, other than those allowed outright (exempted) by the NROD or that is part of a regulated use that is approved under prescribed conditions. Note: Gardens and lawns within the NROD that existed prior to the time the overlay district was applied to a subject property are allowed to continue but cannot expand further into the overlay district.

Response: Landscaping and/or site restoration may be necessary for maintenance of the new roadway within an NROD boundary and is permitted under 17.49.90(E).

New lots that would have their buildable areas for new development within the NROD are prohibited.

Response: Not applicable.

The dumping of materials of any kind is prohibited except for placement of fill as provided in (D) below. The outside storage of materials of any kind is prohibited unless they existed before the overlay district was applied to a subject property. Uncontained areas of hazardous materials as defined by the Oregon Department of Environmental Quality (ORS 466.005) are also prohibited.

Response: All fill placement will be part of an approved development activity and therefore allowed. No uncontained areas of hazardous materials are anticipated.

D. Grading, the placement of fill in amounts greater than ten cubic yards, or the removal of native vegetation within the NROD is prohibited, unless part of an approved development activity.

Response: All fill placement and vegetation removal will be part of an approved development activity and therefore allowed.

17.49.80 Uses Allowed Outright (Exempted)

Response: Not applicable.

17.49.90 Uses Allowed Under Prescribed Conditions

The following uses within the NROD are subject to the applicable standards listed in Sections 17.49.100 through 17.49.190 pursuant to a Type II process:

E. New roadways, bridges/creek crossings, utilities or alterations to such facilities when not exempted by Section 17.49.80, subject to Section 17.49.150 (for roads, bridges/creek crossings) or Section 17.49.140 (for utility lines) or Section 17.49.100 (for stormwater detention or pre-treatment facilities).

Response: The proposed project includes a new roadway and alterations to existing roadways and is therefore an allowed use under prescribed conditions. Items A-D and F-G do not apply to this project.

Development Standards

17.49.100 General Development Standards

The following standards apply to all Uses Allowed under Prescribed Conditions within the NROD with the exception of rights of ways (subject to Section 17.49.150), trails (subject to Section 17.49.170), utility lines (subject to Section 17.49.140), land divisions (subject to Section 17.49.160), and mitigation projects (subject to Section 17.49.180 or 17.49.190):

Response: The proposed project will follow 17.49.150 and 17.49.155 standards, therefore the standards in this section do not apply.

17.49.110 Width of Vegetated Corridor

A. Calculation of Vegetated Corridor Width within City Limits. The NROD consists of a vegetated corridor measured from the top of bank or edge of a protected habitat or water feature. The minimum required width is the amount of buffer required on each side of a stream, or on all sides of a feature if non-linear. The width of the vegetated corridor necessary to adequately protect the habitat or water feature is specified in Table 17.49.110.

Table 17.49.110

Protected Feature Type (See Definitions)	*Anadromous Fish-bearing Stream*	*All Other Features*			
		Intermittent Stream < 25%, drains < 100 acres	*All Other Streams (Intermittent or Perennial)*		*Delineated Wetland*
Minimum Required Width	*200'*	*15'*	*50'*	*200'*	*50'*
Slope Adjacent to Feature	*Any*	*< 25 %*	*> 25 % for less than 150 feet (see Note 2)*	*> 25 % for 150 feet or more (see Note 2)*	*Any*
Starting Point for Measurements from Feature	*Top of Bank*	*Top of Bank*	*Top of Bank*	*Top of bank to break in > 25 % slope (See Note 3) + 50'*	*Delineated Edge of Title 3 Wetland*
Maximum Disturbance Allowance	*See Section 17.49.120*				
Mitigation Requirements	*See Section17.49.180 or 17.49.190*				

Notes:

Vegetated corridors in excess of fifty feet apply on steep slopes only in the uphill direction from the protected water feature.

Where the protected water feature is confined by a ravine or gully, the top of the ravine is the break in the ≥ 25 percent slope.

Response: Based on the field-verifiable wetland delineation that was conducted and the definition of natural resource feature proposed for this project (refer to Section 4.0), buffers were applied based on this table.

B. Habitat Areas within City Parks. For habitat and water features identified by Metro as regionally significant which are located within city parks, the NROD Boundary shall correspond to the Metro Regionally Significant Habitat Map.

Response: The proposed project is not located within a City Park.

C. Habitat Areas outside city limit / within UGB. For habitat and water features identified by Metro as regionally significant which are located outside of the city limits as of the date of adoption of this ordinance, the minimum corridor width from any non-anadromous fish bearing stream or wetland shall be fifty feet (50').

Response: The southern portion of the project is located outside of the city limits, but within the UGB. The MetroMap website was reviewed and it was determined that no Metro regionally significant habitat and waters features are mapped within this portion of the project area (MetroMap. 2010. Available: http://metromap.metro-region.org/metromap.cfm?Accept=accept. Accessed June 26, 2009 and June 25, 2010).

17.49.120 Maximum Disturbance Allowance for Highly Constrained Lots of Record

Response: Not applicable to the proposed project.

17.49.130 Existing Development Standards

In addition to the General Development Standards of Section 17.49.100, the following standards apply to alterations of existing development within the NROD, except for trails, rights of way, utility lines, land divisions and mitigation projects

Response: As this is a rights of way project, this section does not apply.

17.49.150 Standards for Rights of Ways

The following standards apply to public rights of way within the NROD, including roads, bridges/stream crossings and pedestrian paths with impervious surfaces:

A. Stream crossings shall be limited to the minimum number necessary to ensure safe and convenient pedestrian, bicycle and vehicle connectivity, and shall cross the stream at an angle as close to perpendicular to the stream channel as practicable. Bridges shall be used instead of culverts wherever practicable.

Response: No new stream crossings are proposed for this project. In addition, no stream crossing culverts will be modified or reconstructed as part of the project.

B. Where the right-of-way crosses a stream the crossing shall be by bridge or a bottomless culvert;

Response: Not applicable.

C. No fill or excavation shall occur within the ordinary high water mark of a stream;

Response: An adjustment is requested. Fill and/or excavation will be required within the ordinary high water mark of Stream 15 and will be regulated by the Oregon Department of State Lands and U.S. Army Corps of Engineers. Permits have been submitted to both agencies to authorize the fill and excavation within this stream. In addition, future code revisions state "*C. No fill or excavation shall occur within the ordinary high water mark of a stream without the approval of the Division of State Lands and/or the U.S. Army Corps of Engineers".*

D. If the Oregon Department of State Lands (DSL) has jurisdiction over any work that requires excavation or fill in a wetland, required permits or authorization shall be obtained from DSL prior to release of a grading permit;

Response: Approval for the proposed project has been requested from the Oregon Department of State Lands (Joint Permit Application to comply with the State of Oregon's Removal/Fill Law) and the U.S. Army Corps of Engineers (Joint Permit Application to comply with section 404 of the Clean Water Act). A Joint Permit Application was submitted May 25, 2010 and a permit is expected to be issued by both agencies by September 25, 2010.

E. Any work that will take place within the banks of a stream shall be conducted between June 1 and August 31, or shall be approved by the Oregon Department of Fish and Wildlife; and

Response: Stream 15, where work will be conducted, is a tributary of Abernethy Creek. The Oregon Department of Fish and Wildlife in-water-work-window for Abernethy Creek is July 15-September 30 (ODFW 2008) and the project will comply with this timing.

F. Mitigation is required, subject to Section 17.49.180 or 17.49.190.

Response: Mitigation will be provided for impacts to the NROD, refer to 17.49.190.

17.49.155 Standards for Stormwater Facilities

Approved facilities that infiltrate stormwater on-site in accordance with Public Works Low-Impact Development standards, including but not limited to; vegetated swales, rain gardens, vegetated filter strips, and vegetated infiltration basins, and their associated piping, may be placed within the NROD boundary pursuant to the following standards:

Response: The proposed project includes the addition of stormwater facilities; therefore the Development Standards listed below apply.

A. The forest canopy within the driplines of existing trees shall not be disturbed.

Response: An adjustment is requested. The majority of the stormwater facilities will not require forest canopy disturbance. However, in several situations were impacts to the canopy are unavoidable for the construction of stormwater swales, the impacted trees will be mitigated for under 17.41.

B. Only vegetation from the Oregon City Native Plant List shall be planted within these facilities.

Response: Vegetation from the native plant list will be exclusively used within these facilities.

C. Mitigation is required, subject to Section 17.49.180 or 17.49.190.

Response: Mitigation will be provided for impacts of stormwater facilities within NROD buffers, refer to 17.49.190.

D. The Community Development Director may allow landscaping requirements of the base zone, other than landscaping required for parking lots, to be met by preserving, restoring and permanently protecting habitat on development sites within the Natural Resource Overlay District.

Response: Not applicable.

17.49.180 Mitigation Standards

Due to the large size of the required mitigation, many of the mitigation standards in 17.49.180 do not apply to the site. In lieu of the mitigation standards, the project will comply with the alternative mitigation standards in 17.49.190. However, the project will comply with the intent of 17.49.180 wherever possible as demonstrated below.

- The mitigation site will be located approximately 225 feet northwest of the proposed project.
- The mitigation will be contiguous to the NROD buffer of Wetlands J, K, and L, and is currently mapped as NROD according to the City's NROD map.
- All vegetation including invasive and nuisance species will be cleared during removal of the 21,000 cubic yards of wood waste and bark chips.
- The mitigation site will be planted and seeded with species on the Oregon City Native Plant List.
- Based on the proposed planting strategy to allow for planting in rows at 7 foot on-center spacing to facilitate maintenance, 762 trees and 436 shrubs per acre are recommended. Irrigation and imported, high quality topsoil will be used at the mitigation site to ensure planting success to achieve the functional equivalent of the planting densities set forth in the current municipal code.
- Trees and shrubs will be planted in triangular spacing at 7 feet on-center. Clusters of shrubs and groundcovers will be planted in clusters of two plants spaced at 18 inches on-center.
- Irrigation will be installed throughout the mitigation site to ensure 80% survival after 5 years.
- Nine species of trees and nine species of shrubs will be installed at the mitigation site. There will be less than one third of the trees in the same genus. Refer to Appendix A, Mitigation Plan Sheets for additional details on species diversity.
- Five years of monitoring and maintenance are proposed along with annual reporting. Photographs shall accompany the report that indicate the progress of the mitigation. Success criteria for the mitigation site at the end of the 5-year monitoring period will include the following: a minimum of 80% survival of trees and shrubs and no more than 10% cover of invasive species, as defined by the Oregon Department of Agriculture (ODA 2010).
- As the proposed project is a capital improvement project funded through a combination of federal, state and city funding, the Public Works Department, as the applicant, will provide appropriate oversight and assurances that all mitigation requirements shall be met.

- The applicant has elected to provide a deed restriction as a long-term protection instrument for the mitigation site. Upon completion, this deed restriction will be provided to the Planning Department.

17.49.190 Alternative Mitigation Standards

In lieu of the above mitigation standards of Section 17.49.180, the following standards may be used. Compliance with these standards shall be demonstrated in a mitigation plan report prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. At the applicant's expense, the City may require the report to be reviewed by an environmental consultant.

A. The proposed mitigation shall occur at a minimum 2:1 ratio of mitigation area to proposed disturbance area;

Response: An adjustment is requested. Due to the low quality of the existing NROD buffers, the heavily degraded nature of the mitigation site (refer to Section 5.0) that will be highly improved by the mitigation action, and the large acreage of mitigation that would be required at a 2:1 replacement, mitigation at a ratio of 1:1 is proposed. 4.7 acres of NROD impacts will be created for the proposed project.

B. The proposed mitigation shall result in a significant improvement of at least one functional value listed in section 17.49.10, as determined by a qualified environmental professional;

Response: The proposed mitigation will improve the following functional values:

B. Protect floodplains and wetlands, and restore them for improved hydrology, flood protection, aquifer recharge, and habitat functions.

C. Protect upland habitats, and enhance connections between upland and riparian habitats.

This will be accomplished through the native plant revegetation effort, soil replacement, and long-term protection of the site which will prevent future development at the mitigation site. Refer to Section 2.0 for further details.

C. There shall be no detrimental impact on resources and functional values in the area designated to be left undisturbed;

Response: There will be no impacts to wetlands and waters that surround the mitigation site. These areas will be considered no work zones and will be fenced accordingly during construction activities. The hydrology source for these wetlands and waters has been carefully considered and will not be altered by the proposed mitigation. The functional values of areas left undisturbed are expected to increase after the mitigation site is created due to the removal of invasive species in adjacent areas and reestablishment of a seed source, through mitigation planting, of native species in adjacent areas.

D. Where the proposed mitigation includes alteration or replacement of development in a stream channel, wetland, or other water body, there shall be no detrimental impact related to the migration, rearing, feeding or spawning of fish;

Response: No mitigation work will be conducted within a stream, wetland, or other water body. No migration, rearing, feeding or spawning habitat for native migratory fish (including endangered species) is located within the proposed project. The closest known migration,

rearing, feeding or spawning of native migratory fish is located within Abernethy Creek and the Clackamas River, located outside of the proposed project (StreamNet 2010. Available: www.streamnet.org. Accessed June 22, 2009 and June 25, 2010).

E. Mitigation shall occur on the site of the disturbance to the extent practicable. If the proposed mitigation cannot practically occur on the site of the disturbance, then the applicant shall possess a legal instrument, such as an easement, sufficient to carryout and ensure the success of the mitigation.

Response: All proposed impacts will permanently remove vegetation within the NROD, not allowing for mitigation at the site of the impact. Investing resources to restore NROD buffers in highway or road rights-of-way will encourage wildlife to utilize areas adjacent to roadways, which will lead to a potential increase in wildlife and vehicle collisions. In addition, the right-of-way space is confined and does not provide adequate acreage for NROD mitigation. Due to the large size of the required mitigation, locating the mitigation in one large area will be the best ecological option for the project, by providing a large, contiguous expanse of habitat within an otherwise developed landscape. This large area will be protected by an easement or deed restriction which will protect the mitigation site in perpetuity. In addition, one large mitigation area will provide the most cost efficient means to maintain and monitor the site.

An access agreement is being established with UPRR for the construction and planting work and for the monitoring period.

2.0 Functional Values

The resources and functional values to be restored, created, or enhanced through the mitigation plan;

According to 17.49.10, "The NROD contributes to the following functional values:

A. Protect and restore streams and riparian areas for their ecologic functions and as an open space amenity for the community.

B. Protect floodplains and wetlands, and restore them for improved hydrology, flood protection, aquifer recharge, and habitat functions.

C. Protect upland habitats, and enhance connections between upland and riparian habitat.

D. Maintain and enhance water quality and control erosion and sedimentation through the revegetation of disturbed sites and by placing limits on construction, impervious surfaces, and pollutant discharges.

E. Conserve scenic, recreational, and educational values of significant natural resources."

Response: The purpose of the proposed mitigation is to address functional values B and C as described below.

B. Protect floodplains and wetlands, and restore them for improved hydrology, flood protection, aquifer recharge, and habitat functions.

The proposed mitigation is located entirely within the Oregon City Design Flood Boundary. Approximately 21,000 cubic yards of wood waste material will be removed from the mitigation site for floodplain mitigation for the proposed project and an additional 25,000 cubic yards of wood waste material will be removed for future floodplain impacts. NROD mitigation will occur

after all floodplain mitigation has occurred. This site will be protected from future development, further aiding in the floodplain protection. The floodplain will be restored with native vegetation within the mitigation area.

C. Protect upland habitats, and enhance connections between upland and riparian habitat.

The proposed mitigation site is located within upland habitat. The site will serve to enhance the connections between Wetlands J, K, and L and Ditches 20 and 21.

17.49.200 Adjustment from Standards

If a regulated NROD use listed in Section 17.49.90 cannot meet one or more of the applicable NROD standards then an adjustment may be issued if all of the following criteria are met. Compliance with these criteria shall be demonstrated by the applicant in a written report prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. At the applicant's expense, the City may require the report to be reviewed by an environmental consultant. Such requests shall be processed under the Type III development permit procedure. The applicant shall demonstrate:

A. There are no feasible alternatives for the proposed use or activity to be located outside the NROD area or to be located inside the NROD area and to be designed in a way that will meet all of the applicable NR-SW development standards;

Response: Refer to Section 5.0, Impacts within the NROD, for a discussion on avoidance and minimization measures employed to reduce impacts within NROD buffers.

B. The proposal has fewer adverse impacts on significant resources and resource functions found in the local NROD area than actions that would meet the applicable environmental development standards;

Response: The proposed project has fewer adverse impacts on NROD resources and their functions than an action that would meet the applicable environmental development standards. This is due to the heavily degraded nature of the NROD buffers and the suitable mitigation that will create a higher functioning NROD area than currently exists within the project. Refer to Section 5.0, Impacts within the NROD, for details on the alternatives analysis conducted for the proposed project.

C. The proposed use or activity proposes the minimum intrusion into the NROD area that is necessary to meet development objectives;

Response: Refer to Section 5.0, Impacts within the NROD, for a discussion on avoidance and minimization measures employed to reduce impacts within NROD buffers. The smallest project footprint possible has been developed to reduce impacts within the NROD buffers.

D. Fish and wildlife passage will not be impeded; and

Response: Native migratory fish are not known to occur within the proposed project (Brick 2009). In addition, ODFW has determined that native migratory fish that would require fish passage are not present within the project area. The proposed project will not cause additional wildlife passage impacts above those already present from the existing roadways.

E. With the exception of the standard(s) subject to the adjustment request, all other applicable NROD standards can be met.

Response: As demonstrated by the responses provided in this Section, all standards will be met with the exception of the standards where adjustments have been requested.

Application Requirements

17.49.210 Type II Development Permit Application

Unless otherwise directed by the NROD standards, proposed development within the NROD shall be processed as a Type II development permit application. All applications shall include the items required for a complete application by Sections 17.49.220-230, and Section 17.50.080 of the Oregon City Municipal Code as well as a discussion of how the proposal meets all of the applicable NROD development standards 17.49.100-170.

Response: Not applicable.

17.49.220 Required Site Plans

Site plans showing the following required items shall be part of the application:

A. For the entire subject property (NROD and non-NROD areas):

1. The NROD district boundary. This may be scaled in relation to property lines from the NROD Map;

Response: The buffers, based on a field-verifiable wetland/waters delineation, have been included in Attachment A, Figures 2a-e. Based on discussions with the City Planner for Oregon City, the NROD District Boundary is the same as the individual NROD buffers (Pete Walter, pers. comm., City Planner, Oregon City May 6, 2010).

2. 100 year floodplain and floodway boundary (if determined by FEMA);

Response: The City's Design Flood Boundary (50.7 feet) is shown in Attachment A, Figure 2 (Pete Walter, pers. comm., City Planner, Oregon City May 6, 2010).

3. Creeks and other waterbodies;

Response: Wetlands and waters boundaries, based on a field-verifiable wetland/waters delineation, are included in Attachment A, Figures 2a-e.

4. Any wetlands, with the boundary of the wetland that will be adjacent to the proposed development determined in a wetlands delineation report prepared by a professional wetland specialist and following the Oregon Division of State Lands wetlands delineation procedures;

Response: All wetlands within or adjacent to the proposed project are shown in Attachment A, Figures 2a-e. All wetlands were delineated by a wetland scientist following DSL wetland delineation procedures (Refer to Attachment B for the Wetland/Waters Delineation Report).

5. Topography shown by contour lines of 2 or 1 foot intervals for slopes less than 15% and by 10 foot intervals for slopes 15% or greater;

Response: An adjustment is requested. Due to the large scale of the proposed project, contour lines at intervals appropriate for 1" = 200' scale figures (no greater than 5 foot intervals) are provided.

6. Existing improvements such as structures or buildings, utility lines, fences, driveways, parking areas, etc.

Response: These features are shown in Attachment A, Figures 2a-e.

7. Extent of the required Vegetated Corridor required by Table 17.49.110.

Response: The NROD buffers are shown in Attachment A, Figures 2a-e.

B. Within the NROD area of the subject property:

1. The distribution outline of shrubs and ground covers, with a list of most abundant species;

Response: An adjustment is requested. Due to the large scale of the project, showing the distribution outline of shrubs and ground covers is impractical. Based on discussions with the City Planner of Oregon City, it was agreed that a list of abundant species within each impacted NROD area would be shown instead (Attachment A, Figures 2a-e) (Pete Walter, pers. comm., City Planner, Oregon City May 6, 2010).

1. A list of most abundant species;

Response: A list of most abundant species within each impacted NROD buffer is included in Attachment A, Figures 2a-e and in Section 4.0 of this report.

2. Trees 6 inches or greater in diameter, identified by species. When trees are located in clusters they may be described by the approximate number of trees, the diameter range, and a listing of dominant species;

Response: A tree survey is currently being conducted. The tree locations, diameter, and species will be provided as soon as possible (as approved by Pete Walter) (Pete Walter, pers. comm., City Planner, Oregon City May 12, 2010).

3. An outline of the disturbance area that identifies the vegetation that will be removed. All trees to be removed with a diameter of 6 inches or greater shall be specifically identified as to number, trunk diameters and species;

Response: An outline of the disturbance area (area of potential impact) is shown in Attachment A, Figures 2a-e. Trees to be removed shall be provided on a plan sheet as soon as possible.

4. If grading will occur within the NROD, a grading plan showing the proposed alteration of the ground at 2 foot vertical contours in areas of slopes less than 15% and at 5 foot vertical contours of slopes 15% or greater.

Response: An adjustment is requested. Due to the large scale of the proposed project, contour lines at intervals appropriate for 1" = 200' scale figures (no greater than 5 foot intervals).

C. A construction management plan including:

1. Location of site access and egress that construction equipment will use;

Response: All construction access will utilize existing roadways. Mitigation site construction access is shown in Attachment A, Figure 2b.

2. Equipment and material staging and stockpile areas;

Response: All equipment and material staging and stockpiling will occur within the area of potential impact shown in Attachment A, Figures 2a-e.

3. Erosion control measures that conform to City of Oregon City erosion control standards;

Response: Refer to Attachment D, Preliminary Erosion and Sediment Control Plan.

4. Measures to protect trees and other vegetation located outside the disturbance area.

Response: Work exclusion zones will be established around sensitive areas, including protected trees. These areas will be fenced off to avoid damage, refer to Attachment D, sheet GA.

D. A mitigation site plan demonstrating compliance with Section 17.49.180 or 17.49.190, including:

1. Dams, weirs or other in-water features;

Response: Not applicable.

2. Distribution, species composition, and percent cover of ground covers to be planted or seeded;

Response: Refer to Attachment C (Mitigation Plan Report).

3. Distribution, species composition, size, and spacing of shrubs to be planted;

Response: Refer to Attachment C (Mitigation Plan Report).

4. Location, species and size of each tree to be planted;

Response: Refer to Attachment C (Mitigation Plan Report).

5. Stormwater management features, including retention, infiltration, detention, discharges and outfalls;

Response: Not applicable.

6. Water bodies or wetlands to be created, including depth;

Response: Not applicable.

7. Water sources to be used for irrigation of plantings or for a water source for a proposed wetland.

Response: Irrigation source shown on Sheet 1a of the Mitigation Plan Report (Attachment C).

17.49.230 Mitigation Plan Report

A mitigation plan report that accompanies the above mitigation site plan is also required. The report shall be prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. The mitigation plan report shall, at a minimum, discuss:

Response: The mitigation plan report was written by Kristen Currens, Biologist, Mason, Bruce & Girard, Inc. The planting plan was prepared by Tim Strand, Landscape Architect Associate, GreenWorks, PC.

A. Written responses to each applicable Mitigation Standard 17.49.180 or 17.49.190 indicating how the proposed development complies with the mitigation standards;

B. The resources and functional values to be restored, created, or enhanced through the mitigation plan;

C. Documentation of coordination with appropriate local, regional, state and federal regulatory/resource agencies such as the Oregon Department of State Lands (DSL) and the United States Army Corps of Engineers (USACE);

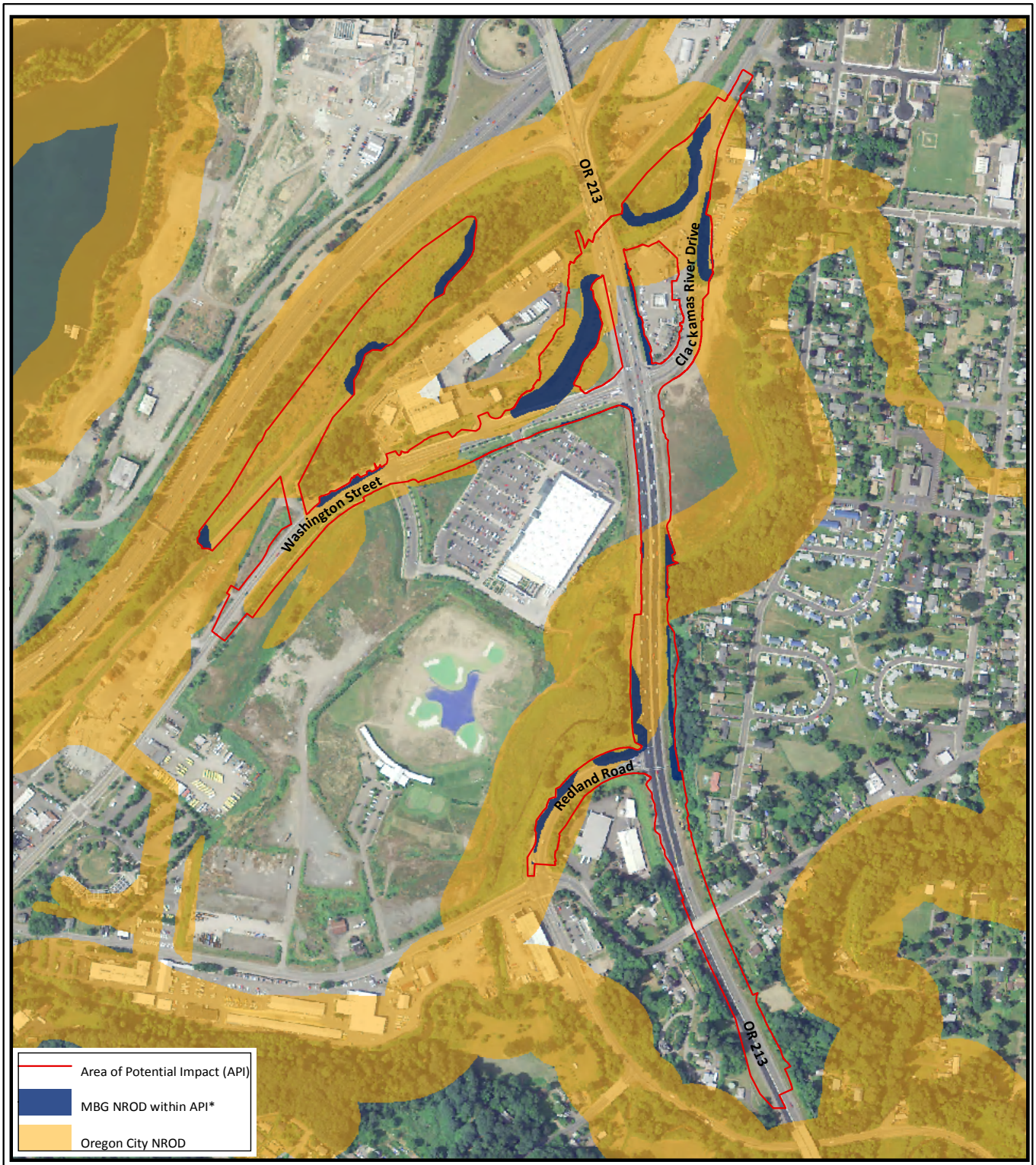
D. Construction timetables;

E. Monitoring and Maintenance practices pursuant to Section 17.49.230 (F) and a contingency plan for undertaking remedial actions that might be needed to correct unsuccessful mitigation actions during the first 5 years of the mitigation area establishment.

Response: Refer to Attachment C.

Miscellaneous

Response: This section does not apply to the proposed project.



* MBG NROD buffers based on Table 17.49.110 and a field-verifiable wetland/waters delineation. Accuracy is +/-0.1 feet.

1 inch = 575 feet

0 150 300 600 Feet

0 100 200 Meters

N

Figure 3

NROD Data

OR 213: I-205 - Redland Road O'xing (Oregon City) Project

Clackamas County, Oregon

This product is for informational purposes and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.

Source: Aerial photograph from NAIP 2009. API from OBEC. Oregon City NROD from Oregon City in June 2010. All reproduced for the purposes of this map.

Creation Date: 6/29/10

Pete Walter

Subject: FW: OR 213 NROD Review

From: Kristen K. Currens [mailto:KCurrens@masonbruce.com]
Sent: Friday, August 13, 2010 11:18 AM
To: Pete Walter
Subject: RE: OR 213 NROD Review

Pete,
Here is the information from the joint permit application that addresses what we are proposing for wetland, stream, and ditch mitigation. We are proposing to purchase 1.56 credits (1 credit=1 acre) of mitigation bank credit to compensate for impacting 1.56 acres of wetland and stream. We are also proposing to create 0.33 acre of new ditches and swales onsite to replace 0.18 acre of ACOE and DSL jurisdictional ditches.
Please let me know if you have any questions.
Kristen

Mitigation

*Describe the reasonably expected adverse effects of the development of this project and how the effects will be mitigated.**

- *For permanent impact to wetlands, complete and attach a Compensatory Wetland Mitigation (CWM) Plan. (See OAR 141-085-0705 for plan requirements)**
- *For permanent impact to waters other than wetlands, complete and attach a Compensatory Mitigation (CM) plan (See OAR 141-085-0765 for plan requirements)**
- *For permanent impact to estuarine wetlands, you must submit a CWM plan.**

Proposed permanent wetland impacts of 1.50 acres will require compensatory mitigation. On-site mitigation was considered for the proposed project. However, wetland creation would require greater than 2 acres of mitigation. Publically owned areas that would not require private property acquisition for an area this large with available hydrology are not available on-site or within close proximity to the proposed project. In addition, the cost of designing, constructing, maintaining, and monitoring a 2-acre site would be infeasible for a public entity.

Therefore, as the project is located in the service areas of two wetland mitigation banks, permanent impacts to wetlands are proposed to be mitigated within the Foster Creek and Mud Slough Wetland Mitigation Banks. Permanent impacts to Wetlands B, C, and E (1.37 acres) will be mitigated via purchase of wetland mitigation credits from the Foster Creek Wetland Mitigation Bank. Permanent impacts to Wetlands D, H and I (0.13 acre) will be mitigated via purchase of wetland mitigation credits from the Mud Slough Wetland Mitigation Bank.

Due to the small impact area in Stream 15 (0.055 acre), onsite mitigation and subsequent monitoring is not financially feasible. Therefore, impacts to Stream 15 will be mitigated via purchase of swale restoration credits at the Foster Creek Wetland Mitigation Bank (0.06 acre). Permanent impacts to jurisdictional ditches (0.18 acre) will be mitigated onsite by the creation of 0.33 acre of new ditches and swales (not including bio-retention ponds or bio-slopes). These ditches will be graded to approximately similar elevations as the impacted ditches so that they intercept approximately the same amount of ground water and maintain similar hydrologic and vegetative conditions as the existing ditches.

Kristen Currens
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zed use, interpretation or modification of the files or text.

TREE REMOVAL PERMIT NARRATIVE
OR 213: I-205 – REDLAND ROAD OVERCROSSING PROJECT

The following narrative provides supporting information to obtain written approval to remove existing trees during construction of the OR 213: I-205 – Redland Road Overcrossing project (hereinafter referred to as the Project), pursuant to the Oregon City Municipal Code (OCMC) Chapter 17.41 (*Tree Protection Standards* [TPS]), and OCMC Chapter 12.08 (*Public and Street Trees* [PST]). The Applicant, the City of Oregon City (City) is proposing to improve traffic flow and safety along OR 213. The following narrative provides a brief overview of the project and documents its compliance with OCMC Chapters 17.41 and 12.08.

Project Location

The proposed Project is located in Oregon City, Clackamas County, Oregon. It begins on OR 213 at the I-205 interchange and continues south along OR 213 to the bridge over Redland Road. Portions of the project extend west from OR 213 along Washington Street, east from OR 213 along Clackamas River Drive, and west from OR 213 along Redland Road to Abernethy Road.. The project is located within the City limits.

The proposed Project improvements are located within the existing City public road right-of-way, Oregon Department of Transportation (ODOT) public road right-of-way, and a portion of the Stein Oil property taxlot number 2-2E-29-02700. Currently the portion of Stein Oil property is in the process of being acquired by the City for public road right-of-way..

Project Overview

The proposed Project includes realignment of Washington Street and Clackamas River Drive to cross under OR 213 at a new overcrossing bridge. A roundabout will be added along Clackamas River Drive east of the new intersection of OR 213 and Washington Street/Clackamas River Drive. These modifications combine to create a jughandle intersection configuration that eliminates left-turn and east-west cross movements at the OR 213 intersection. The Project also involves roadway widening and lane realignments on OR 213 to accommodate three travel lanes in each direction and both southbound (SB) and northbound (NB) right-turn lanes at the jughandle intersection. The OR 213 roadway and the new bridge will be constructed to accommodate 12-foot-wide travel lanes, 10-foot-wide shoulders (includes 2 feet shy distance), and an 8-foot-wide median.

Additional improvements involve roadway widening to accommodate the upgrade of the NB left-turn lane at the Redland Road intersection, the construction of a SB right-turn lane at the Redland Road intersection, and widening and lane realignment changes to Redland Road. Redland Road will be widened to provide two 12-foot travel lanes approaching OR 213, one 12-foot travel lane approaching Abernethy Road, one 14-foot median, and two 6-foot

shoulders. Stormwater facilities as well as landscaping will be added throughout the proposed Project.

OCMC Chapter 17.41

The OCMC Chapter 17.41 establishes the City's TPS, which are intended to ensure that new developments are designed in a manner that preserves trees to the maximum extent practicable.[1] The provisions of this chapter apply to development applications subject to Site Plan and Design Review (OCMC Chapter 17.62) standards. All applicants must demonstrate full compliance with the terms of the OCMC TPS prior to project approval.[2]

This narrative provides preliminary information regarding the number of trees that will be removed during construction activities. A complete tree survey will be conducted to accurately assess the total number, caliper, and location of trees to be removed. This information will be provided to the City for approval prior to Planning Commission review.

Compliance Options

Based on the scope of work proposed for this Project, the Applicants have opted to comply with the TPS through Option 1, Mitigation. The Applicant has identified all trees to be protected and removed within the project area, and is providing mitigation for the removed trees by replanting pursuant to the TPS requirements.

Tree Removal and Replanting

It is currently anticipated that the Applicant will be required to remove approximately 195 regulated trees from within the project construction area. Tree removal will occur throughout the project area in order to accommodate roadway widening and realignment as well as the construction of a temporary access road to the proposed mitigation site.

In accordance with OCMC § 17.41.060, the Applicant will plant replacement trees for all regulated trees that are removed from within the construction area at the prescribed ratios based on the diameter at breast height (DBH) of the removed trees. The total DBH of the removed trees will be obtained during the tree survey. This information will be compiled upon survey completion and provided to the City for review and approval. Currently, the Applicant is proposing to plant approximately 3,584 trees within the mitigation area. This quantity will likely exceed the minimum requirements specified in OCMC Table 17.41.060-1. All proposed trees were selected from the approved Oregon City Native Plant List. Please refer to the Natural Resource Overlay District (NROD) Mitigation Plan for further details on tree species to be planted as mitigation.

Planting Area Priority

Due to project site restrictions and property ownership, the Applicant is proposing to utilize an off-site replacement tree planting location. This City-owned property is located between the UPRR tracks and I-205 (northeast of the Metro Transfer Station property). The tree replacement activities will be conducted in conjunction with the required NROD and Flood Management

[1] OCMC § 17.41.010
[2] OCMC § 17.41.020

Overlay District (FMOD) mitigation. Please refer to the NROD Mitigation Plan for further details.

Regulated Tree Protection Procedures

Tree protection measures have been identified on the attached Preliminary Tree Removal and Mitigation Plan. The Project conforms to the following tree protection standards as outlined in OCMC § 17.41.130(B)(1-10):

Standard 1: Except as otherwise determined by the community development director, all required tree protection measures set forth in this section shall be instituted prior to any development activities, including but not limited to clearing, grading, excavation or demolition work, and such measures shall be removed only after completion of all construction activity, including necessary landscaping and irrigation installation, and any required plat, tract, conservation easement or restrictive covenant has been recorded.

Response 1: The Applicant shall install all required tree protection measures prior to commencing construction activities, and will remove all installed tree protection measures upon project completion.

Standard 2: Approved construction fencing, a minimum of 4 feet tall with steel posts placed no farther than 10 feet apart, shall be installed at the edge of the tree protection zone or dripline, whichever is greater. An alternative dripline fencing material secured by metal posts staked at no more than 4 feet on center around the dripline of the tree or grove may be used with the approval of the community development director.

Response 2: The Applicant will utilize existing roadway fences where available to protect existing trees that will not be removed during construction activities. Where necessary, new fencing will be installed and removed following project completion. All fencing will be a minimum of 4 feet tall with steel posts placed no farther than 10 feet apart.

Standard 3: Approved signs shall be attached to the fencing stating that inside the fencing is a tree protection zone, not to be disturbed unless prior approval has been obtained from the community development director.

Response 3: The Applicant shall provide appropriate signage along newly installed and existing fences proposed for tree protection, to deter unauthorized disturbance.

Standard 4: No construction activity shall occur within the tree protection zone, including, but not limited to, dumping or storage of materials such as building supplies, soil, waste items; nor passage or parking of vehicles or equipment.

Response 4: No construction activities are proposed within the tree protection zone. All staging and stockpiling will occur outside of the tree protection zone, in an approved upland location.

Standard 5: The tree protection zone shall remain free of chemically injurious materials and liquids such as paints, thinners, cleaning solutions, petroleum products, and concrete or dry wall excess, construction debris, or run-off.

Response 5: The Applicant does not propose to dispose of chemicals or other construction debris within the tree protection zone. These materials will be discarded in an approved upland location.

Standard 6: No excavation, trenching, grading, root pruning or other activity shall occur within the tree protection zone unless directed by an arborist present on-site and approved by the community development director.

Response 6: All proposed tree protection measures will be implemented prior to construction to preclude any construction activities from occurring within the tree protection zone.

Standard 7: No machinery repair or cleaning shall be performed within 10 feet of the dripline of any trees identified for protection.

Response 7: All equipment repair and cleaning will be performed at a distance greater than 10 feet from the dripline of all trees proposed for protection.

Standard 8: Digging a trench for placement of public or private utilities or other structure within the critical root zone of a tree to be protected is prohibited. Boring under or through the tree protection zone may be permitted if approved by the community development director and pursuant to the approved written recommendations and on-site guidance and supervision of a certified arborist.

Response 8: No excavation within the critical root zone of the protected trees is proposed. All excavation will occur at a distance far enough away to avoid damaging the protected trees.

Standard 9: The City may require that a certified arborist be present during any construction or grading activities that may affect the dripline of trees to be protected.

Response 9: No grading or construction activities are proposed that will disturb the dripline of protected trees. If changes to the site design require that activities occur within a distance close enough to the tree protection zone that it might result in adverse impacts, the Applicant shall contact a certified arborist to oversee and monitor construction activities.

Standard 10: The community development director may impose conditions to avoid disturbance to tree roots from grading activities and to protect trees and other significant vegetation identified for retention from harm. Such conditions may include, if necessary, the advisory expertise of a qualified consulting arborist or horticulturist both during and after site preparation, and a special maintenance/management program to provide protection to the resource as recommended by the arborist or horticulturist.

Response 10: As indicated within Response 9, no grading or construction activities are proposed that will disturb the dripline of protected trees. If modifications to the site design result in the need to conduct activities within the critical root zone of a protected tree, the Applicant shall implement all necessary precautionary measures to avoid or minimize unauthorized impacts to protected trees.

OCMC Chapter 12.08

In addition to the 195 regulated trees, the Project will also require the removal of approximately 43 street trees. These trees are currently located along Washington Street and Clackamas River Drive. The removal of these trees is required to accommodate road widening and realignment activities. As a result, the Applicant is required to comply with OCMC Chapter 12.08. The following provides preliminary information regarding the number and caliper of the street trees that will be removed during construction activities. A complete tree survey will be conducted to accurately assess the total number, caliper, and location of street trees to be removed. This information will be provided to the City for approval prior to Planning Commission review.

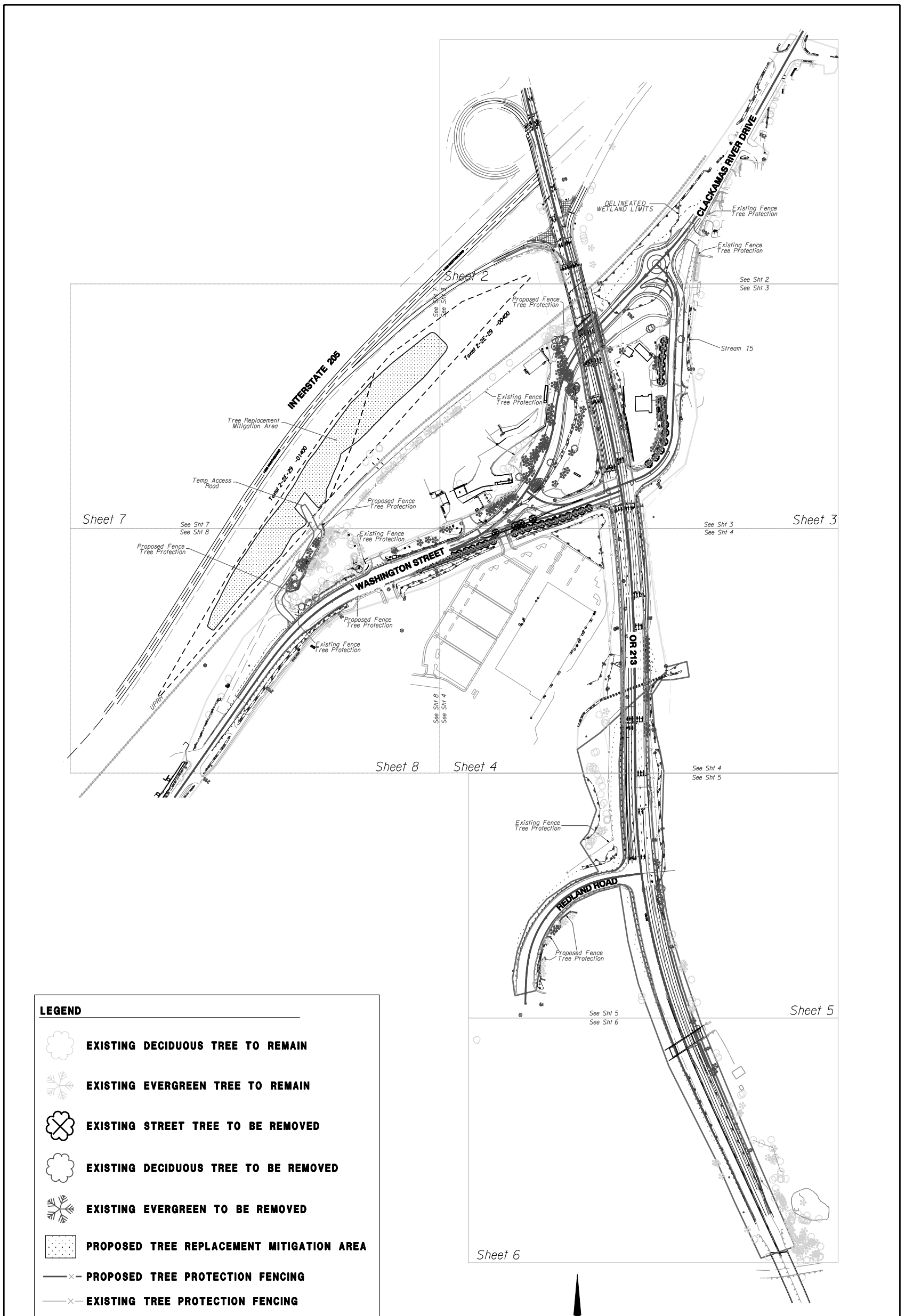
According to OCMC § 12.08.035, existing street trees shall be retained and protected during construction unless removal is specified as part of a land use approval or in conjunction with a public facilities construction project. Because the Applicant cannot avoid removing the existing street trees, they must be replaced in accordance with OCMC Table 12.08.035. All new trees will have a minimum 2-inch caliper trunk measured 6 inches above the root crown. Replacement mitigation will be provided within existing or proposed rights-of-way (ROW), or within an approved off-site planting location. These replacement street trees shall be provided in addition to the required new street trees in accordance with OCMC § 12.08.015. A Preliminary Streetscape Plan has been provided.

Conclusions

The proposed OR 213: I-205 – Redland Road Overcrossing project will provide improved traffic flow and safety along OR 213 between the I-205 interchange and the Redland Road overcrossing. In order to construct the proposed improvements, approximately 195 regulated trees and 43 street trees will need to be removed from within the construction area. As compensation for the regulated trees, the Applicant is proposing to provide replacement trees at a ratio that will likely exceed the minimum requirements of the TPS. Proposed mitigation will occur on a property currently owned by the Applicant.

In addition, the Applicant will be providing street tree replacement mitigation in accordance with the PST requirements. Mitigation for the removed street trees will be provided within existing or proposed ROW, or at an approved off-site location. For those trees within the project area that will be preserved, appropriate protection measures consisting of existing and proposed fencing will be provided prior to the onset of construction activities.

In summary, the Project has been designed in a manner that preserves trees to the maximum extent practicable. All removed trees (regulated and street trees) shall be replaced at a ratio equal to or greater than the minimum requirements, and all preserved trees shall be protected with approved fencing. The OR 213: I-205 – Redland Road Overcrossing project has been designed consistent with the TPS and the PST provisions outlined in the OCMC Chapters 17.42 and 12.08.


INTERSTATE 205
CLACKAMAS RIVER DRIVE
WASHINGTON STREET
OR 213
REDLAND ROAD
UPRR
DELINEATED WETLAND LIMITS
Existing Fence Tree Protection
Proposed Fence Tree Protection
Tree Replacement Mitigation Area
Temp. Access Road
Stream 15
Taxlot 2-2E-29 -01400
Taxlot 2-2E-29 -00400
Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6
Sheet 7
Sheet 8
See Sht 2
See Sht 3
See Sht 4
See Sht 5
See Sht 6
See Sht 7
See Sht 8
LEGEND
EXISTING DECIDUOUS TREE TO REMAIN
EXISTING EVERGREEN TREE TO REMAIN
EXISTING STREET TREE TO BE REMOVED
EXISTING DECIDUOUS TREE TO BE REMOVED
EXISTING EVERGREEN TO BE REMOVED
PROPOSED TREE REPLACEMENT MITIGATION AREA
PROPOSED TREE PROTECTION FENCING
EXISTING TREE PROTECTION FENCING
SCALE 1" = 400'
400 200 0 400
FEET
N
PRELIM. TREE REMOVAL AND MITIGATION PLAN
OBEC CONSULTING ENGINEERS
Corporate Office: 920 COUNTRY CLUB ROAD, SUITE 100B EUGENE, OREGON 97401-6089, 541-683-6090
2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1295, 503-589-4100
831 O'HARE PARKWAY MEDFORD, OREGON 97504-4005, 541-774-5590
5005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035, 503-620-6103
OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON
TREE REMOVAL PERMIT NARRATIVE
DATE: 5/28/2010
SHEET 1 OF 9
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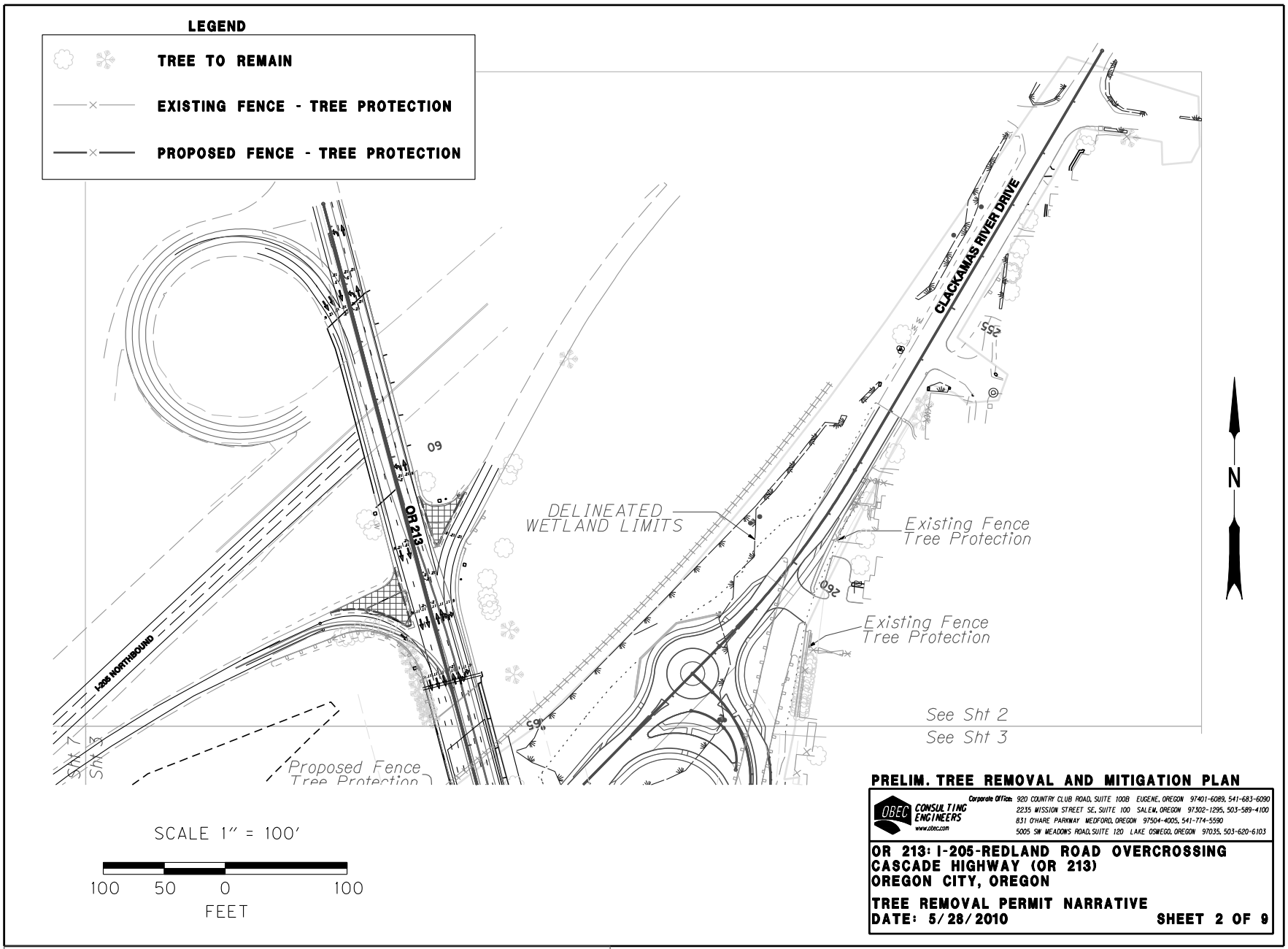

PRELIM. TREE REMOVAL AND MITIGATION PLAN

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831 O'HARE PARKWAY MEDFORD, OREGON 97504-4005, 541-774-5590
5005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035, 503-620-6103

OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON

TREE REMOVAL PERMIT NARRATIVE
DATE: 5/28/2010 SHEET 2 OF 9

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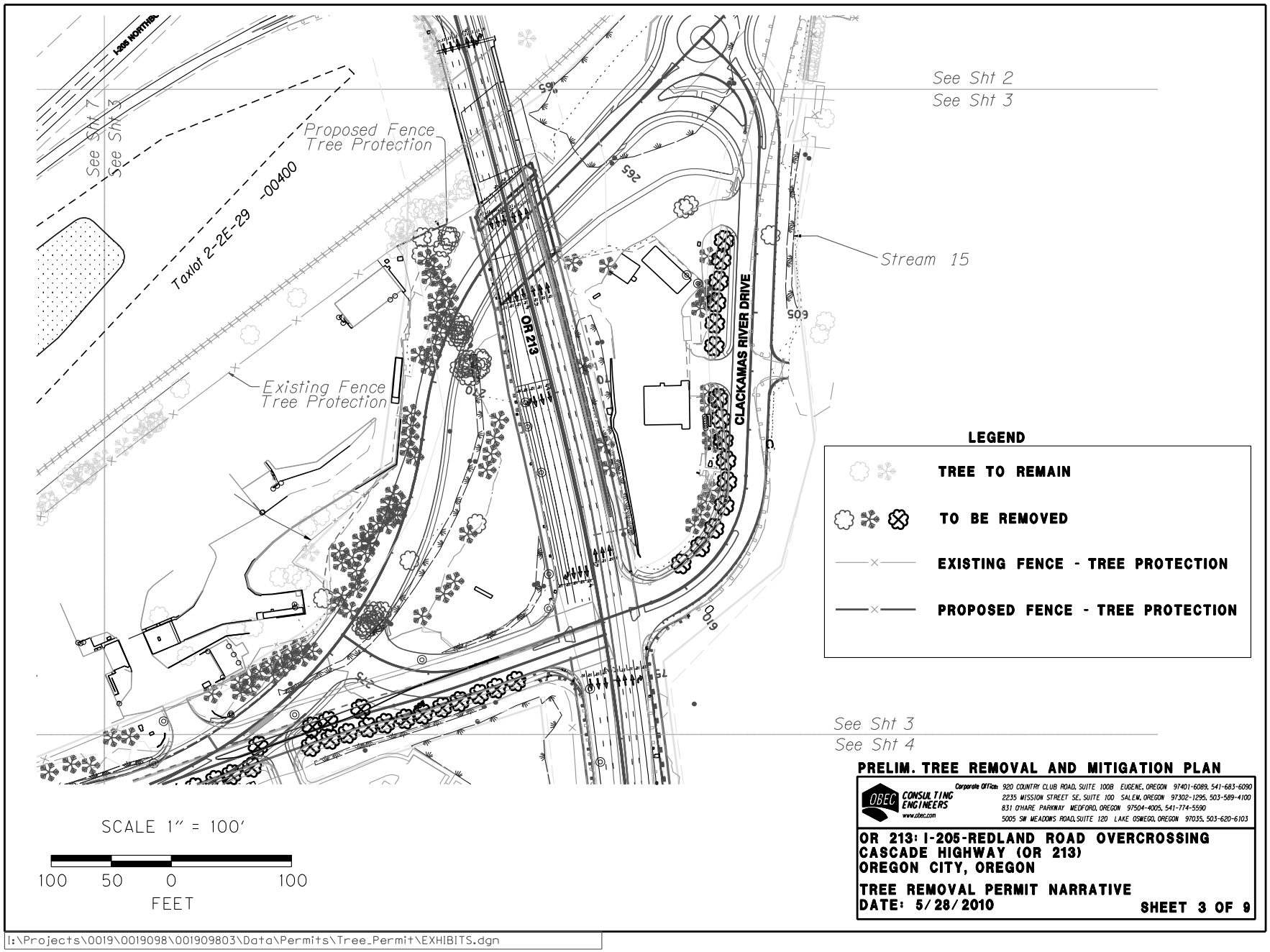
See Sht 2
See Sht 3
See Sht 1
See Sht 3
Proposed Fence
Tree Protection
Taxlot 2-2E-29 -00400
Existing Fence
Tree Protection
Stream 15
OR 213
CLACKAMAS RIVER DRIVE
See Sht 3
See Sht 4
LEGEND
TREE TO REMAIN
TO BE REMOVED
EXISTING FENCE - TREE PROTECTION
PROPOSED FENCE - TREE PROTECTION
SCALE 1" = 100'
100 50 0 100
FEET
PRELIM. TREE REMOVAL AND MITIGATION PLAN
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831 O'HARE PARKWAY MEDFORD, OREGON 97504-4005, 541-774-5590
5005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035, 503-620-6103
OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON
TREE REMOVAL PERMIT NARRATIVE
DATE: 5/28/2010
SHEET 3 OF 9
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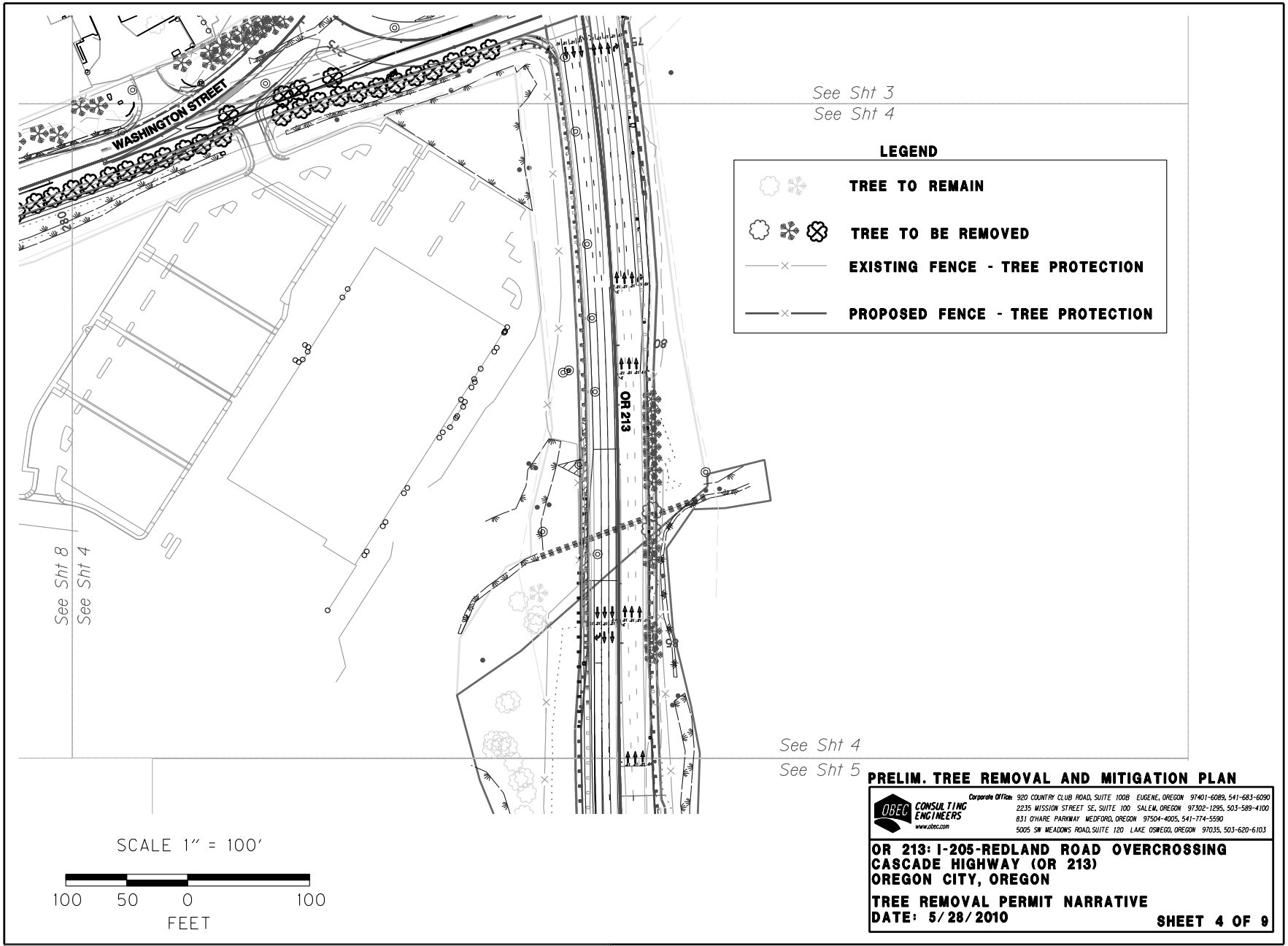

PRELIM. TREE REMOVAL AND MITIGATION PLAN

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831 O'HARE PARKWAY MEDFORD, OREGON 97504-4005, 541-774-5590
5005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035, 503-620-6103

OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON

TREE REMOVAL PERMIT NARRATIVE
DATE: 5/28/2010 **SHEET 4 OF 9**

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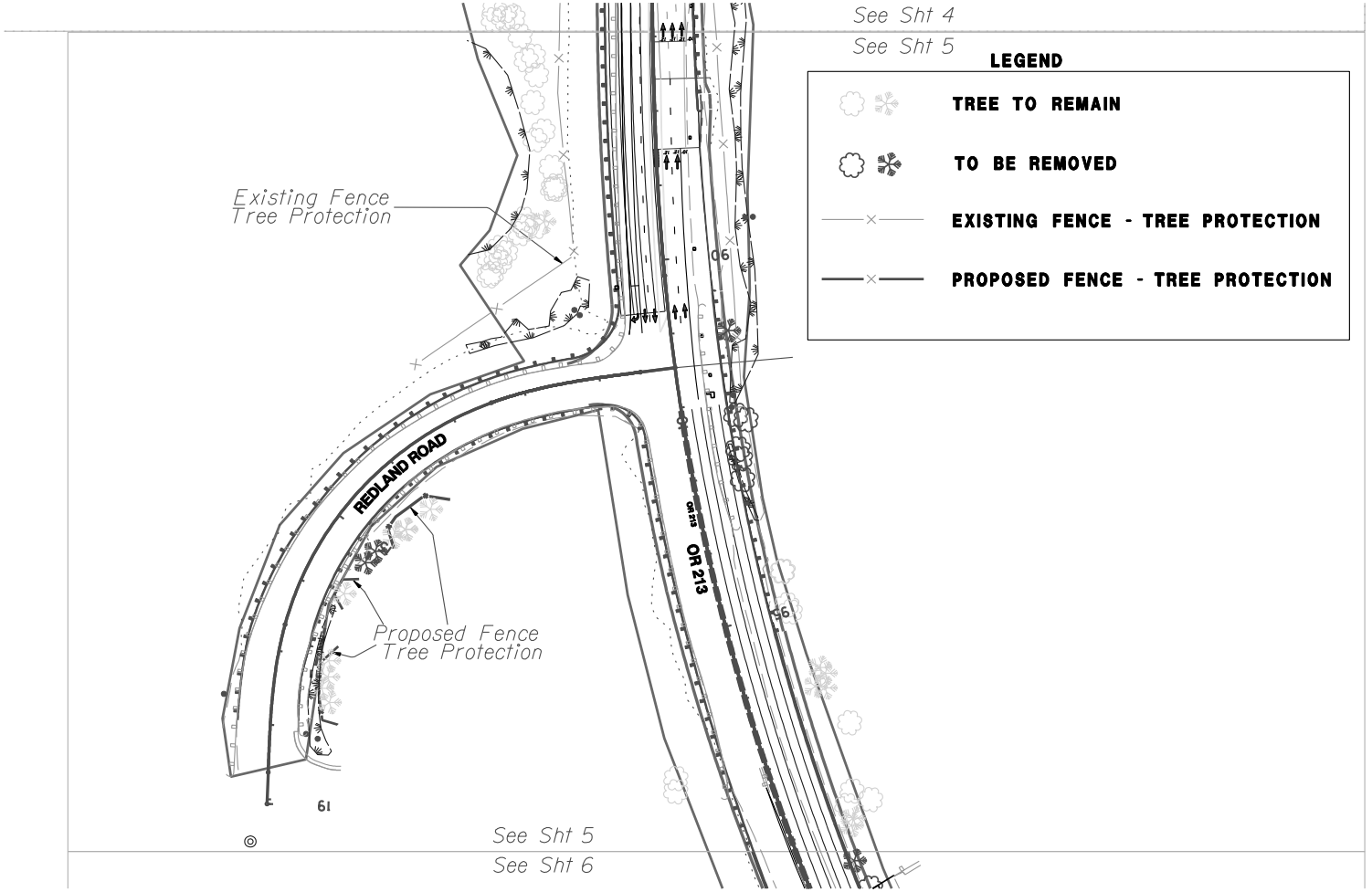

SCALE 1" = 100'

100 50 0 100
FEET

PRELIM. TREE REMOVAL AND MITIGATION PLAN

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5005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035, 503-620-6103

OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON

TREE REMOVAL PERMIT NARRATIVE
DATE: 5/28/2010

SHEET 5 OF 9

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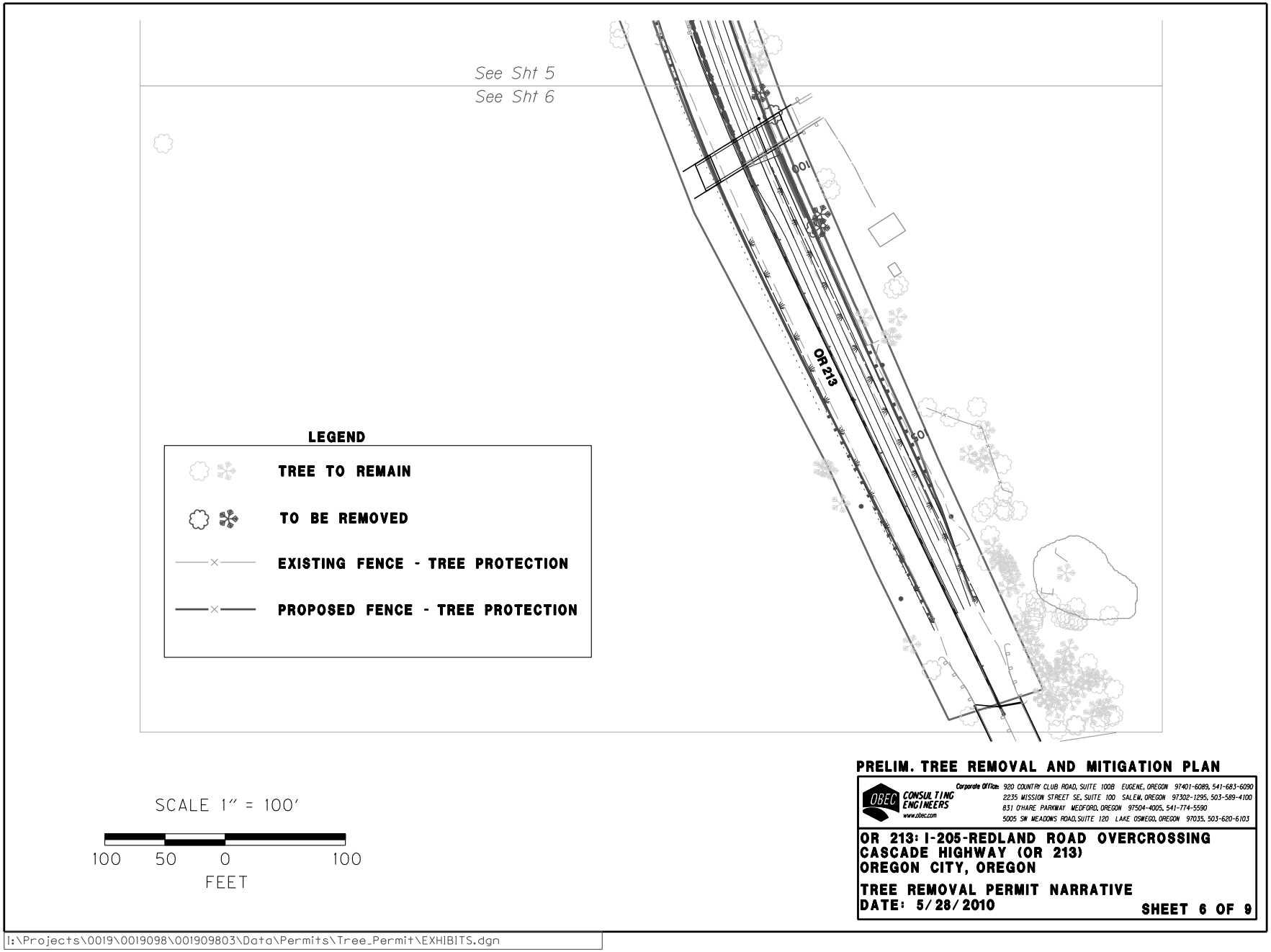
See Sht 5
See Sht 6
OR 213
100
50
LEGEND
TREE TO REMAIN
TO BE REMOVED
EXISTING FENCE - TREE PROTECTION
PROPOSED FENCE - TREE PROTECTION
SCALE 1" = 100'
100 50 0 100
FEET
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OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON
TREE REMOVAL PERMIT NARRATIVE
DATE: 5/28/2010
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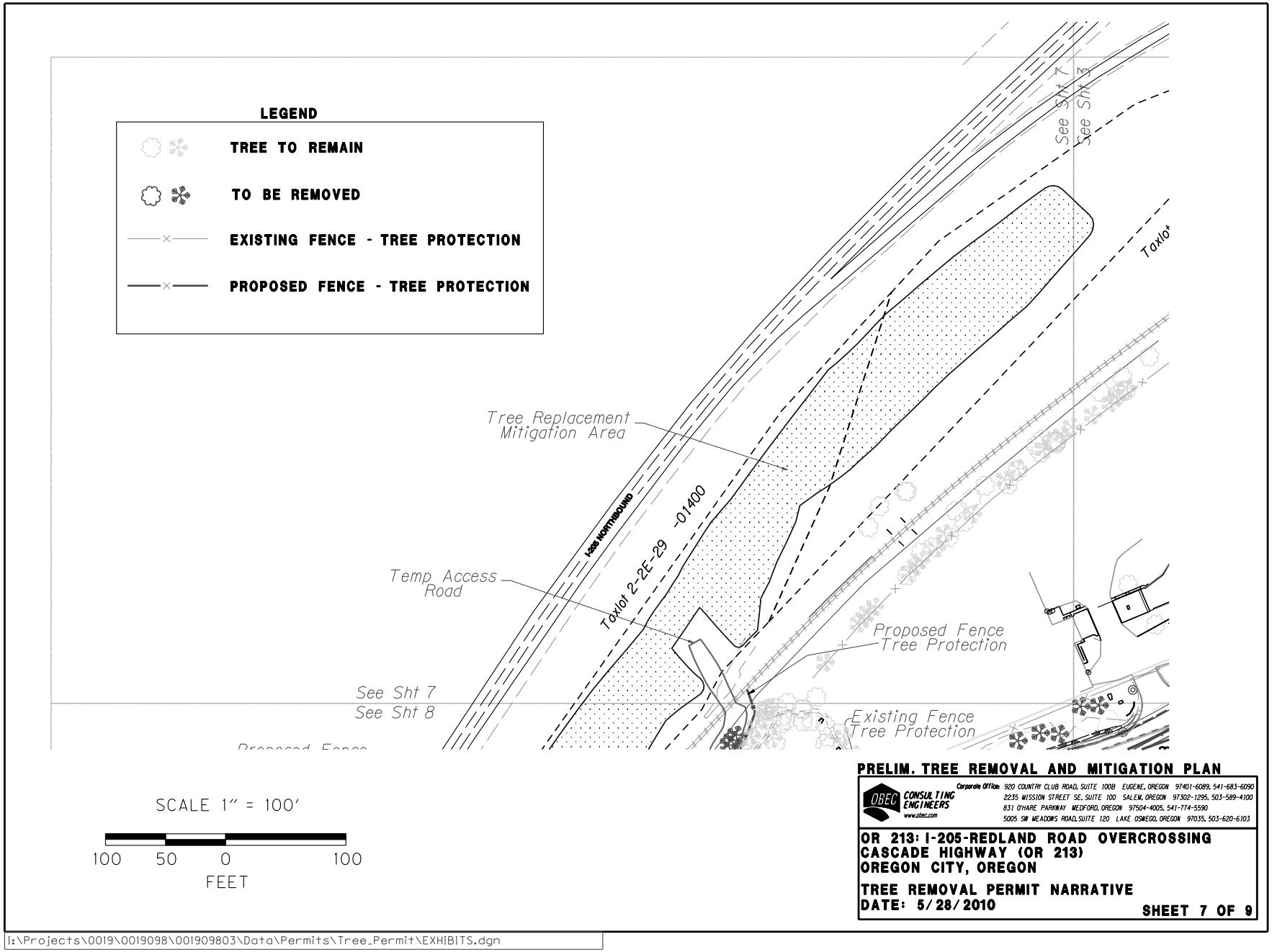
LEGEND
TREE TO REMAIN
TO BE REMOVED
EXISTING FENCE - TREE PROTECTION
PROPOSED FENCE - TREE PROTECTION
See Sht 7
See Sht 8
Taxlot
Tree Replacement
Mitigation Area
I-205 NORTHBOUND
Taxlot 2-2E-29 -01400
Temp Access
Road
Proposed Fence
Tree Protection
See Sht 7
See Sht 8
Existing Fence
Tree Protection
SCALE 1" = 100'
100 50 0 100
FEET
PRELIM. TREE REMOVAL AND MITIGATION PLAN
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TREE REMOVAL PERMIT NARRATIVE
DATE: 5/28/2010
SHEET 7 OF 9
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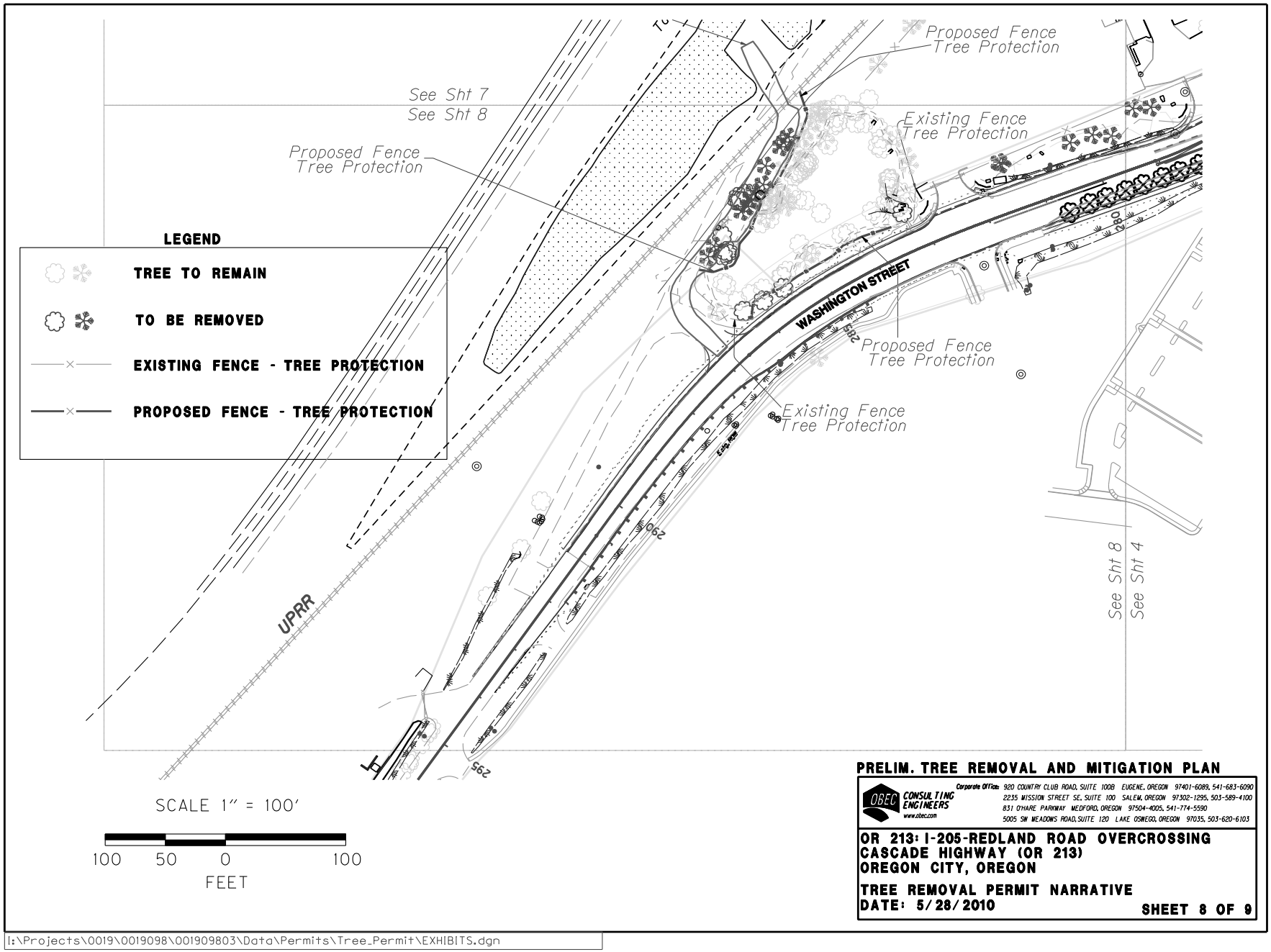
See Sht 7
See Sht 8
Proposed Fence
Tree Protection
Existing Fence
Tree Protection
Proposed Fence
Tree Protection
LEGEND
TREE TO REMAIN
TO BE REMOVED
EXISTING FENCE - TREE PROTECTION
PROPOSED FENCE - TREE PROTECTION
WASHINGTON STREET
Proposed Fence
Tree Protection
Existing Fence
Tree Protection
UPRR
See Sht 8
See Sht 4
SCALE 1" = 100'
100 50 0 100
FEET
PRELIM. TREE REMOVAL AND MITIGATION PLAN
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OR 213: I-205-REDLAND ROAD OVERCROSSING
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TREE REMOVAL PERMIT NARRATIVE
DATE: 5/28/2010
SHEET 8 OF 9
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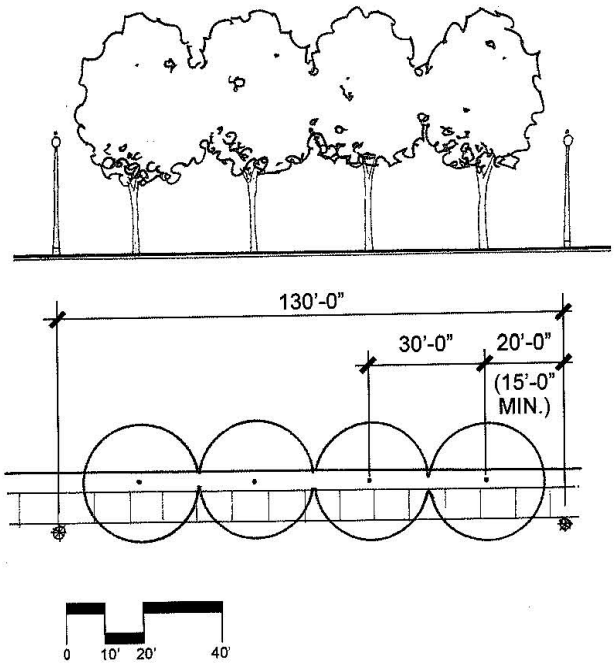
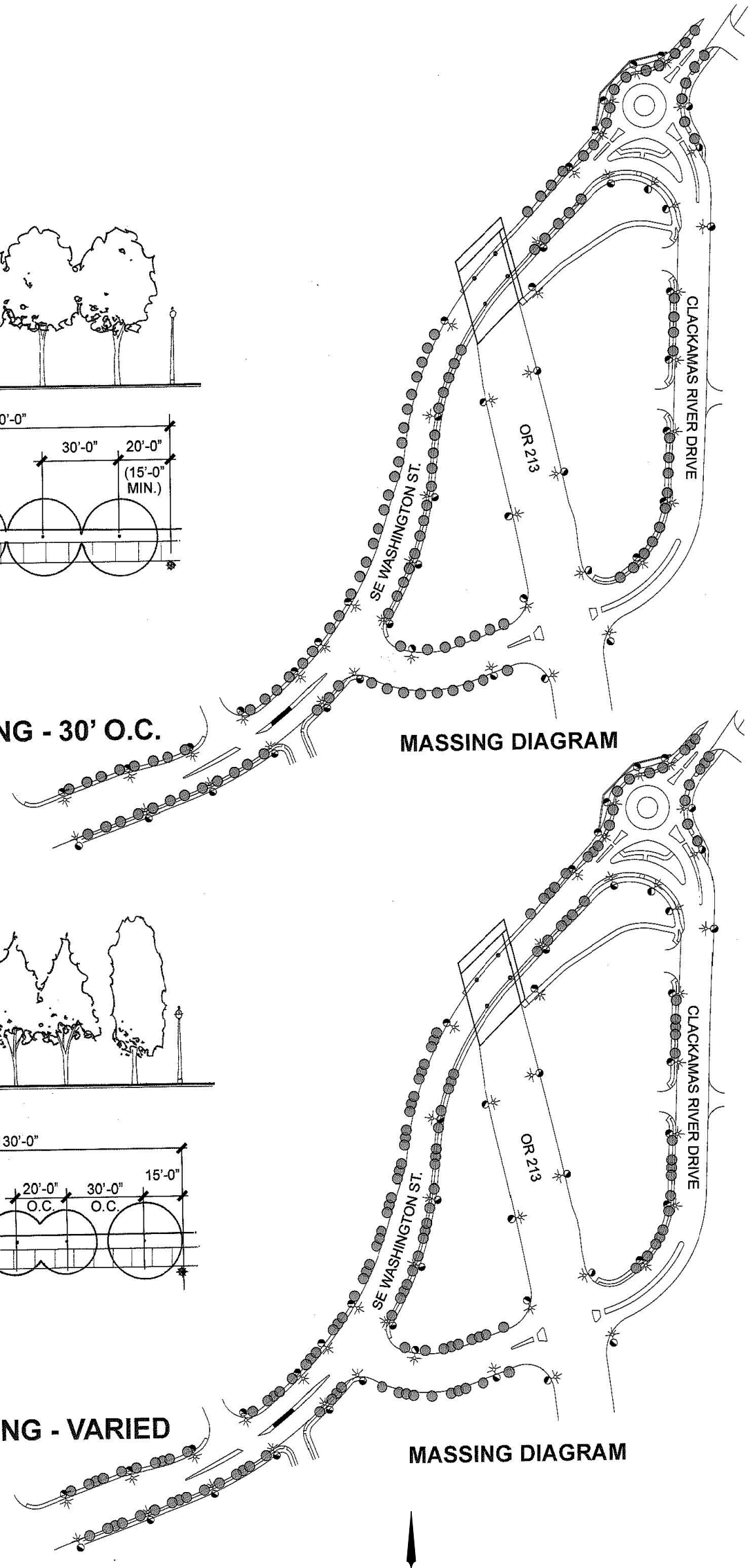
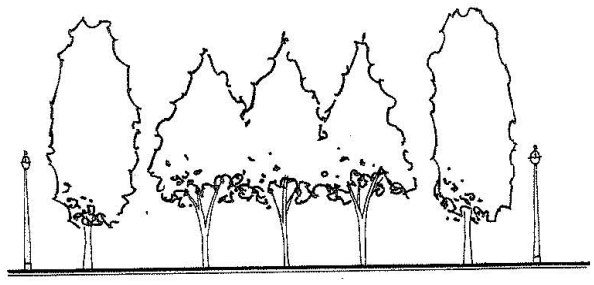
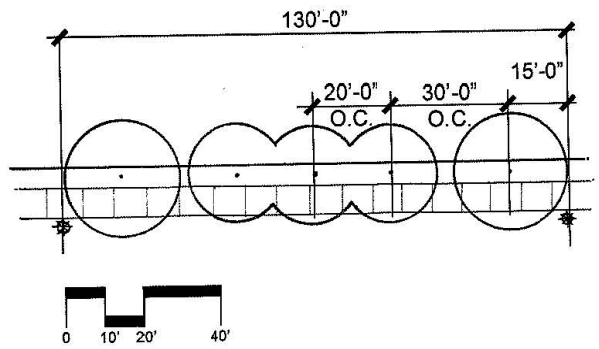


1 **TREE SPACING - 30' O.C.**
PLAN & ELEVATION



MASSING DIAGRAM





2 **TREE SPACING - VARIED**
PLAN & ELEVATION

MASSING DIAGRAM

N

MAY 2010 GREENWORKS

PRELIMINARY STREETSCAPE PLAN
PREPARED BY GREENWORKS.

PRELIMINARY STREETSCAPE PLAN

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2235 MISSION STREET SE, SUITE 100 SALEM, OREGON 97302-1295, 503-589-4100
831 O'HARE PARKWAY MEDFORD, OREGON 97504-4005, 541-774-5590
5005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035, 503-620-6103

OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON

TREE REMOVAL PERMIT NARRATIVE
DATE: 5/28/2010 SHEET 9 OF 9

FLOOD MANAGEMENT OVERLAY DISTRICT PERMIT NARRATIVE
OR 213: I-205 – REDLAND ROAD OVERCROSSING PROJECT

The following narrative and attached supplemental documents provide supporting information related to the attainment of a floodplain permit pursuant to the requirements of the Oregon City Municipal Code (OCMC) Chapter 17.42 (*Flood Management Overlay District* [FMOD]) for the OR 213: I-205 – Redland Road Overcrossing project (hereinafter referred to as the Project). The Applicant, the City of Oregon City (City), is proposing to improve traffic flow and safety along OR 213. The following narrative provides a brief overview of the project and documents its compliance with OCMC Chapter 17.42.

Project Location

The proposed Project is located in Oregon City, Clackamas County, Oregon. It begins on OR 213 at the I-205 interchange and continues south along OR 213 to the bridge over Redland Road. Portions of the project extend west from OR 213 along Washington Street, east from OR 213 along Clackamas River Drive, and west from OR 213 along Redland Road to Abernethy Road.

Portions of the proposed Project improvements are located within the FMOD. The FMOD fill impacts are located within the existing City public road right-of-way, Oregon Department of Transportation (ODOT) public road right-of-way, and a portion of the Stein Oil property taxlot number 2-2E-29-02700. Currently the portion of Stein Oil property is in the process of being acquired by the City for public road right-of-way.

Project Overview

As previously indicated, the goal of the Project is to improve traffic flow and safety on OR 213 between the I-205 interchange and the Redland Road overcrossing for the following reasons:

- To maintain acceptable traffic egress and safety levels on OR 213.
- This section of OR 213 is designated as an expressway and serves as an important southeast Portland Metropolitan Area north-south transportation facility.
- To avoid or minimize traffic congestion on OR 213 caused by traffic backing up from the Washington Street/Clackamas River Drive intersection to the I-205 interchange and the mainline freeway.
- To allow for continued development along this section of OR 213 and the surrounding area, which is within the City limits and the urban growth boundary of the Portland Metropolitan Area.

The proposed Project includes realignment of Washington Street and Clackamas River Drive to cross under OR 213 at a new overcrossing bridge. A roundabout will be added along Clackamas River Drive east of OR 213. These modifications combine to create a jughandle intersection configuration that eliminates left-turn and east-west cross movements at the OR 213 intersection, reducing the signal phases from eight to two. The Project also involves roadway widening and lane realignments on OR 213 to accommodate three travel lanes in each direction and both southbound (SB) and northbound (NB) right-turn lanes at the jughandle intersection. The OR 213 roadway and the new bridge will be constructed to accommodate 12-foot-wide travel lanes, 10-foot shoulder widths (includes 2 feet shy distance), and an 8-foot-wide median.

Additional improvements involve roadway widening to accommodate the upgrade of the NB left-turn lane at the Redland Road intersection, the construction of a SB right-turn lane at the Redland Road intersection, and widening and lane realignment changes to Redland Road. Redland Road will be widened to provide two 12-foot travel lanes approaching OR 213, one 12-foot travel lane approaching Abernethy Road, one 14-foot median, and two 6-foot shoulders.

OCMC Chapter 17.42

The OCMC Chapter 17.42 establishes the City's FMOD: an overlay zone classification defining areas subject to periodic flooding or inundation which can result in property harm or loss, disruption of public services, hazards for public health, or added expense for public services.[1] The provisions of this chapter apply to development within the FMOD, which includes all areas of special flood hazards and all mapped flood management areas[2] within the City.[3] No structure or land shall be constructed, located, extended, converted, or altered without full compliance with the terms of the OCMC floodplain regulations.[4]

Flood Management Area Standards

The Project involves lands currently mapped within the designated flood management areas. As a result, the project has been designed to be consistent with all applicable flood management area standards outlined in OCMC § 17.42.170, as discussed below.

Uses Permitted Outright

The Project is required to comply with the provisions of OCMC Chapter 17.49 (*Natural Resource Overlay District* [NROD]), which protects the habitat and associated functions of the streams, riparian corridors, wetlands and the regulated upland habitats found in the City.[5] As a requirement of this chapter, the Applicant has to provide mitigation for unavoidable impacts to regulated resources during project construction. The proposed mitigation will occur on a parcel currently owned by the City that is mapped within the 100-year floodplain. According to

[1] OCMC § 17.42.010(A)
[2] Mapped flood management areas include: land contained within the 100-year floodplain, flood area and floodway as shown on the Federal Emergency Management Agency flood insurance maps, including areas of special flood hazard and the area of inundation for the February 1996 flood; and lands that have physical or documented evidence of flooding within recorded history based on aerial photographs of the 1996 flooding and/or the water quality and flood management areas maps.
[3] OCMC § 17.42.030(B)(1-2)
[4] OCMC § 17.42.050
OCMC § 17.49.020

OCMC § 17.42.170(A)(2), this type of use is permitted outright within flood management areas and required no further approval or mitigation.

Provisional Uses

The Project area is primarily zoned mixed-use downtown (MUD), intermixed with several parcels with either general commercial (C), general industrial (GI), or residential (R-3.5) zoning designations. The proposed infrastructure improvements along OR 213 are not prohibited uses within the underlying zoning districts. As a result, the uses are allowed in the FMOD, because the Project has been designed to be consistent with the development standards in OCMC § 17.42.170(D), as discussed below.

Prohibited Uses

No prohibited uses, as defined in OCMC § 17.42.170(C), are proposed as a component of this Project.

Site Development Standards

The Project conforms to the following balanced cut and fill standards as outlined in OCMC § 17.42.170(D)(1-10):

Standard 1: This subsection does not apply to work necessary to protect, repair, maintain or replace existing structures, utility facilities, roadways, driveways, accessory uses and exterior improvements in response to emergencies provided that, after the emergency has passed, adverse impacts are mitigated in accordance with applicable standards.

Response 1: The Project will require some maintenance and repair activities along existing roadways; however, these activities are not in response to an emergency situation. As a result, these activities have been designed to be consistent with the flood management area standards, and all adverse impacts will be mitigated.

Standard 2: No net fill in any floodplain is allowed. All fill placed in a floodplain shall be balanced with at least an equal amount of soil material removed. For the purposes of calculating net fill, fill shall include any structure below the design flood elevation that has been flood-proofed.

Response 2: The project will require approximately 21,000 cubic yards (CY) of net fill below the design flood elevation (50.7 feet). Fill activities are associated with grading activities required to accommodate new roadway alignments and existing roadway widening. As mitigation, the Applicant is proposing to balance the fill with approximately 21,000 CY of cut. In addition, the Applicant is proposing to provide an additional 25,000 CY of excavation within the mitigation area, to be banked for future use by the City for floodplain compensation on subsequent projects.

Standard 3: Any excavation below bankfull stage shall not count toward compensating for fill.

Response 3: The bankfull stage for the project area has been determined to be at 29 feet. No excavation below this elevation will occur within the mitigation area. Therefore, no excavation

below the bankfull stage is being proposed as compensation for the 21,000 CY of fill below the design flood elevation.

Standard 4: Excavation to balance a fill shall be located on the same parcel as the fill unless it is not practicable to do so. In such cases the excavation shall be located in the same City floodplain as long as the proposed excavation and fill will not increase flood impacts for surrounding properties, as determined through hydrologic and hydraulic analysis.

Response 4: Due to project location, right-of-way size and layout, and property ownership issues, the excavation to balance proposed fill activities cannot be located on the same parcel; however, it will be located within the same City floodplain. The mitigation area is north of the Union Pacific Railroad between the railway and I-205 on a property currently owned by the City. The proposed excavation and fill will not increase flood impacts for surrounding properties or modify the existing hydrological regime of the surrounding wetlands.

Standard 5: For excavated areas identified by the City to remain dry in the summer, such as parks or mowed areas, the lowest elevation of the excavated area shall be at least 6 inches above the winter "low water" elevation and sloped at a minimum of 2 percent towards the protected water feature, pursuant to Chapter 17.49. One percent slopes will be allowed in smaller areas.

Standard 6: For excavated areas identified by the City to remain wet in the summer, such as a constructed wetland, the grade shall be designed not to drain into the protected water feature, pursuant to Chapter 17.49.

Responses 5, 6: The proposed excavation site has been designed to provide both upland and wetland habitats on the City-owned property. The lowest elevations may remain wet during the summer months, particularly during normal to high water year precipitation levels. The site will consist of the excavation of existing woody and mixed fill materials at a depth ranging from 7 to 14 feet. Hydrology within the wetland areas will be maintained by subsurface groundwater flows as well as surface flows from the adjacent upland areas. The side slopes of the excavated area will be graded at a 3:1 slope to facilitate water movement towards the proposed wetland areas. Please refer to the NROD Mitigation Plan for further details.

Standard 7: Parking areas in the floodplain shall be accompanied by signs that inform the public that the parking area is located in a flood management area and that care should be taken when the potential for flooding exists.

Response 7: No new parking areas are being constructed as a component of this Project.

Standard 8: Temporary fills permitted during construction shall be removed at the end of construction, 30 days after subdivision acceptance or completion of the final inspection.

Response 8: There will be temporary fill within the designated flood management areas associated with the Project. All temporary fills shall be removed at the end of the construction period.

Standard 9: New culverts, stream crossings, and transportation projects shall be designed as balanced cut and fill projects or designed not to significantly raise the design flood elevation.

Such projects shall be designed to minimize the area of fill in flood management areas and to minimize erosive velocities. Stream crossings shall be as close to perpendicular to the stream as practicable. Bridges shall be used instead of culverts wherever practicable.

Response 9: Only one new culvert is proposed as a component of this project. This culvert shall be placed in Stream 15 to accommodate required grading for the widening along Clackamas River Drive. Stream 15 runs along the east side of the Clackamas River Drive roadway fill for several hundred feet (Sheet 1). Because the current stream alignment is parallel to the existing roadway, and the required catch lines will extend beyond the limits of the stream, a 5-foot-wide, approximately 345-foot-long culvert will be installed to convey stormwater flows beneath the roadway fill. The proposed culvert has been sized to be consistent with the existing 60-inch pipe that currently extends south beyond the project area. Stream flows from the newly installed culvert will flow into the existing culvert and off-site before discharging into the unnamed tributary to Abernethy Creek. To avoid a significant rise in the design flood elevation, the proposed and existing culverts are appropriately sized to allow for the passing of the 100-year storm event.

Standard 10: Excavation and fill required for the construction of detention facilities or structures, and other facilities, such as levees, specifically shall be designed to reduce or mitigate flood impacts and improve water quality. Levees shall not be used to create vacant buildable lands.

Response 10: No such structures are proposed as a component of the Project.

Construction Standards

The following outlines the Project's compliance with the Construction Standards mandated in OCMC Chapter 17.42:

- All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.
- All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
- All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
- New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into floodwaters.

Conclusions

The proposed OR 213: I-205 – Redland Road Overcrossing project will provide improved traffic flow and safety along OR 213 between the I-205 interchange and the Redland Road overcrossing. In order to construct the proposed improvements, approximately 21,000 CY of fill will be placed within the designated 100-year floodplain. As compensation, the Applicant is proposing to provide 21,000 CY of excavation on a City-owned parcel that is located off-site but within the same City floodplain as the proposed fill. In addition, the Applicant will be

excavating an additional 25,000 CY of material from within the mitigation area, which it will bank, as credit, for use as compensation on future projects that require floodplain impacts. This FMOD mitigation will be conducted in conjunction with the required NROD mitigation. Following excavation activities, all graded areas will be vegetated with native species, pursuant to the NROD requirements.

In summary, the Project will not result in a net fill within designated flood management areas. The balanced cut and fill will be located within the same floodplain, and will not increase flood impacts for surrounding properties or result in changes to the hydrological connectivity of surrounding natural resource areas. The OR 213: I-205 – Redland Road Overcrossing project has been designed to be consistent with the FMOD provisions outlined in the OCMC Chapter 17.42.

LEGEND

Fill impacts to 100 year flood plain - 21,000 CY fill

Proposed floodplain mitigation area - 46,000 CY excavation

Mitigation Area Taxlot

Bottom of Excavation

Rim of Excavation

Edge of Wetlands

Limit of Proposed Temporary Access

1+80.40

0+00.00

Taxlot 2-2E-29 -01400

Taxlot 2-2E-29 -00400

Stream 15

I-205 NORTHBOUND

I-205 OFFRAMP

UNION PACIFIC RAILROAD

CLACKAMAS RIVER DRIVE

WASHINGTON STREET

OREGON STATE HWY 213

SCALE 1" = 100'

100 50 0 100

FEET

N

FLOODPLAIN IMPACT & MITIGATION PLAN

OBEC CONSULTING ENGINEERS
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831 DYMRE PARKWAY MEDFORD, OREGON 97504-4005, 541-774-5590
5005 SW MEADOWS ROAD, SUITE 120 LAKE OSWEGO, OREGON 97035, 503-620-6103

OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON

FMOD PERMIT NARRATIVE
DATE: 5/28/2010 **SHEET 1 OF 4**

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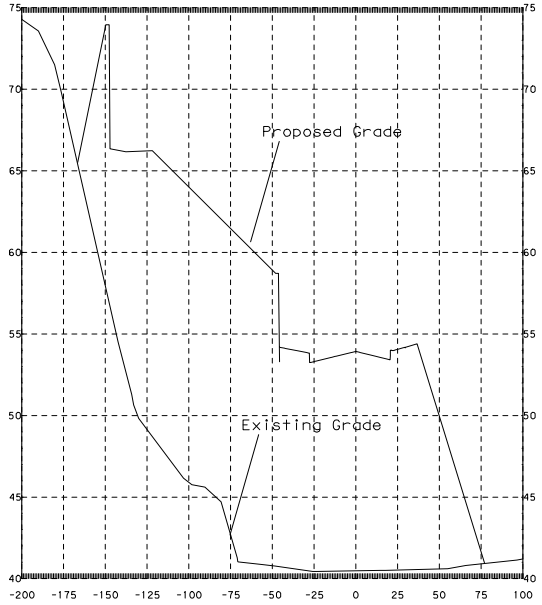
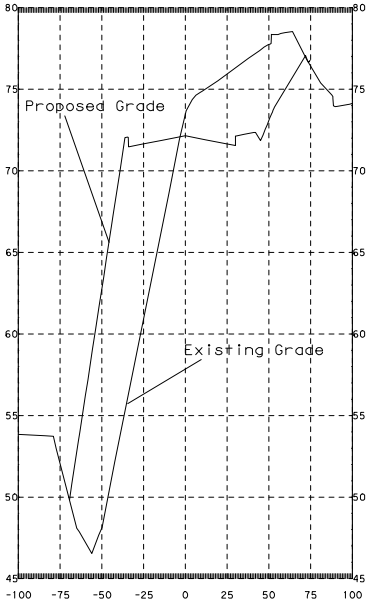
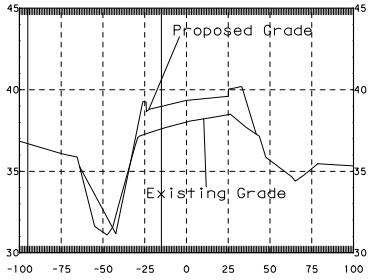


Section A-A



Section B-B

Section C-C



Section D-D

FLOODPLAIN IMPACT CROSS SECTIONS

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OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON

FMOD PERMIT NARRATIVE
DATE: 5/28/2010 **SHEET 2 OF 4**

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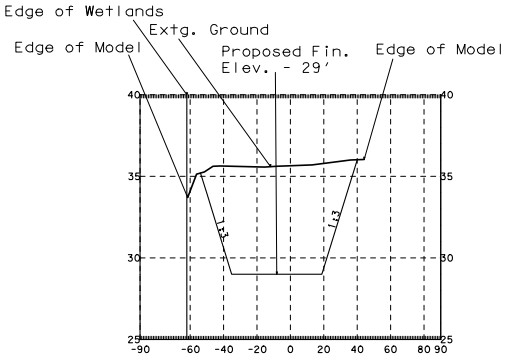
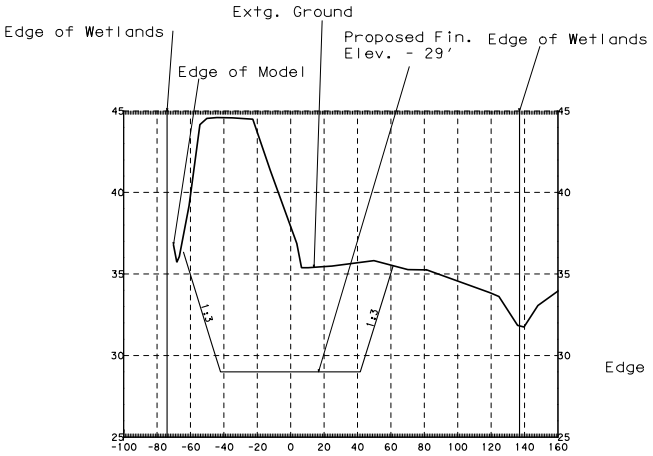


Section E-E



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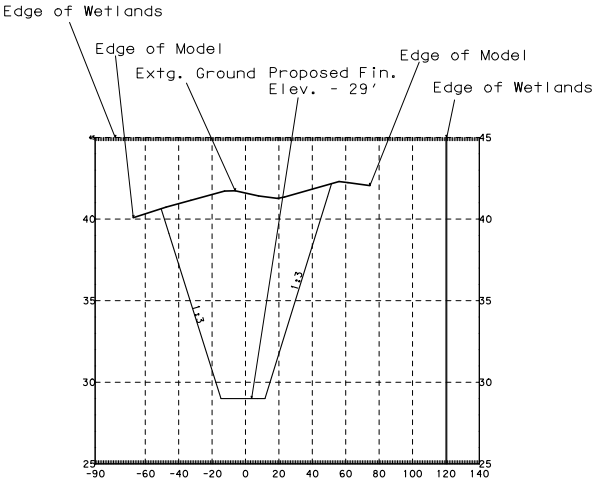

Section G-G

FLOODPLAIN MITIGATION CROSS SECTIONS

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OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON

FMOD PERMIT NARRATIVE
DATE: 5/28/2010 **SHEET 3 OF 4**

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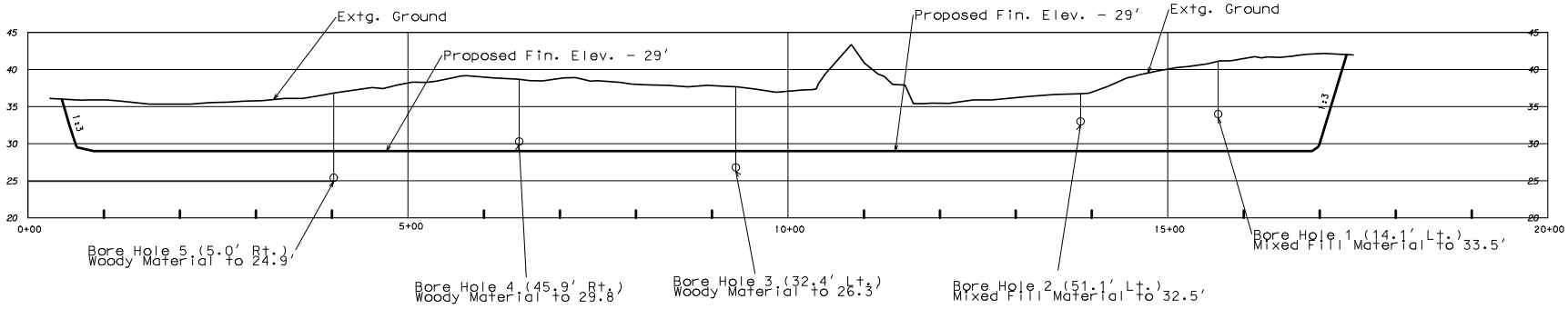

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——	Mitigation_Fin	0.000

Scaled 10.00000000 Times Ver.
Scaled 1.00000000 Times Hor.

FLOODPLAIN MITIGATION PROFILE

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OR 213: I-205-REDLAND ROAD OVERCROSSING
CASCADE HIGHWAY (OR 213)
OREGON CITY, OREGON

FMOD PERMIT NARRATIVE
DATE: 5/28/2010 **SHEET 4 OF 4**

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OREGON CITY

Public Works

625 Center Street | Oregon City OR 97045
Ph (503) 657-0891 | Fax (503) 657-7829

TO: Pete Walter, Associate Planner

FROM: Nancy J.T. Kraushaar, P.E., City Engineer/Public Works Director

DATE: June 18, 2010

SUBJECT: OR 213: I-205 to Redland Road O'xing Transportation Project
Geologic Hazards Application – US 10-01
Variance Application – VR 10-01

INTRODUCTION

The OR 213: I-205 to Redland Road Overcrossing (O'xing) transportation project (the Project) includes two major units of construction. The first unit will realign Washington Street and Clackamas River Drive under OR 213 through the construction of a new OR 213 overcrossing (O'xing) bridge. A roundabout will be constructed east of the new bridge where Washington Street and Clackamas River Drive will intersect. These modifications combine to create a Jughandle intersection configuration that eliminates left-turn and east-west cross movements at the OR 213 intersection and reduces the signal phases from eight to two. This Project unit also involves roadway widening and lane restriping on OR 213 to accommodate three travel lanes in each direction and both southbound (SB) and northbound (NB) right-turn lanes at the Jughandle intersection. The OR 213 roadway and the new bridge will be constructed to accommodate 12-foot wide travel lanes, 10-foot wide shoulders (includes 2 feet shy distance), and an eight-foot wide median.

The second unit of the Project involves roadway widening to accommodate a new NB left-turn lane at the Redland Road intersection, the construction of a SB right-turn lane at the Redland Road intersection, the addition of a third through travel lane in each direction along OR 213, and widening and channelization changes on Redland Road. Redland Road will be widened to provide two 12-foot wide travel lanes approaching OR 213, one 12-foot side travel lane approaching Abernethy Road, one 14-foot wide median, and two 6-foot wide shoulders. Additional widening will be included at the Abernethy Road end of the alignment to provide a 12-foot wide right-turn lane.

Exhibit A illustrates areas where slopes greater than or equal to 25 percent (and part of Oregon City's Geologic Hazards overlay district) occur within the project boundaries. The Project is thus subject to Oregon City Municipal Code (OCMC) Chapter 17.44 – US – Geologic Hazards.

17.44 GEOLOGIC HAZARDS

Comprehensive geotechnical engineering studies have been completed as part of the OR 213: I-205 to Redland Road O'xing project design. The work is summarized in the Preliminary Geotechnical & Pavement Design Report prepared by Shannon & Wilson (the September 16, 2010 draft which is included with this application as **Attachment 1**). The geotechnical work for the project is at the level of detail, standard, and expertise that the requirements and intent of OCMC 17.44 – US – Geologic Hazards are met. The City Engineer has modified many and waived several of the standard OCMC 17.44 application requirements with the understanding that this application includes the Shannon & Wilson report. The checklist used to document the application requirements is included in this report as **Attachment 2**. Their final report recommendations should be a requirement of the land use permit associated with OCMC 17.44 for the project.

Their report will be peer-reviewed by the City Engineer and the Geo-Hydro section of the Oregon Department of Transportation which will provide diligent oversight of the Shannon & Wilson work. Their report specifically addresses all geotechnical issues associated with the project.

17.44.060 D GEOLOGIC HAZARDS VARIANCE REQUESTED

One of the OCMC 17.44 Geologic Hazards requirements for development standards pertains to the wall face height of the two retaining walls. **The code states that "cut and fill slopes, such as those for a street, driveway accesses, or yard area, greater than seven feet in height (as measured vertically) shall be terraced. Faces on a terraced section shall not exceed five feet. Terrace widths shall be a minimum of three feet and shall be vegetated. Total cut and fill slopes shall not exceed a vertical height of 15 feet.** These code requirements, terracing, and maximum dimensions are not feasible for Retaining Walls #1 and #2 of the Project. In working with the Community Development Department, it was determined that it would be appropriate to apply for a variance to the code limitations.

Exhibit A shows the two retaining wall locations relative to the Geologic Hazards base map. **Figure 1** is a Vicinity Map that illustrates where Retaining Walls #1 and #2 are found within the Redland Road Intersection Improvements area and the Jughandle project area.

Construction for the Jughandle (Retaining Wall #2) will begin in 2011. The construction schedule for the Redland Road Intersection Improvements (including Retaining Wall #1) is not certain because funding is not yet identified for this phase of the project construction. To provide certainty for the final project design and public funding that will be used for the project, we are asking that if approved, the variance permit for Retaining Wall #1 remain effective through its construction.

***Wall Details*:**
Retaining Wall #1 is 808 feet long and ranges in height from less than 2 feet to 18 feet with an average height of 13 feet. Wall #1 will be topped by a 5-foot high vinyl coated chain link safety fence.

Retaining Wall #2 is 109 feet long and ranges in height from less than less than 2 feet to 7 feet. Wall #2 will be topped by a 3.5-foot high pedestrian railing. Below Retaining Wall #2, a finished cut slope will be constructed with a maximum total height of 18 feet.

The Retaining Wall #1 and #2 heights and cut slopes are illustrated using plan views, elevations, and cross-sections in **Figures 2 through 5**.

The architectural style for both retaining walls will be the same or similar to the Retaining Wall Surface Examples presented in **Attachment B**.

The walls will be designed by an Oregon registered professional structural engineer assisted by Oregon registered geotechnical (Shannon & Wilson) and civil engineers (OBEC) recommendations regarding subsurface conditions, finished slopes, foundations, groundwater, drainage, stormwater management, etc.

As referenced above, the geologic hazards code development standards (OCMC 17.44.060 D) limits wall face height on cut and fill slopes as follows:

OCMC 17.44.060 D. *Cut and fill slopes, such as those for a street, driveway accesses, or yard area, greater than seven feet in height (as measured vertically) shall be terraced. Faces on a terraced section shall not exceed five feet. Terrace widths shall be a minimum of three feet and shall be vegetated. Total cut and fill slopes shall not exceed a vertical height of fifteen feet. Except in connection with geotechnical remediation plans approved in accordance with the chapter, cuts shall not remove the toe of any slope that contains a known landslide or is greater than twenty-five percent slope. The top of cut or fill slopes not utilizing structural retaining walls shall be located a minimum on one-half the height of the cut slope from the nearest property line.*

VARIANCE APPLICATION

OCMC 17.60 – VARIANCES defines the procedures and grounds for the Planning Commission to authorize variances from requirements in OCMC Title 17 – ZONING.

Oregon City Public Works is applying for a variance to OCMC 17.44.060 D to allow faces on a cut slope to exceed five feet for Retaining Walls # 1 and 2 and to allow a finished cut slope to exceed fifteen vertical feet below Retaining Wall #1.

This application is requesting the following specific variances:

***Retaining Wall #1*: a 13-foot variance for the wall face.**

***Retaining Wall #2*: a 2-foot variance for the wall face and a 3-foot variance for the finished cut slope below the wall.**

17.60.030 – Variance - Grounds. *A variance may be granted only in the event that all of the following conditions exist:*

A. *That the variance from the requirements is not likely to cause substantial damage to adjacent properties by reducing light, air, safe access or other desirable or necessary qualities otherwise protected by this title;*
B. *That the request is the minimum variance that would alleviate the hardship;*
C. *Granting the variance will equal or exceed the purpose of the regulation to be modified;*
D. *Any impacts resulting from the adjustment are mitigated;*
E. *No practical alternatives have been identified which would accomplish the same purpose and not require a variance; and*
F. *The variance conforms to the comprehensive plan and the intent of the ordinance being varied.*

The above variance grounds will be addressed individually for each of Retaining Walls #1 and #2.

A variance may be granted only in the event that:
17.60.030 A - The variance from the requirements is not likely to cause substantial damage to adjacent properties by reducing light, air, safe access or other desirable or necessary qualities otherwise protected by this title.

Retaining Wall #1:
Adjacent properties include single family residential properties on the Holcomb Overlook bluff above the wall and the wide OR 213 right-of-way at the base of the wall. Use of a retaining wall in this location greatly reduces the impact on properties above the wall that would result if a code-permitted terraced slope (with 5-foot wall faces and 3-foot terraces) was constructed into the hillside instead of the proposed retaining wall. Such a terraced slope would require significant additional excavation into the slope behind the proposed wall location, considerable additional disturbance of the existing slope below the residential properties, and increase the potential for detriental slope impacts. The retaining wall allows a greater buffer between the highway improvements and the residential properties and preserves existing vegetation on the existing slope.

The retaining wall will be designed to stabilize materials above the wall. Light, air, and other desirable qualities will not be changed for properties above the wall. The light, air, and other desirable qualities on the highway will not change because of the retaining wall.

The wall will be designed by a structural engineer with geotechnical engineering recommendations. The project design meets ODOT and/or AASHTO highway design standards. The structural design, highway design, and geotechnical design ensure standard engineering practices are followed for safe access.

The retaining wall surface will include architectural style detailing similar to the Retaining Wall Surface Examples presented in Attachment B. A 5-foot high vinyl coated chain link fence is required at the top of the wall to meet safety standards.

Retaining Wall #2:
Above the wall, adjacent properties include Stein Oil Card Lock and Gas Station. Below the wall lies a finished cut slope. Below the finished cut slope, the new Washington Street connection to Clackamas River Drive will be constructed. The existing Union Pacific railroad (UPRR) tracks are adjacent to the opposite side of the new road. The retaining wall is aligned with the new bridge abutment walls. Efforts have been made to reduce the wall height as much as possible by increasing the finished cut slope height slightly. The retaining wall has been designed to stabilize materials above the wall.

Light, air, and other desirable qualities will not be changed for properties above the wall. There is an existing steep slope that will be cut into for the new alignment of Washington Street. The light, air, and other desirable qualities on the new Washington Street connection to Clackamas River Drive and the UPRR tracks will not be impacted by the retaining wall because of the broad slope below the wall.

The wall will be designed by a structural engineer with geotechnical engineering recommendations. The project design meets ODOT and/or AASHTO highway design standards. The structural design, highway design, and geotechnical design ensure standard engineering practices are followed for safe access. Additional safety features include a 3.5-foot pedestrian railing on top of Wall #2 and a new pedestrian connection to OR 213 from Clackamas River Drive located just behind the wall.

The retaining wall surface will include architectural style detailing similar to the Retaining Wall Surface Examples presented in Attachment B. An extensive landscaping plan designed by a registered landscape architect will be used on the cut slope below the wall to enhance the area.

A variance may be granted only in the event that:
17.60.030 B - The request is the minimum variance that would alleviate the hardship.

Retaining Wall #1:
This retaining wall is 808 feet long. The retaining wall varies from less than 2 feet to 18 feet in height. The wall face height variance requested is 13 feet. To meet code terracing requirements, far greater impacts to private properties above the wall would result due to

major additional cuts needed to provide 5-foot maximum wall faces terraced into the final hill design.

The wall location and dimensions also minimizes impacts on the Holcomb Overlook residential properties by maintaining a significant buffer between their properties and the highway and preserving as much vegetation as possible within that buffer.

Given the overall geography and proximity of the residential properties to OR 213, the project design has minimized the highway project footprint and resulting negative impacts on adjoining properties while meeting ODOT design standards.

Retaining Wall #2:
This retaining wall is only 109 feet long and the requested 2-foot height variance applies to less than 50 feet of that length. To minimize the face height variance, the project has increased the slope height which requires the 3-foot slope height variance request. The project has attempted to minimize the wall face height in balance with requesting a minimum slope height variance. These variances are needed to fit the new roadway design between private property and the UPRR tracks. The project has been carefully designed to benefit the general public.

A variance may be granted only in the event that:
17.60.030 C - Granting the variance will equal or exceed the purpose of the regulation to be modified.

Retaining Wall #1:

The project design meets ODOT and AASHTO safety standards. The retaining wall is being designed by structural and geotechnical engineers to support the slopes in the area. Use of the taller wall at this location greatly reduces the excavation and disturbance of the existing slope. The wall will be structurally equivalent or more stable (less risky relative to geologic hazards) than terracing with multiple walls.

In addition, drainage around the retaining wall is being managed by drainage systems designed by Oregon registered civil engineers to maintain stable surface and subsurface conditions in the wall area. Drainage above and behind this single wall is more easily managed than drainage above multiple terraced walls (which at this location would be approximately 5 terraced walls.

Use of the taller wall also allows for protection of the Holcomb Boulevard bridge that crosses OR 213 in this area. Efforts to terrace a new wall would create greater potential for detrimental impact on the embankment behind the bridge abutments.

Retaining Wall #2:
The slope to be excavated for the new alignment of Washington Street is not a natural slope but a manmade slope created for OR 213 and Clackamas River Drive area. The cut into this manmade slope is required to allow for adequate clearance between the new OR 213 bridge and the new Washington Street that will pass under OR 213. The retaining wall is being designed by structural and geotechnical engineers to support the slopes in the area. Drainage around the retaining wall is being managed by engineered drainage systems to maintain stable surface and subsurface conditions in the wall area. The wall will be structurally equivalent or more stable (less risky relative to geologic hazards) than terracing with multiple walls.

The slope below the wall will be graded using controlled construction specifications and landscaped to ensure structural integrity.

A variance may be granted only in the event that:
17.60.030 D - Any impacts resulting from the adjustment are mitigated.

Retaining Wall #1:
The adjustment in allowable wall face height and cut slope height result in a single retaining wall which is a more favorable condition for this location. As discussed above, the single wall has fewer negative impacts than using a terraced wall approach. Keeping the highway in a smaller footprint is beneficial to the integrity of the slopes and properties in this area. In addition, architectural detailing will be used for the retaining wall (see Attachment 3) to mitigate the appearance of the wall to the traveling public on OR 213.

Retaining Wall #2:
The adjustment requested for the face height of Wall #2 is fairly small (a 2-foot adjustment from 5 feet to 7 feet maximum height) as is the adjustment requested for the cut slope height (3-foot adjustment from 15 feet to 18 feet maximum height). Project approaches that mitigate for these adjustments include an elaborate landscaping plan to beautify the new cut slope, new sidewalk connection from Clackamas River Drive to OR 213, and architectural detailing to be used for the concrete wall (see Attachment 3).

A variance may be granted only in the event that:
17.60.030 E - No practical alternatives have been identified which would accomplish the same purpose and not require a variance.

Retaining Wall #1:
This slope and wall configuration is the only practical alternative to achieve the OR 213 improvements with minimal impact on the slope adjacent to the highway and below the Holcomb Overlook residential properties. Minimizing the highway improvement footprint by using the proposed wall maintains a buffer between the highway and the private properties and requires the least amount of excavation and disturbance to the existing slope and

vegetation. No alternatives exist for the wall that would not interfere with the existing Holcomb Boulevard bridge (and its abutments) that crosses over OR 213 at this location.

Retaining Wall #2:
The wall and slope configuration at this location is the only practical alternative that keeps both the wall face and slope cut variance request fairly small. It also allows for a more elaborate native landscaping scenario with the expansive slope below the wall. The space available to construct the new Washington Street alignment under OR 213 (including sidewalks and bike lanes), the bridge abutments, the new sidewalk connection at the top of the slope, and the roundabout at the Clackamas River Drive intersection is very constrained by the existing Union Pacific railroad tracks. Expanding the footprint to not require a variance would not be possible on the railroad side, would conflict with the new bridge abutment, and would require considerable additional right-of-way acquisition on the Stein Oil side which would impact use of this private property.

A variance may be granted only in the event that:
17.60.030 F - The variance conforms to the comprehensive plan and the intent of the ordinance being varied.

Retaining Wall #1 and Retaining Wall #2:

Intent of Ordinance Being Varied – The requested variances conform to the intent of the ordinance varied because the proposed walls and cut slope represent the least risk of negative impacts to surrounding private properties and will protect against future landslides. The proposed walls and cut slope also represent the least risk of negative impacts to the bridge abutments for the existing Holcomb and future Washington Street overcrossings and the slopes and embankments they retain.

In the case of Retaining Wall #1, the wall provide a more protective approach to slope stability through less disturbance of the existing slopes and existing vegetation below Holcomb Overlook. For Retaining Wall #2, the wall and cut slope below are being designed to ensure stable conditions. Portions of the cut slope will be more gentle (flatter) than the existing slope. Drainage will be managed to avoid damaging adjacent properties and maintain slope stability in the area.

Conforms to the Comprehensive Plan – The following responses have been prepared to explain how the variances conform to the Oregon City Comprehensive Plan:

Goal 2.2 – Downtown Oregon City: Develop the Downtown area, which includes the Historic Downtown Area, the "north end" of the Downtown, Clackamette Cove, and the End of the Oregon Trail area, as a quality place for shopping, living, working, cultural and recreational activities, and social interaction. Provide walkways for pedestrian and bicycle traffic, preserve

views of Willamette Falls and the Willamette River, and preserve the natural amenities of the area.
Policy 2.2.2: Support multi-modal transportation options throughout the Regional Center and to other Regional and Town Centers.
Policy 2.2.9: Improve connectivity for vehicles, bicycles, and pedestrians within the Oregon City Downtown community and waterfront master plan areas and improve links between residential areas and the community beyond.

The variances are necessary to construct the OR 213: I-205 to Redland Road O'xing transportation project. The project supports multi-modal access to and development in the Oregon City Regional Center which includes the End of the Oregon Trail area, Downtown, and Clackamette Cove. The realignment of Washington Street under OR 213 will provide safer connectivity for bicycles and pedestrians across OR 213 by replacing the at-grade crossing of the 7+ lane expressway.

Goal 7.1 – Natural Hazard: Protect life and reduce property loss from the destruction associated with natural hazards.
Policy 7.1.8: Provide standards in City Codes for planning, reviewing, and approving development in areas of potential landslides that will prevent or minimize potential landslides while allowing appropriate development.

The variances represent carefully designed retaining wall and cut slope configurations that protect life and reduce property loss from the destruction associated with natural hazards while providing roadway improvements that improve safety and mitigate congestion. The wall designs will provide stability for the slopes and materials they support. Portions of the slope in the area of Retaining Wall #2 will be gentler (flatter) than the pre-project existing slope.

Goal 9.8 – Economic Development – Transportation System, Policy 9.8.5: *Work with the Oregon Department of Transportation to preserve and improve the capacity of Highway 213 and its intersection with I-205.*

The variances requested are associated with the OR 213: I-205 to Redland Road O'xing transportation project. The City is working with the Oregon Department of Transportation to preserve and improve the capacity of OR 213 and its intersection with I-205.

Goal 11.1 – Provision of Public Facilities, Policy 11.1.2 and 11.1.5: Provide public facilities and services consistent with the goals, policies and implementing measures of the Comprehensive Plan, if feasible.
Policy 11.1.5: Design the extension or improvement of any major public facility and service to an area to complement other public facilities and services at uniform levels.

The OR 213: I-205 to Redland Road O'xing transportation project has been carefully planned to provide Oregon City residents with adequate public facilities that are consistent with the

Comprehensive Plan. The project is improving the intersection of OR 213 and Washington Street with the Jughandle.

Complementary public facility improvements included with the project are a roundabout at the Clackamas River Drive intersection with the new Washington Street alignment, restoration of wetlands between the Union Pacific railroad tracks and I-205, redundancy for the existing waterline that crosses I-205 on the interchange bridge, stormwater quality improvements, improved pedestrian and bicycle connectivity, and a landscaped gateway to Oregon City.

Goal 11.6 – Transportation Infrastructure, Policy 11.6.1: Make investments to accommodate multi-modal traffic as much as possible to include bike lanes, bus turnouts and shelters, sidewalks, etc., especially on major and minor arterial roads, and in regional and employment centers.
Policy 11.6.2: Advocate for local, state, and regional cooperation in achieving an integrated connected system such as for the Amtrak station, light rail, and bus transit.

The OR 213: I-205 to Redland Road O'xing transportation project represents a local, state, and federal investment to accommodate multi-modal traffic, especially on arterial roads and in regional centers. The project represents local, state, and regional cooperation in achieving an integrated, connected system. The project will improve the link via OR 213 to the Oregon City South Metro Amtrak Station.

Goal 12.3 – Multi-Modal Travel Options – Policy 12.3.2: Provide an interconnected and accessible pedestrian system that links residential areas with major pedestrian generators such as employment centers, public facilities, and recreational areas.
Policy 12.3.8: Ensure that the multi-modal transportation system preserves, protects, and supports the environmental integrity of the Oregon City community.

While the primary outcome of the OR 213: I-205 to Redland Road O'xing transportation project is improved capacity and safety and reduced congestion and delay for motorized vehicles, significant improvements will also result for pedestrian and bicycle safety and connection by replacing the existing Washington Street at-grade 7+lane crossing with the new Washington Street undercrossing. These improvements link to the Oregon City Regional Center.

A bi-product of this project will preserve and improve environmental integrity by restoring the wetlands between I-205 and the Union Pacific Railroad.

Goal 12.5 – Safety, Policy 12.5.1: Identify improvements that are needed to increase the safety of the transportation system for all users.
Policy 12.5.2: Identify and implement ways to minimize conflict points between different modes of travel.
Policy 12.5.3: Improve the safety of vehicular, rail, bicycle, and pedestrian crossings.

The OR 213: I-205 to Redland Road O'xing transportation project represents the development and maintenance of a safe transportation system. The identified improvements will increase safety for vehicles, bicycles, and pedestrians and improve the safety of vehicle, bicycle, and pedestrian crossings. The project has identified and will implement ways to minimize conflict points between different modes of travel.

Exhibits:
Exhibit A – Retaining Wall Locations (Shown with Slopes ≥ 25%)

Figures:
Figure 1 – Vicinity Map
Figure 2 – Retaining Wall #1 Plan and Elevation
Figure 3 – Retaining Wall #1 Cross-Sections (Average Height and Maximum Height)
Figure 4 – Retaining Wall #2 Plan and Elevation
Figure 5 – Retaining Wall #2 Wall Cross-Section (Maximum Height) and Slope Cross-Section (Maximum Height)

Attachments:
Attachment 1 – Shannon & Wilson September 16, 2009 Preliminary Geotechnical & Pavement Design Report, OR 213: I-205 to Redland Road Over-Crossing, Oregon City, Oregon
Attachment 2 – Geologic Hazards Checklist
Attachment 3 – Retaining Wall Surface Samples

This map is not suitable for survey, engineering, legal, or navigation purposes. Data errors and omissions may exist.

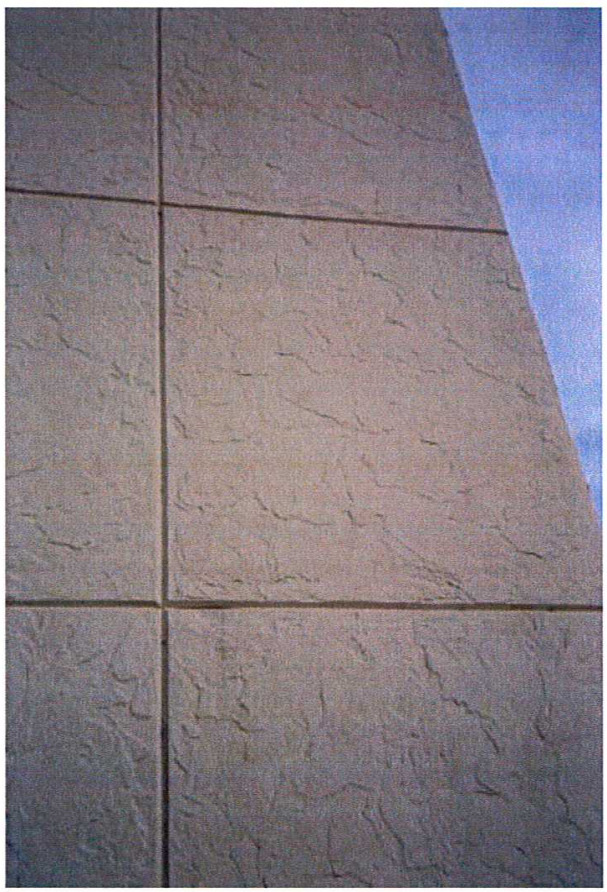
Exhibit A
Retaining Wall Locations

City of Oregon City
625 Center St
Oregon City, OR
(503) 657-0891
www.orcity.org

Date: 6/12/10; Map: Retaining Wall Location Map - 8_5x11P.mxd; Plot: Retaining Wall Location Map - 8_5x11P - 20100612.pdf

Attachment 3

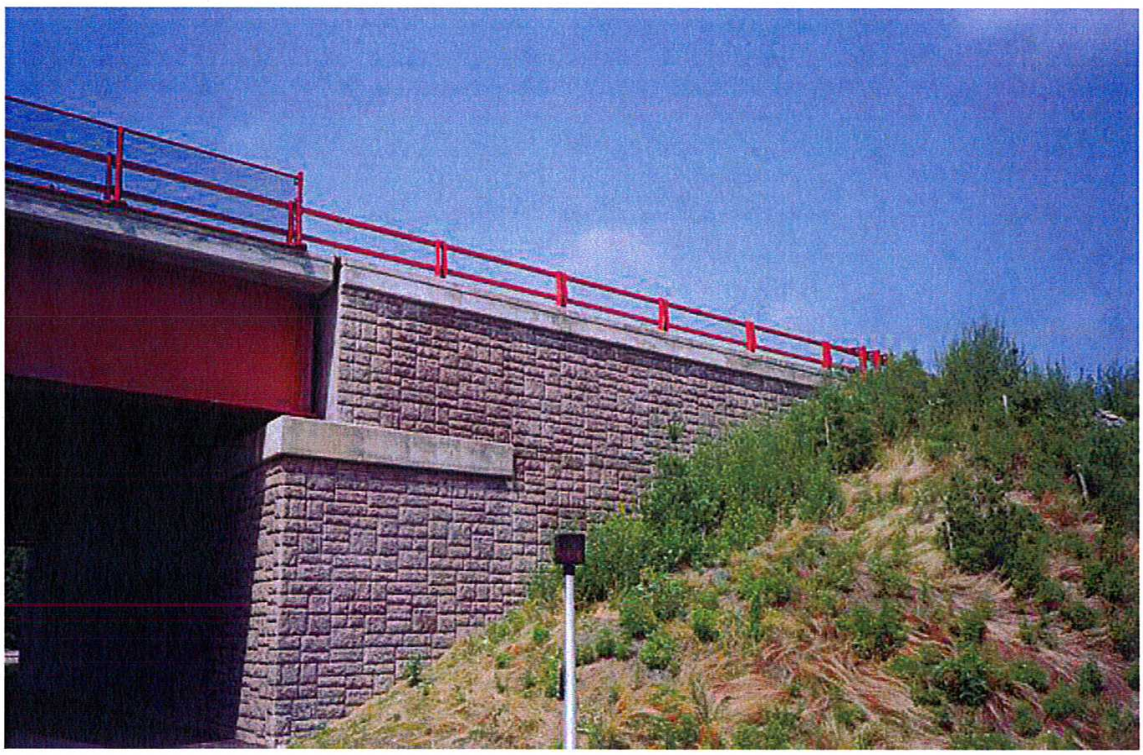
Retaining Wall Surface Examples



Retaining Wall Surface Examples

Retaining Wall Surface Examples

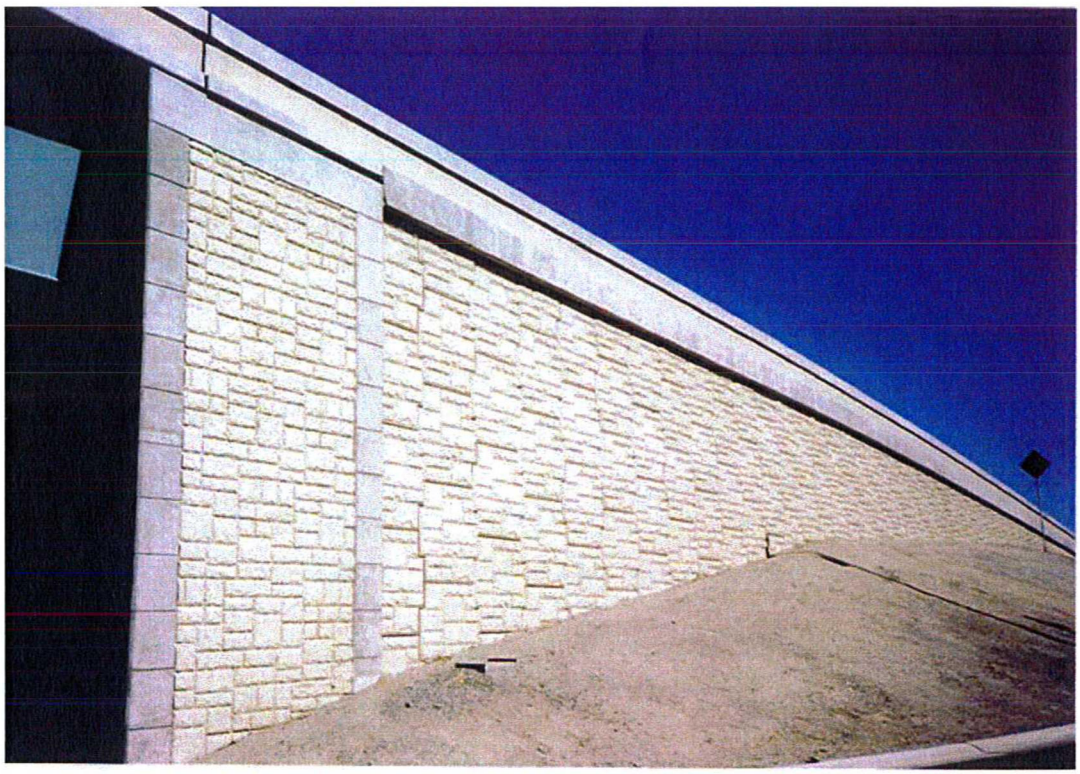
Retaining Wall Surface Examples



Retaining Wall Surface Examples

Retaining Wall Surface Examples

Retaining Wall Surface Examples



Retaining Wall Surface Examples

DAVID EVANS
AND ASSOCIATES INC.

MEMORANDUM

DATE:	August 16, 2010
TO:	Peter Walter
FROM:	Ethan Rosenthal, Alex Dupey
SUBJECT:	**WR 10-02 NROD and Mitigation Plan Consistency Analysis: OR 213 Jughandle**
PROJECT:	City of Oregon City Water Quality Area Resource Review
PROJECT NO:	ORCT0000-0029
COPIES:	File

The City of Oregon City has contracted with David Evans and Associates, Inc. (DEA), to review permit applications located within the Natural Resource Overlay District (NROD), and mitigation plans as applicable to ensure they meet Oregon City land development code criteria. This memorandum provides DEA's findings and recommendations related to the Applicant's development application (WR 10-02).

The proposed project includes the realignment of Washington Street and Clackamas River Drive under OR 213 throughout the construction of a new OR 213 overcrossing bridge. A roundabout where Washington Street and Clackamas River Drive will intersect will be constructed east of the new bridge. These modifications combine to create a jughandle intersection configuration eliminating left-turn and east-west cross movements at the OR 213 intersection and reducing the signal phases from eight to two. The project further involves roadway widening and lane restriping on OR 213 to accommodate three travel lanes in each direction and southbound (SB) and northbound (NB) right-turn lanes at the jughandle intersection. The OR 213 roadway and the new bridge will be constructed to accommodate 12-foot-wide travel lanes, 10-foot wide shoulders (includes 2 feet shy distance), and an eight-foot wide median.

Additional improvements include: roadway widening to accommodate the new NB left-turn lane at the Redland Road intersection, the construction of a SB right-turn lane at the Redland Road intersection, the addition of a third through travel lane in each direction along OR 213, the addition of a culvert in a portion of an unnamed tributary of Abernethy Creek (Stream 15), and widening and channelization changes on Redland Road. Redland Road will be widened to provide two 12-foot wide travel lanes approaching OR 213, one 12-foot wide travel lane approaching Abernethy Road, one 14-foot wide median, and two 6-foot wide shoulders. Additional widening will be included at the Abernethy Road end of the alignment to provide a 12-foot wide right-turn lane. Stormwater facilities and landscaping will be added throughout the proposed project.

17.490.030 Map as Reference

The Applicant has elected to provide a verifiable delineation rather than using the existing NROD buffer. Section 17.40.250 permits verification of the boundary through a site-specific survey. The Applicant has completed a wetland delineation and identified the existing NROD overlay area compared with the delineated features. DEA has reviewed the delineation prepared by the Applicant. Based on aerial photos,

2100 SW River Parkway Portland Oregon 97201 Phone: 503.223.6663 Facsimile: 503.223.2701

it appears that the delineation identifies the specific NROD features in the vicinity of the project. Generally, the applicant also identifies required the width of buffer applied to the NROD resource as described in Table 17.49.110 (see below).

17.49.110: Width of Vegetated Corridor

As described above in response to 17.49.030, the Applicant has elected to verify the NROD buffers through a site-specific survey. The Applicant has applied the following buffers to each NROD resource, as described in Sections 4.1 and 4.2 of the NROD Report, including:

Stream 14: Slopes surrounding this feature are less than 25%. Although the source for this stream could not be located in the field, it is apparent, due to its small size, that the stream drains less than 100 acres. Therefore, the NROD buffer around this feature is 15 feet.

Stream 15: Natural slopes surrounding this feature (excluding the adjacent road fill slope) are approximately 2%. Due to the high volume of water observed in this stream during the wetland delineation fieldwork in February and March 2009, this stream is considered perennial. Therefore, the NROD buffer extends 50 feet around this feature.

Stream 16:

> **Reach 1**: Slopes in this reach exceed 25% for less than 150 feet on the north side of the stream and extend for more than 150 feet on the south side of the stream. The Applicant has determined that this stream is perennial. The buffer for the north side of the stream was established 50 feet beyond the top-of-ravine (TOR).
>
> **Reach 2:** Natural slopes (excluding the roadfill slope) on the east side of this stream reach are greater than 25% for less than 150 feet. The Applicant has determined that this stream is perennial. Therefore, the NROD buffer extends 50 feet from the TOR along this portion of stream.
>
> **Reach 3:** Natural slopes on the east/southeast side of the stream within this reach (excluding the roadfill slope) varied between greater than 25% and less than 25%. The Applicant has determined that this stream is perennial. Therefore, the TOR extends 50 feet from the TOR along this portion of stream. In areas where the slope was less than 25%, the NROD buffer extends 50 feet from the OHWL.

Pond 18: The slope surrounding this pond is less than 25%; therefore, the NROD buffer extends 50 feet around the feature.

Wetland A: The NROD buffer extends 50 feet from the edge of the delineated wetland boundary. The NROD buffer is comprised of a disturbed, non-native grass community dominated by reed canary grass and orchard grass.

Wetland B: The NROD buffer extends 50 feet from the edge of the delineated wetland boundary. The NROD buffer is comprised of maintained lawn including non-native grass species and planted quaking aspen (Populus tremuloides) and giant redwood (Sequoiadendron giganteum).

Wetland C: The NROD buffer extends 50 feet from the edge of the delineated wetland boundary. Vegetation within the NROD surrounding Wetland C is disturbed and is dominated by Himalayan blackberry and black cottonwood.

Wetland D: Vegetation within Wetland D is heavily disturbed and is composed of reed canary grass, tall fescue, broadleaf cattail, and rush species. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary. The NROD buffer surrounding Wetland D is vegetated with reed canary grass, willow species, and Himalayan blackberry.

Wetland E: Vegetation within Wetland E is primarily composed of reed canary grass and climbing nightshade. A distinct vegetation boundary marked the edge of the wetland; the surrounding NROD buffer is dominated by Himalayan blackberry and climbing nightshade. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary.

Wetland F: Vegetation within Wetland F is entirely dominated by reed canary grass. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary and is included in the wider NROD buffer for Stream 16 as the natural slope in this area is greater than 25%. The NROD buffer is dominated by a highly disturbed vegetation community that includes Himalayan blackberry and reed canary grass.

Wetland G: This wetland occupies a hill slope descending from the Home Depot building and parking lot to the OHWL for Stream 16. Vegetation within Wetland G is dominated by a disturbed vegetation community that includes reed canary grass, tall fescue, and bentgrass and bluegrass species. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary and is dominated by a disturbed grass community consisting of bentgrass and bluegrass species.

Wetland H: Vegetation within Wetland H is dominated by various bluegrass species and tall fescue. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary. The NROD buffer is dominated by willow species, red osier dogwood, beaked hazelnut, and Himalayan blackberry.

Wetland I: Vegetation within Wetland I is dominated by reed canarygrass and black cottonwood. Reed canarygrass is confined to the wetland boundary and, along with topographic breaks and soil changes, helps determine the wetland boundary. The NROD buffer is disturbed and is dominated by reed canarygrass and Himalayan blackberry. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary.

Wetland J: This wetland occupies a depression forming the confluence of several ditches at the southwestern extent of the proposed project. Vegetation within Wetland J is dominated by black cottonwood, black hawthorn, Himalayan blackberry, and Fuller's teasel. The adjacent NROD buffer is dominated by Himalayan blackberry. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary.

Wetland K: Vegetation within Wetland K is dominated by black cottonwood, Oregon ash, Oregon crab apple (Malus fusca), rose spirea (Spiraea douglasii), Himalayan blackberry, and fringed willowherb (Epilobium ciliatum). Vegetation in the adjacent NROD buffer is disturbed and is dominated by black cottonwood, Oregon ash, English ivy, and Himalayan blackberry. The NROD buffer extends 50 feet from the edge of the delineated wetland boundary.

Wetland L: Vegetation within Wetland L is dominated by black cottonwood and Oregon ash. The adjacent upland areas are distinguished by an abrupt topographic rise and the dominance of Himalayan blackberry. The adjacent NROD buffer is dominated by rose species, black cottonwood, Oregon ash, English ivy, and Himalayan blackberry. No buffer was identified for this wetland.

Based on Section 4.0, Table 1, that identifies the required NROD buffers (see Table 17.49.110), the Applicant has identified stream buffers based on this table. The Applicant has also provided further documentation that identifies Stream 16 as a perennial stream (Walter, 2010). Based on the information provided it appears that the buffer calculations are accurate.

Wetlands A through K all require 50-foot buffers, which the Applicant has identified. Wetland buffers are the same in both existing and proposed buffer tables (Table 17.49.110). The Applicant has not identified a NROD buffer for Wetland L, but based on Table 17.49.110, this is likely to be 50 feet.

The Applicant notes that the project will also require a Joint Permit Application, which has already been submitted to the Oregon Department of State Lands and the U.S. Army Corps of Engineers. In addition to the mitigation proposed for impacts to the NROD , the Applicant proposes to purchase mitigation bank credits for impacts associated with the Project. (Currens, 2010).

17.49.180 Mitigation Standards

As the Applicant has proposed to meet 17.48.190 Alternative Mitigation Standards, 17.49.180 does not apply.

17.49.190 Alternative Mitigation Standards

The applicant proposes the following mitigation in lieu of the mitigation standards identified in 17.49.180:

- The Applicant has identified a mitigation site located approximately 225 feet northwest of the proposed project where all Project-related mitigation will occur.
- The mitigation will be contiguous to the NROD buffer of Wetlands J, K, and L, and is currently mapped as NROD according to the City's NROD map.
- All vegetation,including invasive and nuisance species, will be cleared during removal of the approximately 21,000 cubic yards of wood waste and bark chips.
- The mitigation site will be planted and seeded with species on the Oregon City Native Plant list.

- Based on the proposed planting strategy that allows for planting in rows at 7-foot on-center spacing to facilitate maintenance, 762 trees and 436 shrubs per acre are recommended.
- Irrigation and imported, high quality topsoil will be used at the mitigation site to ensure planting success and to achieve the functional equivalent of the planting densities set forth in the current municipal code.
- Trees and shrubs will be planted in triangular spacing at 7-feet on-center. Clusters of shrubs and groundcovers will be planted in clusters of two plants spaced at 18-inches on-center.
- Irrigation will be installed throughout the mitigation site to ensure 80% survival after 5 years.
- Nine species of trees and nine species of shrubs will be installed at the mitigation site.
- Less than one-third of the trees will be in the same genus.
- Five years of monitoring and maintenance are proposed along with annual reporting. Photographs shall accompany the report indicating the progress of the mitigation.
- Success criteria for the mitigation site at the end of the 5-year monitoring period will include the following, as defined by the Oregon Department of Agriculture: a minimum of 80% survival of trees and shrubs and no more than 10% cover of invasive species.
- As the proposed project is a capital improvement project funded through a combination of federal, state and city funding, the Public Works Department, as the Applicant, will provide appropriate oversight and assurances that all mitigation requirements shall be met.
- The applicant has elected to provide a deed restriction as a long-term protection instrument for the mitigation site. Upon completion, this deed restriction will be provided to the Planning Department.

The Applicant has proposed an adjustment to the minimum mitigation ratio from 2:1 to 1:1 as identified in **17.49.190(A)**. While the mitigation plan will improve the proposed mitigation site by removing wood debris and invasive species and replacing it with clean topsoil and native trees and shrubs, additional mitigation areas could be added to meet the required mitigation ratio. This would prove beneficial by providing additional habitat, particularly if the additional habitat is adjacent to the proposed mitigation area.

In addition to the mitigation proposed as part of 17.49.190, the Applicant proposes to purchase 1.56 mitigation banking credits from area mitigation banks to mitigate impacts to wetlands located with the NROD buffer and also plans to create approximately 0.33 acres of ditches and swales onsite as part of the mitigation strategy identified in its JPA (Walter, 2010). The NROD mitigation proposal, in addition to what is proposed in the JPA, totals approximately 6.6 acres. This is less than the approximately 9.4 acres of mitigation area required under the NROD. While the proposed planting plan and improvements to the mitigation site will be beneficial to the area, there may be other opportunities in the area to provide additional mitigation, such as immediately north of the proposed mitigation area. To the extent practicable, the Applicant should maximize the amount of on-site mitigation.

Comments

DEA provides the following assessment of the proposed mitigation relative to City code and generally acceptable practices:

1. DEA concurs with the proposed removal of invasive species in disturbed areas and the proposed mitigation strategy and planting plan for the off-site mitigation area.

2. DEA concurs with the proposed monitoring schedule, although this may need to be revisited should monitoring show that problems are occurring and remedial efforts are needed.

3. If the Corps or DSL should require additional mitigation, then the applicant should provide the City with the details of the mitigation to determine how this fits within City code. The Applicant should also provide specific information relating to which impacts will be mitigated through purchasing mitigation credits and which impacts are being mitigated at the proposed NROD mitigation site. The Applicant may actually be achieving a greater than 1:1 mitigation ratio than the adjustment they are proposing.

17.49.220 Required Site Plans

It appears that generally, the required information under 17.49.220(A-C) is shown on the preliminary site plans or included in plans attached to the Water Resources Study and Mitigation Plan, except where the scale of the project limits the amount of detail. Where this is the case, the Applicant has requested an adjustment to these standards. In general, as the drawings provided provide enough information to evaluate the proposal, it appears that these standards are met.

17.49.230 Mitigation Plan Report

The Mitigation Plan submitted as part of the application identifies how the Applicant proposes to respond to the mitigation requirements outlined in 17.49.190, meeting 17.49.230(A), although, as described above, the Applicant has requested adjustments to reduce the required mitigation ratio for the total amount of mitigation that is required and the number of plantings.

DEA concurs with the proposed planting and mitigation plan, but the amount of mitigation as required in 17.49.190(A) should be reviewed to determine whether the proposed NROD mitigation combined with purchasing the mitigation banking credits is sufficient to meet this standard. The proposed mitigation will improve the off-site mitigation area, and maximizing any opportunities for additional mitigation, preferably adjacent to the off-site mitigation area will improve the area and further meet the 2:1 mitigation ratio under 17.49.230(B).

17.49.230(C) requires consultation with appropriate state and federal regulatory agencies. As described above, the Applicant has submitted a JPA to the Corps and DSL, and has proposed to purchase mitigation credits in addition to the NROD mitigation. The City should confirm that neither the COE nor the DSL will require any additional mitigation. DEA has neither reviewed the JPA nor any correspondence between the Applicant and either the COE or the DSL about the project.

17.49.230(D) requires a construction timetable which the Applicant has provided. Mitigation monitoring as required under 17.49.230(E) is also addressed. These standards appear to be met.

Recommended Conditions of Approval

The Applicant's mitigation plan and NROD application are well organized and generally clear in how they propose to mitigate the impacts associated with the project. Given that the Applicant has elected to complete its own delineation and propose an alternative mitigation plan, DEA has relied on the information submitted by the Applicant for its review as opposed to existing NROD data. Based on this review, and on the information submitted, DEA recommends the following condition of approval:

1. The Applicant shall provide the City correspondence with the Army Corps of Engineers and the Oregon Department of State Lands to confirm the impacts associated with the project do not require additional mitigation to meet federal and state standards.

Copies: File
Attachments/Enclosures:
Initials: WAD
File Name: \\Pdxfs1\project\O\ORCT00000031\0600INFO\0670Reports\OR 213 NROD Consistency Analysis .docx
Project Number: ORCT0000-0031

Pre-Application Conference Summary

Pre-application conferences are required by Section 17.50.030 of the City Code, as follows:
(A) PURPOSE: The pre-application conference is to provide the applicant the necessary information to make an informed decision regarding their land use proposal.
(B) A pre-application conference is required for all land use permits.
(C) Time Limit: A pre-application conference is valid for a period of six (6) months.
(D) An omission or failure by the Planning Division to provide an applicant with relevant information during a pre-application discussion shall not constitute a waiver of any standard, criterion, or requirement of the City of Oregon City. Information given in the conference is subject available information and may be subject to change without notice.
NOTE: The subsequent application may be submitted to any member of the Planning Staff.

==========

PRE-APP # 10-12 / DATE: 4/23/10
APPLICANT: O.C. Public Works, c/o Aleta Froman-Goodrich
SITE ADDRESS: 2001 WASHINGTON, 13001 CLACKAMAS RIVER DR
PROPERTY DESCRIPTION: 2-2E-29-00904 and 2-2E-29-02700 (Metro and Stein Oil), remainder is ODOT or Railroad ROW, - City owned.
STAFF: Walter, Cullison ZONING: MUD, C, GI
PROPOSED USE/ACTIVITY: I205 / OR213 / Redland Rd Interchange (aka Jughandle)

INFORMATION NECESSARY TO BEGIN DEVELOPMENT: This listing of information does not preclude the Community Development Department or hearings body from requesting additional data necessary to make a recommendation and/or decision regarding the proposed activity.

1. PLANNING

- ❑ Zoning/ Setbacks N/A (Road ROW project – no structures)
- ❑ Is the Site in a Natural Resource Overlay District? (Yes or No) Yes
- ❑ Is the Site in a Flood Management Overlay District? (Yes or No)) Yes
- ❑ Is the Site in a Historic Overlay District? (Yes or No) No
- ❑ List of Minimum Required Planning Processes: All criteria must be addressed in narrative form for the application to be found complete.

- ❑ The applicant (has) / **has not** met the public meeting requirement due to the extensive outreach already performed. CIC, CC meetings (Provide Summaries w/ application)

1. Requirements

- ❑ OCMC 17.50 – Administrative Processes – Type III – Planning Commission
- ❑ OCMC 17.42 – Flood Management Overlay District
- ❑ OCMC 17.44 – Unstable Slope / Geologic Hazards Overlay District
- ❑ OCMC 17.49 – Natural Resource Overlay District (NROD)
- ❑ OCMC 12.08 – Public and Street Trees
- ❑ OCMC 17.04 - Definitions
- ❑ *Notes:*

1) Request necessary adjustments through Type III discretionary review to applicable code sections as follows:

17.49 - NROD

- 17.49.200 Adjustment from Standards
  - 17.49.190 Alternative Mitigation Standards
    - Mitigation Area / Disturbance Area < minimum 2:1 ratio
    - Off-site / Non-Contiguous Mitigation Area
    - Alternative Mitigation proposed
- Mitigation Site is degraded currently.

17.41 – Tree Protection

- 17.41.075 – Alternative Mitigation Plan
  - Trees Removal outside of NROD may use the Alternative Mitigation Standards specified for 17.49.190.
-

2) **17.42 – Flood Plain**

- Base Flood Elevation Data shall be as determined by city as approved by FEMA.
- 50.7 1996.
  Alteration of watercourse 17.42.120.
  17-42-160 – document "Bankfull" Stage.
  * Provide complete calc. for how Bankfull Stage is determined

3) **17.44 – Geologic Hazards**

- Tax lots 904 and 2700 are flagged as within the Geo Hazard Overlay
- Applicable review to be determined by City Engineer

2. ENGINEERING

A. Grading: _____
B. Drainage: _____
C. Sanitary Sewer: _____
D. Water: _____
E. Right-of-Way Dedication/Easements:
_____
F. Street Improvements_____
G. Special Analysis (traffic study, geotechnical study, EIS):_____
H. Development Impact Statement required with Subdivision applications.
I. TSP compliance (Connectivity, Street Widths, etc.):_____
Other: _____

3. BUILDING (Has not commented)

A. Proposed Construction Type: _____
B. Number of Stories: _____
C. Square Footage: _____
D. Number of Buildings: _____
E. Type of Occupancy: _____
F. Fire Sprinklers: _____
G. Valuation (estimate): $_____
H. Fire/Life Safety Required: Yes _____ No _____

4. FIRE (No comments)

A. Fire Flow Requirements (gallons per minute): Per Clackamas County Fire 1
B. Location/Number of Hydrants: Per Clackamas County Fire 1
C. Access Requirements: Per Clackamas County Fire 1
D. Other: _____

OTHER COMMENTS:

_____
_____
_____
_____
_____
_____

NOTICE TO APPLICANT: A property owner may apply for any permit they wish for their property. HOWEVER, THERE ARE NO GUARANTEES THAT ANY APPLICATION WILL BE APPROVED. No decisions are made until all reports and testimony have been submitted. This form will be kept by the Community Development Department. A copy will be given to the applicant. IF the applicant does not submit an application within six (6) months from the Pre-application Conference meeting date, a NEW Pre-Application Conference will be required.

Oregon
Theodore R. Kulongoski, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE, Ste C
Salem, OR 97301-1266
(503) 986-0671
Fax (503) 986-0793
www.oregonheritage.org

June 14, 2010

City of Oregon City Planning
PO Box 3040
Oregon City, OR 97045-0304

RE: Archaeological Permit No. 1388

Dear Local Government Planner:

Enclosed is an archaeological permit application submitted to State Parks by Kathryn Toepel.
It is the responsibility of State Parks to forward all such applications to those parties described under ORS 390.235. Landowners should have been contacted by the applicant for access and disposition of artifacts (private lands).

Please review this application, mark your evaluation below, and return it to us with any comments. If we do not receive a response within thirty (30) days from the date of this notification, we will assume you have no objection to this permit.

Thank you for your cooperation. Please contact me if you have any questions.

Sincerely,

Matt Diederich, MAIS
SHPO Archaeologist
(503) 986-0577
Matthew.Diederich@state.or.us

Reviewer Evaluation

✓ I approve of the permit

____ I request conditions (attach)

____ I object to the permit (attach explanation)

Signature: Peter Walker, AICP

Date: 6/22/2010

cc: Dr. Jon Erlandson (OSMA)
Karen Quigley (CIS)
Bobby Walker (Landowner)
Confederated Tribes of Grand Ronde Community of Oregon
Confederated Tribes of Siletz
Confederated Tribes of Warm Springs

PERMIT APPLICATION: ARCHAEOLOGY: OREGON SHPO

AP 1388	Oregon Parks and Recreation Department 725 Summer Street NE, Suite C Salem, OR 97301-1266	

All Information must be completed before this application will be considered. Use separate sheets if more space is needed to complete a section. This permit is circulated with a 30 day comment period from date of mailing.

Applicant (typed): Kathryn Anne Toepel Date: June 10, 2010
Institution: HERITAGE RESEARCH ASSOCIATES, INC.
Address: 1997 Garden Avenue
City: Eugene State/Zip: OR 97403
Signature: Kathryn Toepel Telephone/Fax: 541-485-0454/541-485-1364 fax
Email Address (if applicable): heritagere@aol.com 541-729-5587 cell

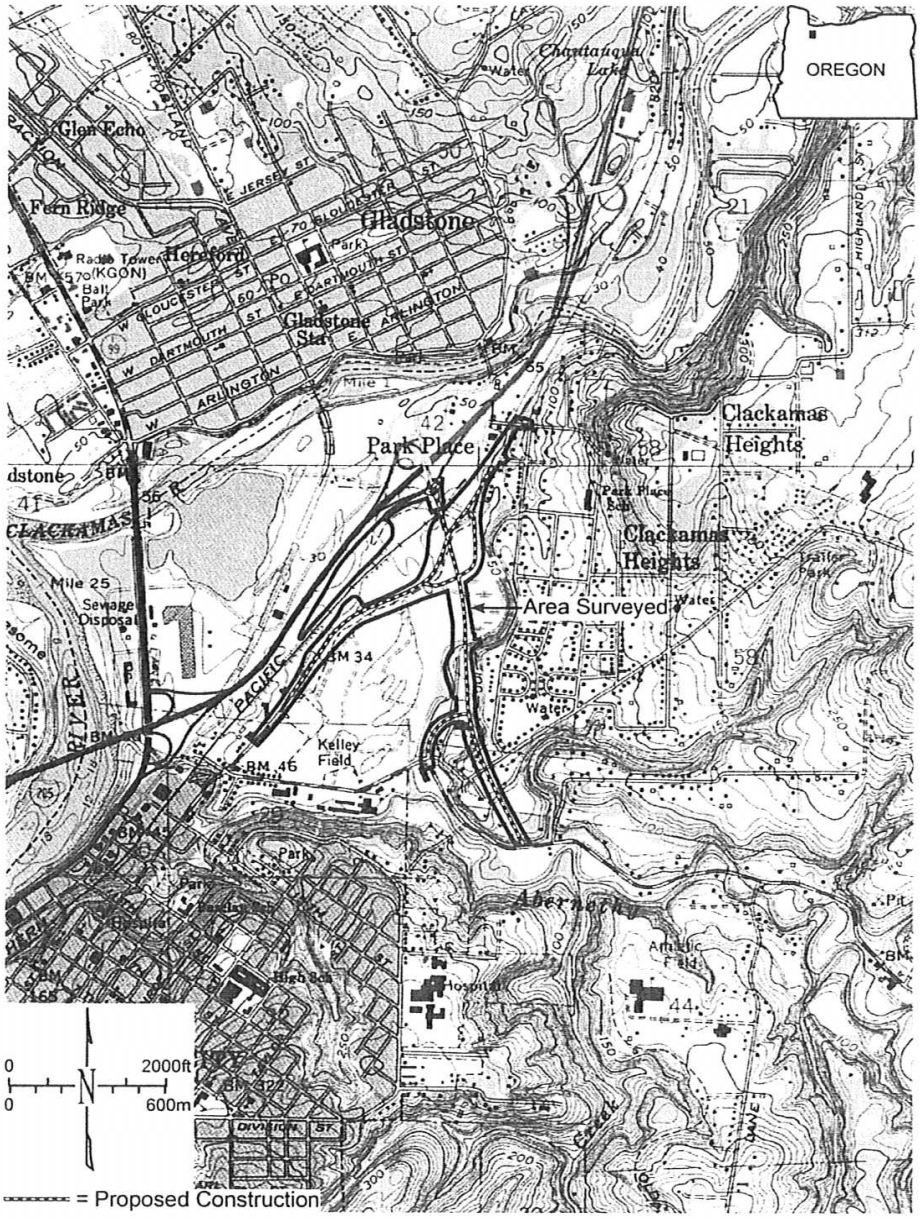
Attach current vitae demonstrating person meets or exceeds legal requirements of ORS 390.235
*Attach letter supporting applicant's ability to conduct proposed work (See Permit Application Guideline #3)

	Project Name and/or Site Trinomial: OR213: I-205 Bridge - Abernethy Creek Bridge Project County(ies): Clackamas County USGS Quad Name: Oregon City 7.5' quadrangle Township: 2S Range: 2E Section: 20, 29
Surface Owner ORS 358.920(5): A signed landowner agreement that excavation can take place on private land must be submitted with this form.	Owner: Oregon Dept of Transportation, Region 2B Representative: Bobby Walker, Interim District 2B Manager Address: 9200 SE Lawnfield Rd, /Bobby.D.WALKER@odot.state.or.us City: Clackamas, OR Zip: 97015-8685 Telephone/Fax: 971-673-6200
Agency that has management control over the project. **Attach letter of agreement for proposed work from land manager (See Permit Application Guideline #5)	Name: Oregon Dept of Transportation, Region 1 Institution/Rep: Kurt Roedel, ODOT Archaeologist Address: 355 Capitol Street NE, Rm 301 City: Salem, OR Zip: 97301 Telephone/Fax 503-986-5471 (ofc) or 503-508-7933 (cell)
Person in direct charge of excavation (if you have not submitted an application this calendar year, please attach resume that shows person meets or exceeds legal requirements of ORS 390.235)	Name: Albert Oetting, PhD, RPA; Kendra Carlisle, MA Affiliation: Heritage Research Associates, Inc. Address: 1997 Garden Avenue City: Eugene Zip: 97403 Telephone: 541-485-0454 x101
Project Description	Requested Permit Duration: 1 year Starting Date of Fieldwork: July 11, 2010 Proposed Date of Fieldwork Completion: July 2011 Due Date of Final Report (to SHPO, OSMA, CIS, and appropriate Tribes): July 2011 Purpose of Investigation: Discovery excavations will be conducted in three defined high potential areas within existing right-of-way that may be affected by the proposed roadway improvement project to identify whether archaeological deposits may be present. Data will be used to assist in defining additional work, if needed, to assess potential project impacts.

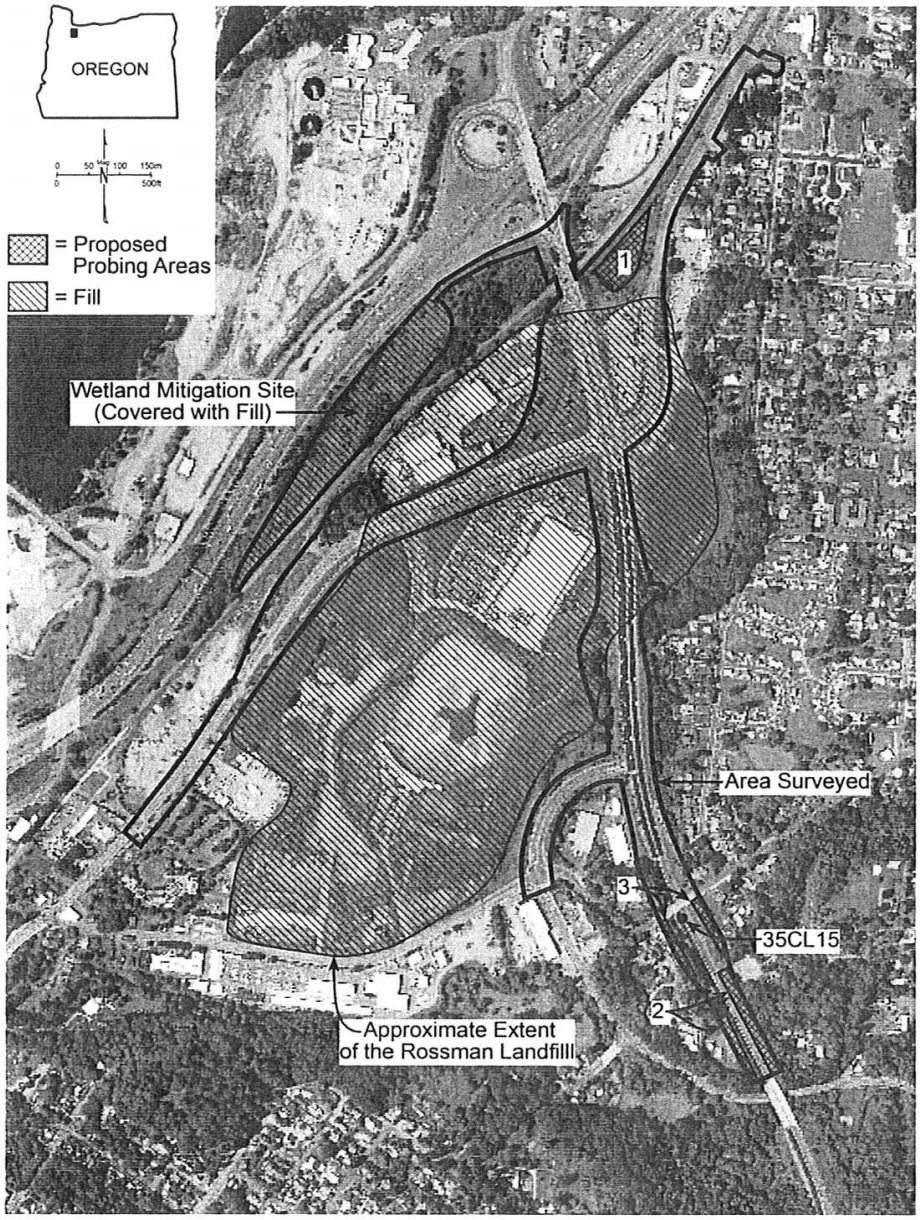
	Scope of Work/Research Design: Much of the OR213 project area has been disturbed, but three remnant natural surface areas may have potential to contain buried archaeological materials. Round shovel probes (30-cm-diameter) will be the primary excavation unit used to locate archaeological deposits within these high potential areas. If potential archaeological deposits or areas of possible cultural stratigraphy are located, square shovel probes (50x50 cm) may be excavated (if approved by ODOT) to provide better exposures of subsurface structure, artifact density, and to establish the presence of archaeological deposits. Excavation of a maximum of 50 round shovel probes and 20 square shovel probes is anticipated to establish whether archaeological deposits are present. All hand excavations will be conducted by natural strata, subdivided by 10-cm levels. All soil, with the exception of modern fill, will be sifted through 1/8-inch mesh screens. All units will be backfilled upon completion. Collection of cultural material from excavations or borings conducted by non-archaeological contractors will also be conducted under this permit (e.g. from geotech boring samples). Results will be presented in a formal technical report. The report will be submitted to the Tribes, CIS, ODOT, SHPO, and others as required by the terms of this permit and by the project contract. In the event human remains are encountered, all work in the area will cease and SHPO, CIS, OSP, and Tribes shall be immediately notified.
Ancillary plan for reporting results if applicable (i.e., in addition to the final report submitted to SHPO, OSMA, CIS, and appropriate tribes).	
Curation **ORS 358.920, 390.235(3). OSMA requires that a signed landowner agreement on curation of artifacts for private property must be submitted with this form.** **For public lands a letter from the curatorial facility (i.e., OSU) should accompany this form.** **(See Permit Application Guideline #8)**	**Temporary Curatorial Lab or Facility:** **Name: Heritage Research Associates, Inc.** **Address: 1997 Garden Avenue** **City: Eugene Zip: 97403** **Telephone: 541-485-0454** **Permanent Curatorial Facility:** **Name: Oregon State Museum of Anthropology or designee** **Address: University of Oregon** **City: Eugene Zip: 97403** **Telephone: 541-346-5120** **Proposed Date of Delivery to Permanent Curatorial Facility:** **by June 2011**
Tribal Notification **If the excavation is associated with a prehistoric or historic American Indian archaeological site, a copy of the notice required under ORS 358.950 must be submitted with this form. Consultation should occur during the 30-day review period.**	**Describe Contact Procedures (e.g., letter, fax or personal meeting to discuss proposed work, permit terms or conditions, monitoring, unanticipated discovery plan for human remains, curation):** The Chair of each Tribe or alternate representative as instructed by each Tribe will be kept informed by letter, fax or telephone as to the proposed dates of fieldwork, nature of the work effort, and results of investigations. More detailed coordination may also be made with the Tribal representatives at their request.

Where feasible, a copy is submitted to CIS within two days of receipt, requesting the most appropriate tribe. The application will not be circulated unless it is complete and accompanied with the extra documentation requirements (see Guidelines). Copies of this form are then sent to the landowner, local planning department, OSMA, CIS and appropriate tribe(s). SHPO gives reviewers 31 calendar days to return their comments, and if no objections are made then the permit will be issued or denied based on the information received.

The following section must be filled out by the applicant:
Planning Department: County: Clackamas or City Oregon City
(Rev. 7/2005)



OR213: I-205 Bridge - Abernethy Creek Bridge Project Area (USGS Oregon City 7.5' quadrangle).



Location of surfaces covered with fill and planned discovery probe areas: (1) low flat, (2) stream terrace surface above road cut, (3) bluff top bordering road cut where 35CL15 had been located.

Oregon
Theodore R. Kulongoski, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregonstatelands.us.

May 27, 2010

Nancy J. T. Kraushaar
City of Oregon City
625 Center Street
P.O. Box 3040
Oregon City, OR 97405-0304

Re: Wetland Delineation Report for the OR 213: I-205 to Redland Road Overcrossing Project, Clackamas County; T2S R2E Sec. 20 and 29; Portion of Multiple Tax Lots and Road Right-of-Ways; WD #10-0022; City of Oregon City Local Wetlands Inventory, Wetlands CL-2, CL-3, CL-4, and PP-1

Dear Ms. Kraushaar:

The Department of State Lands has reviewed the wetland delineation report prepared by Mason Bruce & Girard, Inc. for the site referenced above. Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in Figures 6a through 6o of the report. Within the study area, 12 wetlands, 20 waterways, and 1 pond were identified. Of these features, 10 wetlands (totaling approximately 2.74 acres), 6 waterways, and the pond are subject to the permit requirements of the state Removal-Fill Law. The remaining wetlands (Wetlands B and D) and waterways (Ditches 1 through 13, and 17) are exempt per OAR 141-085-0515 (7) & (10) and are not subject to the state law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter, unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at (503) 986-5232 if you have any questions.

Sincerely,

Peter Ryan, PWS
Wetland Specialist

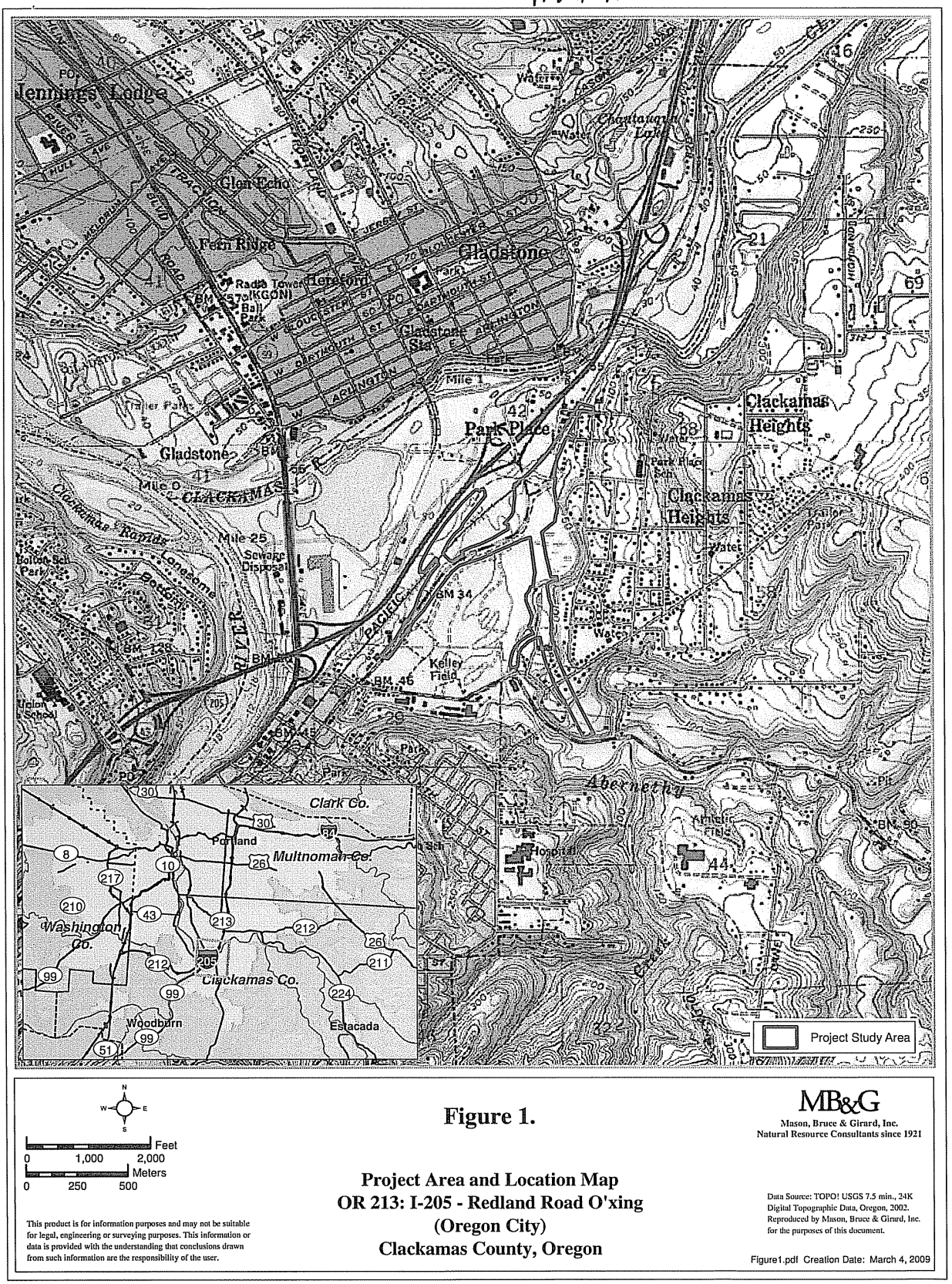
Approved by

Kathy Verble, CPSS
Acting Wetlands Program Manager

Enclosures

ec: Kristen Currens, Mason Bruce & Girard, Inc.
City of Oregon City Planning Department (Maps enclosed for updating LWI)
Charlie Hanner, Corps of Engineers
Anita Huffman, DSL

WD# 10-0022



N
W E
S

Feet
0 1,000 2,000
Meters
0 250 500

This product is for information purposes and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.

Figure 1.

Project Area and Location Map
OR 213: I-205 - Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

MB&G
Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921

Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon, 2002. Reproduced by Mason, Bruce & Girard, Inc. for the purposes of this document.

Figure1.pdf Creation Date: March 4, 2009

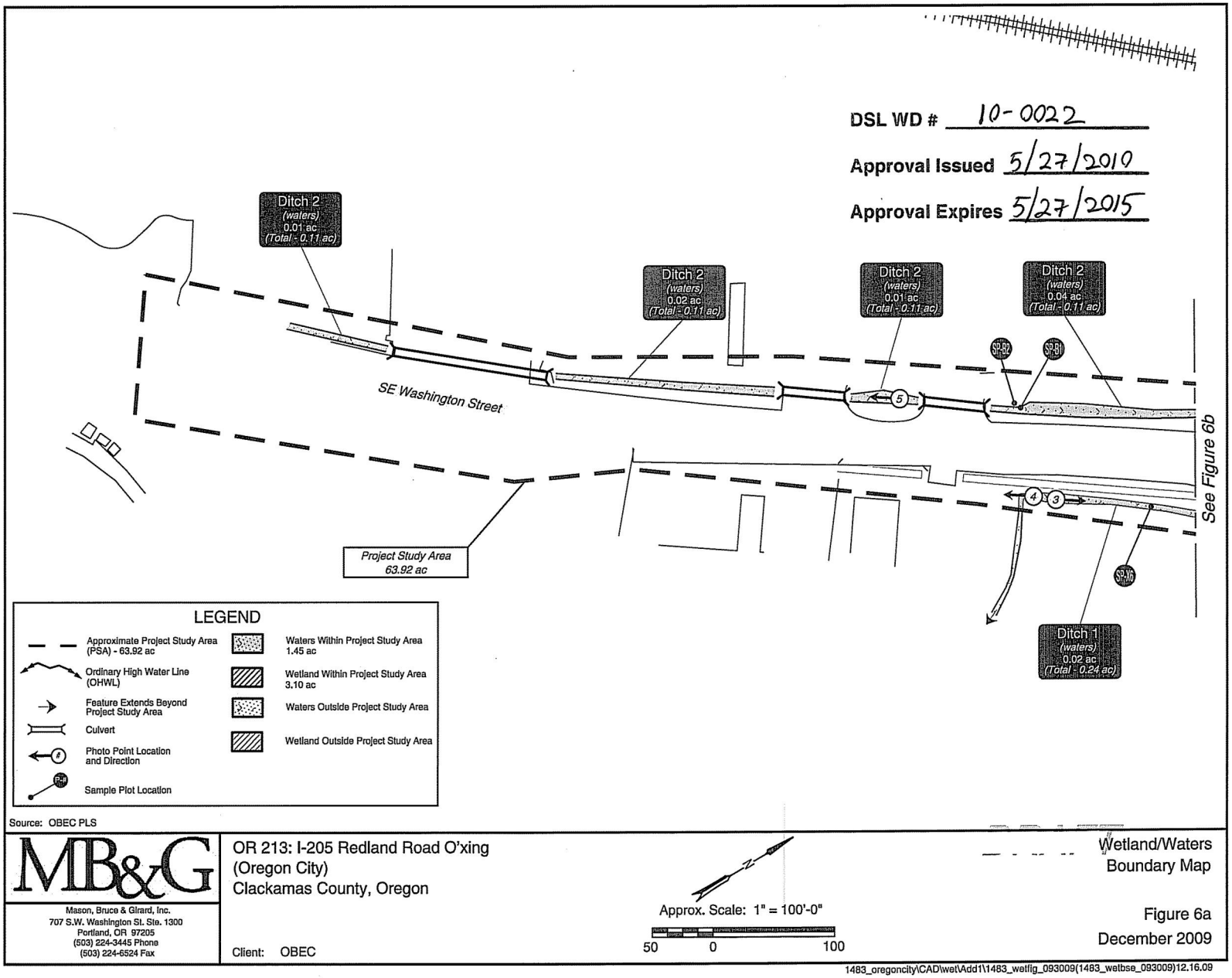
Fig 6n
Fig 6o
Fig 6f
Fig 6h
Fig 6g
Fig 6c
Fig 6d
Fig 6b
Fig 6e
Fig 6a
Fig 6i
Fig 6m
Fig 6j
Fig 6k
Fig 6l
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 800'-0"
400 0 800
Wetland/Waters
Boundary Map
INDEX MAP
Figure 6
December 2009
1483_oregoncity\CAD\Add1\1483_wetfig_092809(1483_wetbse_092809)10.09

WD# 10-0022

DSL WD # 10-0022

Approval Issued 5/27/2010

Approval Expires 5/27/2015



Source: OBEC PLS

MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax

OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

Client: OBEC

Approx. Scale: 1" = 100'-0"

50 0 100

Wetland/Waters Boundary Map

Figure 6a

December 2009

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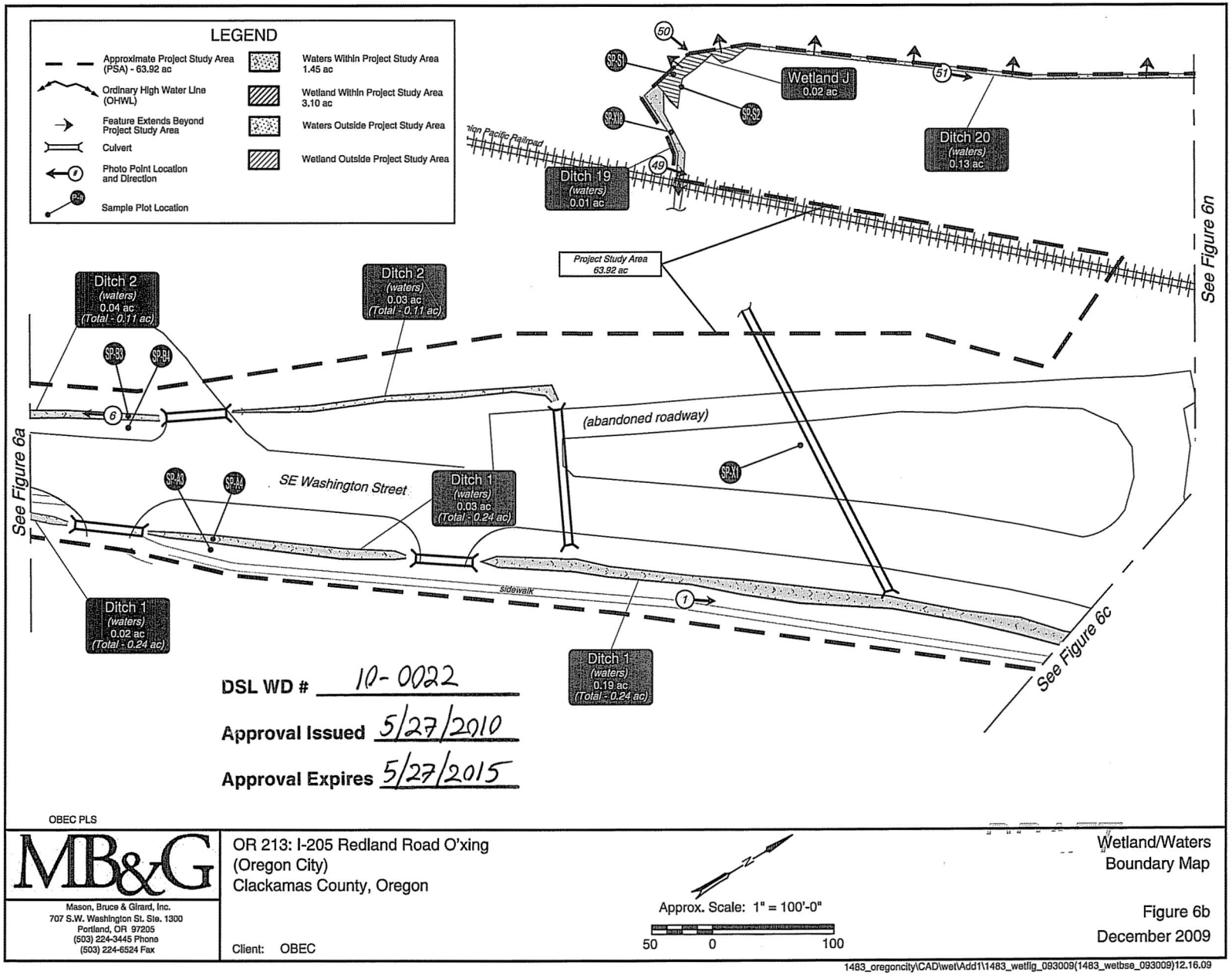
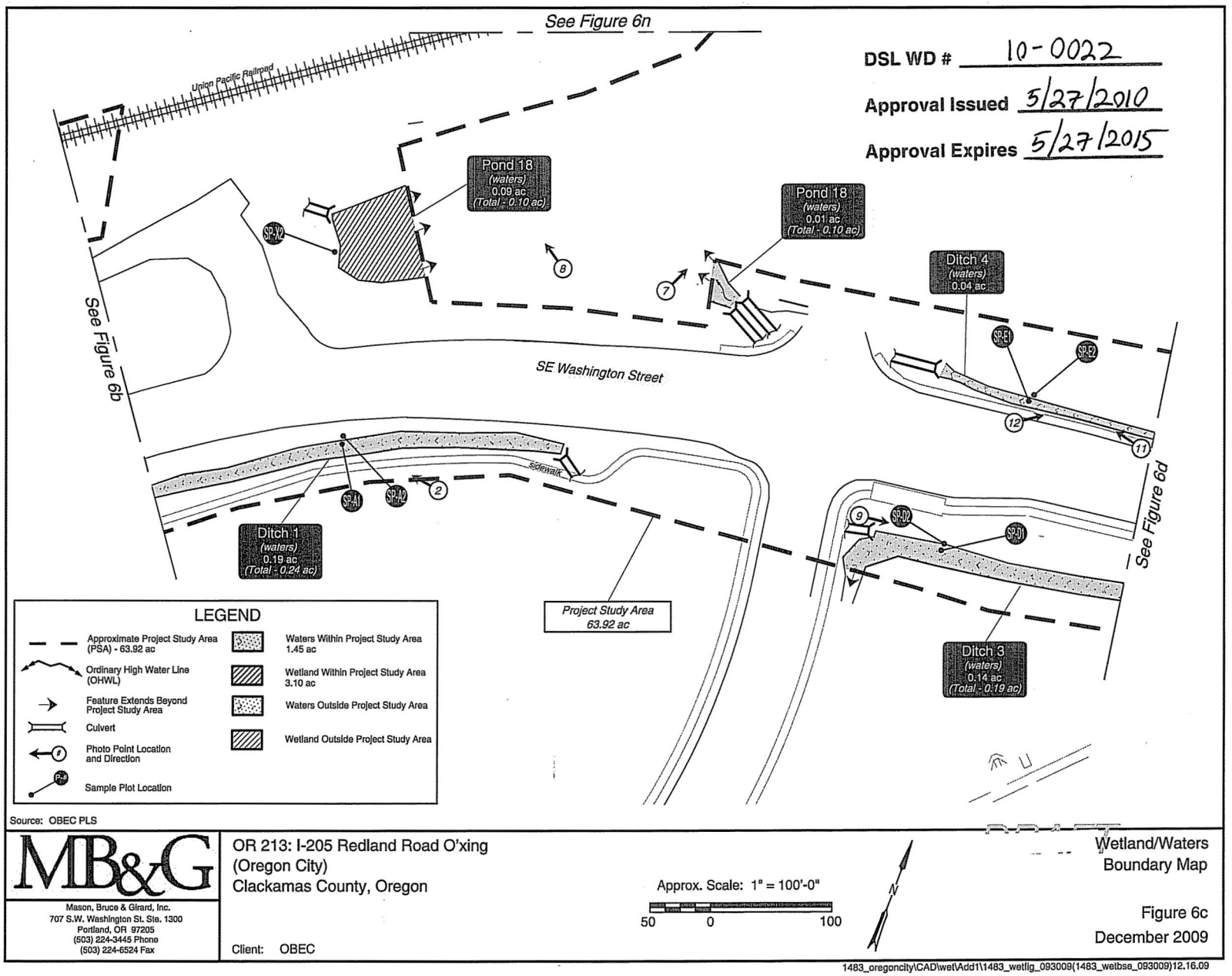

LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Wetland J 0.02 ac
Ditch 20 (waters) 0.13 ac
Ditch 19 (waters) 0.01 ac
Project Study Area 63.92 ac
Ditch 2 (waters) 0.04 ac (Total - 0.11 ac)
Ditch 2 (waters) 0.03 ac (Total - 0.11 ac)
(abandoned roadway)
SE Washington Street
Ditch 1 (waters) 0.03 ac (Total - 0.24 ac)
sidewalk
Ditch 1 (waters) 0.02 ac (Total - 0.24 ac)
Ditch 1 (waters) 0.19 ac (Total - 0.24 ac)
See Figure 6a
See Figure 6n
See Figure 6c
DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
Wetland/Waters Boundary Map
Figure 6b
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetlg_093009(1483_wetbse_093009)12.16.09


See Figure 6n
DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
Union Pacific Railroad
Pond 18 (waters) 0.09 ac (Total - 0.10 ac)
Pond 18 (waters) 0.01 ac (Total - 0.10 ac)
Ditch 4 (waters) 0.04 ac
SP-W2
SP-E1
SP-E2
SE Washington Street
See Figure 6b
See Figure 6d
sidewalk
SP-A1
SP-A2
Ditch 1 (waters) 0.19 ac (Total - 0.24 ac)
SP-D2
SP-D1
Project Study Area 63.92 ac
Ditch 3 (waters) 0.14 ac (Total - 0.19 ac)
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
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N
Wetland/Waters Boundary Map
Figure 6c
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetlg_093009(1483_wetbse_093009)12.16.09

See Figure 6f
Ditch 4
(waters)
0.04 ac
Wetland B
0.17 ac
Ditch 5
(waters)
0.05 ac
SE Washington Street
See Figure 6c
See Figure 6e
Ditch 3
(waters)
0.14 ac
(Total - 0.19 ac)
Ditch 3
(waters)
0.05 ac
(Total - 0.19 ac)
Project Study Area
63.92 ac
Wetland A
0.23 ac
Home Depot Parking Lot
Oregon State Hwy 213
See Figure 6i
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
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N
Wetland/Waters
Boundary Map
Figure 6d
December 2009
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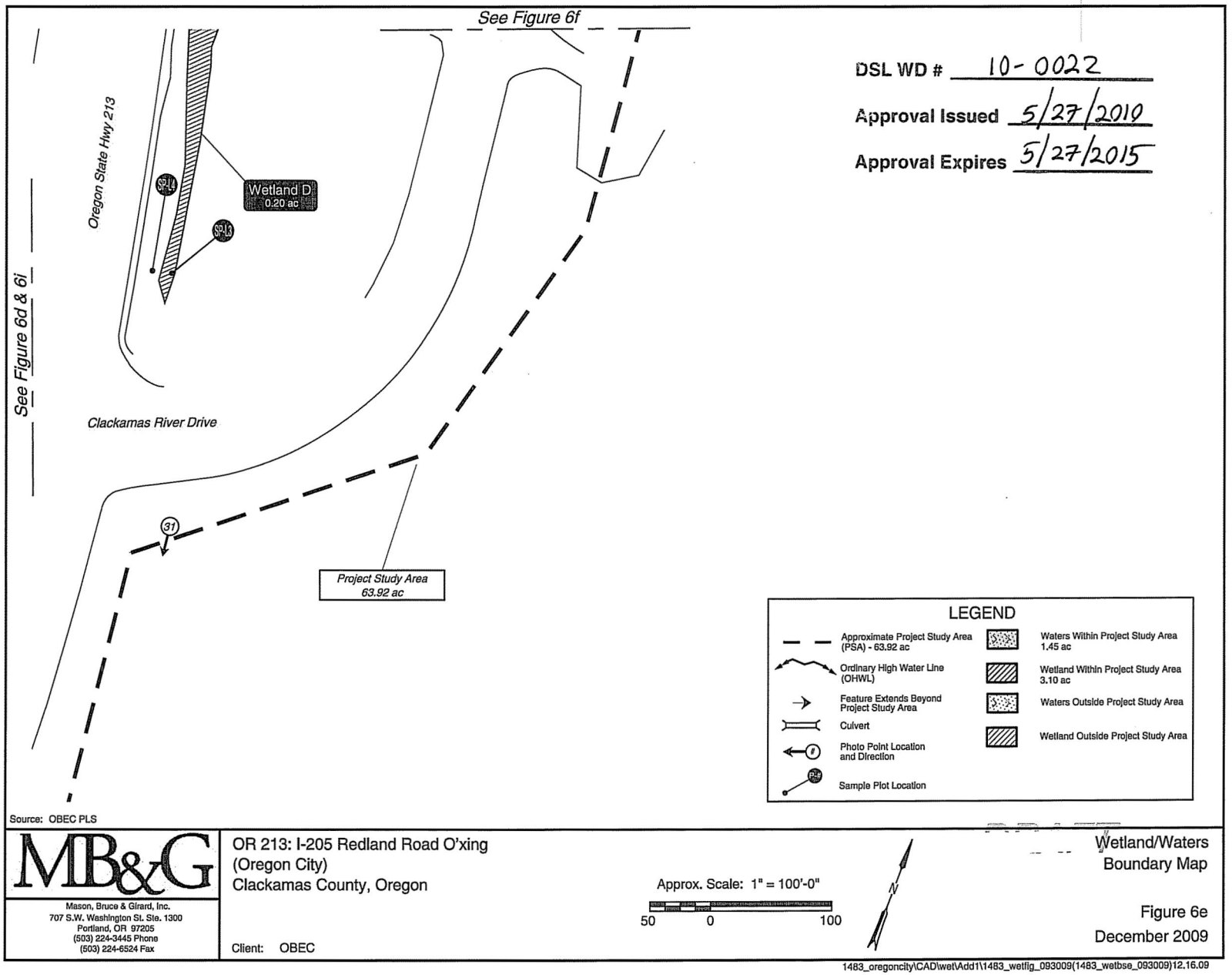
See Figure 6f
DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
Oregon State Hwy 213
SP14
SP15
Wetland D
0.20 ac
See Figure 6d & 6i
Clackamas River Drive
31
Project Study Area
63.92 ac
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
N
Wetland/Waters Boundary Map
Figure 6e
December 2009
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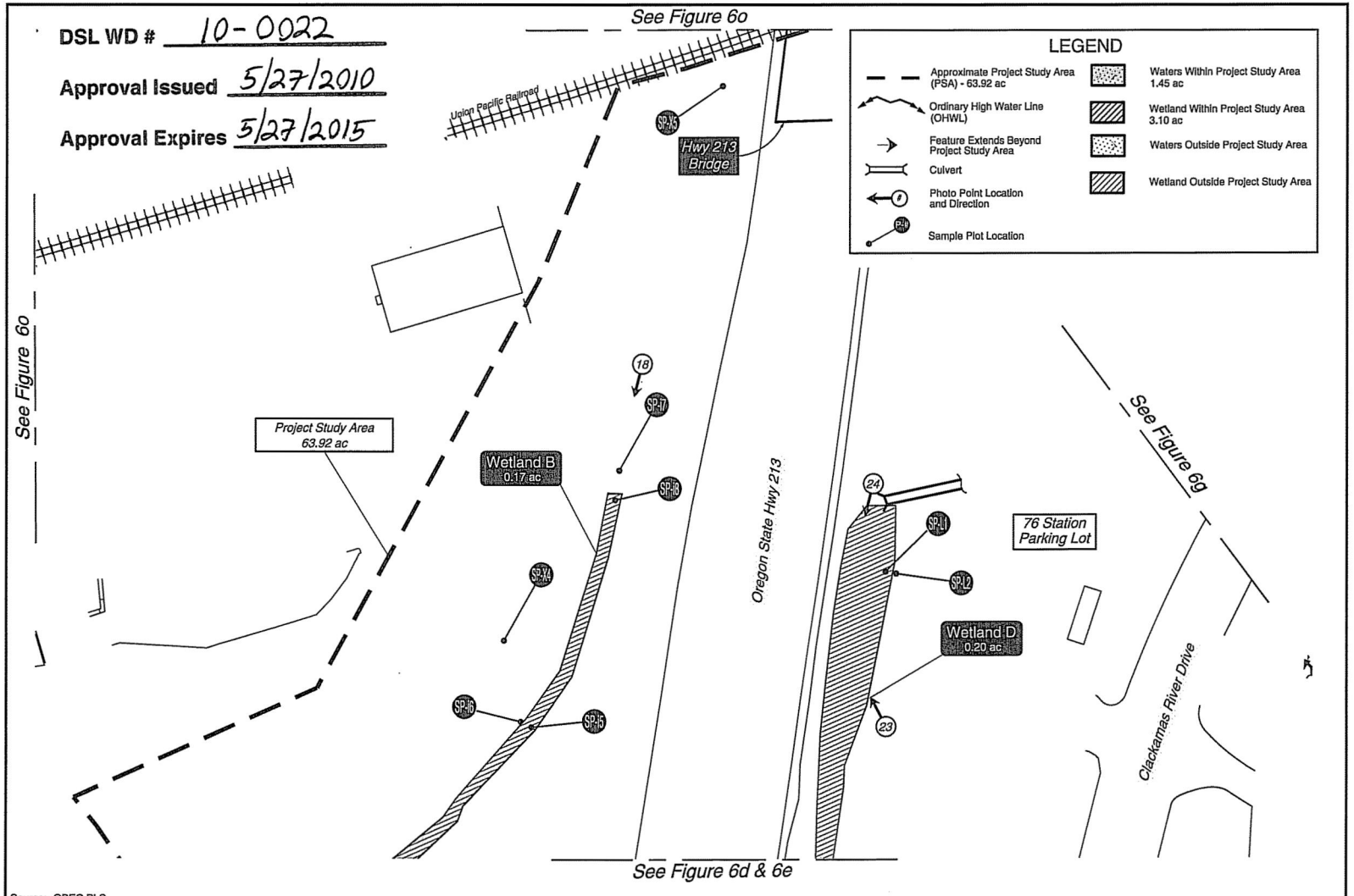
DSL WD # 10-0022

Approval Issued 5/27/2010

Approval Expires 5/27/2015



Source: OBEC PLS

MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax

OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

Client: OBEC

Approx. Scale: 1" = 100'-0"

50 0 100

Wetland/Waters Boundary Map

Figure 6f
December 2009

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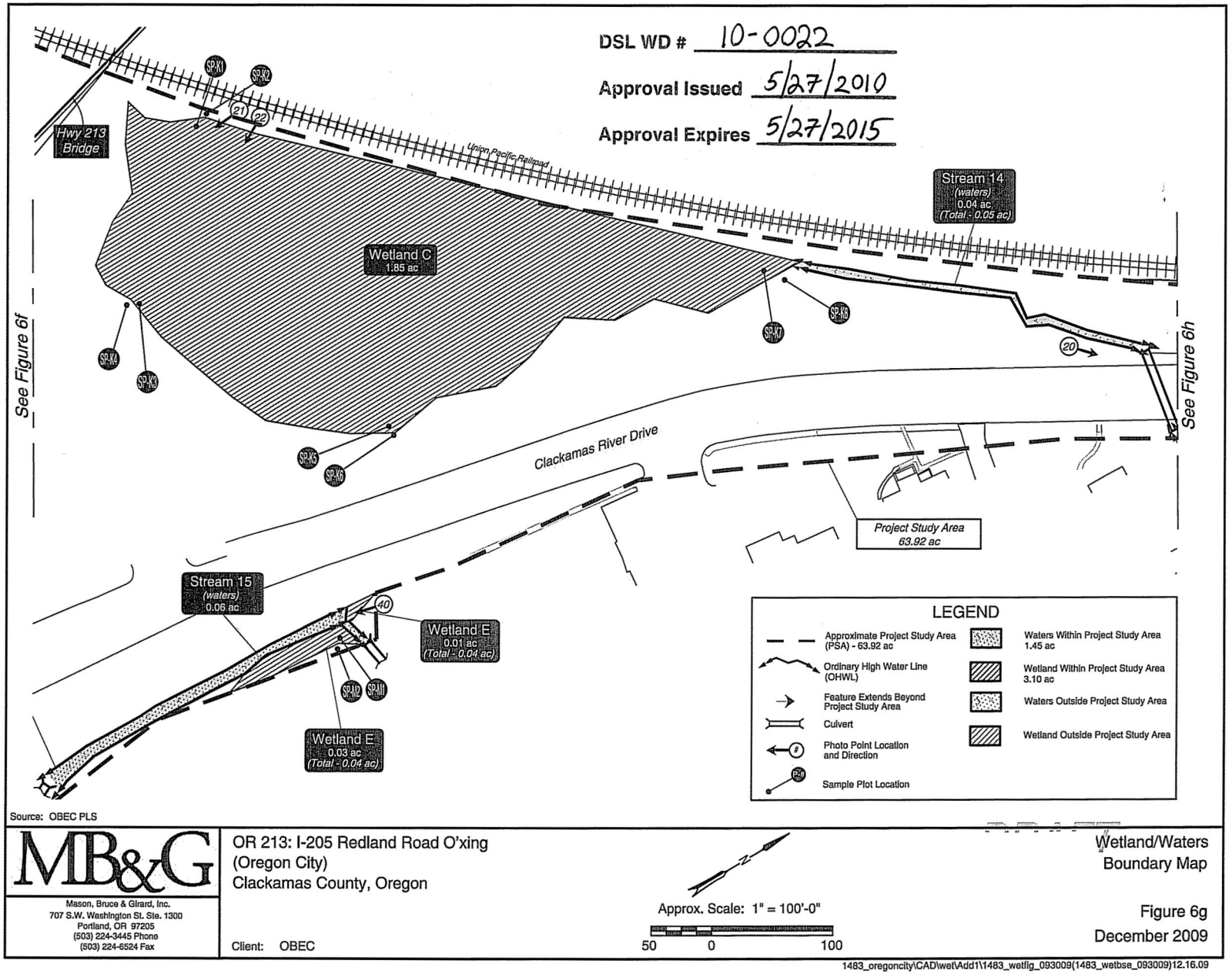
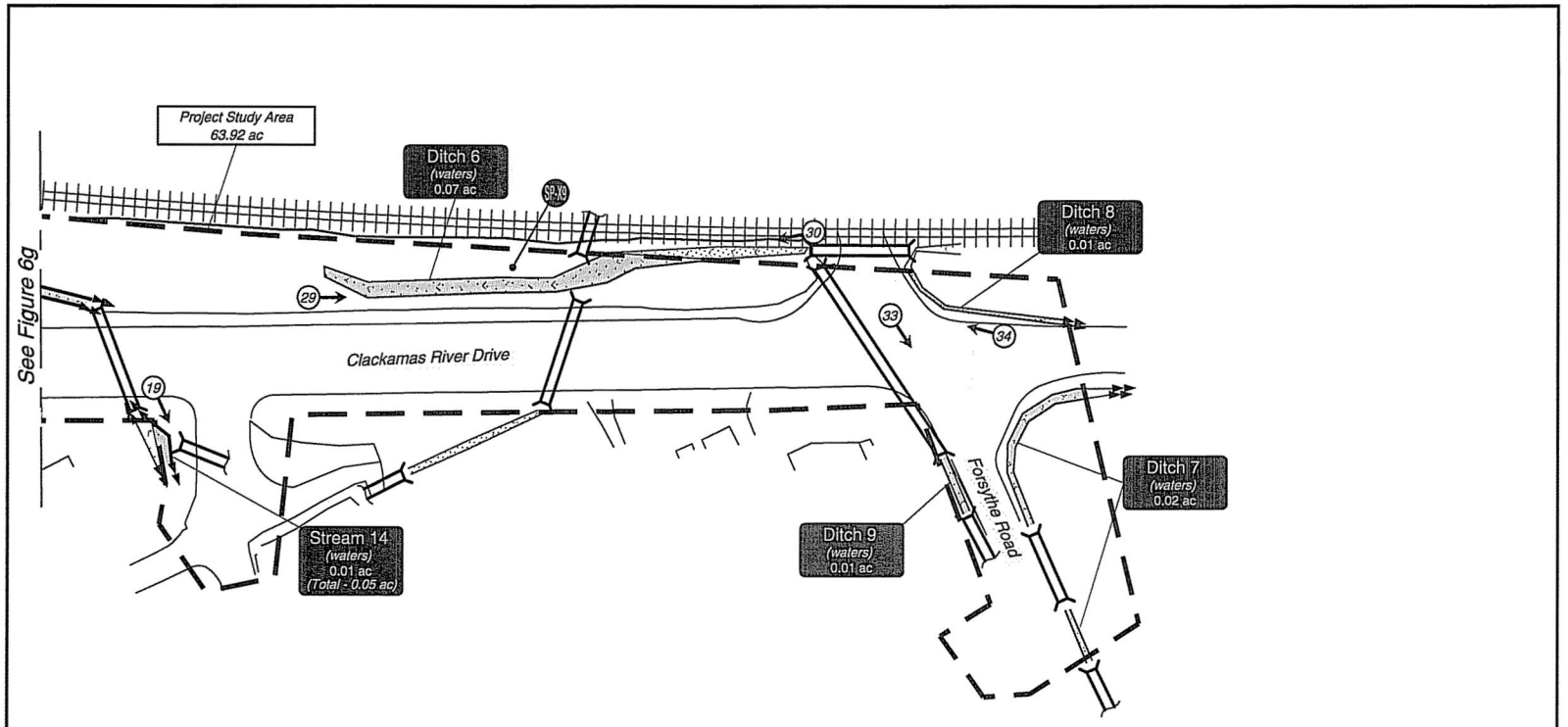

DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
Hwy 213 Bridge
Union Pacific Railroad
Stream 14
(waters)
0.04 ac
(Total - 0.05 ac)
Wetland C
1.85 ac
See Figure 6f
See Figure 6h
Clackamas River Drive
Project Study Area
63.92 ac
Stream 15
(waters)
0.06 ac
Wetland E
0.01 ac
(Total - 0.04 ac)
Wetland E
0.03 ac
(Total - 0.04 ac)
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
Wetland/Waters Boundary Map
Figure 6g
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09



DSL WD # 10-0022

Approval Issued 5/27/2010

Approval Expires 5/27/2015

Source: OBEC PLS

MB&G

Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax

OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

Client: OBEC

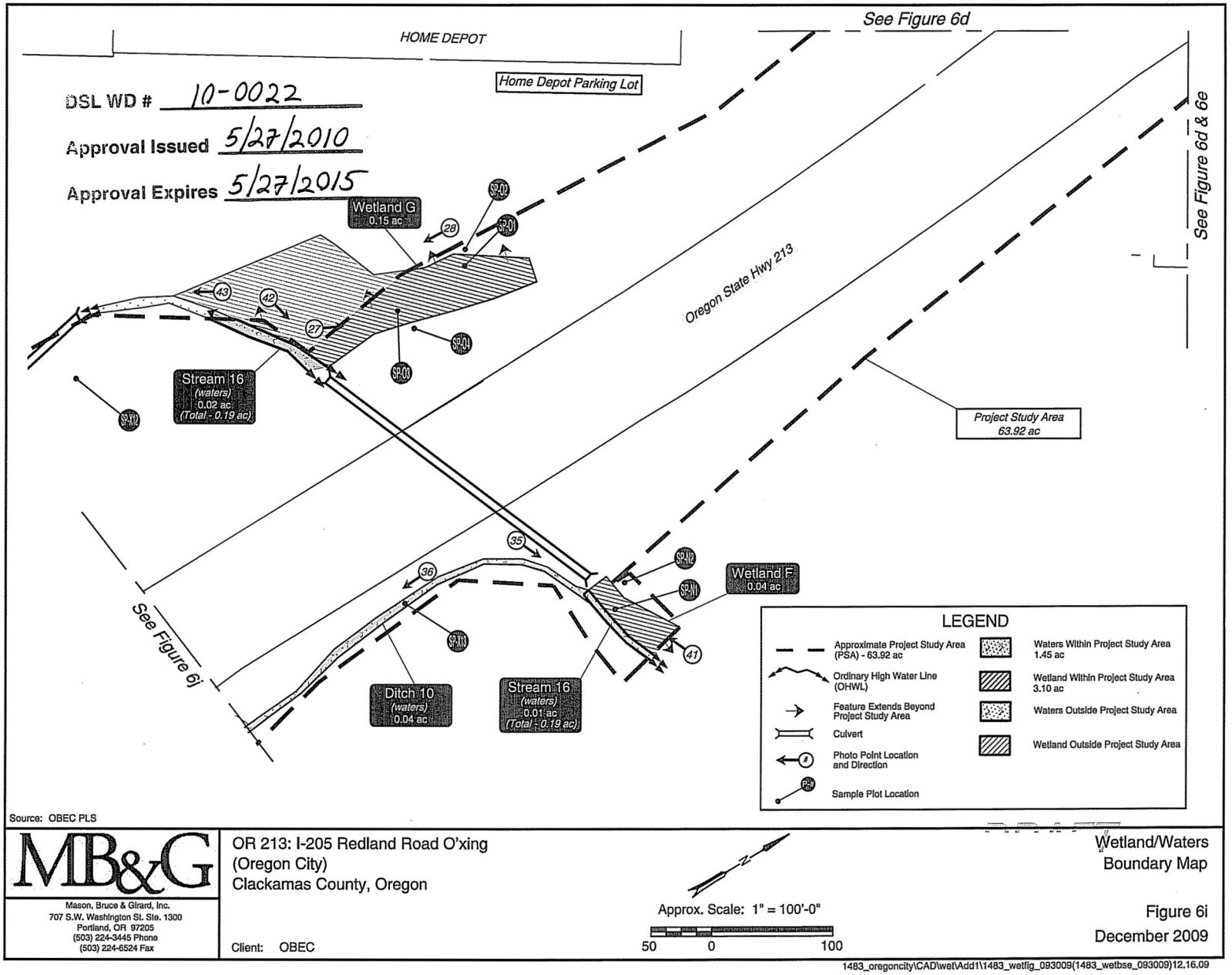
Approx. Scale: 1" = 100'-0"

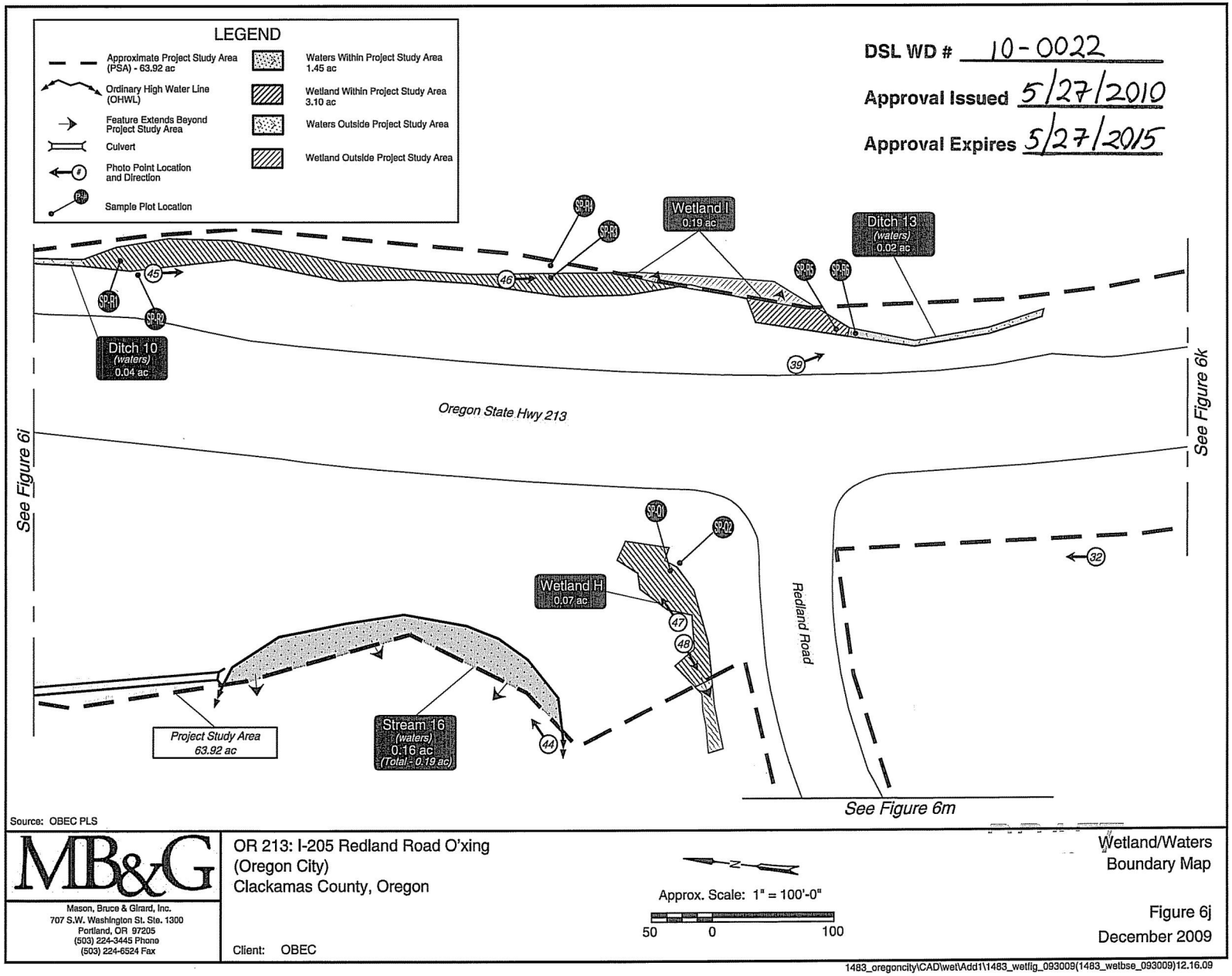
50 0 100

Wetland/Waters Boundary Map

Figure 6h
December 2009

1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09


See Figure 6d
HOME DEPOT
Home Depot Parking Lot
DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
Wetland G
0.15 ac
SP-02
SP-01
28
43
42
27
SP-04
SP-03
Oregon State Hwy 213
See Figure 6d & 6e
Stream 16
(waters)
0.02 ac
(Total - 0.19 ac)
SP-N12
Project Study Area
63.92 ac
35
36
SP-N2
SP-N1
Wetland F
0.04 ac
41
See Figure 6i
SP-N13
Ditch 10
(waters)
0.04 ac
Stream 16
(waters)
0.01 ac
(Total - 0.19 ac)
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
Wetland/Waters
Boundary Map
Figure 6i
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09


LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
Wetland I 0.19 ac
Ditch 13 (waters) 0.02 ac
Ditch 10 (waters) 0.04 ac
Oregon State Hwy 213
See Figure 6i
See Figure 6k
Wetland H 0.07 ac
Redland Road
Project Study Area 63.92 ac
Stream 16 (waters) 0.16 ac (Total - 0.19 ac)
See Figure 6m
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
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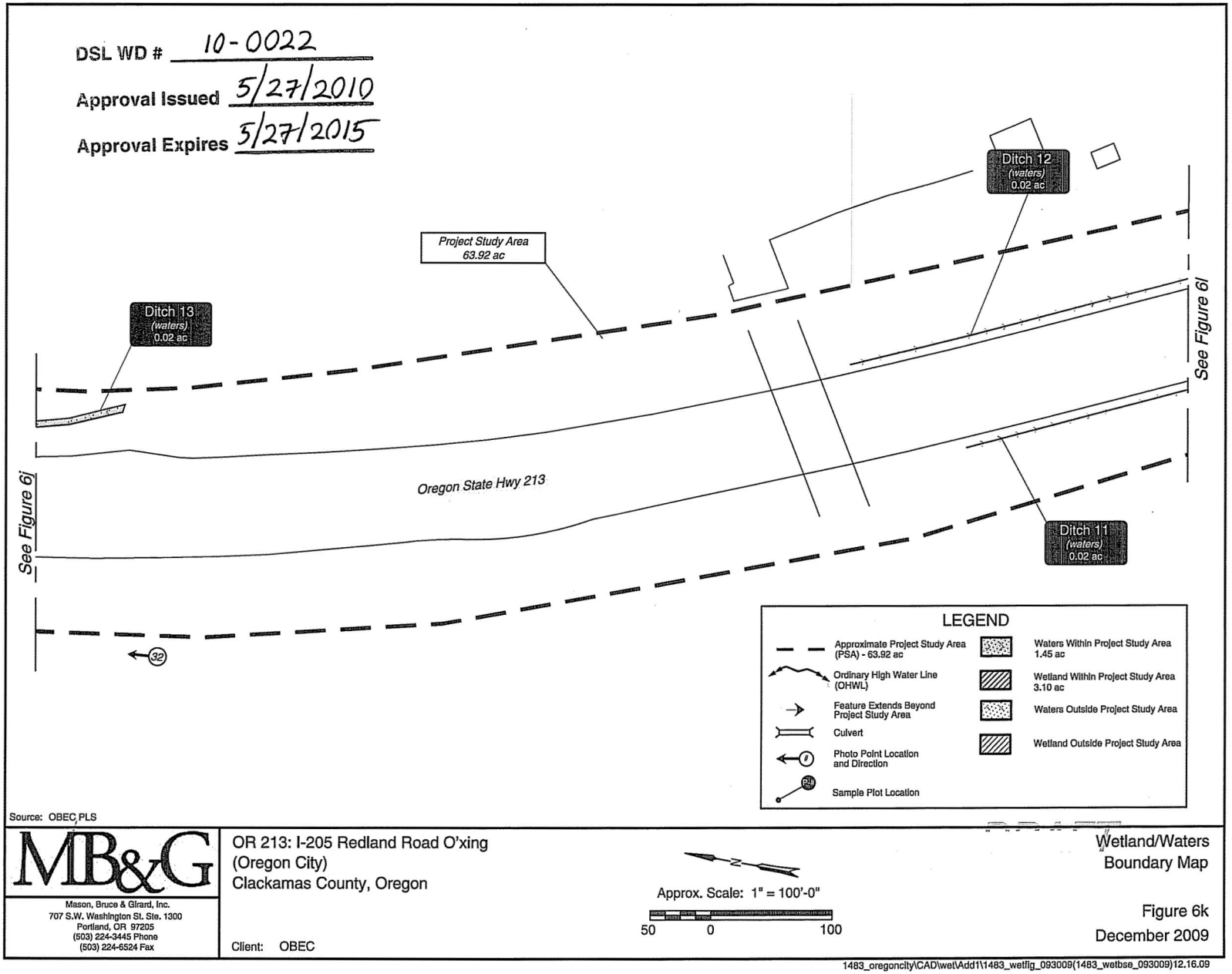
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
Wetland/Waters Boundary Map
Figure 6j
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09

DSL WD # 10-0022

Approval Issued 5/27/2010

Approval Expires 5/27/2015



Source: OBEC, PLS

MB&G

Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax

OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon

Client: OBEC

Approx. Scale: 1" = 100'-0"

50 0 100

Wetland/Waters Boundary Map

Figure 6k
December 2009

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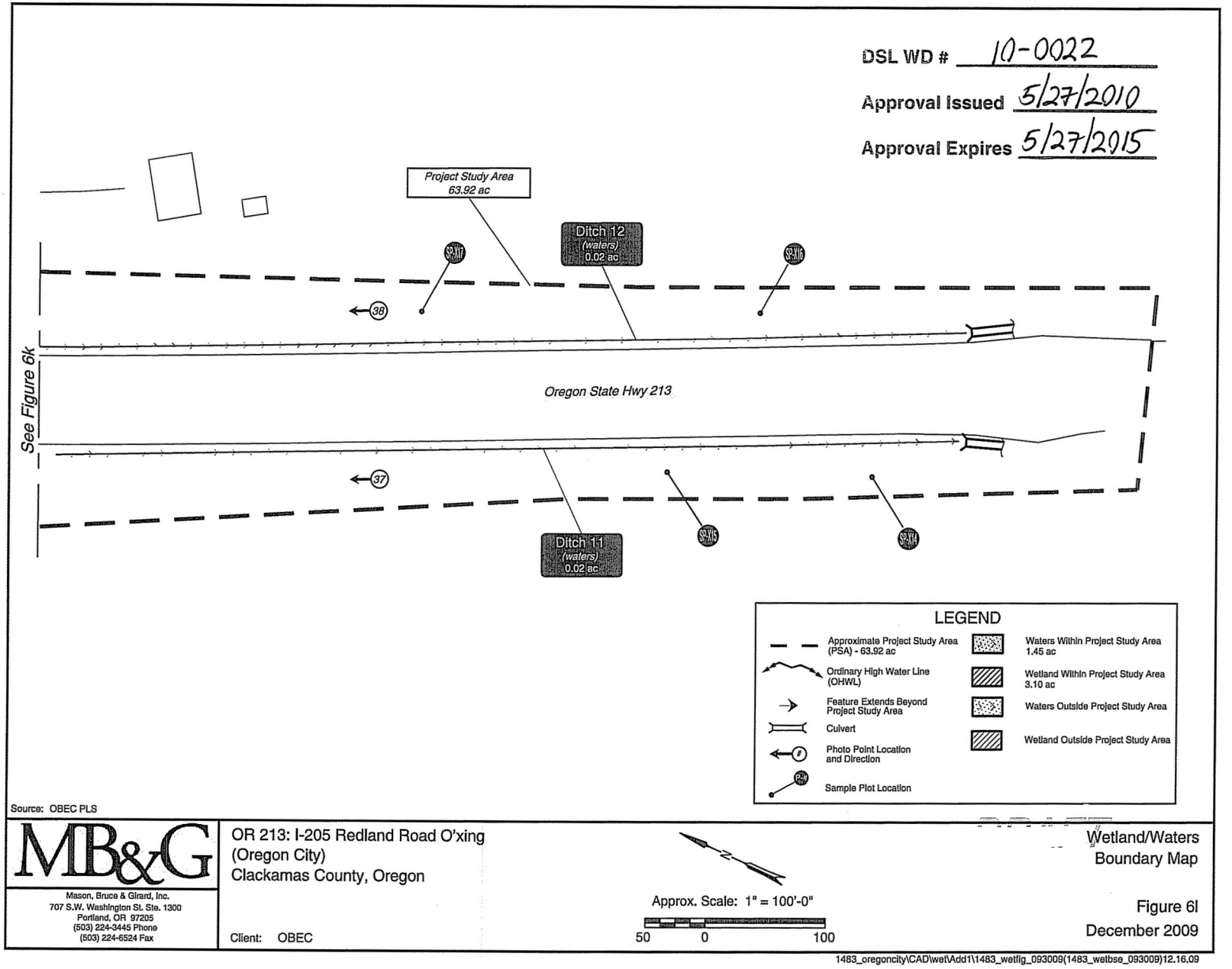
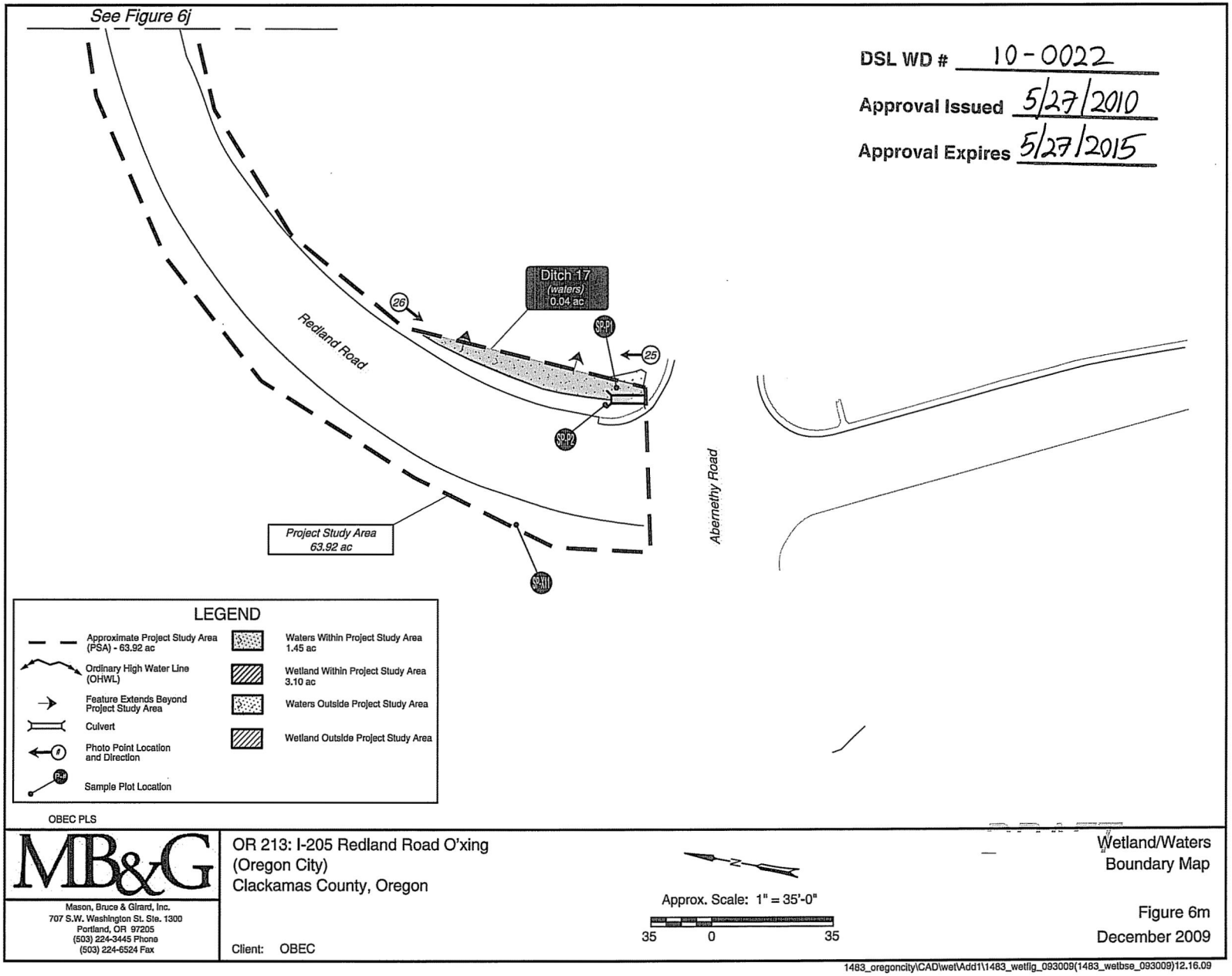

DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
Project Study Area
63.92 ac
Ditch 12
(waters)
0.02 ac
SP-XI7
SP-XI6
38
See Figure 6k
Oregon State Hwy 213
37
Ditch 11
(waters)
0.02 ac
SP-XI5
SP-XI4
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
Wetland/Waters
Boundary Map
Figure 6l
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09


See Figure 6j
DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
Ditch 17
(waters)
0.04 ac
Redland Road
Abernethy Road
Project Study Area
63.92 ac
LEGEND
Approximate Project Study Area (PSA) - 63.92 ac
Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
Waters Within Project Study Area 1.45 ac
Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
OBEC PLS
MB&G
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Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fax
OR 213: I-205 Redland Road O'xing
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 35'-0"
35 0 35
Wetland/Waters
Boundary Map
Figure 6m
December 2009
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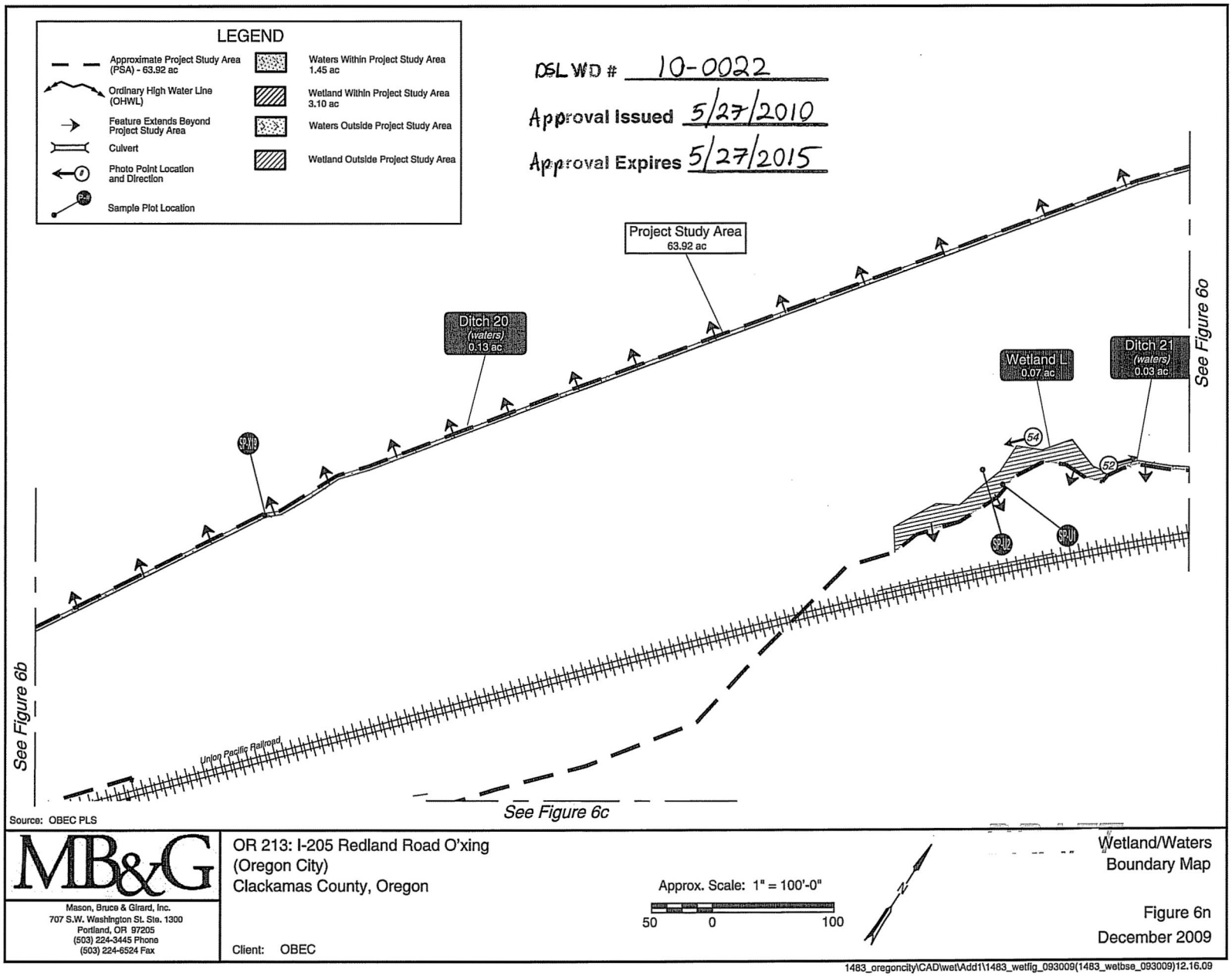
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Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
Culvert
Photo Point Location and Direction
Sample Plot Location
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Wetland Within Project Study Area 3.10 ac
Waters Outside Project Study Area
Wetland Outside Project Study Area
DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
Project Study Area 63.92 ac
Ditch 20 (waters) 0.13 ac
Wetland L 0.07 ac
Ditch 21 (waters) 0.03 ac
SP-U1b
SP-U2
SP-U1
54
52
See Figure 6o
See Figure 6b
See Figure 6c
Union Pacific Railroad
Source: OBEC PLS
MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
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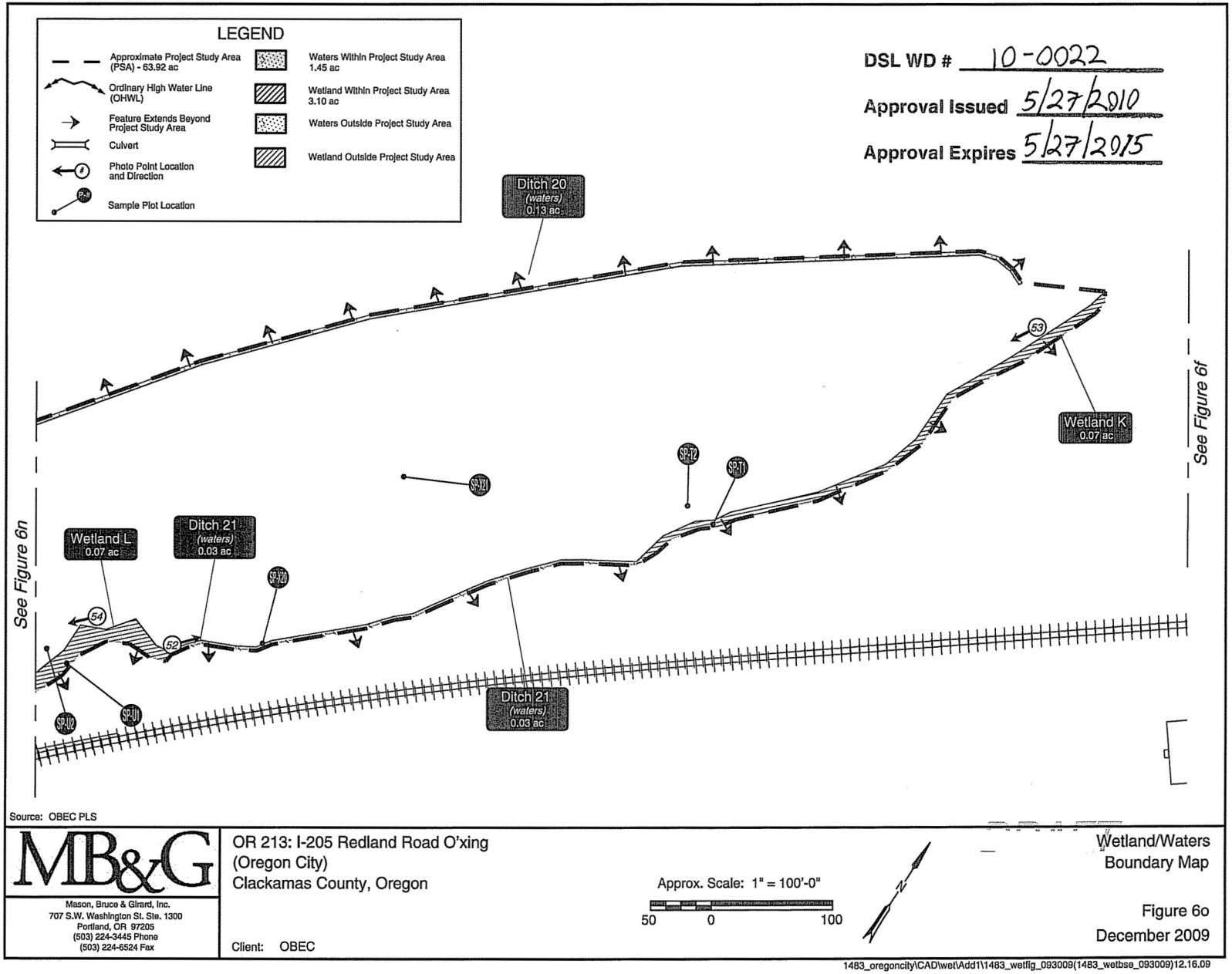
Clackamas County, Oregon
Approx. Scale: 1" = 100'-0"
50 0 100
Client: OBEC
Wetland/Waters Boundary Map
Figure 6n
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09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Ordinary High Water Line (OHWL)
Feature Extends Beyond Project Study Area
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Photo Point Location and Direction
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Waters Outside Project Study Area
Wetland Outside Project Study Area
DSL WD # 10-0022
Approval Issued 5/27/2010
Approval Expires 5/27/2015
Ditch 20 (waters) 0.13 ac
Wetland K 0.07 ac
Wetland L 0.07 ac
Ditch 21 (waters) 0.03 ac
Ditch 21 (waters) 0.03 ac
See Figure 6n
See Figure 6f
Source: OBEC PLS
MB&G
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707 S.W. Washington St. Ste. 1300
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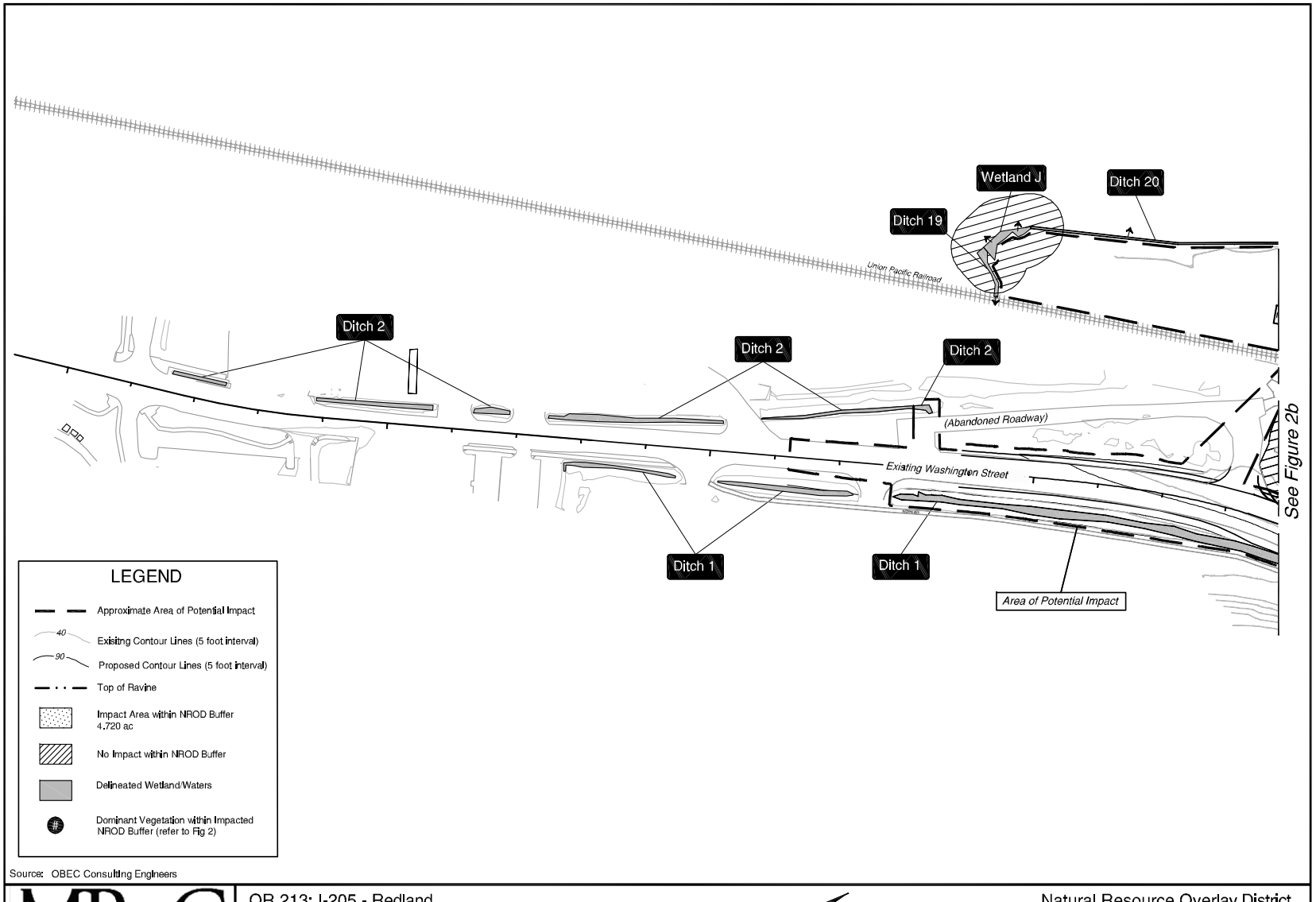
(Oregon City)
Clackamas County, Oregon
Client: OBEC
Approx. Scale: 1" = 100'-0"
50 0 100
Wetland/Waters Boundary Map
Figure 6o
December 2009
1483_oregoncity\CAD\wet\Add1\1483_wetfig_093009(1483_wetbse_093009)12.16.09

Pete Walter

From: Kristen K. Currens [KCurrens@masonbruce.com]
Sent: Friday, August 13, 2010 2:56 PM
To: Pete Walter
Cc: Tom Metcalf; Rick Garrison; Aleta Froman-Goodrich; Tim Strand; Robert Goodrich; James Stupfel; John Kalvelage; Mike Sweeney; Amy Jones
Subject: OR 213 irrigation line NROD discussion
Attachments: Pages from Final NROD report_6310.pdf

Pete,
Aleta, the OBEC team and I discussed the utility line further today and we are planning to proceed with the irrigation line connection at the southern end of the mitigation site as opposed to crossing the railroad tracks. Based on current design concepts, it is unlikely that excavation or fill would be required within features under the jurisdiction of the DSL or ACOE (see attached figure). All utility work is currently planned for north of jurisdictional features. The work will entail excavating a 1.5' wide by 38' long (57 square foot) trench to place a 6" water line (see attached figure) within the Wetland J NROD buffer. NROD impacts will be temporary and will be restored reseeding the area with native species. Please let me know if you need additional information to incorporate into your staff report.
Thanks,
Kristen

Kristen Currens
Biologist
Mason, Bruce & Girard, Inc.
707 SW Washington St., Suite 1300
Portland, OR 97205
503-224-3445
503-224-6524 (fax)
kcurrens@masonbruce.com
www.masonbruce.com



Source: OBEC Consulting Engineers

MB&G
Mason, Bruce & Girard, Inc.
707 S.W. Washington St. Ste. 1300
Portland, OR 97205
(503) 224-3445 Phone
(503) 224-6524 Fa2

OR 213: I-205 - Redland
Road O'xing (Oregon City) Project

Clients: OBEC Consulting Engineers
Oregon City

Approx. Scale: 1" = 200'-0"

100 0 200

Natural Resource Overlay District
Impact Maps

Figure 2a
May 2010

1588_OR213\CAD\NROD\1588_nrodfig_042110 (1588_nrodbse_042110)05.27.10

Pete Walter

From: Ray Valone [Ray.Valone@oregonmetro.gov]
Sent: Wednesday, August 11, 2010 11:29 AM
To: Pete Walter
Subject: RE: Agency Transmittal for OR 213 / I 205 Jughandle Project

Pete,

Thanks for the notice. We have notified our solid waste and transportation staff about this proposal and they know about it. We have no comment, as the actions do not 'trip' any of our regulations or code requirements.

Ray

From: Pete Walter [mailto:pwalter@ci.oregon-city.or.us]
Sent: Thursday, July 29, 2010 4:11 PM
To: Ray Valone
Subject: FW: Agency Transmittal for OR 213 / I 205 Jughandle Project

Ray,

Please can you review or forward to the responsible party.

Thanks,

Pete

From: Pete Walter
Sent: Thursday, July 29, 2010 4:09 PM
To: 'McIntire, Rick'; 'Region1DEVREVApplications@odot.state.or.us'; 'tom geil'
Cc: Laura Butler
Subject: Agency Transmittal for OR 213 / I 205 Jughandle Project

Dear Affected Agencies and Citizen Involvement Committee,

Attached please find a Comment Form and Vicinity Map for the I-205 / OR 213 "Jughandle" project for review and comment. There will be a Planning Commission Public Hearing for this project on August 23, 2010. This land use application is from the Oregon City Public Works Department and consists of the following requests:

WR 10-02:
- Requesting review of a Wetland / Water Resource Delineation, Impacts, and Mitigation)

VR 10-01: Variance
- Requesting a variance from minimum terracing requirements for a retaining wall under the City's Geologic Hazards Code

US 10-01: Geologic Hazards

The application also includes a request for review under the City's Flood Management Overlay District for balanced cut and fill, impacts and mitigation in the flood plain and flood way.

Documents for this application may be downloaded from the following website link.

http://www.orcity.org/planning/landuse

Pete Walter, AICP, Associate Planner
pwalter@orcity.org
Community Development Department
Planning Division
221 Molalla Avenue, Ste. 200
Oregon City, Oregon 97045
503-496-1568 Direct
503-722-3789 Front Desk
503-722-3880 Fax
Website: www.orcity.org

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Property Zoning Report

Online Mapping is available at OCWebMaps

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