Joint Permit Application

This is a joint application, and must be sent to all agencies (Corps, DSL, and DEQ). Alternative forms of permit applications may be acceptable; contact the Corps and DSL for more information.

Kyle Kearns
06/07/2021
21-110716-ZO
Date Stamp

U.S. Army Corps of Engineers Portland District	Oregon Department of State Lands	Oregon Department of Environmental Quality
Action ID Number	Number	

(1) TYPE OF PERMIT(S) IF KNOWN (check all that apply)

Corps: ☐ Individual ☐ Nationwide No.: __ ☐ Regional General Permit _____ ☐ Other (specify):

DSL: ☒ Individual ☐ GP Trans ☐ GP Min Wet ☐ GP Maint Dredge ☐ GP Ocean Energy ☐ No Permit ☐ Waiver

(2) APPLICANT AND LANDOWNER CONTACT INFORMATION

	Applicant	Property Owner (if different)	Authorized Agent (if applicable) ☑ Consultant ☐ Contractor
Name (Required)	Kiril Ivanov	Same as Applicant	Julie Wirth-McGee
Business Name	East Park, LLC		AKS Engineering & Forestry
Mailing Address 1	9550 SE Clackamas Rd		3700 River Road N
Mailing Address 2			Suite 1
City, State, Zip	Clackamas, OR 97015		Keizer, OR 97303
Business Phone			503-400-6028 Ext 417
Cell Phone			971-707-3783
Fax			
Email	karl@iecon.us		wirthmcgeej@aks-eng.com

(3) PROJECT INFORMATION

A. Provide the project location.

Project Name	Latitude & Longitude*
East Park Estates Phase 3	44.931614, -122.964621

Project Address / Location	City (nearest)	County
4811 State Street	Salem	Marion

Township	Range	Section	Quarter / Quarter	Tax Lot
07S	2W	29	B	Portion of 201
07S	2W	29	C	300 and 400
07S	2W	29	C	Portion of 199 and 200

Brief Directions to the Site:
Head east on State Street. Slight right to stay on Center St NE and cross over I-5. In roughly 1.20 miles, the project site will be on the left.

B. What types of waterbodies or wetlands are present in your project area? (Check all that apply.)

☐ River / Stream ☑ Non-Tidal Wetland ☐ Lake / Reservoir / Pond
☐ Estuary or Tidal Wetland ☐ Other ☐ Pacific Ocean

Waterbody or Wetland Name*	River Mile	6th Field HUC Name	6th Field HUC (12 digits)
Wetland B	N/A	Upper Little Pudding River	170900090108

* In decimal format (e.g., 44.9399, -123.0283)
** If there is no official name for the wetland or waterbody, create a unique name (such as "Wetland 1" or "Tributary A").

C. Indicate the project category. (Check all that apply.)		
☐ Commercial Development	☐ Industrial Development	☑ Residential Development
☐ Institutional Development	☐ Agricultural	☐ Recreational
☑ Transportation	☐ Restoration	☐ Bridge
☐ Dredging	☑ Utility lines	☐ Survey or Sampling
☐ In- or Over-Water Structure	☐ Maintenance	☐ Other:

(4) PROJECT DESCRIPTION

A. Summarize the overall project including work in areas both in and outside of waters or wetlands.

The proposed project involves the construction of Phases 3 through 6 of the East Park Estates Planned Unit Development (PUD). All future phases have independent utility and are separate standalone projects that do not rely on these residential phases for utilities or transportation infrastructure. The project consists of residential lots on approximately 67.6-acres with associated streets, sidewalks, curbs, gutters, stormwater treatment, updated or new culvert crossings, and underground utilities.

Roadway work will consist of half street improvements along State Street and Cordon Road, as well as a network of interior streets. Half street improvements along State Street and Cordon Road will consist of widening for sidewalk construction on the north and west sides of the street, respectively, along the project frontage. Per City design standards, the interior roadway section will consist of two travel lanes with concrete sidewalks and planter strips on both sides of the street. The extension of Lost Lake Street southward towards State Street will require improvements to an existing farm access culvert crossing over Wetland B. The existing crossing consists of one 36-inch concrete pipe that will be replaced with a longer 36-inch PVC culvert to facilitate the southward extension of Lost Lake Street. In addition, the southeast extension of Greencrest and Redmond Streets from their current stubs will require the installation of new 36-inch PVC pipes. Construction of the three crossings will require permanent impacts to Wetland B. As required by the City of Salem, Greencrest Street, as the designated collector street, will be extended southward to State Street, resulting in permanent impacts to Wetland H. The construction of two interior streets at the south end of the project will require permanent impacts to Wetland I.

Though the subject parcel is relatively flat with only minimal woody vegetation cover, earthwork (i.e. clearing and grading) will be required to ensure proper storm drainage and to facilitate construction activities on the new residential lots. This will include rough grading and final grading. Temporary stockpile locations have been identified within existing uplands in case the contractor opts to temporarily store excavated materials on-site.

Post-construction stormwater treatment will be provided by a regional combination facility constructed in the northern portion of the project site. Curb inlets and storm lines will be installed to collect and convey runoff from impervious areas to the facilities. The new facility will provide biological uptake and absorption as well as filtration through media per accepted industry standards.

Phase 5 will be constructed entirely in uplands, however, Phases 3, 4 and 6 will require permanent impacts to three on-site palustrine emergent (PEM) wetlands as discussed in further detail in Section B below. The project will result in greater than 50 cubic yards of removal and fill within waters of the state and greater than 0.20 acres of wetland impacts, requiring an Individual Permit from the Oregon Department of State Lands (DSL).

B. Describe work within waters and wetlands.

Permanent impacts to Wetlands B, H and I are necessary during construction of three interior roadway crossings over Wetland B (Lost Lake Street, Greencrest Street, Redmond Street), during construction of the required extension of Greencrest Street to State Street, and during construction of two other interior streets. All Permit Maps and Figures, including site plans and cross-sections, are provided in Attachment 1.

Lost Lake Street Crossing – Replacement of the existing farm access to lengthen the crossing to facilitate construction of the Lost Lake Street extension from the existing road stub southward to State Street will require permanent impacts to Wetland B during Phase 3 of the project. Approximately 560 square feet (0.01 acres) of the wetland will be permanently impacted when 20 cubic yards of native material is excavated to the desired depth. The area will then be backfilled with bedding material (aggregate) and the new 36-inch culvert set in position and structural fill placed around the culvert for stability. The roadway subgrade and wearing surface will be constructed, and new aggregate roadway embankments will be installed. An estimated 120 cubic yards of aggregate, structural fill, and concrete/asphalt will be placed within Wetland B to facilitate construction of the new Lost Lake Street crossing.

Greencrest Street Crossing – Construction of a new culvert crossing to facilitate the required southeast extension of Greencrest Street from the existing road stub southward to State Street will require permanent impacts to Wetland B during Phase 4 of the project. Approximately 3,360 square feet (0.08 acres) of the wetland will be permanently impacted when 125 cubic yards of native material is excavated to the desired depth. The area will then be backfilled with bedding material and the new 36-inch culvert set in position and structural fill placed around the culvert for stability. The roadway subgrade and wearing surface will be constructed, and new aggregate roadway embankments will be installed. An estimated 500 cubic yards of aggregate, structural fill, and concrete/asphalt will be placed within Wetland B to facilitate construction of the new Greencrest Street crossing.

Redmond Street Crossing – Construction of a new culvert crossing to facilitate the southeast extension of Redmond Street from the existing road stub will require permanent impacts to Wetland B during Phase 6 of the project. Approximately 1,074 square feet (0.02 acres) of the wetland will be permanently impacted when 40 cubic yards of native material is excavated to the desired depth. The area will then be backfilled with bedding material and the new culvert set in position and structural fill placed around the culvert for stability. The roadway subgrade and wearing surface will be constructed, and new aggregate roadway embankments will be installed. A new storm line will be installed within the new roadway subgrade, above the new 36-inch culvert. An estimated 250 cubic yards of aggregate, structural fill, and concrete/asphalt will be placed within Wetland B to facilitate construction of the new Redmond Street crossing.

Roadway Construction – Construction of the required collector street (Greencrest Street) and two interior local streets (Fargin Street and Chive Avenue) will require permanent impacts to two isolated wetlands located in the southern part of the project.

- Wetland H Impacts – 2,989 square feet (0.07 acres), 180 cubic yards removal, 70 cubic yards fill
- Wetland I Impacts – 5,705 square feet (0.13 acres), 410 cubic yards removal, 255 cubic yards fill

Impacts will be initiated when native material is excavated from within the wetland area to facilitate construction of the roadway fill prism. The finished roadway grades for all three streets will be below the existing wetland grade to facilitate proper storm drainage. Once the area has been prepared, geotextile fabric, aggregate subgrade, asphalt and concrete will be placed within the wetland area to construct the roadway surface, embankments, and sidewalks.

Indirect Hydrology Impacts – In addition to the permanent, direct impacts proposed during construction, the required southward extension of Greencrest Street to State Street will also result in indirect impacts to Wetland H. Though no physical removal or fill activities are proposed in this location, construction of the roadway is likely to sever hydrology sources, indirectly impacting the remaining 5,260 square feet (0.12 acres) of Wetland H. The new asphalt roadway will be lower in elevation than the existing wetland grade

and founded on an aggregate subgrade that could affect groundwater levels within the area. Further, the new roadway will be equipped with curbs and gutters that will limit infiltration and the amount of rainfall that reaches the remaining wetland area. As a result, it is believed that the required extension of Greencrest Street to State Street will indirectly impact the remainder of isolated Wetland H.

C. Construction Methods. Describe how the removal and/or fill activities will be accomplished to minimize impacts to waters and wetlands.

Construction equipment for the project will be specific to the selected contractor but will likely include dump trucks, backhoes/excavators, graders, paving machines, roller compactors, water trucks, and cement trucks. All construction staging and stockpiling will only occur in uplands and construction access will be provided from existing roadways and gravel construction entrances. Construction entrances and staging areas are shown on attached Figures 7A and 7B.

Pre-Construction Minimization

Some of the elements to be implemented prior to construction to minimize resource impacts are as follows:

- Inform contractor of all permit conditions.
- Erosion and sediment control best management practices (BMPs) will be used to prevent any sediment or sediment-laden water from leaving the site. The contractor will install the BMPs prior to initiating ground disturbance. Anticipated BMPs include sediment fencing, wattles, inlet protection, gravel construction entrances, and a designated concrete washout area.
- Clearly demarcate all no-work zones with orange construction fencing or similar material.
- Confirm that emergency erosion control and spill response materials are on-site prior to construction.

Minimization Measures During Construction

All equipment will be operated from existing impervious areas or uplands, and the contractor will be required to monitor and maintain all erosion controls measures throughout the project to ensure that they are working properly. Similarly, the contractor will clean and inspect all machinery when working near the on-site resources to confirm that it is free of weeds, leaks, and grease.

Post-Construction Stormwater

The project's stormwater quality treatment systems were designed to meet the City of Salem's and Marion County's treatment and/or detention requirements. All contributing impervious area associated with the project will be treated on site. Stormwater runoff will be controlled to the pre-developed flow rates for half the 2-year 24-hour storm event and 10, 25, and 50-year storm events. The stormwater system for this project will include a collection and conveyance system that will use a large combination facility at the north end of the project for treatment. To provide water quality treatment for runoff from the proposed impervious surfaces, stormwater will flow into the vegetated facility, exfiltrate through the growing medium and into a rock storage section. Pollutants of concern post-construction include suspended solids, nutrients, heavy metals, and hydrocarbons. These contaminants will be treated by fully retaining the water quality design storm runoff within the facility. Contaminants will settle and/or will be captured by the vegetation and growing medium as stormwater infiltrates.

(4) PROJECT DESCRIPTION (continued)

D. Describe source of fill material and disposal locations if known.

Construction materials will be imported as necessary, though sources are currently unidentified. Native material removed from the site will be disposed of at an off-site upland location.

E. Construction timeline.

What is the estimated project start date? September 2021

What is the estimated project completion date? December 2022

Is any of the work underway or already complete? If yes, please describe. ☐ **Yes** ☑ **No**

F. Removal Volumes and Dimensions

Wetland / Waterbody Name *	Removal Dimensions					Time Removal is to remain**	Material***
	Length (ft.)	Width (ft.)	Depth (ft.)	Area (sf.)	Volume (c.y.)		
Wetland B	Varies	Varies	Varies	4,994	185	Permanent	Native soil
Wetland H	Varies	Varies	Varies	8,249	180	Permanent	Native soil
Wetland I	Varies	Varies	Varies	5,705	410	Permanent	Native soil

G. Total Removal Volumes and Dimensions

Total Removal to Wetlands and Other Waters	Length (ft.)	Area (sf./ac.)	Volume (c.y.)
Total Removal to Wetlands	Varies	18,948/0.43	775
Total Removal Below Ordinary High Water	--	--	--
Total Removal Below Highest Measured Tide	--	--	--
Total Removal Below High Tide Line	--	--	--
Total Removal Below Mean High Water Tidal Elevation	--	--	--

H. Fill Volumes and Dimensions

Wetland / Waterbody Name*	Fill Dimensions					Time Fill is to remain**	Material***
	Length (ft.)	Width (ft.)	Depth (ft.)	Area (sf.)	Volume (c.y.)		
Wetland B	Varies	Varies	Varies	4,994	870	Permanent	Aggregate/Engineered Fill/Concrete/Asphalt
Wetland H	Varies	Varies	Varies	8,249	70	Permanent	Aggregate/Engineered Fill/Concrete/Asphalt
Wetland I	Varies	Varies	Varies	5,705	255	Permanent	Aggregate/Engineered Fill/Concrete/Asphalt

I. Total Fill Volumes and Dimensions

Total Fill to Wetlands and Other Waters		Length (ft.)	Area (sf./ac.)	Volume (c.y.)
Total Fill to Wetlands		Varies	18,948/0.43	1,195
Total Fill Below Ordinary High Water		--	--	--
Total Fill Below Highest Measured Tide		--	--	--
Total Fill Below High Tide Line		--	--	--
Total Fill Below Mean High Water Tidal Elevation		--	--	--

*If there is no official name for the wetland or waterbody, create a unique name (such as "Wetland 1" or "Tributary A").
**Indicate whether the proposed area of removal or fill is permanent or, if you are proposing temporary impacts, specify the days, months or years the fill or removal is to remain.
*** Example: soil, gravel, wood, concrete, pilings, rock etc.

(5) PROJECT PURPOSE AND NEED

Provide a statement of the purpose and need for the overall project.

Salem is Oregon's capital city and the regional economic center of the Mid-Willamette Valley. The city is growing and with that growth comes a need for more housing. By 2035 nearly 60,000 more people are expected to live in the Salem area according to the Salem Housing Needs Analysis (HNA) 2015 to 2035. This projected population growth and Salem's demographics trends are expected to result in the need for additional housing and more diverse housing types. The site is zoned for residential development and is in close proximity to major transportation corridors and desired schools, making it an ideal location to provide needed housing.

The purpose of this project is to create affordable residential housing to meet the growing demand within the City of Salem. The project will also provide needed sidewalks along State Street to provide a safe travel corridor for students and residents. The wetland impacts proposed are required to ensure safe transportation corridors throughout the development for vehicles, pedestrians, and bicyclists.

(6) DESCRIPTION OF RESOURCES IN PROJECT AREA

A. Describe the existing physical, chemical, and biological characteristics of each wetland or waterbody. Reference the wetland and waters delineation report if one is available. Include the list of items provided in the instructions.

The northern half of the project site was assessed for the presence of wetlands and waters by AKS Engineering & Forestry, LLC (AKS) on September 17, 2019. During the site visit, two wetlands (referred to as Wetlands B and C) were delineated within the project limits. The Wetland Delineation Report was prepared and submitted to DSL under WD#2019-0557, receiving concurrence on January 2, 2020 (Attachment 2). The southern half was assessed by AKS staff on March 26 and April 10, 2020, and March 28, 2021. During the site visit, two wetlands (referred to as Wetlands H and I) were delineated within the project limits. The delineation report was submitted to DSL for review under WD#2020-0298, receiving concurrence on April 7, 2021 (Attachment 3). No Aquatic Resources of Special Concern exist within the project site or within the immediate vicinity.

Wetland B is a ditched PEM swale that flows northerly through the eastern portion of the project site. Wetland B belongs to the Slope HGM classification, with hydrology inputs sourced primarily from groundwater, and secondarily by direct precipitation and runoff from adjacent uplands. Dominant vegetation consists primarily of reed canarygrass (*Phalaris arundinacea*). When surface water is present, it exits the site to the north through culverts under Auburn Road NE into a tributary to Fruitland Creek. Wetland B is 40,328 square feet in size.

Wetland C is a Palustrine forested (PFO)/PEM wetland belonging to the Slope HGM classification located in the northeastern portion of the site. A narrow channel (approximately 1-foot-wide by ½-foot-tall banks) originates in the wetland that conveys flow easterly under NE Cordon Road. The dominant vegetation in the PEM portion of the wetland consists primarily of reed canarygrass. The dominant vegetation in the PFO portion of the wetland consist of black cottonwood (*Populus balsamifera*, FAC) and Oregon ash (*Fraxinus latifolia,* FACW), with lesser amounts of clustered rose (*Rosa pisocarpa*, FAC), and Douglas' meadowsweet (*Spiraea douglasii,* FACW). Wetland C is 6,863 square feet in size. No impacts to Wetland C will occur as a component of this project.

Wetlands H and I are isolated PEM wetlands belonging to the Slope HGM classification located in the southern portion of the site. Hydrology supporting this wetland is a seasonally high groundwater table along with direct precipitation on a subtle southwestern slope. Vegetation primarily consists of spikesedge (*Eleocharis obtusa*; OBL) and spreading bent (*Agrostis stolonifera*; FAC). Wetland H is 8,249 square feet in size; Wetland I is 5,705 square feet in size.

Existing Wetland Function and Value Assessment: A wetland function and value assessment was conducted using the Oregon Rapid Wetland Assessment (ORWAP v3.1) for Wetland. The ORWAP Summary Table illustrating the results of the grouped function and value scores is provided below. Copies of the required maps and Excel data sheets are provided in Attachment 4.

Wetland B ORWAP Summary Table

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function	Water Storage & Delay (WS)	Moderate		Lower	
Water Quality Support	Sediment Retention & Stabilization (NR)	Moderate		Higher	
Fish Habitat	Anadromous Fish Habitat (FA)	Lower		Lower	
Aquatic Habitat	Amphibian & Reptile Habitat (AM)	Higher		Moderate	LM
Ecosystem Support	Organic Nutrient Export (OE)	Higher	MH	--	

Based on the best professional judgment (BPJ) of the investigators, a rating break proximity of "LM" should be indicated for the Hydrologic Function group because Wetland B is a Slope wetland that receives discharging groundwater as its main source of hydrology, with only minimal contributions from direct precipitation and

overland flows. As a result, the small wetland area is likely to have limited subsurface space for storing additional precipitation.

A wetland function and value assessment was conducted using best professional judgment (BPJ) for Wetlands H and I. Per Oregon Administrative Rule (OAR) 141-085-0685(4)(f), when BPJ is used, group-level functions and values to be assessed must include, but are not limited to, those outlined in the Oregon Wetland Assessment Protocol (ORWAP). Conclusions must include a rating (i.e. low, moderate, or higher) for each of the group-level functions and values, and a written discussion of the basis of that rating. The table below provides the required information for the BPJ assessment of both wetlands. As indicated in the assessment table, Wetlands H and I are small, isolated wetlands that do not provide locally significant functions and values.

BPJ Functional Assessment - Wetlands H and I			
Group-Level Functions	**Function Group Rating**	**Value Group Rating**	**Rationale**
Hydrologic Function	Low-Moderate	Low	Wetlands H and I have a flat gradient but are isolated and very small in size. Further, even though they are inundated only seasonally, they lack complex microtopography. In addition, the wetlands have a very small contributing area that is vegetated and lacks impervious areas, thereby minimizing the value they provide related to water storage.
Water Quality Support	Low	Low	Wetlands H and I would not be effective at maintaining or reducing summertime water temperatures, as the wetlands are dry during the summertime and the groundwater table is well below the ground surface. Further, the wetlands lack vegetative complexity and microtopography. Finally, the wetlands have a very small contributing area that lacks pollutant-generating surfaces, thereby limiting the values they provide related to water quality.
Fish Habitat	Low	Low	Wetlands H and I do not provide fish habitat functions and values due to the lack of a surface water connection to other wetlands or waters, including fish bearing streams.
Aquatic Habitat	Low	Low	Wetlands H and I are seasonally saturated with surface water present only after heavy rain events, and for less than seven consecutive days during the growing season. When water is present, depths are minimal, and the ponded areas are likely scattered and very small in size. These areas would not support an abundance and diversity of native amphibians. Waterbirds would not likely use these areas for feeding or nesting. Likewise, the value rating for this group should also be low, as the wetlands do not provide any unique habitat or support any rare, threatened, or endangered aquatic species.
Ecosystem Support	Low	Low	Wetlands H and I are small, isolated wetlands that have very little fluctuation in seasonal water levels. Further, the wetlands are characterized by a mostly uniform vegetation height comprised mostly of non-native grasses and forbs, with only minimal woody vegetation present. Likewise, the value rating for this group should also be low, as the wetlands do not provide any unique habitat or support any rare, threatened, or endangered plant species.

Cultural Resources: there are no existing homes or aboveground structures within the project area. Further, no below-ground cultural resources are expected to be present during soil disturbing activities. The site was originally used as a rural residence and for agriculture production until the early 1940s. The southern portion of the site was then utilized as an agriculture canning operation until 1955 when the facility was dedicated to the production of mushrooms. The mushroom farm was closed in the late 1990s and the facility was decommissioned from 2002 to 2006. Throughout this time the northern half of the project site was regularly cultivated to produce ornamental trees and shrubs. Therefore, significant cultural resources are not expected to be present in the project site. If cultural remains are encountered during the project, all construction activities will cease, and the Oregon Historic Preservation Office (SHPO) will be notified to evaluate the discovery and recommend subsequent courses of action.

Changes in Hydrologic Characteristics: The project is not expected to result in upstream or downstream flooding or erosion. The proposed culverts will result in similar hydrologic flow characteristics within Wetland B and the isolated wetlands are not located in a mapped floodplain.

Rare, Threatened, and Endangered Species: The study area formerly consisted of the Pictsweet mushroom farm. The mushroom farm was decommissioned between 2004 and 2006. Remnant gravel parking, roads, and building pads are present throughout the site; however, no structures are present. According to US Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (iPac) website, there are five plant species, two avian species, and one insect that have the potential to be present within the project area. Based on existing site conditions and species-specific habitat requirements, no suitable habitats for the listed insect or the two listed bird species are present on site. Similarly, most of the listed plant species require specific habitat requirements that are not present within the project area. The only exception is Nelson's checker-mallow (*Sidalcea nelsoniana*), which is typically found in open prairie remnants along the margins of streams, sloughs, ditches, roadsides, fence rows, drainage swales, and in fallow fields. No individuals were observed within the project area during the site visits that have been conducted. This project will not result in adverse impacts to any rare, threatened, or endangered species.

Wildlife Species Use: The project site is in an urban area, and could provide habitat for common resident and migratory songbirds and common, small mammals such as raccoons, skunks, opossums, etc. No large mammals would use the site, because it is surrounded by development and there are no suitable wildlife corridors.

B. Describe the existing navigation, fishing and recreational use of the waterbody or wetland.

The three PEM wetlands within the project area are located on private property, and there are no existing navigational, fishing, or recreational uses of the wetlands.

(7) PROJECT SPECIFIC CRITERIA AND ALTERNATIVES ANALYSIS

Describe project-specific criteria necessary to achieve the project purpose. Describe alternative sites and project designs that were considered to avoid or minimize impacts to the waterbody or wetland.*[*]

Project-Specific Criteria: The goal of this project is to provide affordable housing in the City of Salem to meet the City's housing demand. Property selection criteria included:

- A site at least 20 acres in size located within Salem city limits or in the City's Urban Growth Boundary (UGB) that is available for purchase
- A site currently wholly or partially zoned for residential uses
- A site with relatively flat terrain (slopes less than 10 percent)
- Ability to avoid or minimize impacts to jurisdictional waters, including wetlands and floodplain
- Ability to connect to existing utility and transportation infrastructure
- Ability to provide for safe multi-modal transportation corridors throughout the development
- The ability to meet the current City of Salem Transportation System Plan and land use regulations
- Proximity to existing schools and/or shopping centers and well-travelled transportation corridors

Off-site Alternatives: The applicant requires a site meeting the above listed project criteria. Three other properties currently for sale in the greater Salem area were reviewed against the above criteria.

- **Site 1 –** this 34.13-acres site consists of one tax lot located within the current Urban Growth Boundary (UGB). The site is identified as Tax Lot 100 of Marion County Assessor's Map 083W17B. The lot is designated within the residential agriculture zone, which allows for single-family residential development. Most of the mapped soils are well drained; however, a small pond is mapped in the National Wetland Inventory (NWI) maps in the south-central portion of the property. In addition, Croisan Creek and a small wetland area are mapped along the eastern property line. Based on the

[*] Not required by the Corps for a complete application but is necessary for individual permits before a permit decision can be rendered.

review of aerial imagery, several wetlands are present along Croisan Creek. In addition, the Federal Emergency Management Agency's (FEMA's) 100-year floodplain and floodway are mapped along the entire eastern property line adjacent to Croisan Creek. Though the current listing indicates that access to electricity is available on-site, the property is not currently serviced by other urban facilities such as sanitary sewer, water, and drainage infrastructure. Further, the site is characterized by steeper slopes on the western half as well as steep roadway embankments along Ballantyne Road S and Kuebler Boulevard. So, although this site is in proximity to several desired features, it was not pursued for this project.

- **Site 2 –** this 24.99-acre site consists of one tax lot located within the Salem city limits. The lot is identified as Tax Lot 902 of Marion County Assessor's Map 083W06. The lot is designated within the residential agriculture zone, which allows for single-family residential development. Most of the mapped soils are well drained, and the NWI does not identify any wetland or waters features on the property. Though the current listing indicates that access to electricity is available on-site, the property is not currently serviced by other urban facilities such as sanitary sewer, water, and drainage infrastructure. Further, the site is characterized by steep slopes throughout the property, making site development more difficult, and the property is in a more rural neighborhood requiring additional travel time to schools, shopping centers, and transportation corridors. As a result, this lot was not pursued further for this project.
- **Site 3 –** this 21.36-acre site consists of two tax lots that are located are located inside the UGB in south Salem. The lots are identified as Tax Lots 400 and 500 of Marion County Assessor Map 083W26A. The lots are designated within the urban transition zone, which is intended to retain and protect properties for future urban use. Per the current listing, once the property is annexed into the City, the property would be zoned single family residential (RS). Most of the mapped soils are well drained and no wetlands are mapped on-site; however, a pond is visible within the north portion of the property in the vicinity of a mapped perennial creek. A new subdivision is currently under construction to the west, thereby providing access to utility infrastructure; however, the property is currently forested and is characterized by steeper slopes that would make site development more difficult. Because this property does not meet all the project-specific criteria, it was not pursued further for this project.

No-Build Alternative – If the applicant opted to forgo construction of Phases 3-6, fulfilling the public's current need for affordable housing would not be met. In addition, Greencrest Street is the approved north-south oriented collector for the development and is required to provide direct connection to State Street across from the Oakmont Court intersection. Streets classified as collectors distribute traffic between neighborhoods, activity centers, and the arterial street system, while also providing property access. All the proposed street crossings are necessary to ensure a safe transportation corridor throughout the development for vehicular traffic, pedestrians, and bicyclists. Because Wetland B bisects the property and separates homes currently under construction from those proposed under this project, there is no alternative location to provide the required roadway extensions. As a result, the no-build alternative to avoid impacting the on-site wetlands was not considered.

On-Site Alternatives

The applicant selected the current site for this project due to its proximity to I-5 and other high-use transportation corridors as well as shopping centers, schools, and public parks. The project site is relatively flat and has access to tie into existing public utilities. The project site is zoned for single-family residential development, and the average lot size is planned to meet City density requirements and to be compatible with the surrounding neighborhoods. All on-site alternatives evaluated had the following parameters to implement, as required by the city of Salem:

- The City of Salem is requiring that Greencrest Street be constructed to Collector B standards, as there currently is no north-south collector street between Center Street NE and State Street east of Lancaster Drive NE. This requires a full buildout of the 60-foot right-of-way including separated sidewalks and a bike lane.
- The City of Salem is requiring that the Greencrest Street/State Street intersection be aligned with the Oakmont Court intersection to the south. As a result, avoiding impacts to Wetland H is not possible.

- All internal streets are required to have property line sidewalks with a minimum 4-foot landscape strip adjacent to the curbs to accommodate street trees.

Bridge Crossing Avoidance Alternative – A possible option was to span Wetland B with bridge crossings; however, even the most basic structures designed for legal loads would be cost-prohibitive. Further, no listed species or native migratory fish are known to utilize Wetland B, so the construction of bridge crossings is unjustifiable based on costs alone. As a result, the construction of new bridges over Wetland B for the Lost Lake Street, Greencrest Street, and Redmond Street crossings was not considered a practicable alternative.

On-Site Alternatives to Avoid Impacts to Wetland I – Additional alternatives were considered to avoid impacts to Wetland I. Avoiding this wetland would require realignment/reconfiguration of Chive Avenue and Fargin Street. The following three alternative alignments were evaluated:

- Stub both streets prior to the wetland (Figure 9) – this alternative would essentially stub Chive Avenue and Fargin Street prior to Wetland I to avoid impacts entirely. The city would require that each street be equipped with an emergency vehicle turnaround (i.e., cul-de-sac or hammerhead), which would require that the streets end early enough to allow for construction of the turnarounds. This alternative would result in the loss of at least 6 needed homes and could affect density requirements within the designated residential zone for this area of the development. Further, this alternative does not allow for a transportation corridor with adequate connectively to allow vehicles, pedestrians, and bicyclists to safely move throughout the development.
- Shift Fargin Street to the east and stub Chive Avenue – this alternative would require that Fargin Street be shifted more than 70 feet to the east to avoid impacts to Wetland I. This alternative is not possible, because the new Oregano Avenue/Fargin Street intersection would not meet the City's minimum intersection spacing requirement from Greencrest Street. Further, this alternative would result in double frontage lots (lots with frontage along Fargin and Greencrest), which may not be allowed by the City of Salem and is not desirable for homeowners. Finally, Chive Avenue would need to have an emergency vehicle turnaround, further impacting the number of lots like the above alternative. It is estimated that this alternative would result in the loss of at least 12 needed homes and would affect density requirements within the designated residential zone for this area of the development.
- Shift Fargin Street to the West – this alternative would require that Fargin Street be shifted more than 130 feet to the west to avoid impacts to Wetland I. Though this alternative may meet the City's current design standards, it would result in the largest loss in lots and would not meet the City's current density standards for the designated zoning within this area of the development. It is estimated that this alternative would result in the loss of at least 16 much needed homes and would not allow the project to meet its primary purpose of providing affordable housing in the City of Salem to meet the City's current and future housing demand.

The above alternative alignments for Fargin Street and Chive Avenue do not all meet Salem design standards, and they limit the project's ability to provide the Salem area with much needed affordable housing to meet the documented current and future housing demand. The removal of affordable single-family lots to avoid a low functioning wetland requires consideration of the long-term viability of Wetland I post-construction if any of these avoidance alternatives were implemented. Since the wetland is isolated and only 5,705 square feet in size, once the remainder of the affordable single-family homes and roadways are constructed around the wetland, the following are likely to occur:

- The isolated wetland will become even more isolated as homes and streets are constructed around it, thereby decreasing its functional capacity, and severing any sort of connection it once had to adjacent upland habitat.
- The wetland's hydrology sources could be compromised by construction of adjacent roadways that will collect and convey stormwater runoff to the proposed treatment facilities.
- There are likely to be accelerated inputs of contaminants as a result of pesticide and fertilizer application on adjacent lawns and landscaped areas, thereby introducing new stressors not currently affecting wetland functionality.

Wetland I is not mapped on the Salem/Keizer Local Wetland Inventory, and it has not been identified as providing any locally significant functions or values. Further, it is not an aquatic resource of special concern,

and would not be difficult to replace. The current demand for affordable single-family homes in Salem, as well as the construction of homes to meet future population demands, is a public need that has to be addressed. The impacts of filling Wetland I, an isolated wetland, will be mitigated in-kind through the purchase of legacy credits from a mitigation bank that covers the project area. The functions lost on-site through the filling of the Wetland I will be more than compensated by the on-site stormwater facilities and supporting the long-term protection of the higher functioning wetlands at the bank.

Headwall Minimization Alternative – During the design phase, the possibility of using headwalls to minimize embankment fill was explored; however, this alternative was determined not to be practicable. Due to existing conditions at the proposed crossing locations, headwalls would need to be roughly 8-10 feet tall and 15 feet long (more than 30 feet long at the Greencrest Street crossing) to retain the fill material necessary to construct the culvert crossings. Construction of three retaining walls of this size would add considerable costs to the project, potentially increasing new housing costs, and making it more difficult for the project to provide the much-needed affordable housing in the Salem area.

Narrow Crossing Minimization Alternative – Though the ability to narrow the Greencrest Street cross-section over Wetland B is not possible since it is the designated collector street for the development, the possibility of making the Lost Lake Street and Redmond Street cross-sections narrower was considered. Both streets are local streets equipped with pedestrian sidewalks on both sides of the street. The only way to make the cross-section narrower would be to request a variance from the City to exclude sidewalks along the sections of street that crosses Wetland B. This would require that pedestrians and bicyclists be mixed in with vehicular traffic to cross Wetland B when using these roads. Because this alternative does not allow for the project to provide for a safe transportation corridor throughout the development for vehicular traffic, pedestrians, and bicyclists, it was not considered a viable option.

Preferred Alternative – The proposed site plan was selected because it meets all City code requirements, and it is the most practicable alternative that has the least reasonably expected adverse impacts on jurisdictional wetlands. The preferred layout minimizes impacts to Wetland B, a slightly higher functional wetland, to the most practicable extent by steepening roadway embankments at the culvert ends and aligning the Lost Lake Street crossing with the existing farm access crossing. Impacting the two small, isolated wetlands to provide much needed housing consistent with the City's planning efforts will better serve the rapidly growing Salem population. The purchase of wetland mitigation bank credits to preserve higher functioning wetlands in the local watershed presents the most practical and logistical alternative for the site plan.

(8) ADDITIONAL INFORMATION

Are there state or federally listed species on the project site?	☐ Yes	☑ No	☐ Unknown
Is the project site within designated or proposed critical habitat?	☐ Yes	☑ No	☐ Unknown
Is the project site within a national Wild and Scenic River ?	☐ Yes	☑ No	☐ Unknown
Is the project site within a State Scenic Waterway?	☐ Yes	☑ No	☐ Unknown
Is the project site within the 100-year floodplain?	☐ Yes	☑ No	☐ Unknown

If yes to any above, explain in Block 6 and describe measures to minimize adverse effects to those resources in Block 7.

Is the project site within the Territorial Sea Plan (TSP) Area?	☐ Yes	☑ No	☐ Unknown

If yes, attach TSP review as a separate document for DSL.

Is the project site within a designated Marine Reserve?	☐ Yes	☑ No	☐ Unknown

If yes, certain additional DSL restrictions will apply.

Will the overall project involve ground disturbance of one acre or more?	☑ Yes	☐ No	☐ Unknown

If yes, you may need a 1200-C permit from the Oregon Department of Environmental Quality (DEQ).

Is the fill or dredged material a carrier of contaminants from on-site or off-site spills?	☐ Yes	☐ No	☑ Unknown
Has the fill or dredged material been physically and/or chemically tested?	☐ Yes	☑ No	☐ Unknown

If yes, explain in Block 6 and provide references to any physical/chemical testing report(s).

Has a cultural resource (archaeological and/or built environment) survey been performed on the project area?	☐ Yes	☑ No	☐ Unknown
Do you have any additional archaeological or built environment documentation, or correspondence from tribes or the State Historic Preservation Office?	☐ Yes	☑ No	☐ Unknown

If yes, provide a copy of the survey and/or documentation of correspondence with this application to the Corps only. Do not describe any resources in this document. Do not provide the survey or documentation to DSL.

Is the project part of a DEQ Cleanup Site? No☒ Yes☐ Permit number _____

DEQ contact._____

Will the project result in new impervious surfaces or the redevelopment of existing surfaces? Yes ☒ No ☐

If yes, the applicant must submit a post-construction stormwater management plan as part of this application to DEQ's 401 WQC program for review and approval, see https://www.oregon.gov/deq/FilterDocs/401wqcertPostCon.pdf

Identify any other federal agency that is funding, authorizing or implementing the project.

Agency Name	Contact Name	Phone Number	Most Recent Date of Contact

List other certificates or approvals/denials required or received from other federal, state or local agencies for work described in this application.

Agency	Certificate / approval / denial description	Date Applied

Other DSL and/or Corps Actions Associated with this Site (Check all that apply.)

☐ Work proposed on or over lands owned by or leased from the Corps (may require authorization pursuant to 33 USC 408). These could include the federal navigation channel, structures, levees, real estate, dikes, dams, and other Corps projects.

☐ State owned waterway	DSL Waterway Lease #:	
☐ Other Corps or DSL Permits	Corps #	DSL #
☐ Violation for Unauthorized Activity	Corps #	DSL #
☑ Wetland and Waters Delineation	Corps #	DSL # WD#2019-0557 and WD#2020-0298

Submit the entire delineation report to the Corps; submit only the concurrence letter (if complete) and approved maps to DSL. If not previously submitted to DSL, send under a separate cover letter

(9) IMPACTS, RESTORATION/REHABILITATION, AND COMPENSATORY MITIGATION

A. Describe unavoidable environmental impacts that are likely to result from the proposed project. Include permanent, temporary, direct, and indirect impacts.

The project will require a total of 13,688 square feet (0.31 acres) of direct permanent impacts to three PEM wetlands within the Slopes/Flats HGM classification system. The impacts are associated with three new culvert crossings (Wetland B impacts), the construction of two interior streets (Wetland I impacts), and the required southward extension of Greencrest Street to State Street (Wetland H impacts). A summary of proposed direct permanent impacts is as follows:

- Lost Lake Street Crossing – 560 square feet (0.01 acres), 20 cubic yards removal, 120 cubic yards fill
- Greencrest Street Crossing – 3,360 square feet (0.08 acres), 125 cubic yards removal, 500 cubic yards fill
- Redmond Street Crossing – 1,074 square feet (0.02 acres), 40 cubic yards removal, 250 cubic yards fill
- Wetland H Impacts – 2,989 square feet (0.07 acres), 180 cubic yards removal, 70 cubic yards fill
- Wetland I Impacts – 5,705 square feet (0.13 acres), 410 cubic yards removal, 255 cubic yards fill

In addition, construction of the required southward extension of Greencrest Street, the only collector street for the development, to State Street will require permanent indirect impacts to Wetland H.

- Indirect Hydrology Impacts (Wetland H) – 5,260 square feet (0.12 acres)

No temporary impacts to jurisdictional waters, including wetlands, are proposed as a component of this project.

B. For temporary removal or fill or disturbance of vegetation in waterbodies, wetlands or riparian (i.e., streamside) areas, discuss how the site will be restored after construction to include the timeline for restoration.

No temporary wetland impacts are proposed as a component of this project. Additionally, no impacts to vegetated waterbodies or their adjacent riparian areas will be required. As a result, no restoration activities are proposed.

Compensatory Mitigation

C. Proposed mitigation approach. Check all that apply:

☐ Permittee-responsible Onsite Mitigation	☐ Permittee-responsible Offsite mitigation	☑ Mitigation Bank or In-Lieu Fee Program	☐ Payment to Provide (not approved for use with Corps permits)

D. Provide a brief description of proposed mitigation approach and the rationale for choosing that approach. If you believe mitigation should not be required, explain why.

The project will result in a total of 0.43 acres of permanent impacts to the three PEM wetlands within the Slopes/Flats HGM subclass. Using the Draft Compensatory Mitigation Eligibility and Accounting Determination Form (see Attachment 5), the applicant is proposing to purchase 0.43 acres of Legacy Credits from either the Garrett Creek or Marion bank to mitigate for the unavoidable wetland impacts.

DSL's Principal Objectives: The project's ability to meet the principal objectives listed under OAR-141-085-0680 are described below.

Replace Lost Functions and Values: Wetland mitigation will be in-kind with respect to the Cowardin and HGM classification. The impacted wetlands are categorized as PEM wetlands belonging to the Slope/Flats HGM subclassification. The Garrett Creek wetland mitigation bank provides credits for PEM Slope/Flat wetlands; therefore, wetland impacts will be mitigated in-kind. Wetlands within the mitigation bank provide function and value to the same or better level than the wetlands to be impacted. The functions and values impacted at the project site will be more than replaced through the purchase of mitigation bank credits. In addition, only a portion of Wetland B will be impacted during construction, so the functions and values that this wetland provides will still be intact after construction is complete. The location and nature of the partial impacts will not degrade the overall wetland quality and functional capacity of Wetland B.

As for Wetlands H and I, it is believed that these wetlands are low functioning; however, they do provide some hydrologic functions. Lost functions related to water storage and delay will be replaced on-site through the construction of the combination stormwater facilities at the north end of the project. All contributing impervious area associated with the project will be treated on-site. The bottom of the stormwater facility will consist of a layer of growing medium and native plant materials. Stormwater will be filtered and infiltrated to the maximum extent practical, recharging groundwater and mimicking predevelopment hydrologic conditions. In addition, the proposed wetland bank provides flood control through an interconnected system of wetland and riparian areas that are much more structurally complex and diverse when compared to the two isolated PEM wetlands that will be impacted.

Local Replacement for Locally Important Functions and Values: The on-site PEM wetlands do not provide any locally important functions and values and are not considered to be locally significant by the City of Salem. Because the project will only impact a portion of Wetland B, the remaining wetland area will continue to provide functions and values. Wetland mitigation will be conducted in proximity to the impacted wetlands. The impacted wetlands are within the service area for the proposed bank. The mitigation bank site provides local replacement

for important functions and values that have been lost in the region. The purchase of the mitigation bank credits will replace the wetland functions and values lost at the project site.

Mitigation Project is Self-Sustaining and Minimized Maintenance Needs: The mitigation bank site is located within the appropriate landscape with respect to the topography and natural hydrology sources. These settings ensure the mitigation will be self-sustaining and have minimal maintenance needs.

Mitigation Project is Sited in an Ecologically Suitable Location: The mitigation bank is an approved facility that was sited in an ecologically suitable location to meet the needs and priorities of locally important functions and values. The large size of the mitigation bank contributes to meaningful mitigation in the landscape context and provides connectivity to other habitats.

Minimized Temporal Loss of Wetland and Waters Functions and Values: The purchase of mitigation bank credits will occur prior to project construction, which will avoid temporary loss to local wetland functions.

Mitigation Bank / In-Lieu Fee Information:

Name of mitigation bank or in-lieu fee project: Garrett Creek

Type and amount of credits to be purchased: 0.43 PEM/Slopes/Flats

If you are proposing permittee-responsible mitigation, have you prepared a compensatory mitigation plan?

☐ Yes. Submit the plan with this application and complete the remainder of this section.

☐ No. A mitigation plan will need to be submitted (for DSL, this plan is required for a complete application).

Mitigation Location Information (Fill out only if permittee-responsible mitigation is proposed)

Mitigation Site Name/Legal Description	Mitigation Site Address	Tax Lot #
County	City	Latitude & Longitude (in DD.DDDD format)

Township	Range	Section	Quarter/Quarter

(10) ADJACENT PROPERTY OWNERS FOR PROJECT AND MITIGATION SITE

☑ **Pre-printed mailing labels of adjacent property owners attached**	**Project Site Adjacent Property Owners**	**Mitigation Site Adjacent Property Owners**

Attachment 6

(11) CITY/COUNTY PLANNING DEPARTMENT LAND USE AFFIDAVIT (TO BE COMPLETED BY LOCAL PLANNING OFFICIAL)

I have reviewed the project described in this application and have determined that:

- ☐ This project is not regulated by the comprehensive plan and land use regulations
- ☐ This project is consistent with the comprehensive plan and land use regulations
- ☐ This project is consistent with the comprehensive plan and land use regulations with the following:
  - ☐ Conditional Use Approval
  - ☐ Development Permit
  - ☐ Other Permit (explain in comment section below)
- ☐ This project is not currently consistent with the comprehensive plan and land use regulations. To be consistent requires:
  - ☐ Plan Amendment
  - ☐ Zone Change
  - ☐ Other Approval or Review (explain in comment section below)

An application or variance request has ☐ has not ☐ been filed for the approvals required above.

Local planning official name (print)	Title	City / County

Signature	Date

Comments:

(12) COASTAL ZONE CERTIFICATION

If the proposed activity described in your permit application is within the Oregon Coastal Zone, the following certification is required before your application can be processed. The signed statement will be forwarded to the Oregon Department of Land Conservation and Development (DLCD) for its concurrence or objection. For additional information on the Oregon Coastal Zone Management Program and consistency reviews of federally permitted projects, contact DLCD at 635 Capitol Street NE, Suite 150, Salem, Oregon 97301 or call 503-373-0050 or click here.

CERTIFICATION STATEMENT

I certify that, to the best of my knowledge and belief, the proposed activity described in this application complies with the approved Oregon Coastal Zone Management Program and will be completed in a manner consistent with the program.

Print /Type Applicant Name Not Applicable	Title
Applicant Signature	Date

(13) SIGNATURES

Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and, to the best of my knowledge and belief, this information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities. By signing this application I consent to allow Corps or DSL staff to enter into the above-described property to inspect the project location and to determine compliance with an authorization, if granted. I hereby authorize the person identified in the authorized agent block below to act in my behalf as my agent in the processing of this application and to furnish supplemental information in support of this permit application. I understand that the granting of other permits by local, county, state or federal agencies does not release me from the requirement of obtaining the permits requested before commencing the project. I understand that payment of the required state processing fee does not guarantee permit issuance.

To be considered complete, the fee must accompany the application to DSL. The fee is not required for submittal of an application to the Corps.

Fee Amount Enclosed	$**1,011**

Applicant Signature (required) must match the name in Block 2	
Print Name Kiril Ivanov	Title Managing Member
Signature	Date
Authorized Agent Signature	
Print Name Julie Wirth-McGee, PWS	Title Sr. Environmental Specialist
Signature	Date

Landowner Signature(s)*	
Landowner of the Project Site (if different from applicant)	
Print Name	Title
Signature	Date
Landowner of the Mitigation Site (if different from applicant)	
Print Name	Title
Signature	Date

Department of State Lands, Property Manager (to be completed by DSL)

If the project is located on state-owned submerged and submersible lands, DSL staff will obtain a signature from the Land Management Division of DSL. A signature by DSL for activities proposed on state-owned submerged/submersible lands only grants the applicant consent to apply for a removal-fill permit. A signature for activities on state-owned submerged and submersible lands grants no other authority, express or implied and a separate proprietary authorization may be required.

Print Name	Title
Signature	Date

* Not required by the Corps.

(14) ATTACHMENTS

☒ Drawings
- ☒ Location map with roads identified
- ☒ U.S.G.S topographic map
- ☒ Tax lot map
- ☒ Site plan(s)
- ☒ Plan view and cross section drawing(s)
- ☒ Recent aerial photo
- ☒ Project photos
- ☒ Erosion and Pollution Control Plan(s), if applicable
- ☒ DSL / Corps Wetland Concurrence letter and map, if approved and applicable – (Attachments 2-3)

☒ Pre-printed labels for adjacent property owners (Required if more than 30) – (Attachment 6)
☒ Incumbency Certificate if applicant is a partnership or corporation - (Attachment 7)
☐ Restoration plan or rehabilitation plan for temporary impacts
☐ Mitigation plan
☒ Wetland functional assessments, if applicable – (Attachment 4)
- ☒ Cover Page
- ☒ Score Sheets
- ☒ ORWAP OR, F, T, & S forms
- ☒ ORWAP Reports
- ☒ Assessment Maps
- ☒ ORWAP Reports: Soils, Topo, Assessment area, Contributing area

☐ Stream Functional Assessments, if applicable
- ☐ Cover Page
- ☐ Score Sheets
- ☐ SFAM PA, PAA, & EAA forms
- ☐ SFAM Report
- ☐ Assessment Maps
  - ☐ Aerial Photo Site Map and Topo Site Map (Both maps should document the PA, PAA, & EAA)

☒ Compensatory Mitigation (CM) Eligibility & Accounting Worksheet
- ☐ Matching Quickguide sheet(s)
- ☒ CM Eligibility & Accounting sheet – (Attachment 5)

☐ Alternatives analysis
☐ Biological assessment (if requested by the Corps project manager during pre-application coordination)
☐ Stormwater management plan (may be required by the Corps or DEQ)
☐ Other
- ☐ Please describe:

(14) ATTACHMENTS

List of Attachments
Attachment 1: Permit Maps and Figures
Attachment 2: DSL Concurrence Letter WD2019-0557
Attachment 3: DSL Concurrence Letter WD2020-0298
Attachment 4: ORWAP Maps and Data Sheets
Attachment 5: Compensatory Mitigation Eligibility & Accounting Determination Form
Attachment 6: Adjoining Property Owner Address Labels
Attachment 7: Incumbency Certificate

For U.S. Army Corps of Engineers send application to:

USACE Portland District
ATTN: CENWP-ODG-P
PO Box 2946
Portland, OR 97208-2946
Phone: 503-808-4373
portlandpermits@usace.army.mil

Counties:
Baker, Benton, Clackamas, Clatsop, Columbia, Gilliam, Grant, Hood River, Jefferson, Lincoln, Linn, Malheur, Marion, Morrow, Multnomah, Polk, Sherman, Tillamook, Umatilla, Union, Wallowa, Wasco, Washington, Wheeler, Yamhill

U.S. Army Corps of Engineers
ATTN: CENWP-ODG-E
211 E. 7th AVE, Suite 105
Eugene, OR 97401-2722
Phone: 541-465-6868
portlandpermits@usace.army.mil

Counties:
Coos, Crook, Curry, Deschutes, Douglas, Jackson, Josephine, Harney, Klamath, Lake, Lane

For Department of State Lands send application to:

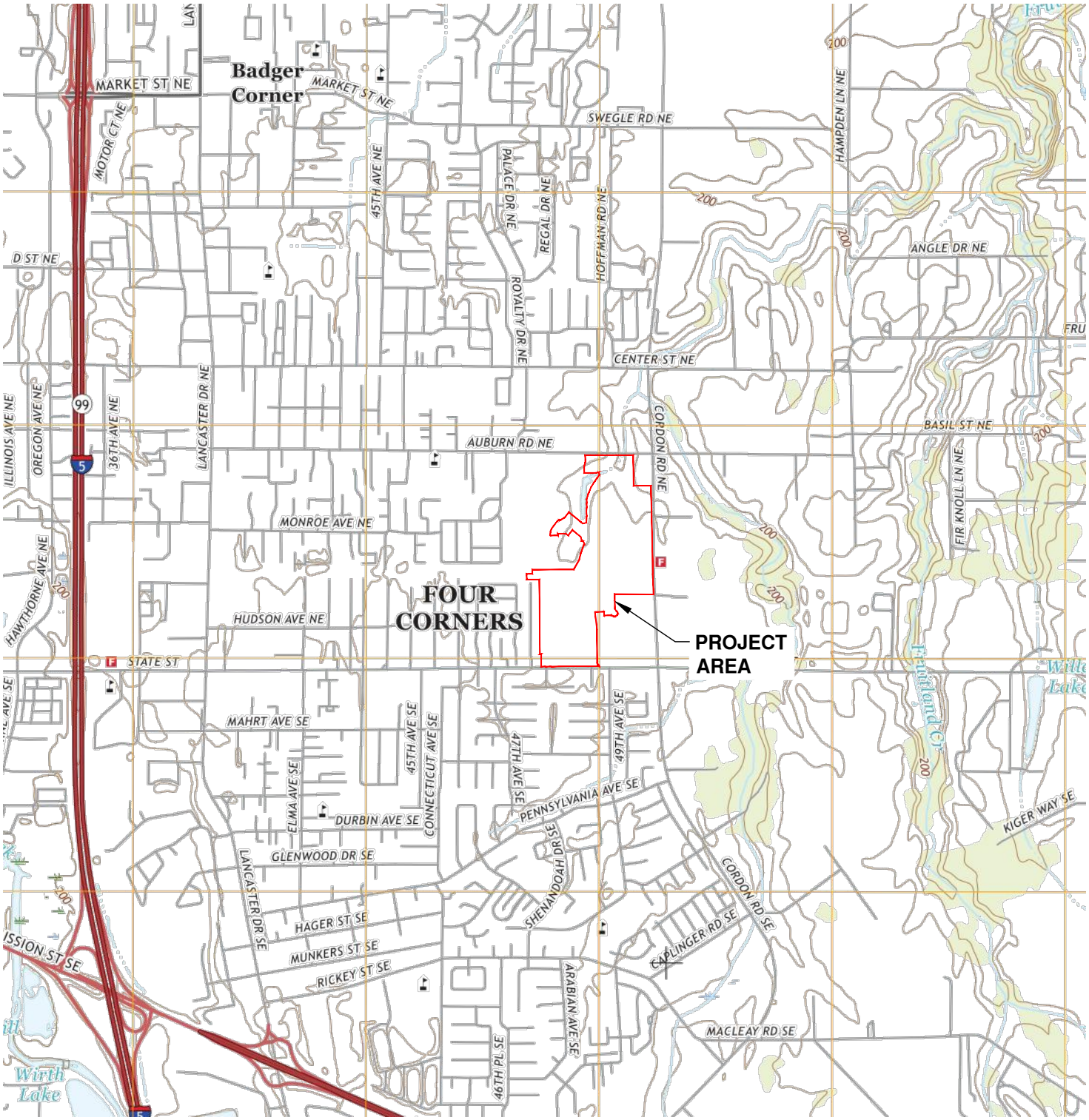
West of the Cascades:
Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
Phone: 503-986-5200

East of the Cascades:
Department of State Lands
1645 NE Forbes Road, Suite 112
Bend, Oregon 97701
Phone: 541-388-6112

For Department of Environmental Quality e-mail application to:

ATTN: DEQ 401 Certification Program
Water Quality
700 NE Multnomah St, Suite 600
Portland, OR 97232
401applications@deq.state.or.us

Attachment 1: Permit Maps & Figures



USGS 7.5' TOPOGRAPHIC SERIES
QUADRANGLE: SALEM EAST, OR (2017)

DATE: 06/07/2021

SCALE: 1"= 2000 FEET

2000 0 800 1200 1600 2000

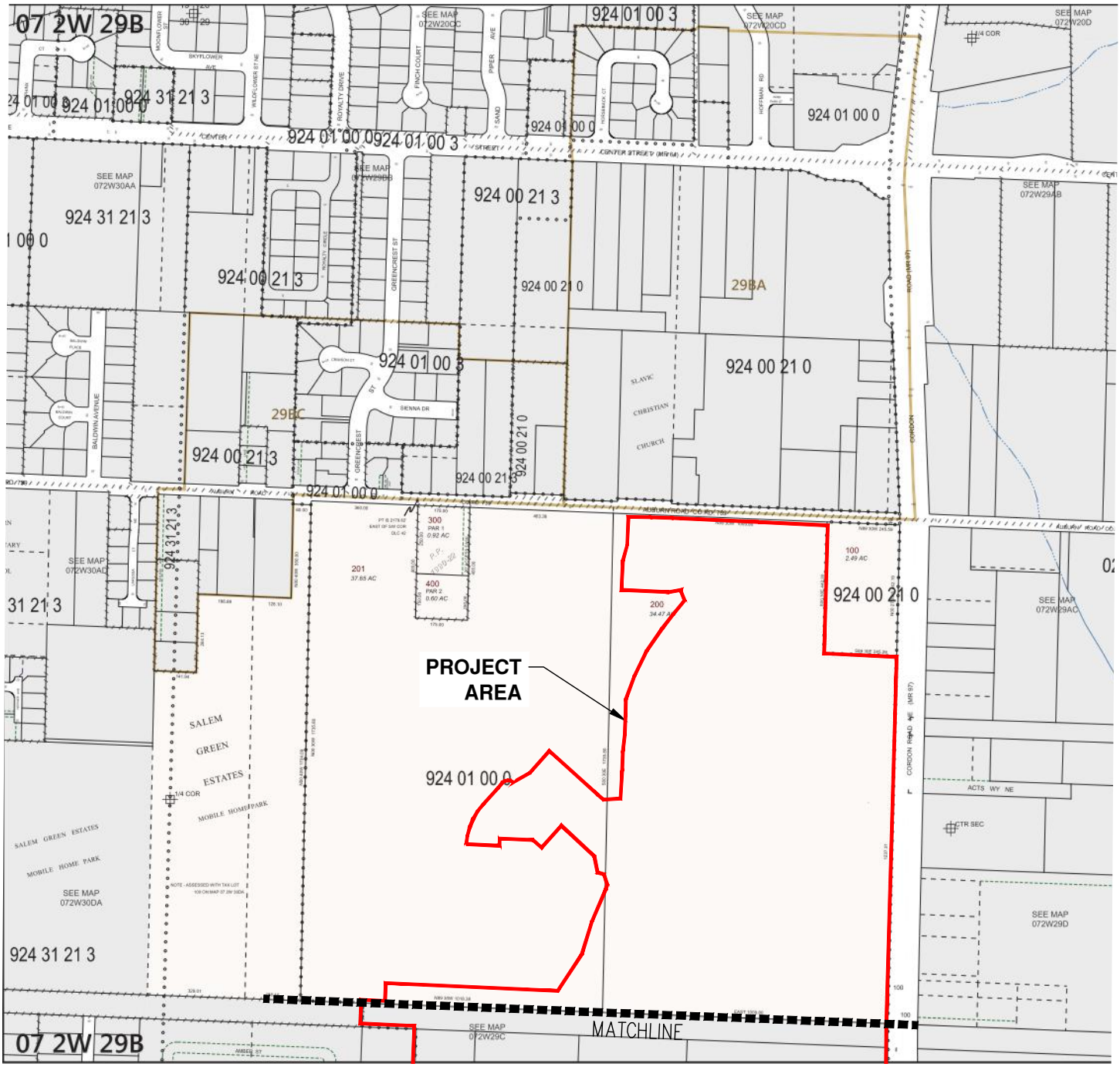
N

USGS LOCATION MAP
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 1

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



MARION COUNTY
TAX LOTS 200 & 201
TAX MAP 7S 2W 29B

DATE: 06/07/2021

SCALE: 1"= 500 FEET

500 0 200 300 400 500

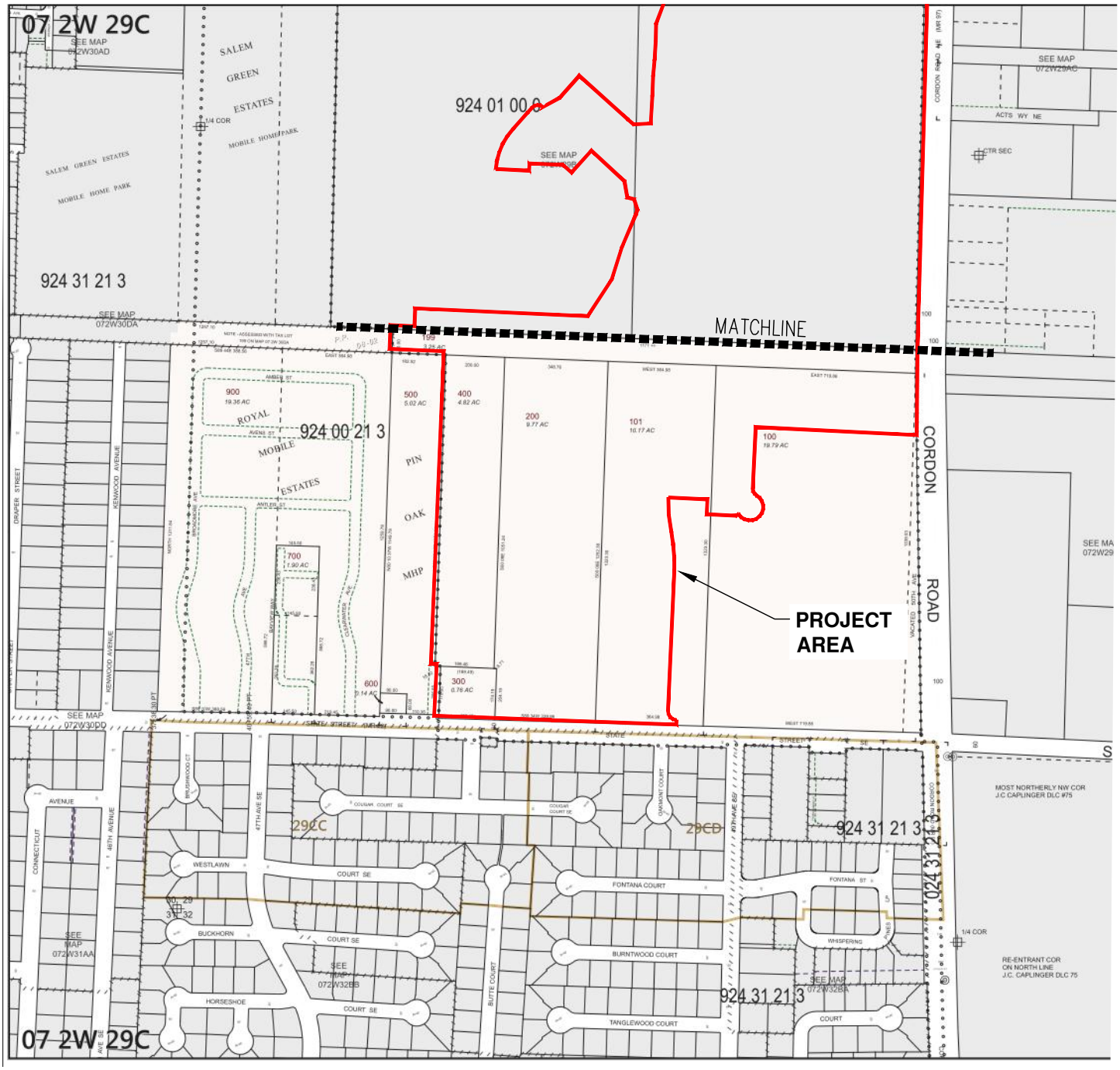
N

TAX MAP 7S 2W 29B
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 2A

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



MARION COUNTY
TAX LOTS 100, 101, 199, 200, 300, 400
TAX MAP 7S 2W 29C

DATE: 06/07/2021

SCALE: 1"= 400 FEET

400 0 80 200 400

ORIGINAL PAGE SIZE: 8.5" X 11"

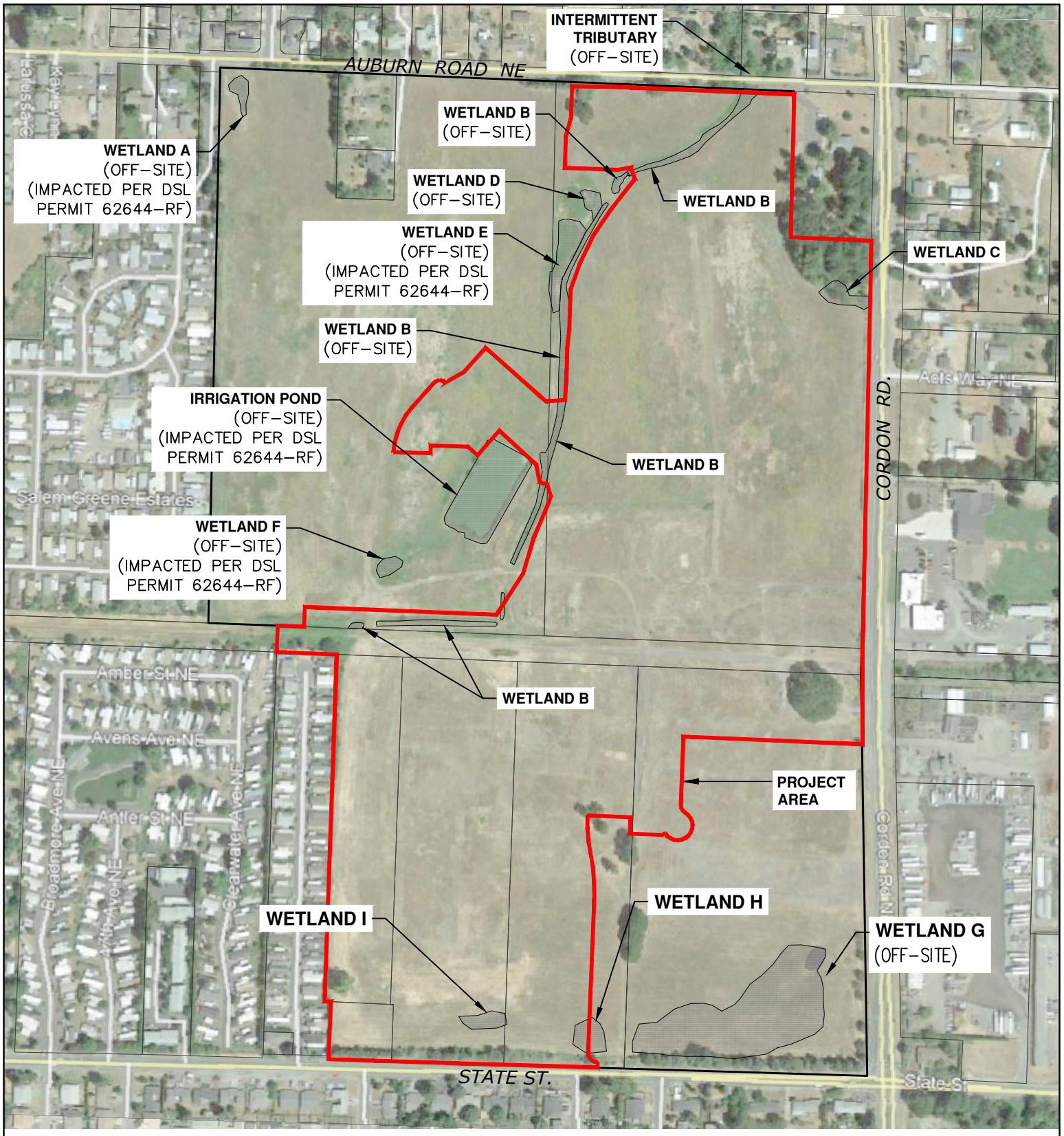
N

TAX MAP 7S 2W 29C
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 2B

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



2019 GOOGLE EARTH

DATE: 06/07/2021

SCALE: 1"= 400 FEET

400 0 80 200 400

ORIGINAL PAGE SIZE: 8.5" X 11"

N

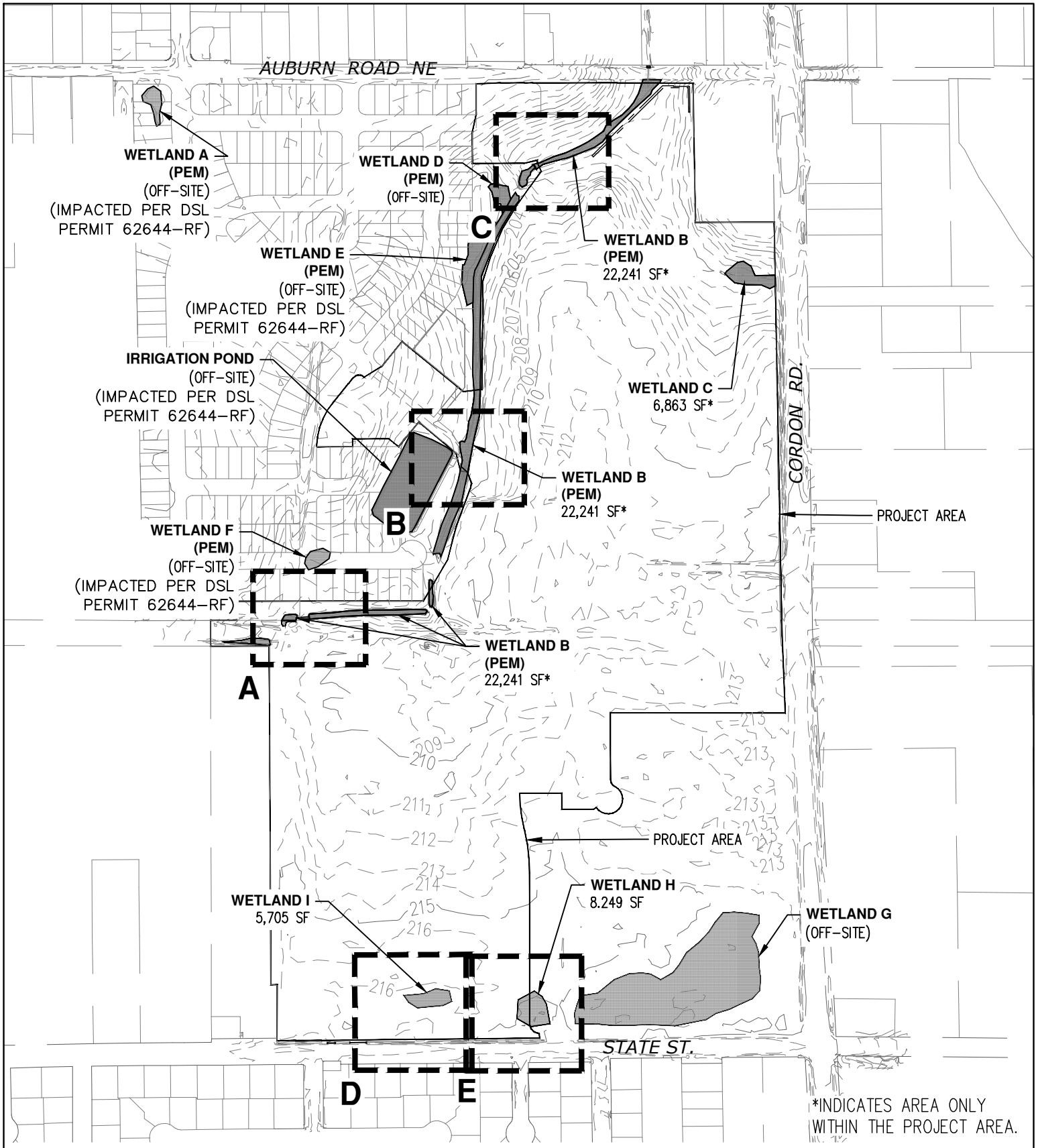
AERIAL PHOTOGRAPH

EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 3

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



1. WETLAND BOUNDARIES SHOWN PER DSL CONCURRENCE WD#2019-0557 & WD#2020-0298
2. EXISTING CONTOURS PROVIDED BY MULTI/TECH ENGINEERING

DATE: 06/07/2021

SCALE: 1"= 400 FEET

400 0 80 200 400

ORIGINAL PAGE SIZE: 8.5" X 11"

N

EXISTING CONDITIONS OVERVIEW

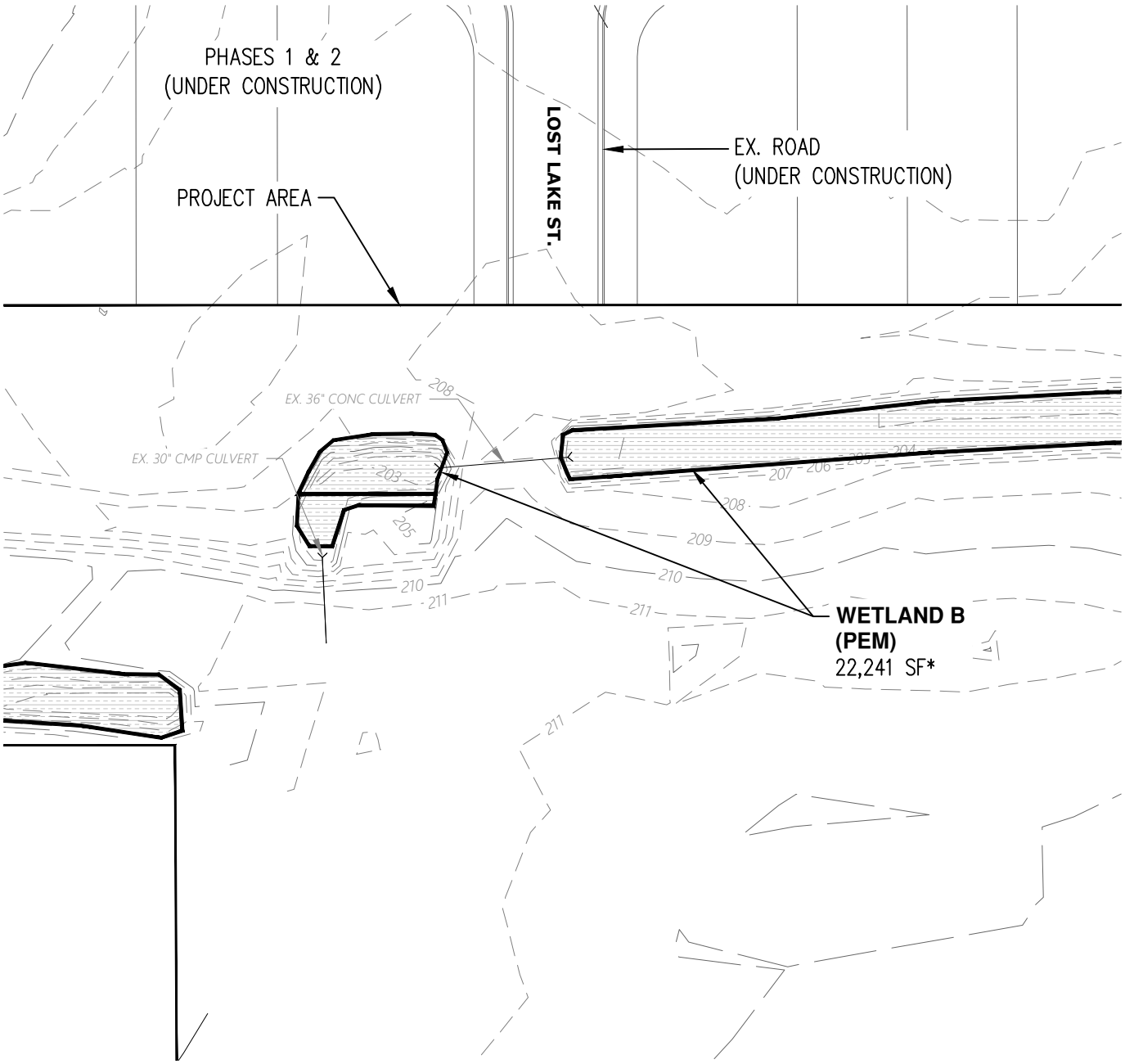
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 4A

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 EXCOND 400 | 4A



*INDICATES AREA ONLY
WITHIN THE PROJECT AREA.

1. WETLAND BOUNDARIES SHOWN PER DSL CONCURRENCE WD#2019-0557 & WD#2020-0298
2. EXISTING CONTOURS PROVIDED BY MULTI/TECH ENGINEERING

DATE: 06/07/2021

SCALE: 1"= 50 FEET

50 0 10 25 50

ORIGINAL PAGE SIZE: 8.5" X 11"

N

EXISTING CONDITIONS - ENLARGEMENT

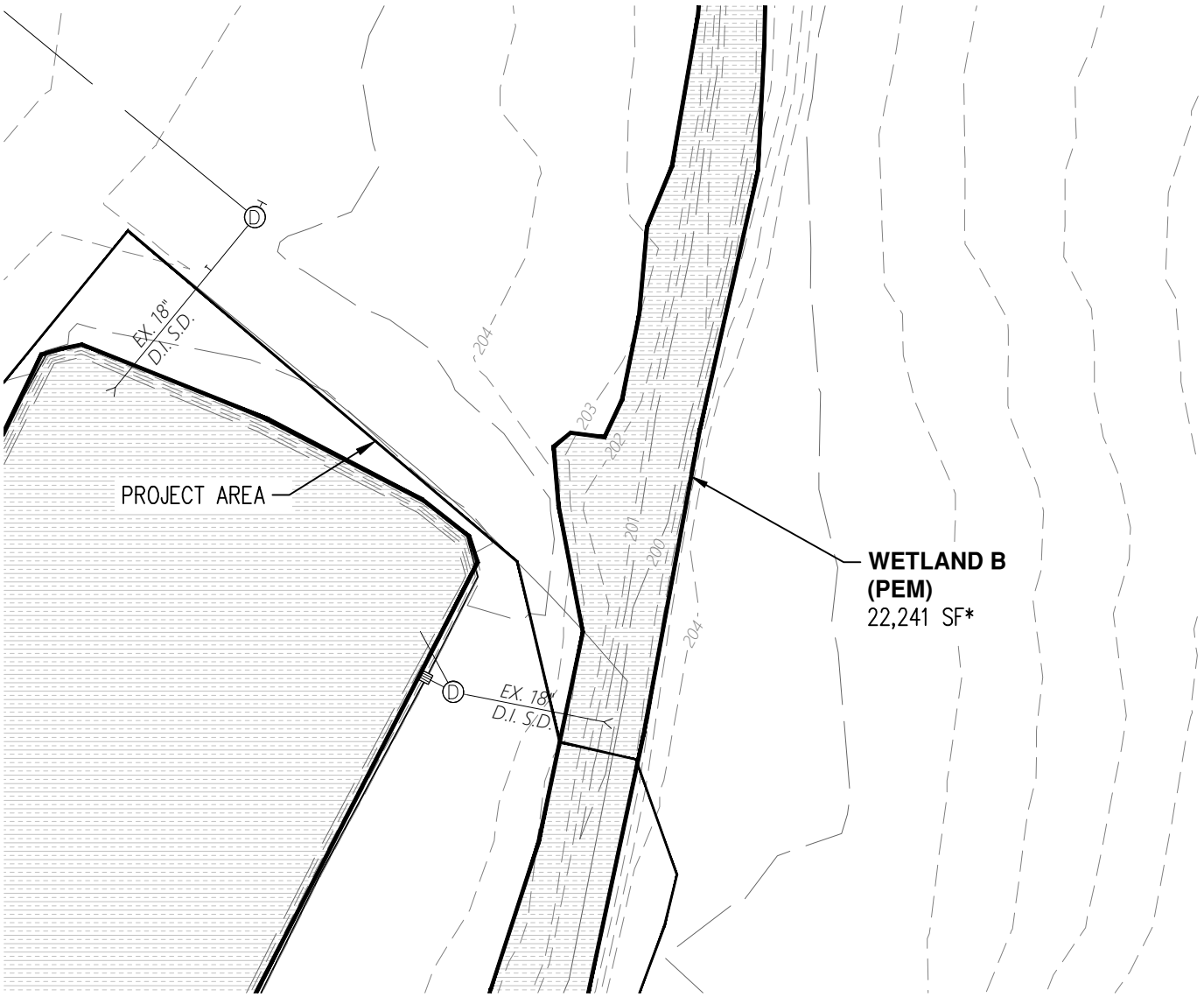
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 4B

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 EXCOND 50 | 4B



B

*INDICATES AREA ONLY
WITHIN THE PROJECT AREA.

1. WETLAND BOUNDARIES SHOWN PER DSL CONCURRENCE WD#2019-0557 & WD#2020-0298
2. EXISTING CONTOURS PROVIDED BY MULTI/TECH ENGINEERING

DATE: 06/07/2021

SCALE: 1"= 50 FEET

50 0 10 25 50

ORIGINAL PAGE SIZE: 8.5" X 11"

N

EXISTING CONDITIONS - ENLARGEMENT

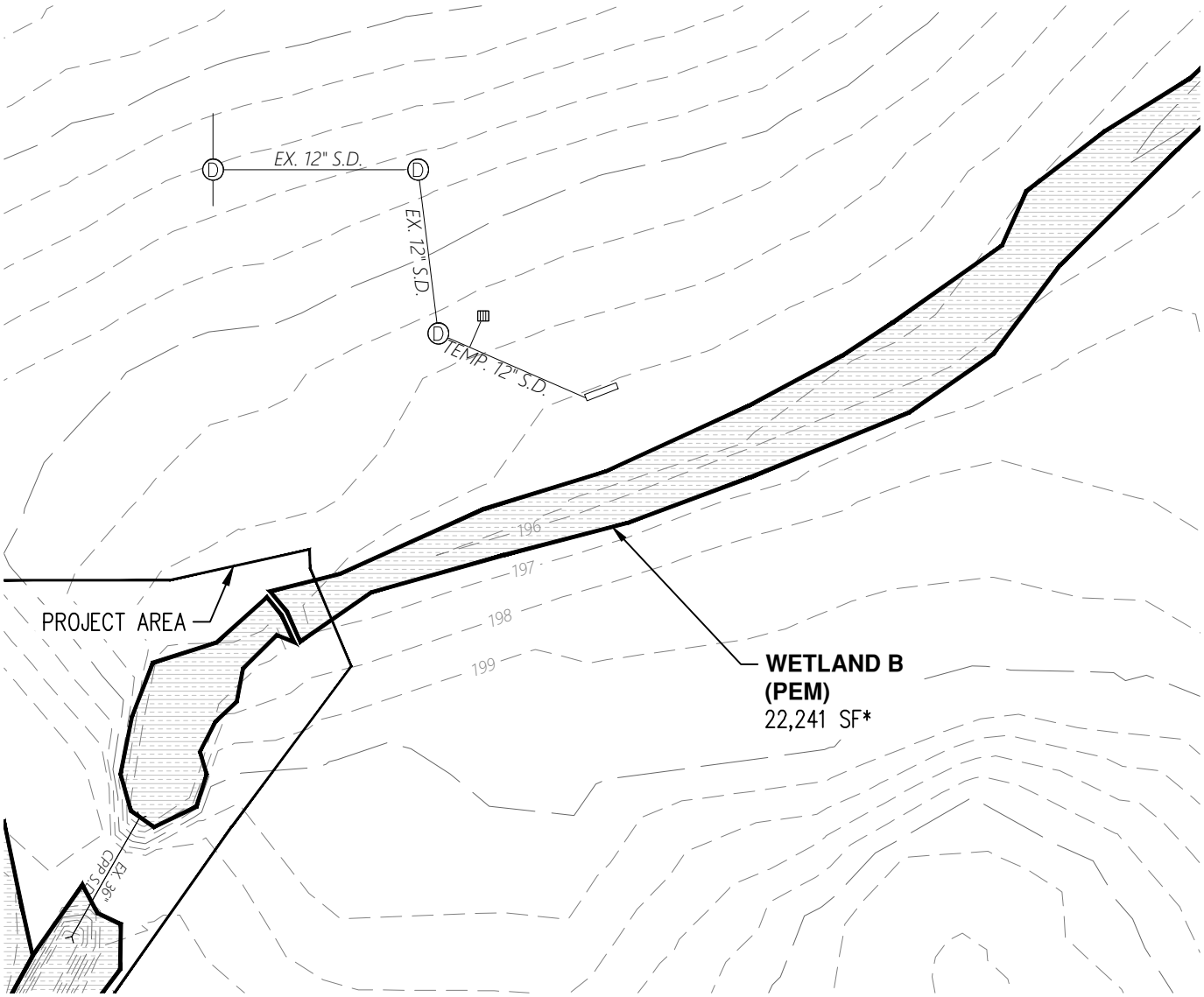
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 4C

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 EXCOND 50 | 4C



*INDICATES AREA ONLY
WITHIN THE PROJECT AREA.

1. WETLAND BOUNDARIES SHOWN PER DSL CONCURRENCE WD#2019-0557 & WD#2020-0298
2. EXISTING CONTOURS PROVIDED BY MULTI/TECH ENGINEERING

DATE: 06/07/2021

SCALE: 1"= 50 FEET

50 0 10 25 50

ORIGINAL PAGE SIZE: 8.5" X 11"

N

EXISTING CONDITIONS - ENLARGEMENT

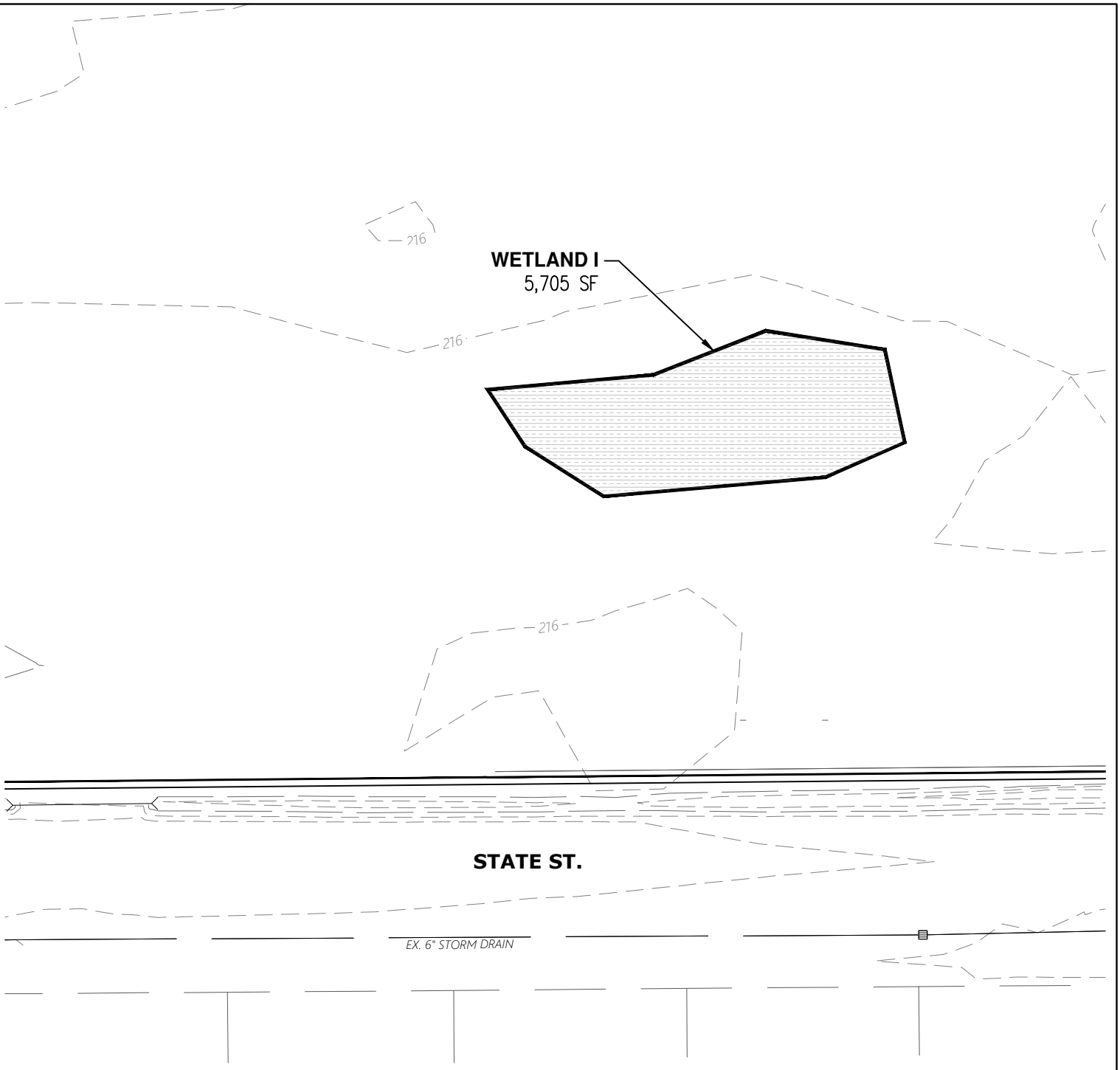
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 4D

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 EXCOND 50 | 4D



D

*INDICATES AREA ONLY
WITHIN THE PROJECT AREA.

1. WETLAND BOUNDARIES SHOWN PER DSL CONCURRENCE WD#2019-0557 & WD#2020-0298
2. EXISTING CONTOURS PROVIDED BY MULTI/TECH ENGINEERING

DATE: 06/07/2021

SCALE: 1"= 50 FEET

50 0 10 25 50

ORIGINAL PAGE SIZE: 8.5" X 11"

N

EXISTING CONDITIONS - ENLARGEMENT

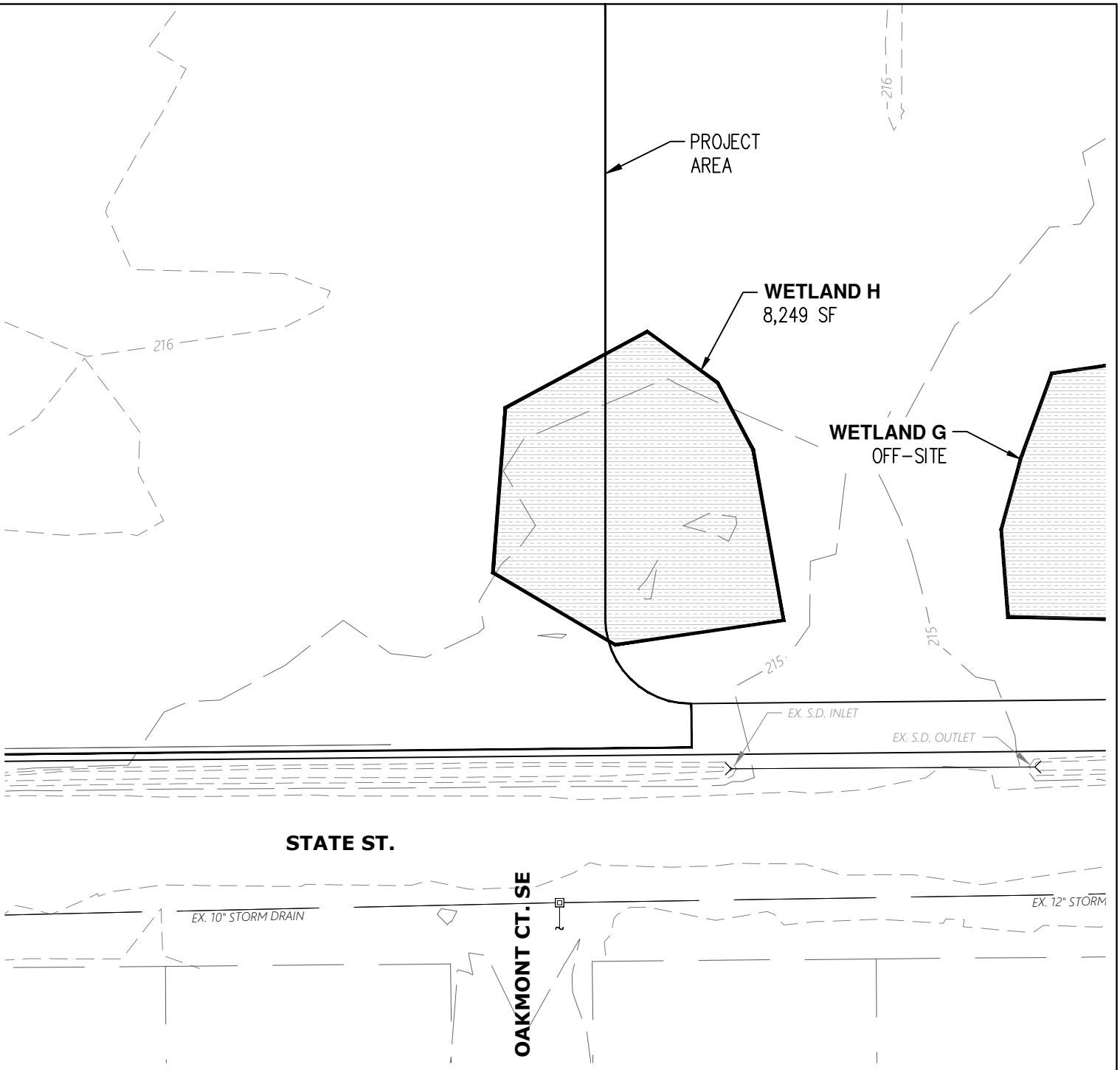
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 4E

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 EXCOND 50 | 4E



1. WETLAND BOUNDARIES SHOWN PER DSL CONCURRENCE WD#2019-0557 & WD#2020-0298
2. EXISTING CONTOURS PROVIDED BY MULTI/TECH ENGINEERING

DATE: 06/07/2021

SCALE: 1"= 50 FEET

50 0 10 25 50

ORIGINAL PAGE SIZE: 8.5" X 11"

N

EXISTING CONDITIONS - ENLARGEMENT

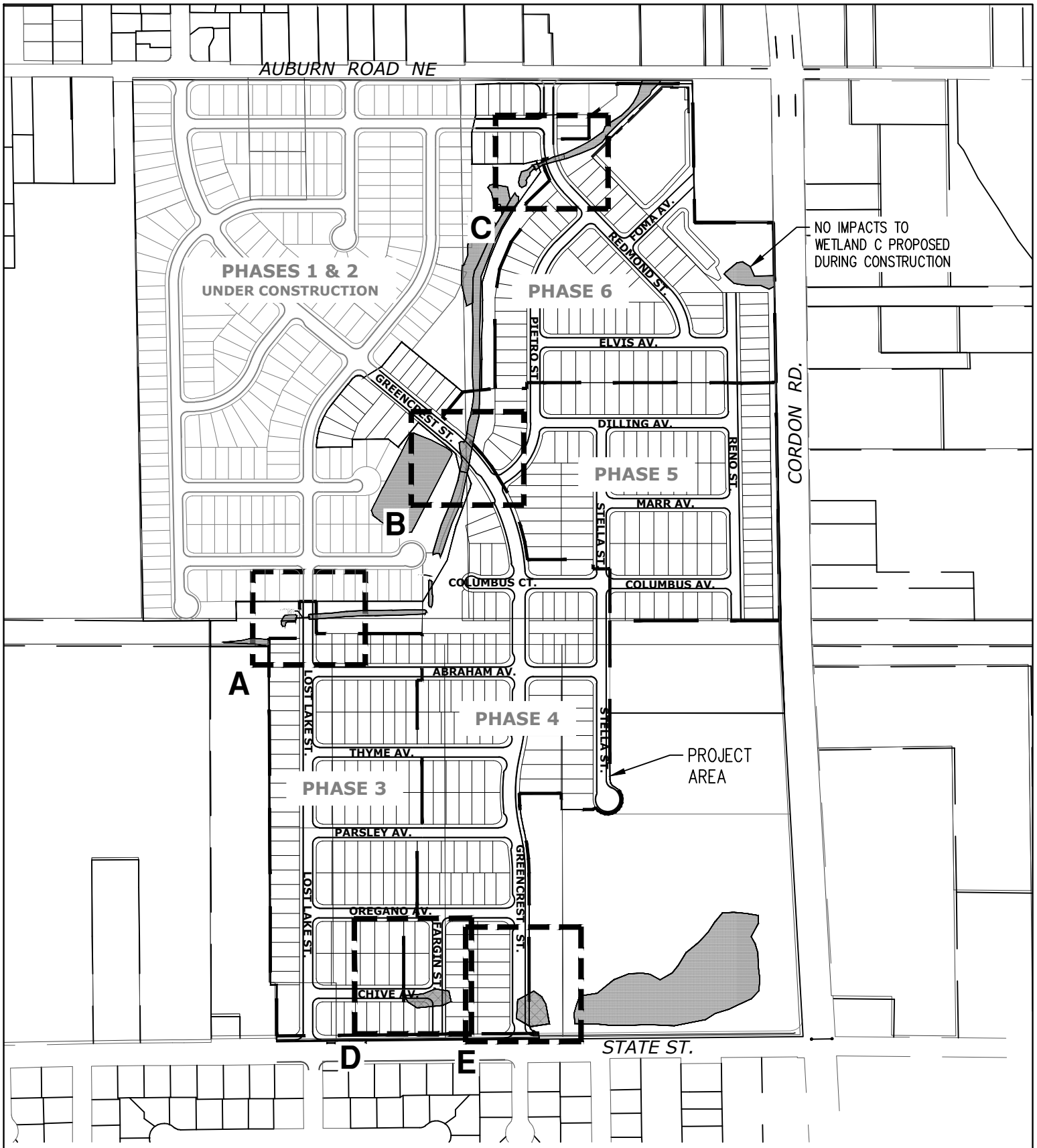
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 4F

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 EXCOND 50 | 4F



NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"= 400 FEET

400 0 80 200 400

ORIGINAL PAGE SIZE: 8.5" X 11"

N

SITE PLAN - OVERVIEW

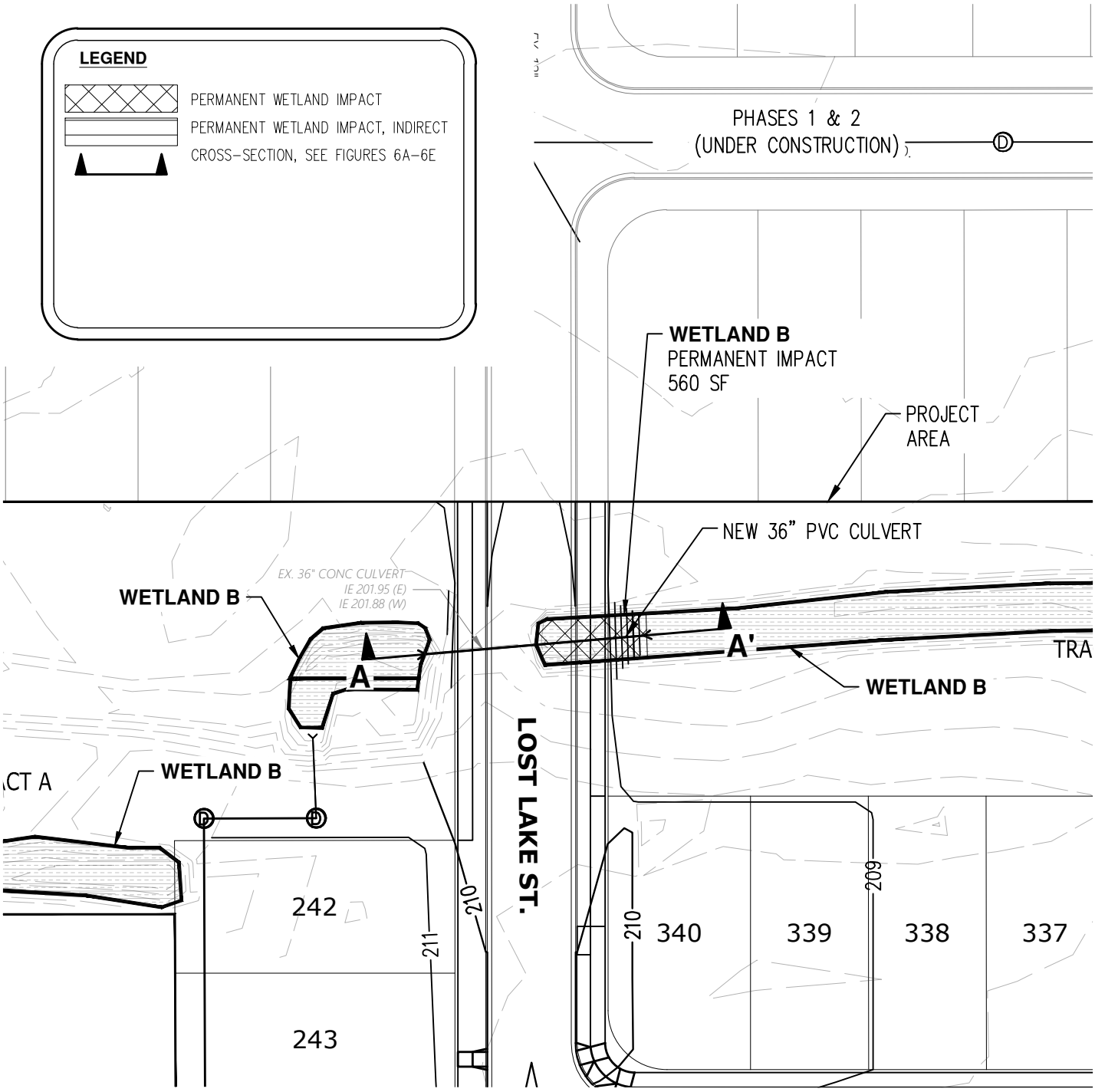
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 5A

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 SITE PLAN 400 | 5A



A

NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"= 50 FEET

50 0 10 25 50

ORIGINAL PAGE SIZE: 8.5" X 11"

N

SITE PLAN - ENLARGEMENT

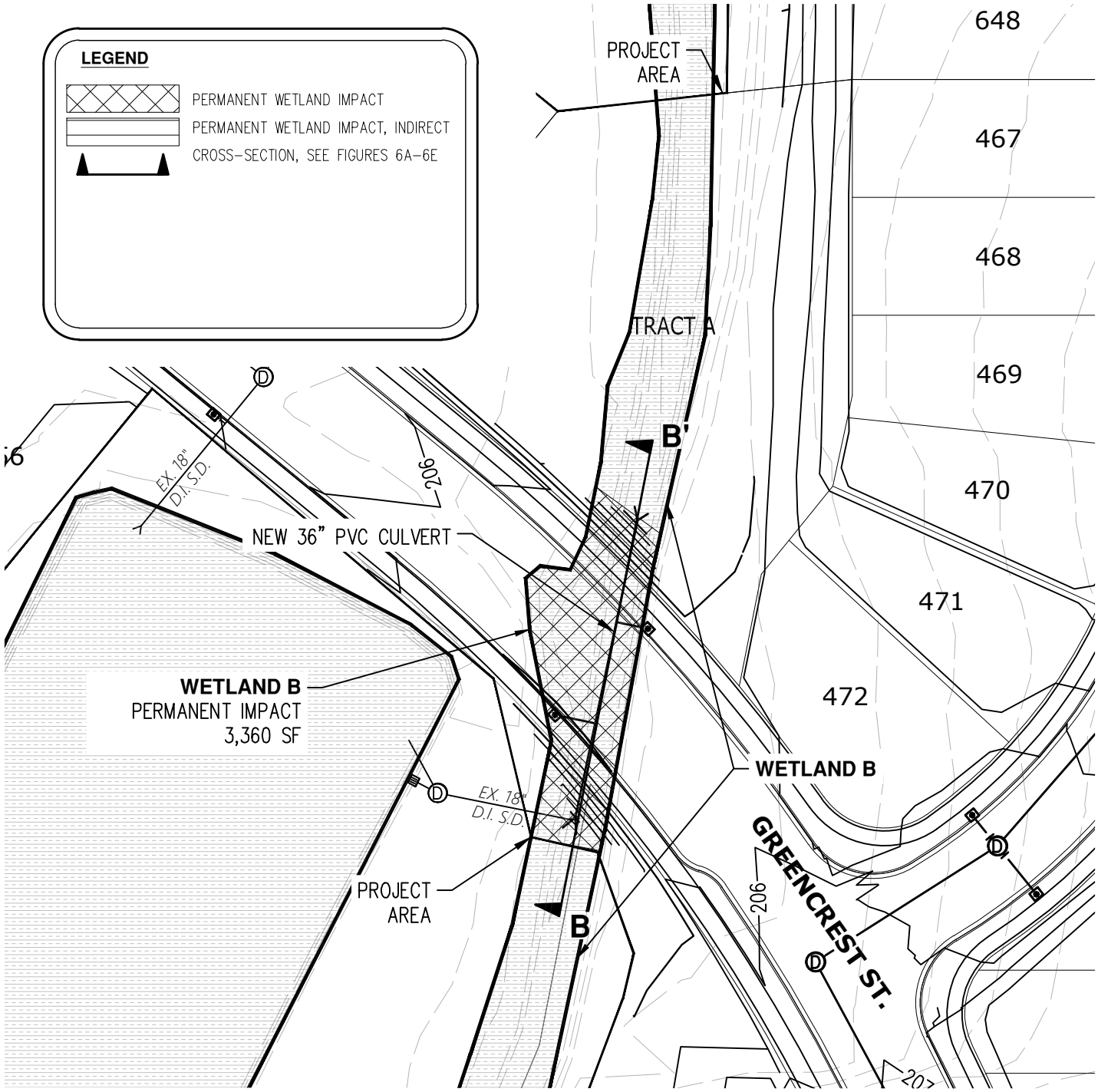
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 5B

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 SITE PLAN 50 | 5B



B

NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"= 50 FEET

50 0 10 25 50

ORIGINAL PAGE SIZE: 8.5" X 11"

N

SITE PLAN - ENLARGEMENT

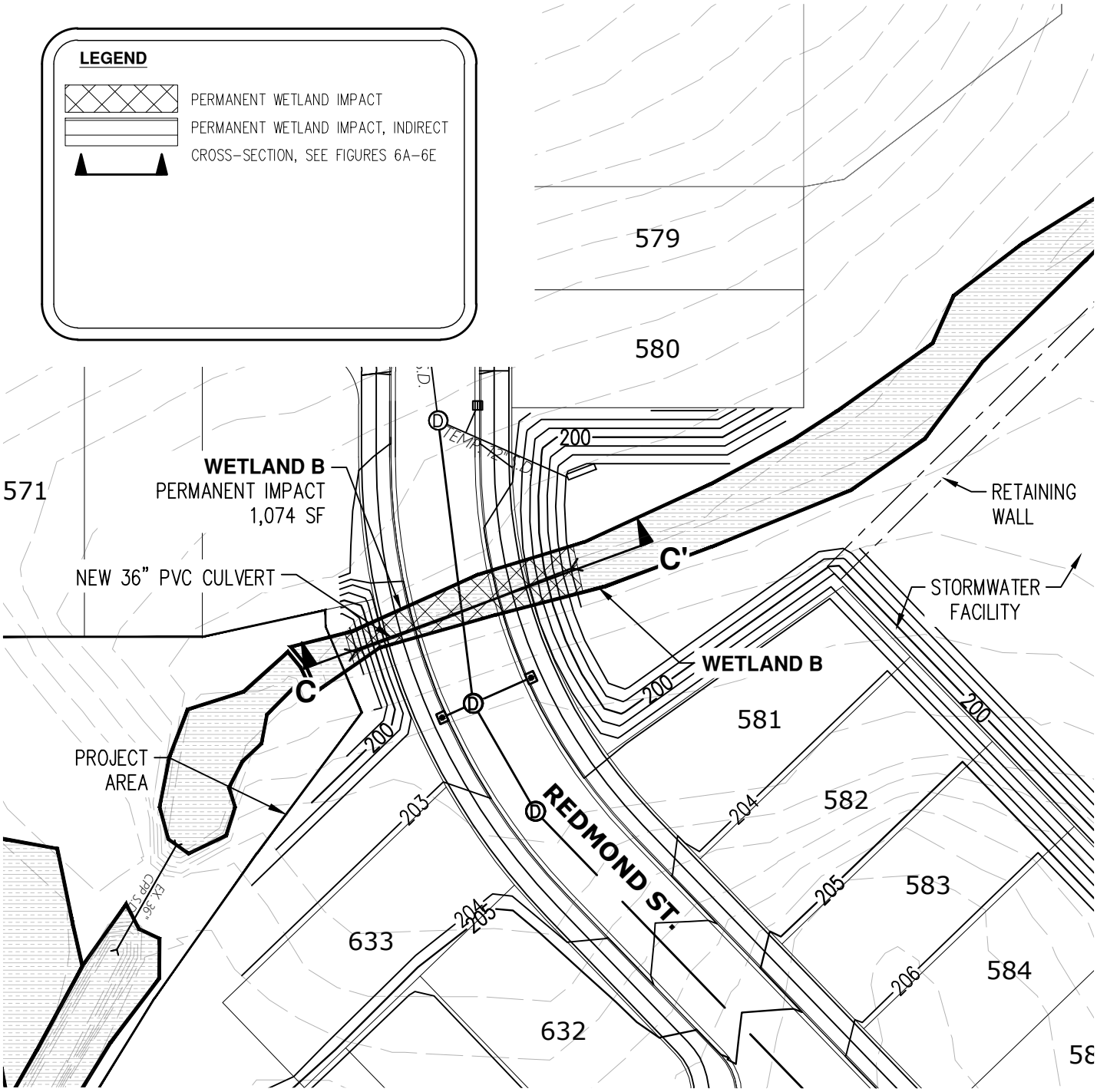
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 5C

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 SITE PLAN 50 | 5C



C

NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"= 50 FEET

50 0 10 25 50

ORIGINAL PAGE SIZE: 8.5" X 11"

N

SITE PLAN - ENLARGEMENT

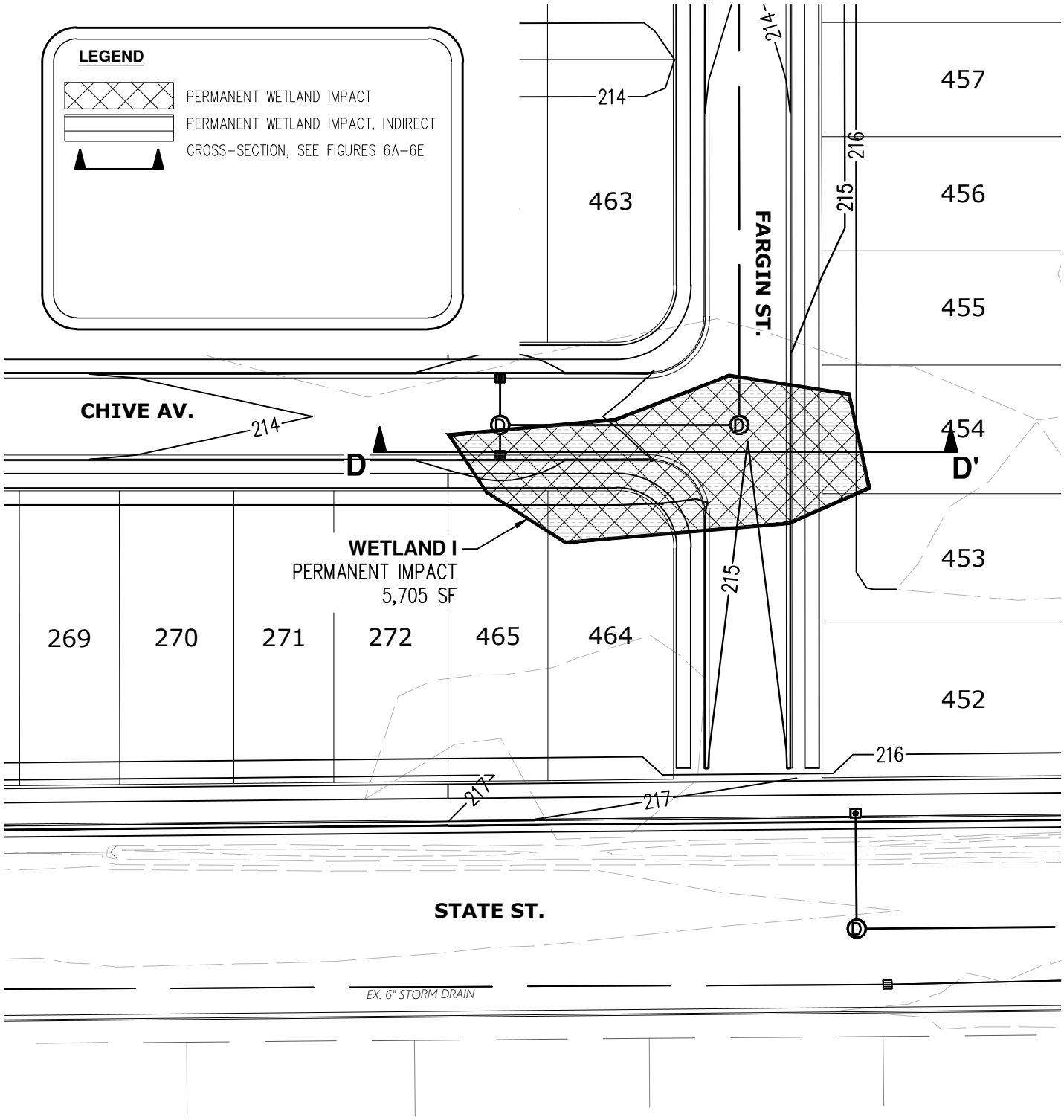
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 5D

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 SITE PLAN 50 | 5D



D

NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"= 50 FEET

50 0 10 25 50

ORIGINAL PAGE SIZE: 8.5" X 11"

N

SITE PLAN - ENLARGEMENT

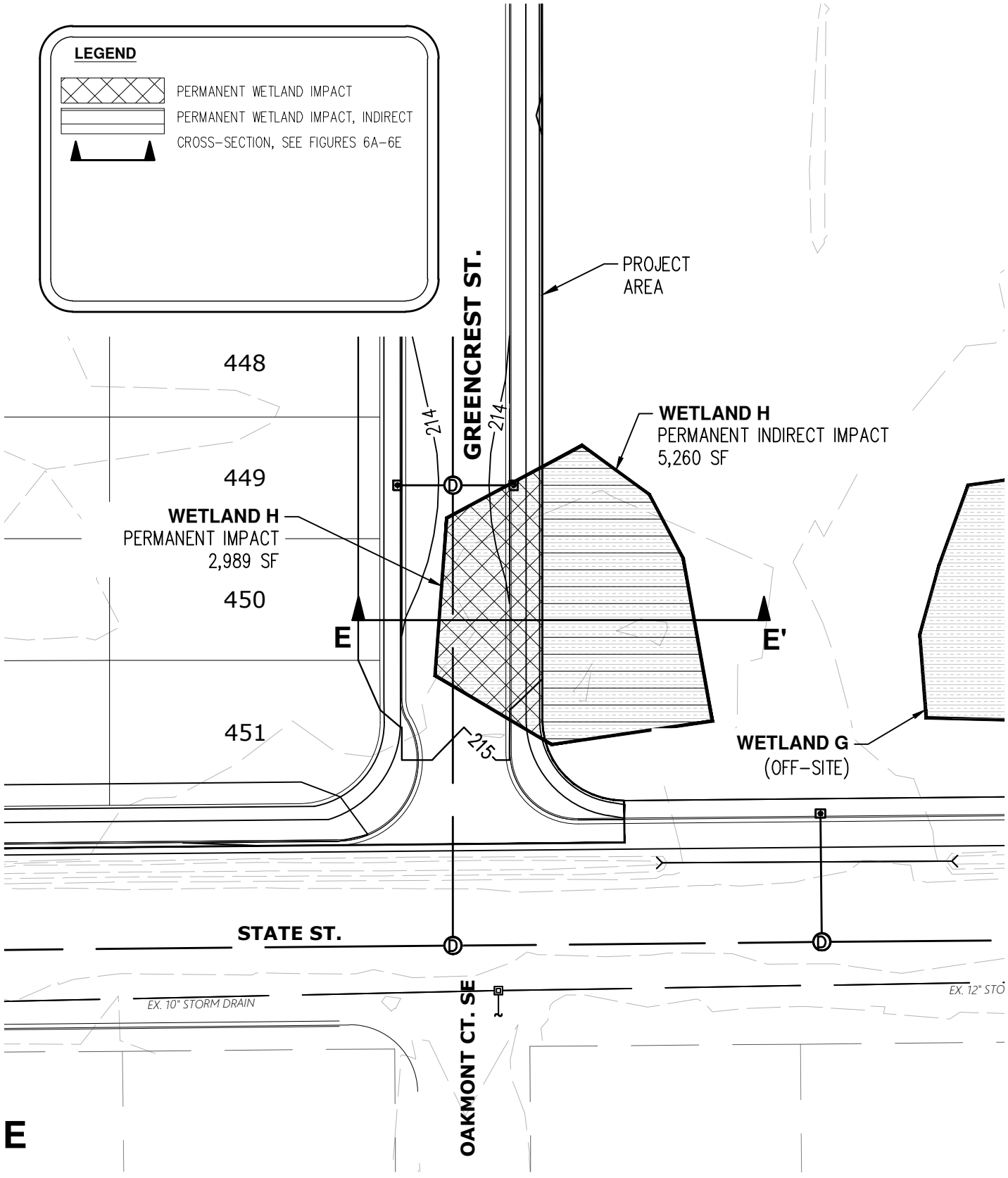
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 5E

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 SITE PLAN 50 | 5E



NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"= 50 FEET

50 0 10 25 50

ORIGINAL PAGE SIZE: 8.5" X 11"

N

SITE PLAN - ENLARGEMENT

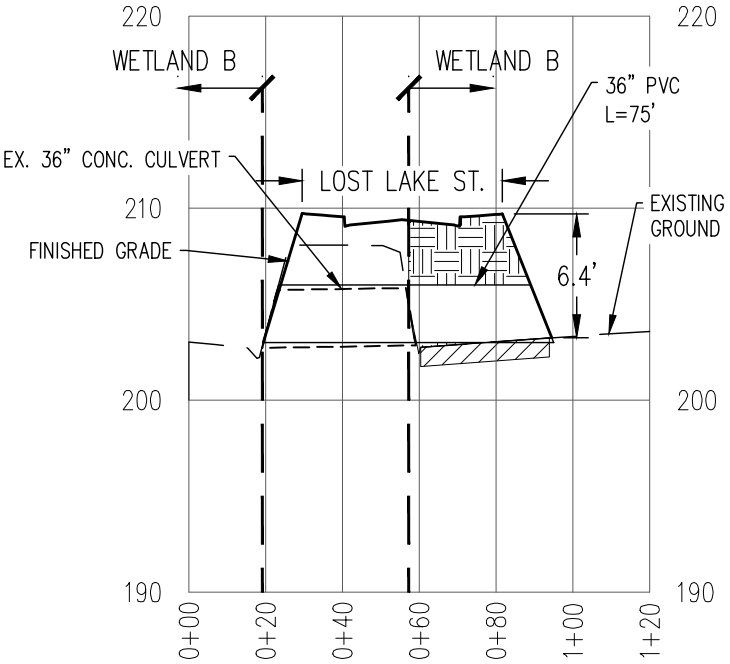
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 5F

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 SITE PLAN 50 | 5F



CROSS-SECTION A-A'

HOR: 1"= 50'

VERT: 1"= 10'

PERMANENT WETLAND FILL

PERMANENT WETLAND REMOVAL & FILL

		Permanent DSL Impacts		
Wetland	Construction Activity	SF/Acres	Removal (CY)	Fill (CY)
Wetland B	Lost Lake St. Crossing	560/0.01	20	120
Wetland B	Greencrest St. Crossing	3,360/0.08	125	500
Wetland B	Redmond St. Crossing	1,074/0.02	40	250
Wetland C	N/A	0.0/0.0	0	0
Wetland H	Indirect	5,260/0.12	0	0
Wetland H	Roadway Construction	2,989/0.07	180	70
Wetland I	Roadway Construction	5,705/0.13	410	255
Total:		18,948/0.43	775	1,195

DATE: 06/07/2021

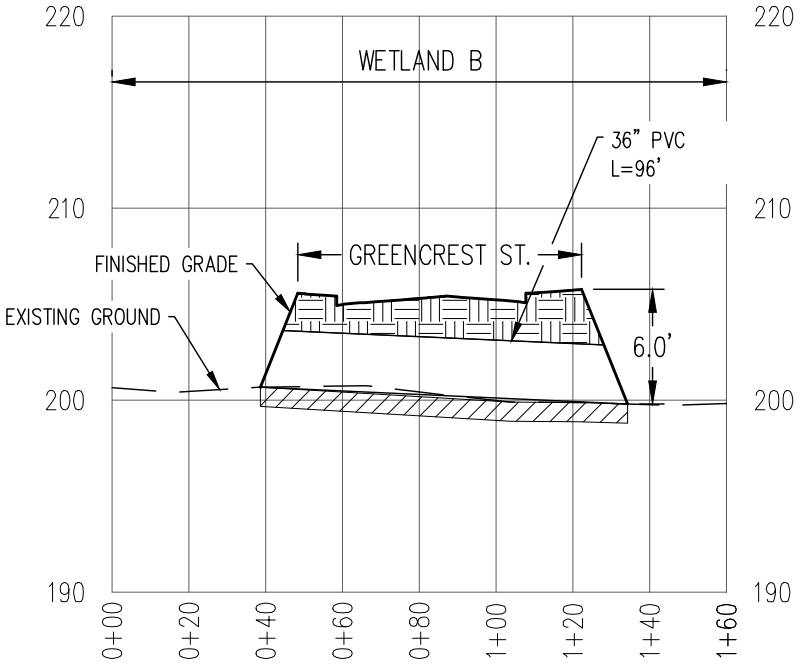
CROSS-SECTION A

EAST PARK ESTATES PHASE 3-6: JPA

FIGURE **6A**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



CROSS-SECTION B-B'

HOR: 1"= 50'

VERT: 1"= 10'

PERMANENT WETLAND FILL

PERMANENT WETLAND REMOVAL & FILL

		Permanent DSL Impacts		
Wetland	Construction Activity	SF/Acres	Removal (CY)	Fill (CY)
Wetland B	Lost Lake St. Crossing	560/0.01	20	120
Wetland B	Greencrest St. Crossing	3,360/0.08	125	500
Wetland B	Redmond St. Crossing	1,074/0.02	40	250
Wetland C	N/A	0.0/0.0	0	0
Wetland H	Indirect	5,260/0.12	0	0
Wetland H	Roadway Construction	2,989/0.07	180	70
Wetland I	Roadway Construction	5,705/0.13	410	255
Total:		18,948/0.43	775	1,195

DATE: 06/07/2021

CROSS-SECTION B

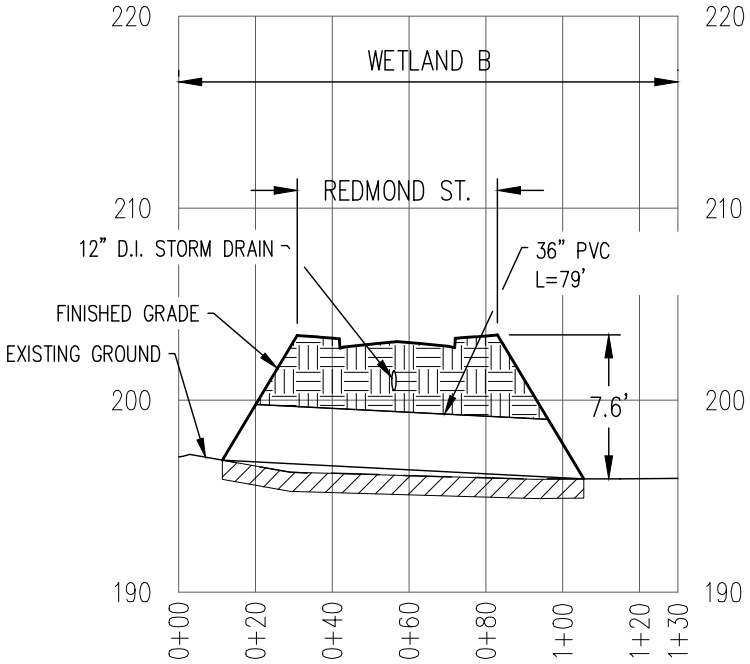
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE **6B**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 XSECS | XSEC B



CROSS-SECTION C-C'

HOR: 1"= 50'

VERT: 1"= 10'

PERMANENT WETLAND FILL

PERMANENT WETLAND REMOVAL & FILL

		Permanent DSL Impacts		
Wetland	Construction Activity	SF/Acres	Removal (CY)	Fill (CY)
Wetland B	Lost Lake St. Crossing	560/0.01	20	120
Wetland B	Greencrest St. Crossing	3,360/0.08	125	500
Wetland B	Redmond St. Crossing	1,074/0.02	40	250
Wetland C	N/A	0.0/0.0	0	0
Wetland H	Indirect	5,260/0.12	0	0
Wetland H	Roadway Construction	2,989/0.07	180	70
Wetland I	Roadway Construction	5,705/0.13	410	255
Total:		18,948/0.43	775	1,195

DATE: 06/07/2021

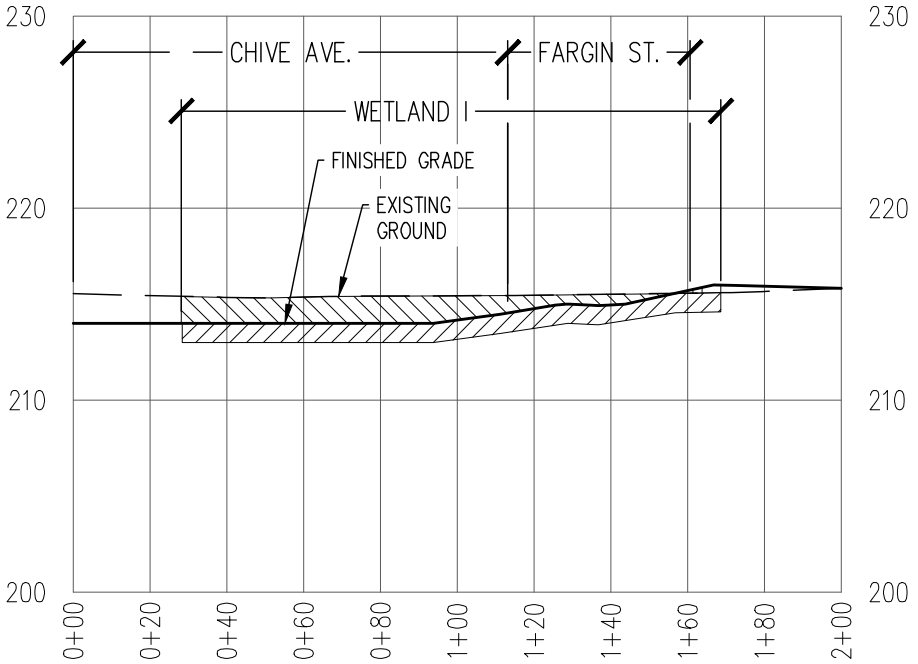
CROSS-SECTION C

EAST PARK ESTATES PHASE 3-6: JPA

FIGURE **6C**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



CROSS-SECTION D-D'

HOR: 1"= 50'

VERT: 1"= 10'

PERMANENT WETLAND FILL

PERMANENT WETLAND REMOVAL & FILL

PERMANENT WETLAND REMOVAL

		Permanent DSL Impacts		
Wetland	Construction Activity	SF/Acres	Removal (CY)	Fill (CY)
Wetland B	Lost Lake St. Crossing	560/0.01	20	120
Wetland B	Greencrest St. Crossing	3,360/0.08	125	500
Wetland B	Redmond St. Crossing	1,074/0.02	40	250
Wetland C	N/A	0.0/0.0	0	0
Wetland H	Indirect	5,260/0.12	0	0
Wetland H	Roadway Construction	2,989/0.07	180	70
Wetland I	Roadway Construction	5,705/0.13	410	255
Total:		18,948/0.43	775	1,195

DATE: 06/07/2021

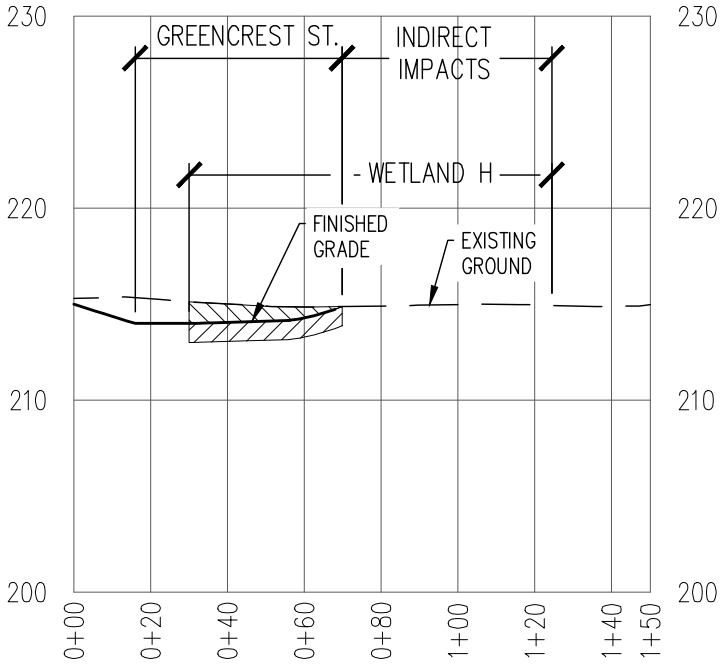
CROSS-SECTION D

EAST PARK ESTATES PHASE 3-6: JPA

FIGURE **6D**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



CROSS-SECTION E-E'

HOR: 1"= 50'

VERT: 1"= 10'

PERMANENT WETLAND REMOVAL

PERMANENT WETLAND REMOVAL & FILL

		Permanent DSL Impacts		
Wetland	Construction Activity	SF/Acres	Removal (CY)	Fill (CY)
Wetland B	Lost Lake St. Crossing	560/0.01	20	120
Wetland B	Greencrest St. Crossing	3,360/0.08	125	500
Wetland B	Redmond St. Crossing	1,074/0.02	40	250
Wetland C	N/A	0.0/0.0	0	0
Wetland H	Indirect	5,260/0.12	0	0
Wetland H	Roadway Construction	2,989/0.07	180	70
Wetland I	Roadway Construction	5,705/0.13	410	255
Total:		18,948/0.43	775	1,195

DATE: 06/07/2021

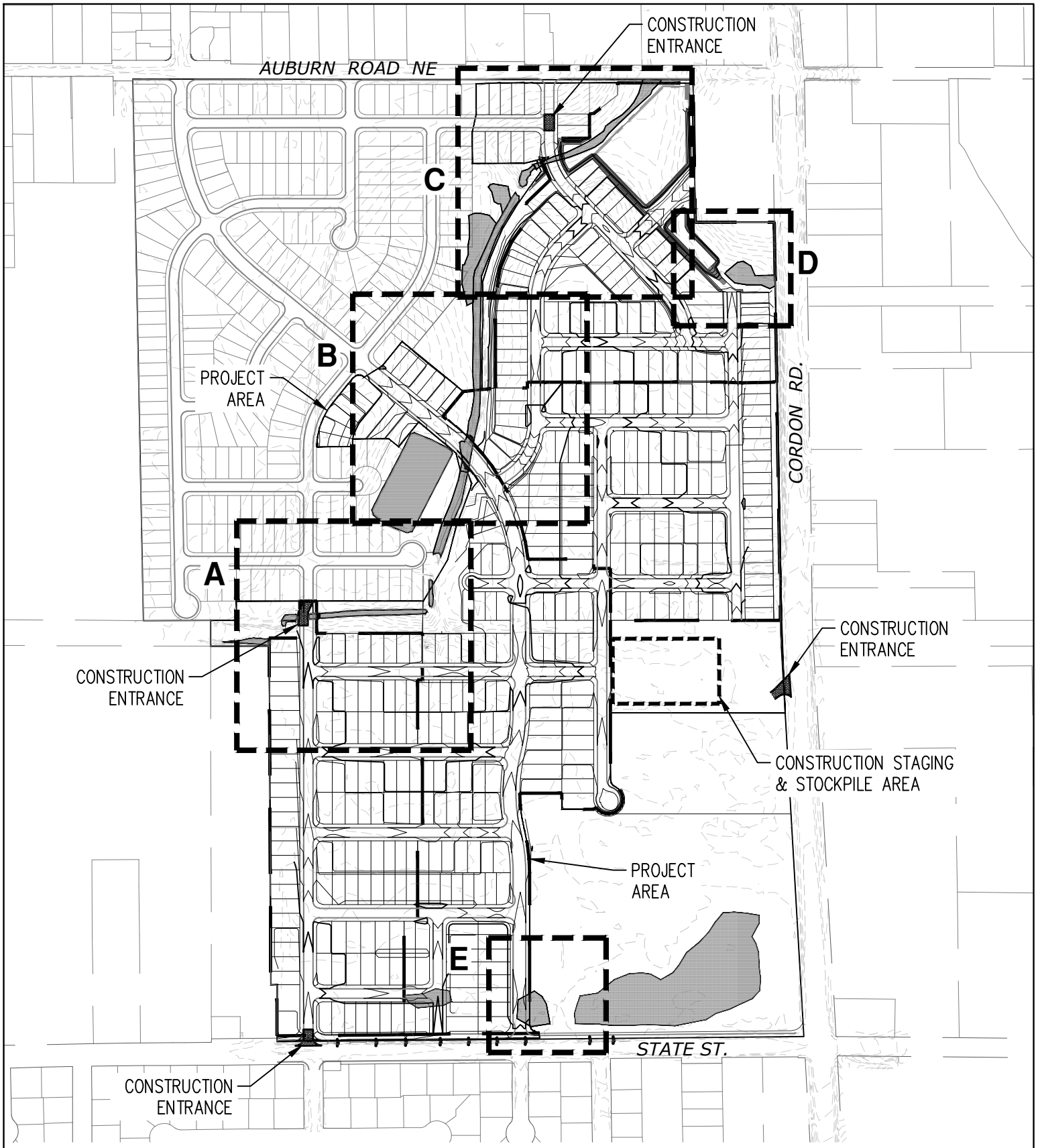
CROSS-SECTION E

EAST PARK ESTATES PHASE 3-6: JPA

FIGURE **6E**

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"= 400 FEET

400 0 80 200 400

ORIGINAL PAGE SIZE: 8.5" X 11"

N

GRADING AND EROSION CONTROL PLAN

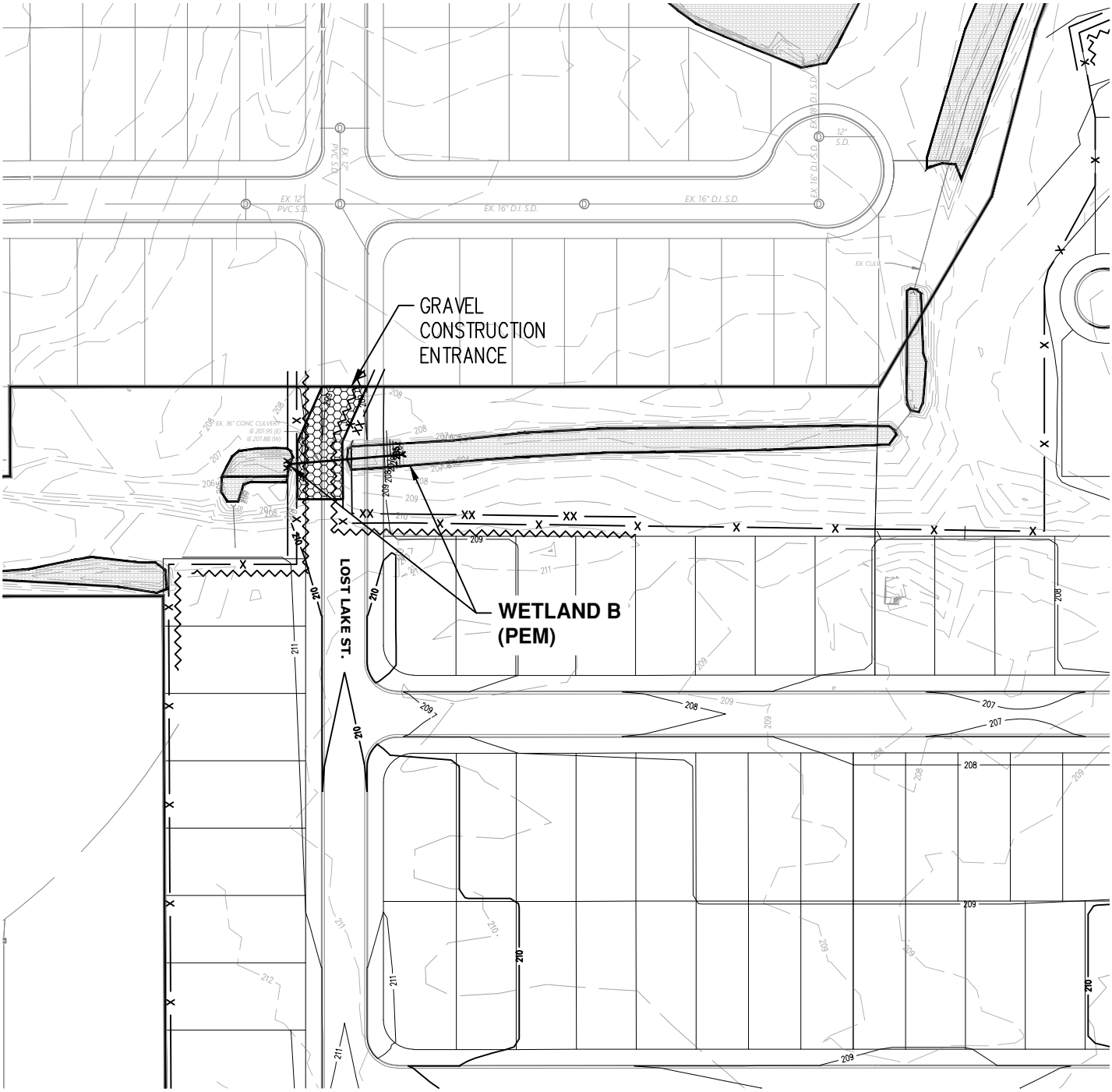
EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 7A

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 ESCP 400 | 7A



A

xx xx = ORANGE CONSTRUCTION FENCE

x x = SEDIMENT FENCE

= WATTLES OVERLAND FLOW

NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 8.5" X 11"

N

GRADING AND EROSION CONTROL PLAN

EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 7B

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

B

——— xx ——— xx ——— = ORANGE CONSTRUCTION FENCE

——— x ——— x ——— = SEDIMENT FENCE

〰〰〰〰〰〰〰〰〰〰〰〰 = WATTLES OVERLAND FLOW

NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 8.5" X 11"

N

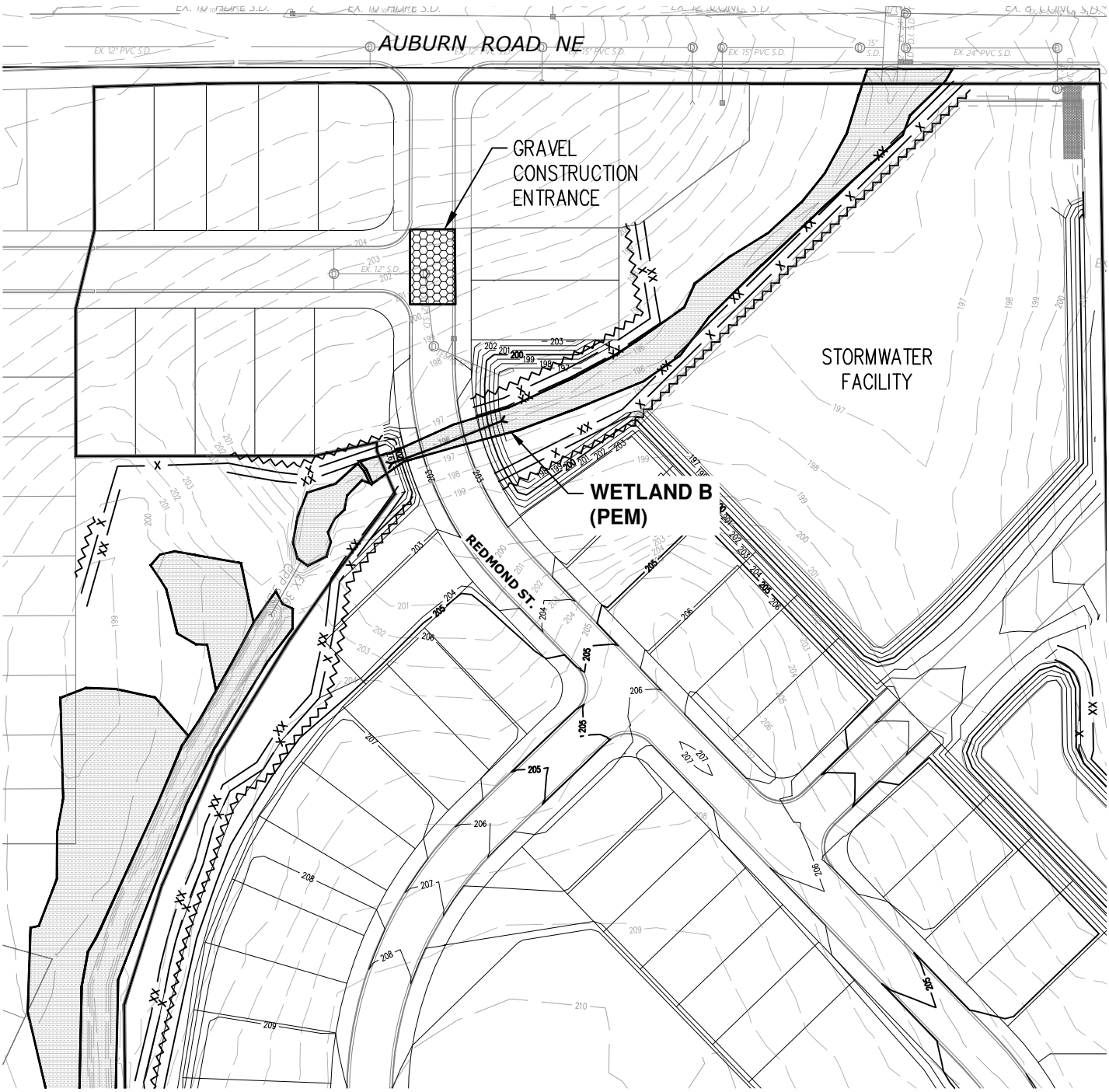
GRADING AND EROSION CONTROL PLAN

EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 7C

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



C

xx xx = ORANGE CONSTRUCTION FENCE

x x = SEDIMENT FENCE

= WATTLES OVERLAND FLOW

NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 8.5" X 11"

N

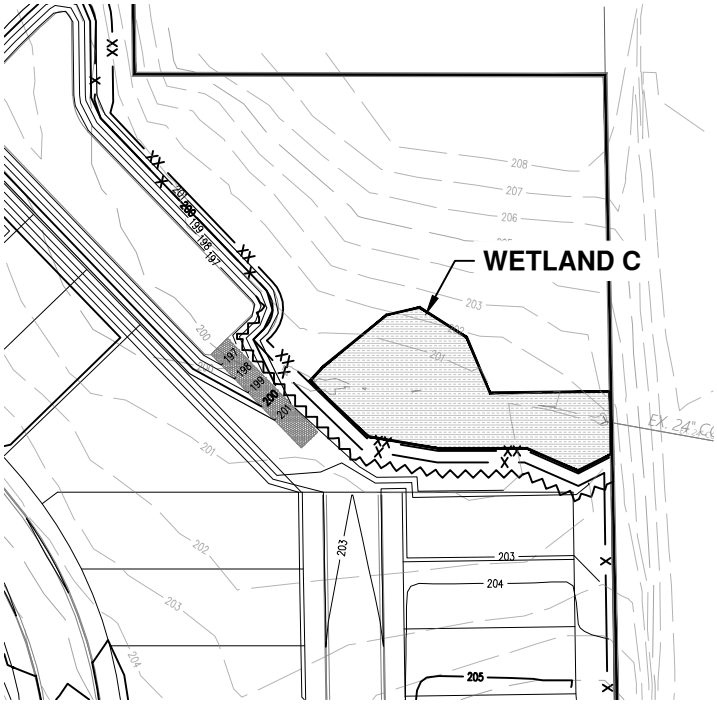
GRADING AND EROSION CONTROL PLAN

EAST PARK ESTATES PHASE 3-6: JPA

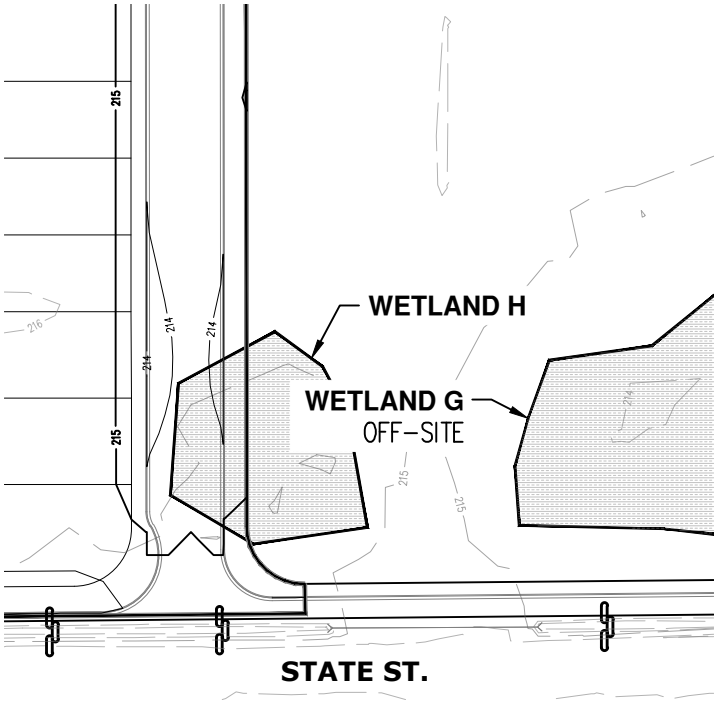
FIGURE 7D

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



D



E

xx xx = ORANGE CONSTRUCTION FENCE

x x = SEDIMENT FENCE

= WATTLES OVERLAND FLOW

NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 8.5" X 11"

N

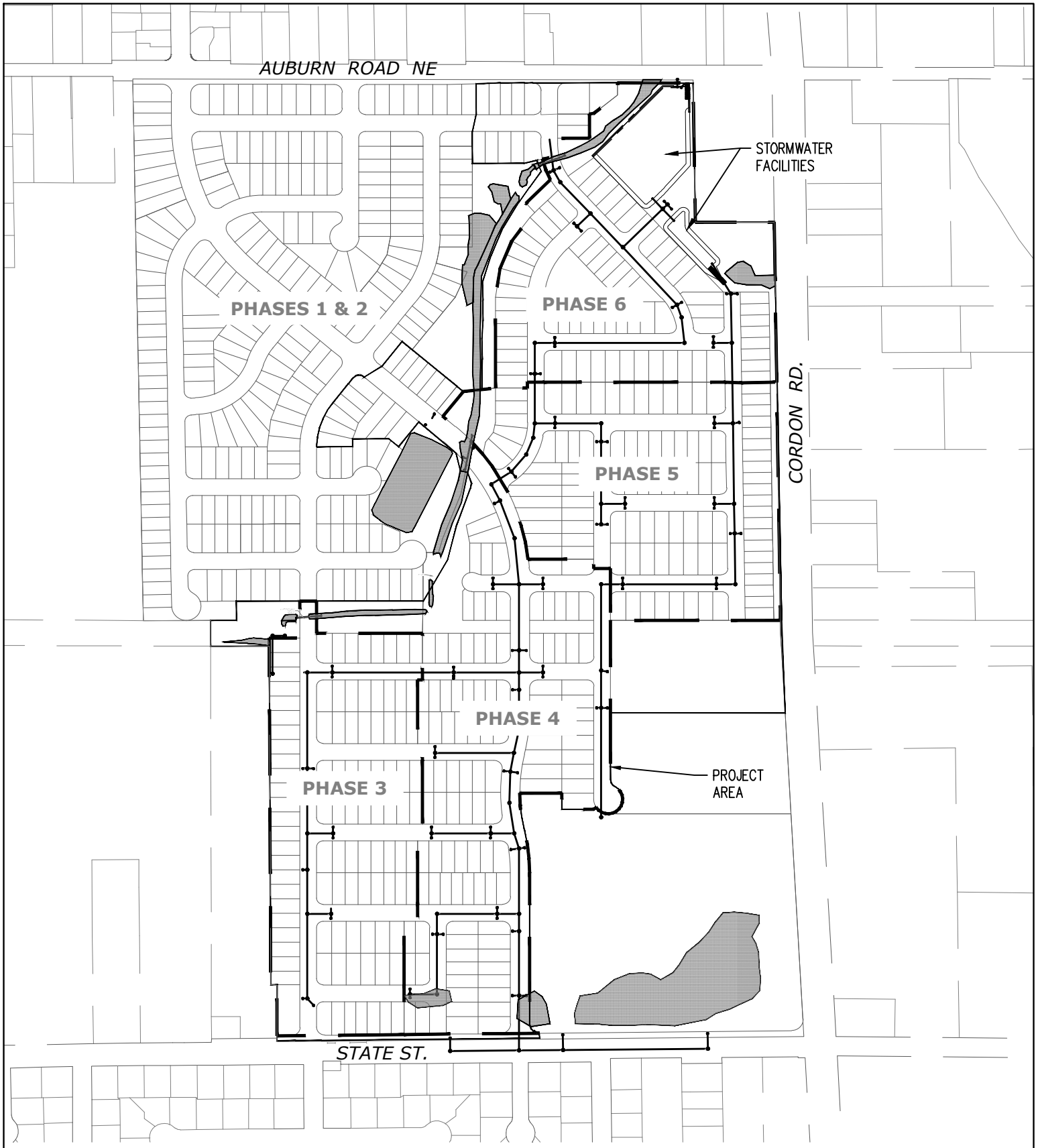
GRADING AND EROSION CONTROL PLAN

EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 7E

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669



NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"= 400 FEET

400 0 80 200 400

ORIGINAL PAGE SIZE: 8.5" X 11"

N

STORMWATER MANAGEMENT PLAN

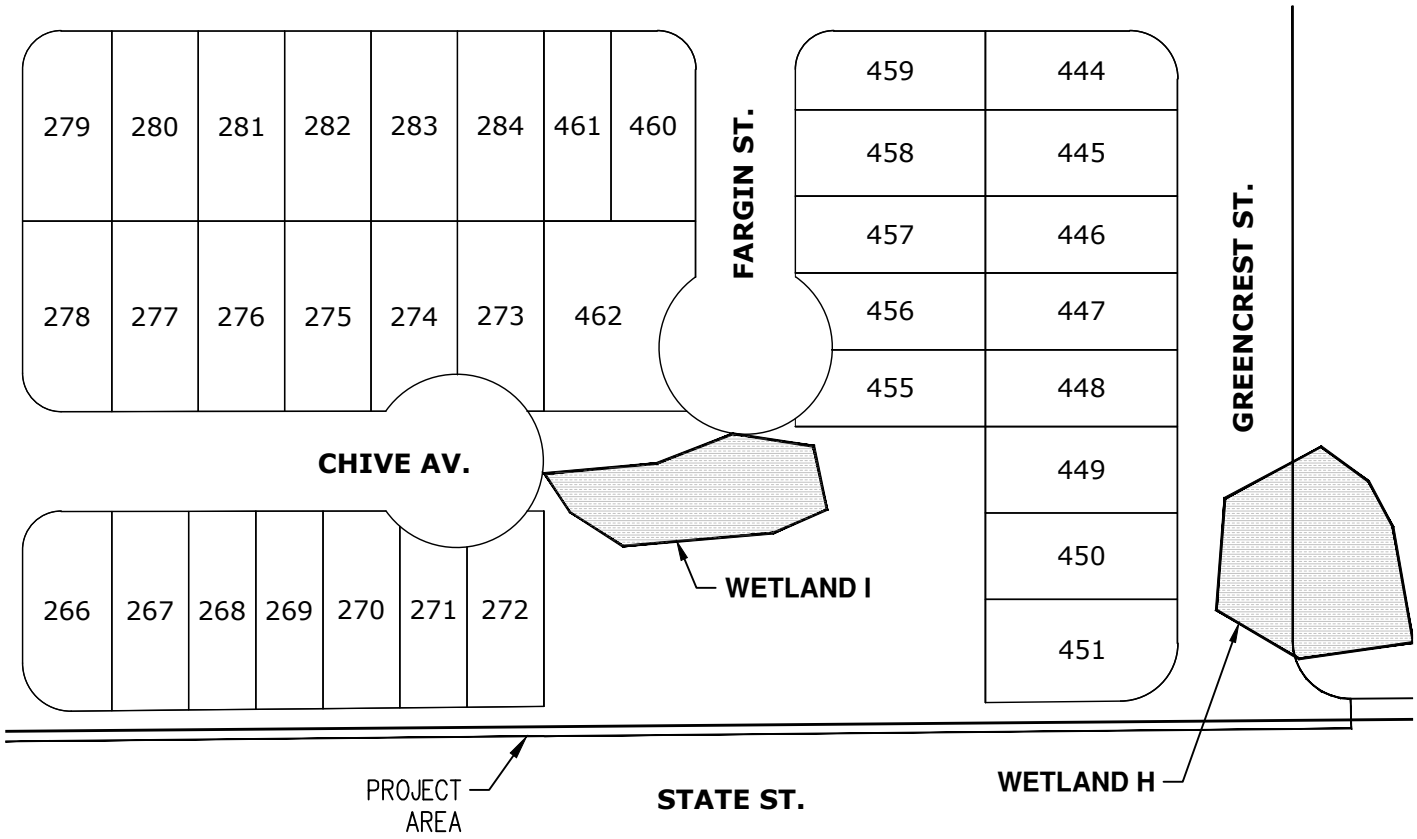
EAST PARK ESTATES PHASE 3-6: JPA

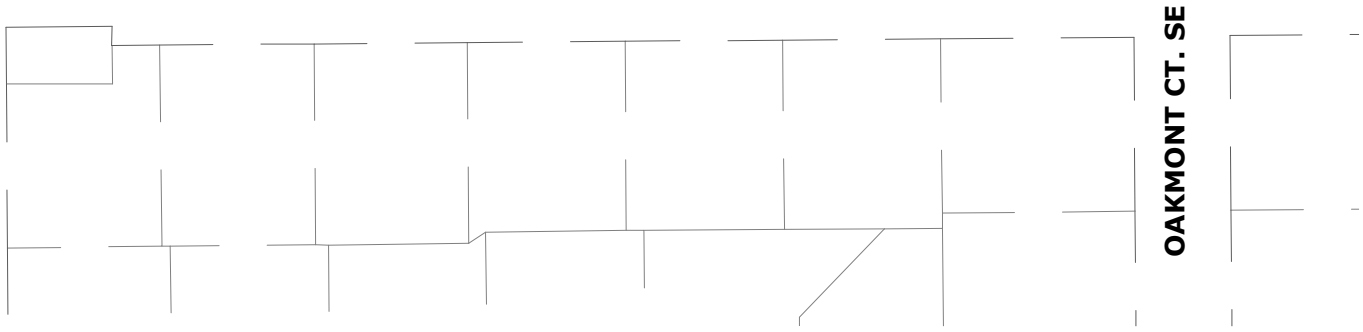
FIGURE 8

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

DWG: 7669 JPA2 STM PLAN 400 | 8





NOTE: SITE PLAN, GRADING, ESCP, AND STORMWATER PROVIDED BY MULTI/TECH ENGINEERING.

DATE: 06/07/2021

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 8.5" X 11"

N

ALTERNATIVE SITE PLAN

EAST PARK ESTATES PHASE 3-6: JPA

FIGURE 9

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: SRR
CHKD: JWM
AKS JOB: 7669

Attachment 2: DSL Concurrence Letter WD-2019-0557

Oregon
Kate Brown, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregon.gov/dsl

January 2, 2020

I&E Construction
Attn: Karl Ivanov
9550 SE Clackamas Road
Clackamas, OR 97015

Re: WD # 2019-0557 **Approved**
Wetland Delineation Report for East Park Estates PUD-North Half
Marion County; T7S R2W S29B, TLs 200, 201, 300, and 400
Salem Local Wetlands Inventory, Wetland PU-T

Dear Mr. Ivanov:

The Department of State Lands has reviewed the wetland delineation report prepared by AKS Engineering & Forestry, LLC for the site referenced above. Based upon the information presented in the report, a site visit on 12/18/2019, and additional information submitted upon request, we concur with the wetland boundaries as mapped in revised Figures 5, 5A and 5B of the report. Please replace all copies of the preliminary wetland maps with these final Department-approved maps.

Within the study area, 6 wetlands (Wetland A-F, totaling approximately 1.65 acres) and one water (Irrigation Pond) were identified. The wetlands and pond are subject to the permit requirements of the state Removal-Fill 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 the 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. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

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. If you have any questions, please contact the Jurisdiction Coordinator for Marion County, Daniel Evans, PWS, at (503) 986-5271.

Sincerely,

Peter Ryan Digitally signed by Peter Ryan
Date: 2020.01.02 11:21:53 -08'00'

Peter Ryan, PWS
Aquatic Resource Specialist

Enclosures

ec: Stacey Reed, PWS, AKS Engineering & Forestry, LLC
Salem Planning Department (Maps enclosed for updating LWI)
Kinsey Friesen, Corps of Engineers
Mike DeBlasi, DSL
Patricia Farrell, City of Salem Public Works
Zach Diehl, Kyle Anderson, City of Salem GIS

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: https://apps.oregon.gov/DSL/EPS/program?key=4.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279**. A single PDF of the completed cover from and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information

☒ Applicant ☐ Owner Name, Firm and Address:
Karl Ivanov / I&E Construction
9550 SE Clackamas Road
Clackamas, OR 97015

Business phone #
Mobile phone # (optional)
E-mail: Karl@iecon.us

RECEIVED
OCT 09 2019
RECEIVED $ 454.00
DEPARTMENT OF STATE LANDS
VH 330168

☒ Authorized Legal Agent, Name and Address (if different):
Same as Applicant

Business phone #
Mobile phone # (optional)
E-mail:

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: KIRIL IVANOV **Signature:** _____
Date: 10.4.19 Special instructions regarding site access: _____

Project and Site Information

Project Name: East Park Estates PUD - North Half

Latitude: 44.934159 Longitude: -122.962786
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Residential

Tax Map # 7S 2W 29B
Tax Lot(s) 200, 201, 300 and 400

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
SW Intersection of Auburn Road NE and Cordon Road NE

Township 7S Range 2W Section 29 QQ
Use separate sheet for additional tax and location information

City: Salem County: Marion

Waterway: N/A River Mile: N/A

Wetland Delineation Information

Wetland Consultant Name, Firm and Address:
Stacey Reed, PWS
AKS Engineering & Forestry, LLC
12965 SW Herman Road, Ste 100
Tualatin, OR 97062

Phone # (503) 563-6151
Mobile phone # (if applicable)
E-mail: staceyr@aks-eng.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.
Consultant Signature: Stacey Reed Date: 10/4/19

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No | Study Area size: 73.99 AC | Total Wetland Acreage: 1.65

Check Applicable Boxes Below

☐ R-F permit application submitted
☐ Mitigation bank site
☐ Industrial Land Certification Program Site
☐ Wetland restoration/enhancement project (not mitigation)
☒ Previous delineation/application on parcel
If known, previous DSL # 2007-0702

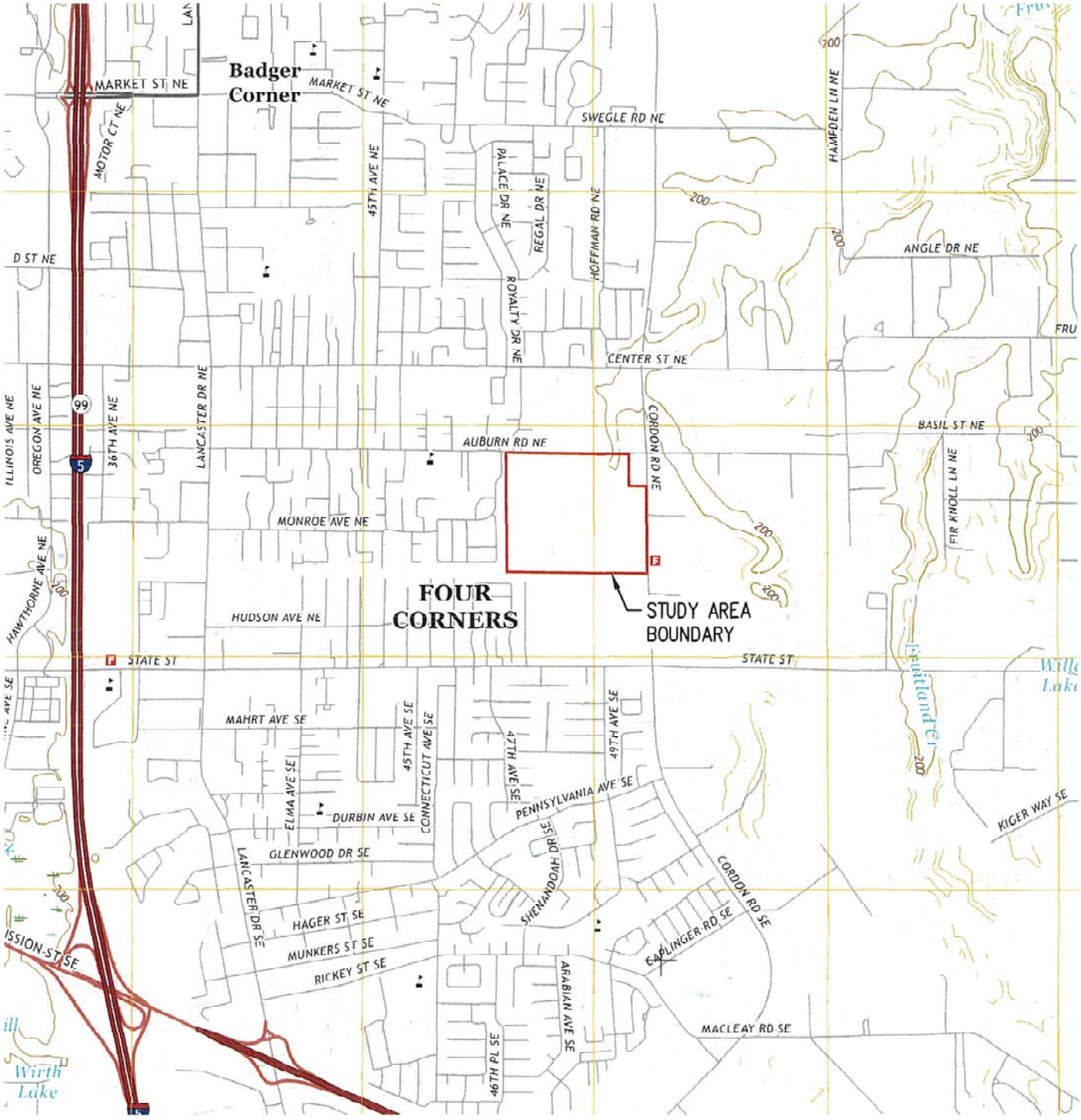
☒ Fee payment submitted $ 454
☐ Fee ($100) for resubmittal of rejected report
☐ Request for Reissuance. See eligibility criteria. (no fee)
DSL # _____ Expiration date _____
☐ LWI shows wetlands or waters on parcel
Wetland ID code _____

For Office Use Only

DSL Reviewer: DE Fee Paid Date: 10 / 9 / 19 DSL WD # 2019-0557

Date Delineation Received: 10 / 9 / 19 Scanned: ☐ Electronic: ☐ DSL App.# _____

proj. # 78758



USGS 7.5' TOPOGRAPHIC SERIES
QUADRANGLE: SALEM EAST, OR (2017)

N

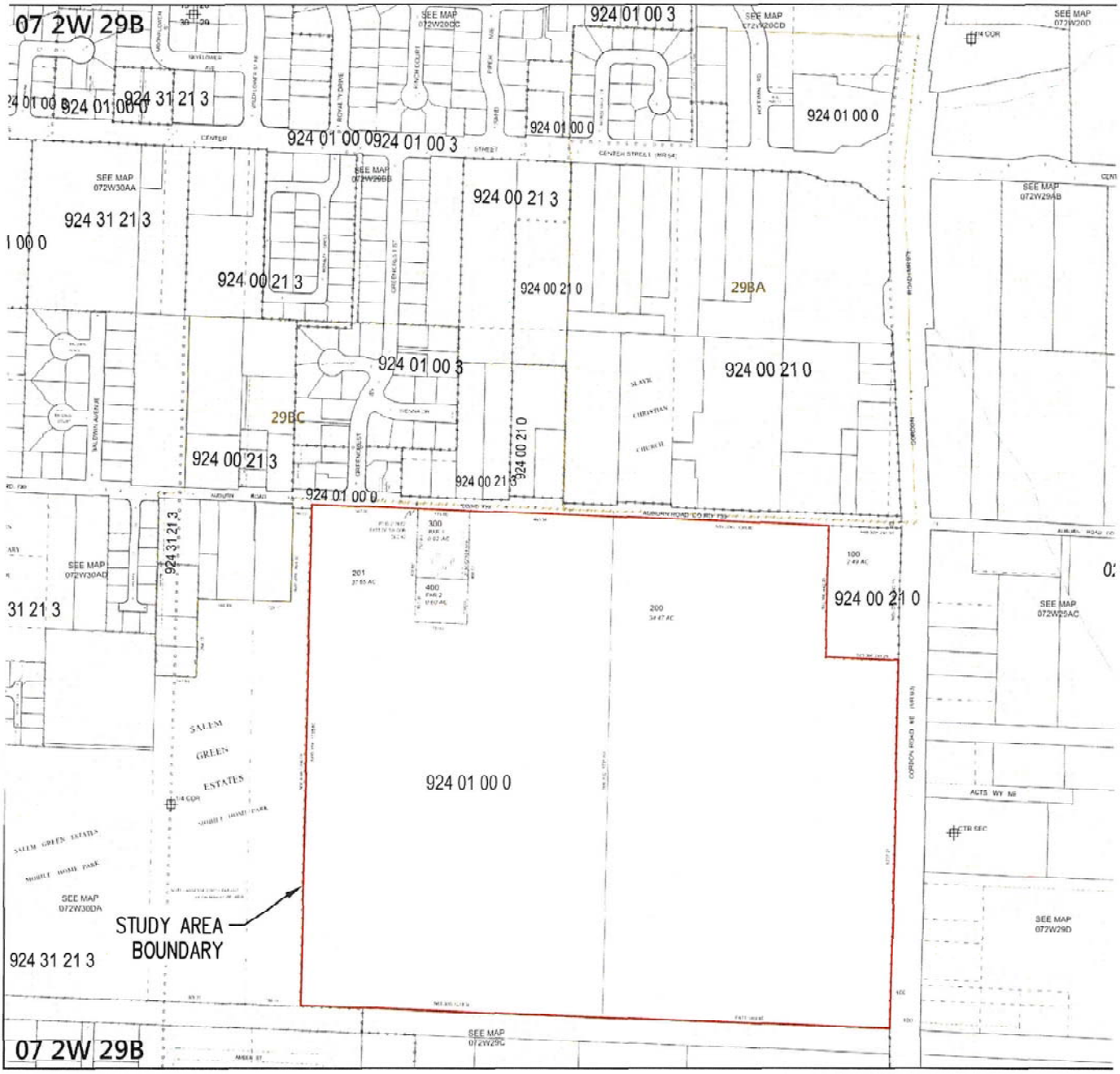
SCALE: 1"= 2000 FEET

2000 0 800 1200 1600 2000

DATE: 09/24/2019

USGS VICINITY MAP EAST PARK ESTATES P.U.D. NORTH WETLAND DELINEATION REPORT	FIGURE 1
AKS ENGINEERING & FORESTRY, LLC 3700 RIVER RD N, STE 1 KEIZER, OR 97303 503.400.6028 WWW.AKS-ENG.COM	DRWN: SAS CHKD: SAR AKS JOB: 7669

DWG: 7669 20190918 NR FIGURES NORTH | FIGURE 1



MARION COUNTY
TAX LOTS 200, 201, 300, & 400
TAX MAP 7S 2W 29B

N

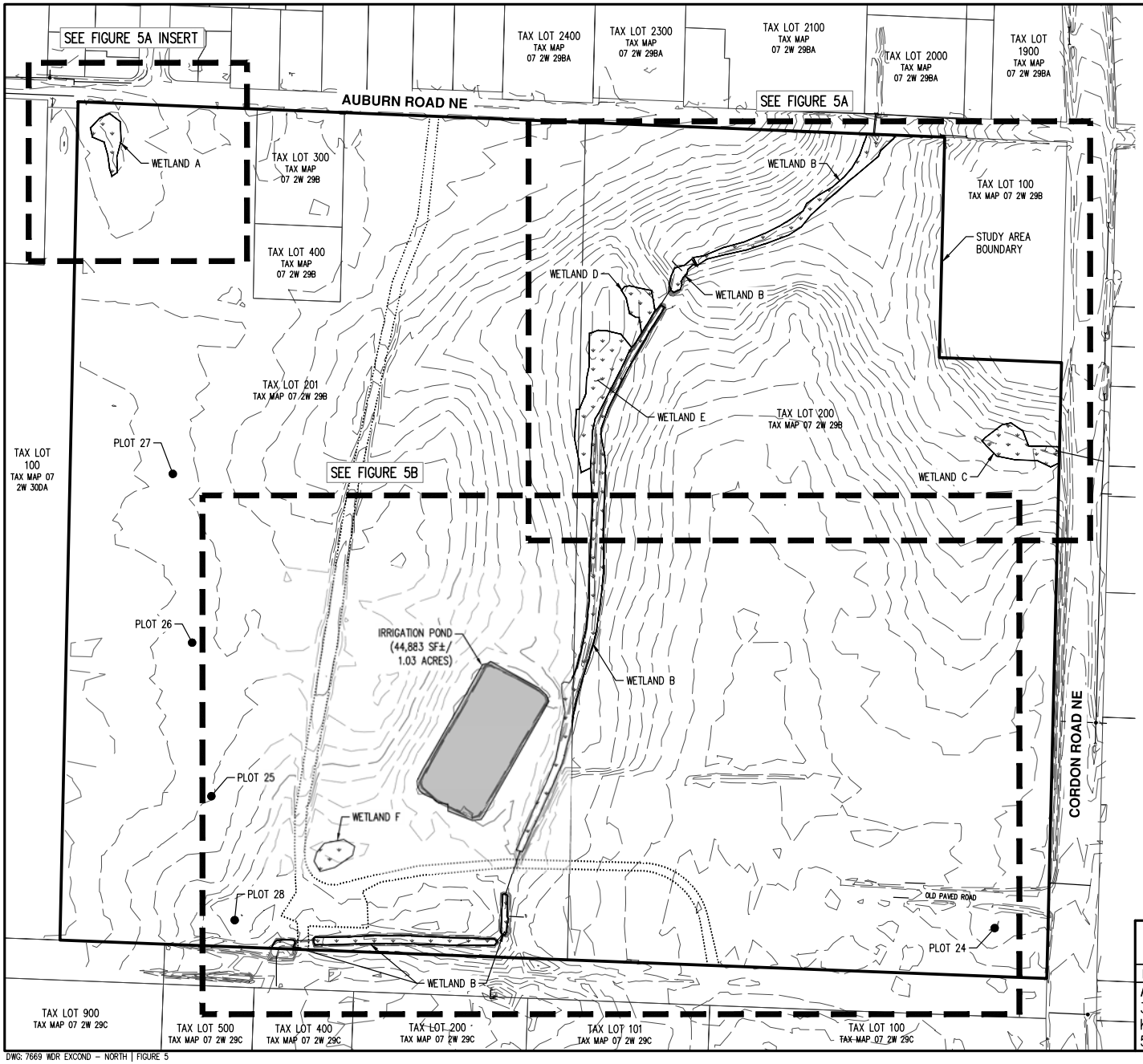
SCALE: 1"= 250 FEET

250 0 100 150 200 250

DATE: 09/24/2019

TAX MAP (MAP 7S 2W 29B) EAST PARK ESTATES P.U.D. NORTH WETLAND DELINEATION REPORT	FIGURE 2
AKS ENGINEERING & FORESTRY, LLC 3700 RIVER RD N, STE 1 KEIZER, OR 97303 503.400.6028 WWW.AKS-ENG.COM	DRWN: SAS CHKD: SAR AKS JOB: 7669

DWG: 7669 20190918 NR FIGURES NORTH | FIGURE 2



LEGEND:

ON-SITE WETLAND AREA: 71,637 SF± (1.65 ACRES±)

WETLAND A: 3,953 SF± (0.09 ACRES±)
WETLAND B: 40,328 SF± (0.93 ACRES±)
WETLAND C: 6,863 SF± (0.16 ACRES±)
WETLAND D: 3,476 SF± (0.08 ACRES±)
WETLAND E: 13,660 SF± (0.31 ACRES±)
WETLAND F: 3,357 SF± (0.08 ACRES±)

WETLAND BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC. (AKS) ON SEPTEMBER 17, 2019 AND WERE GPS SURVEYED IN THE FIELD USING A TRIMBLE GEO7X GPS RECEIVER WITH SUBMETER ACCURACY.

1-FOOT INTERVAL GROUND CONTOURS DERIVED FROM MULTITECH ENGINEERING PROFESSIONAL LAND SURVEY.

DSL WD # 2019-0557
Approval Issued 01/02/2020
Approval Expires 01/02/2025

N

SCALE: 1"= 200 FEET

200 0 40 100 200

ORIGINAL PAGE SIZE: 11" x 17"

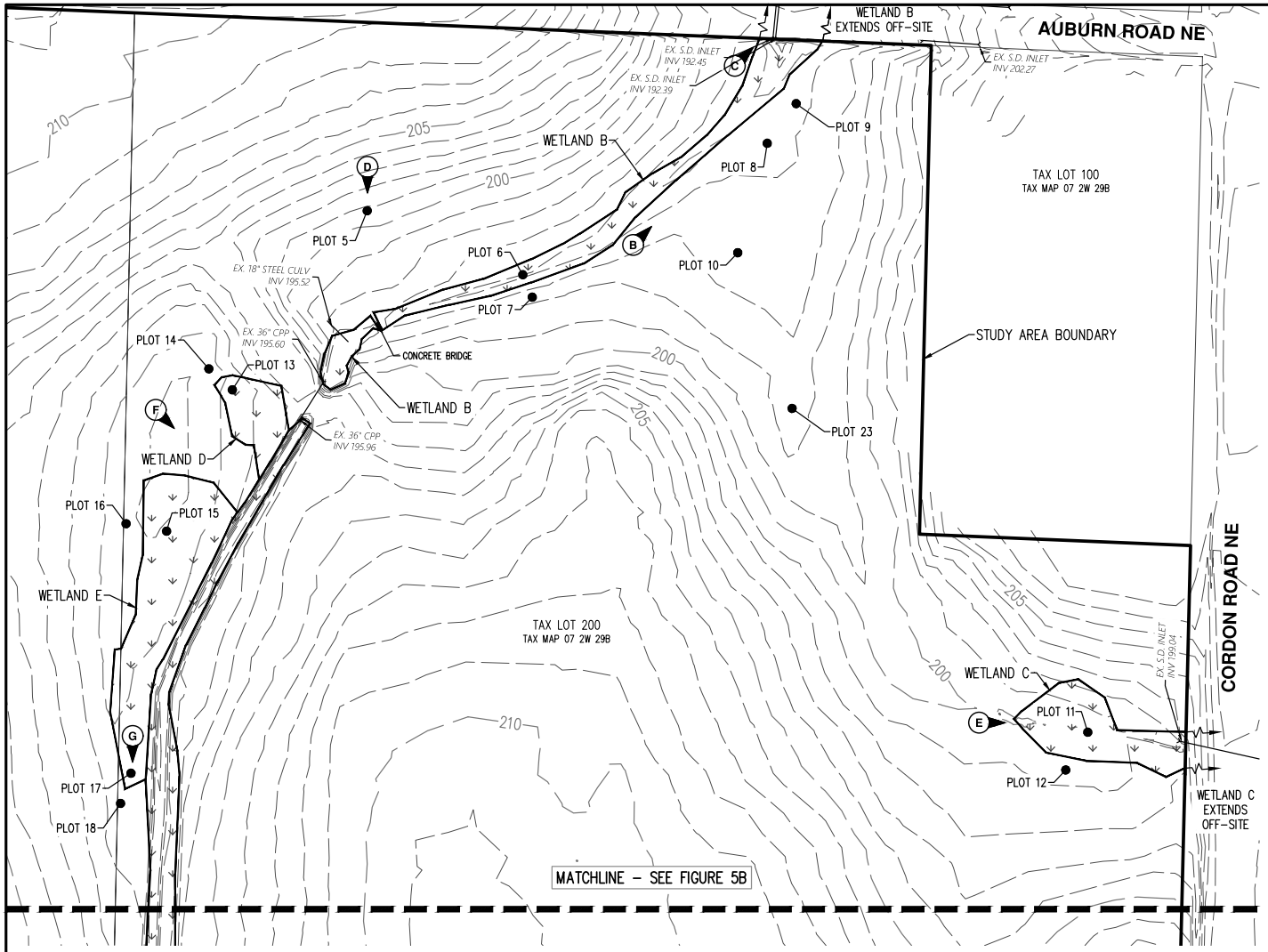
DATE: 12/19/2019

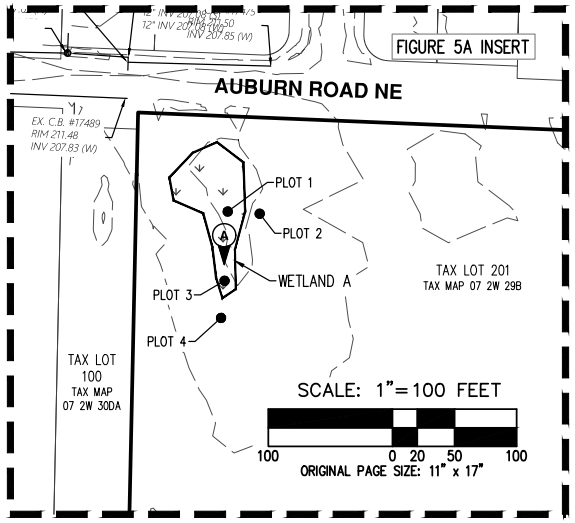
WETLAND DELINEATION MAP OVERVIEW	FIGURE
EAST PARK PUD - NORTH HALF WETLAND DELINEATION REPORT	5

AKS ENGINEERING & FORESTRY, LLC
3700 RIVER RD N, STE 1
KEIZER, OR 97303
503.400.6028 WWW.AKS-ENG.COM

DRWN: JRI
CHKD: SAR
AKS JOB: 7669

DWG: 7669 WDR EXCOND - NORTH | FIGURE 5





LEGEND:

ON-SITE WETLAND AREA: 71,637 SF± (1.65 ACRES±)

WETLAND A: 3,953 SF± (0.09 ACRES±)
WETLAND B: 40,328 SF± (0.93 ACRES±)
WETLAND C: 6,863 SF± (0.16 ACRES±)
WETLAND D: 3,476 SF± (0.08 ACRES±)
WETLAND E: 13,660 SF± (0.31 ACRES±)
WETLAND F: 3,357 SF± (0.08 ACRES±)

A — PHOTO POINT LOCATION AND ORIENTATION

WETLAND BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC. (AKS) ON SEPTEMBER 17, 2019 AND WERE GPS SURVEYED IN THE FIELD USING A TRIMBLE GEO7X GPS RECEIVER WITH SUBMETER ACCURACY.

1-FOOT INTERVAL GROUND CONTOURS DERIVED FROM MULTITECH ENGINEERING PROFESSIONAL LAND SURVEY.

SCALE: 1"=100 FEET
100 0 20 50 100
ORIGINAL PAGE SIZE: 11" x 17"

N

DSL WD # 2019-0557
Approval Issued 01/02/2020
Approval Expires 01/02/2025

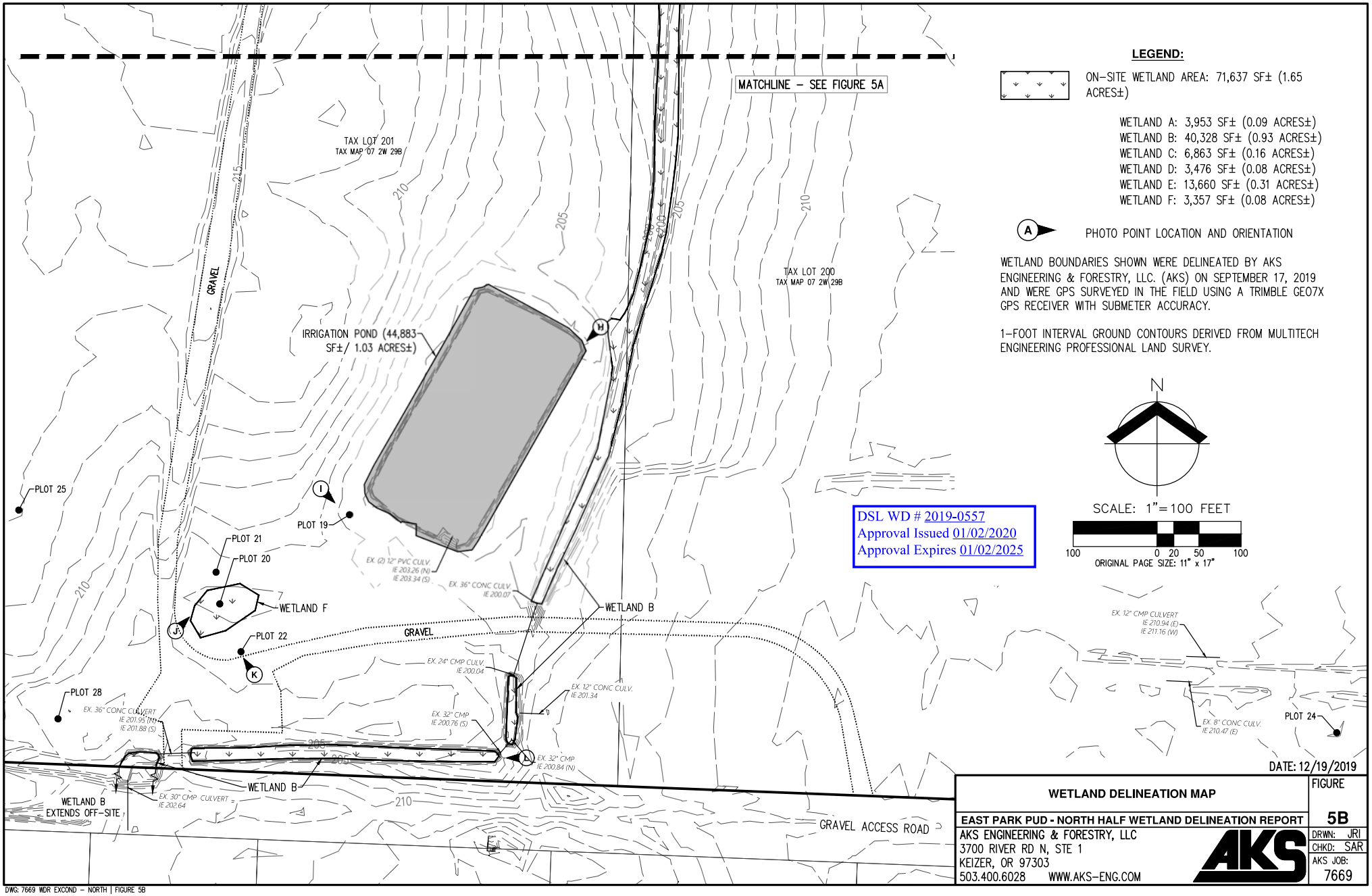
DATE: 12/19/2019

WETLAND DELINEATION MAP	FIGURE 5A
EAST PARK PUD - NORTH HALF WETLAND DELINEATION REPORT	

AKS ENGINEERING & FORESTRY, LLC
3700 RIVER RD N, STE 1
KEIZER, OR 97303
503.400.6028 WWW.AKS-ENG.COM

DRWN: JRI
CHKD: SAR
AKS JOB: 7669

DWG: 7669 WDR EXCOND – NORTH | FIGURE 5A



LEGEND:

ON-SITE WETLAND AREA: 71,637 SF± (1.65 ACRES±)

WETLAND A: 3,953 SF± (0.09 ACRES±)
WETLAND B: 40,328 SF± (0.93 ACRES±)
WETLAND C: 6,863 SF± (0.16 ACRES±)
WETLAND D: 3,476 SF± (0.08 ACRES±)
WETLAND E: 13,660 SF± (0.31 ACRES±)
WETLAND F: 3,357 SF± (0.08 ACRES±)

A — PHOTO POINT LOCATION AND ORIENTATION

WETLAND BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC. (AKS) ON SEPTEMBER 17, 2019 AND WERE GPS SURVEYED IN THE FIELD USING A TRIMBLE GEO7X GPS RECEIVER WITH SUBMETER ACCURACY.

1-FOOT INTERVAL GROUND CONTOURS DERIVED FROM MULTITECH ENGINEERING PROFESSIONAL LAND SURVEY.

N

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 11" x 17"

DSL WD # 2019-0557
Approval Issued 01/02/2020
Approval Expires 01/02/2025

DATE: 12/19/2019

WETLAND DELINEATION MAP

FIGURE 5B

EAST PARK PUD - NORTH HALF WETLAND DELINEATION REPORT

AKS ENGINEERING & FORESTRY, LLC
3700 RIVER RD N, STE 1
KEIZER, OR 97303
503.400.6028 WWW.AKS-ENG.COM

DRWN: JRI
CHKD: SAR
AKS JOB: 7669

DWG: 7669 WDR EXCOND – NORTH | FIGURE 5B

Attachment 3: DSL Concurrence Letter WD-2020-0298

Oregon
Kate Brown, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregon.gov/dsl

April 7, 2021

East Park LLC
Attn: Kiril Ivanov
9550 SE Clackamas Road
Clackamas, OR 97015

Re: WD # 2020-0298 **Approved with Revisions**
Wetland Delineation Report for East Park Estates PUD – South Half
Marion County; T7S R2W S29 TLs 100, 101, 199, 200, 300, and 400

Dear Mr. Ivanov:

The Department of State Lands has reviewed the wetland delineation report prepared by AKS Engineering & Forestry, LLC for the site referenced above. Based upon the information presented in the report, a site visit on March 18, 2021 and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 5, 5a and 5b of the report. Please replace all copies of the preliminary wetland maps with these final Department-approved maps.

Within the study area, 4 wetlands (Wetland B, G, H, and I, totaling approximately 2.85 acres) and 2 ditches (Ditch 1 and 2) were identified. The wetlands are subject to the permit requirements of the state Removal-Fill 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 the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). However, the 2 ditches are exempt per OAR 141-085-0515(10); therefore, are not subject to current state Removal-Fill permit requirements.

This concurrence is for purposes of the state Removal-Fill Law only. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

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. If you have any questions, please contact the Jurisdiction Coordinator for Marion County, Daniel Evans, PWS, at (503) 986-5271.

Sincerely,

Peter Ryan, SPWS
Aquatic Resource Specialist

Enclosures

ec: Stacey Reed, PWS, AKS
Salem Planning Department (Maps enclosed for updating LWI)
Kinsey Friesen, Corps of Engineers
Carrie Landrum, DSL
Patricia Farrell, City of Salem Public Works
Zach Diehl, Kyle Anderson, City of Salem GIS

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: https://apps.oregon.gov/DSL/EPS/program?key=4.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF of the completed cover from and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information

☒ Applicant ☒ Owner Name, Firm and Address:
Kiril Ivanov / East Park LLC
9550 SE Clackamas Road
Clackamas, OR 97015

Business phone #
Mobile phone # (optional)
E-mail: karl@iecon.us

☐ Authorized Legal Agent, Name and Address (if different):

Business phone #
Mobile phone # (optional)
E-mail:

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: Kiril Ivanov **Signature:** _____

Date: 05/11/2020 Special instructions regarding site access: ____

Project and Site Information

Project Name: East Park Estates PUD - South Half

Latitude: 44.929976 Longitude: -122.962051
decimal degree - centroid of site or start & end points of linear project

Proposed Use:
Residential

Tax Map # 7 2W 29C
Tax Lot(s) 100, 101, 199, 200, 300 and 400

Tax Map #
Tax Lot(s)

Project Street Address (or other descriptive location):
NW Intersection of State Street and Cordon Road NE

Township 7S Range 2W Section 29 QQ
Use separate sheet for additional tax and location information

City: Salem County: Marion

Waterway: N/A River Mile: N/A

Wetland Delineation Information

Wetland Consultant Name, Firm and Address:
Stacey Reed, PWS
AKS Engineering & Forestry, LLC
12965 SW Herman Road, Ste 100
Tualatin, OR 97062

Phone # (503) 563-6151
Mobile phone # (if applicable)
E-mail: staceyr@aks-eng.com

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.
Consultant Signature: Stacey Reed Date: 5/11/2020

Primary Contact for report review and site access is ☒ Consultant ☐ Applicant/Owner ☐ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No | Study Area size: 47.80 AC Total Wetland Acreage: 2.85 Ac

Check Applicable Boxes Below

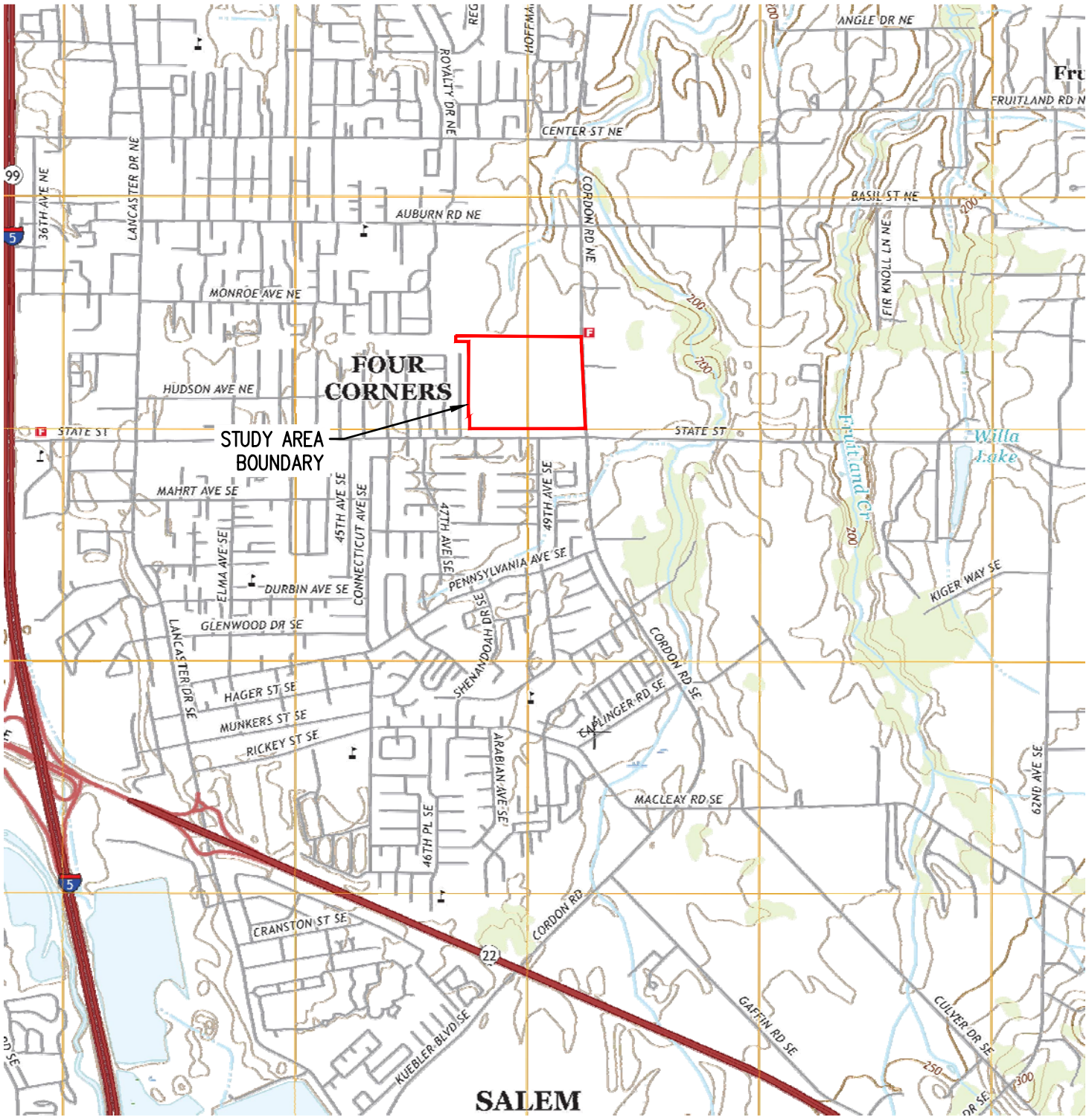
☐ R-F permit application submitted
☐ Mitigation bank site
☐ Industrial Land Certification Program Site
☐ Wetland restoration/enhancement project (not mitigation)
☒ Previous delineation/application on parcel
If known, previous DSL # 2012-0029

☒ Fee payment submitted $ 466
☐ Fee ($100) for resubmittal of rejected report
☐ Request for Reissuance. See eligibility criteria. (no fee)
DSL # ____ Expiration date ____
☐ LWI shows wetlands or waters on parcel
Wetland ID code ____

For Office Use Only

DSL Reviewer: DE Fee Paid Date: ____ / ____ / ____ DSL WD # 2020-0298

Date Delineation Received: 5 / 14 / 20 Scanned: ☐ Electronic: ☒ DSL App.# ____



USGS 7.5' TOPOGRAPHIC SERIES
QUADRANGLE: SALEM, OR (2017)

N

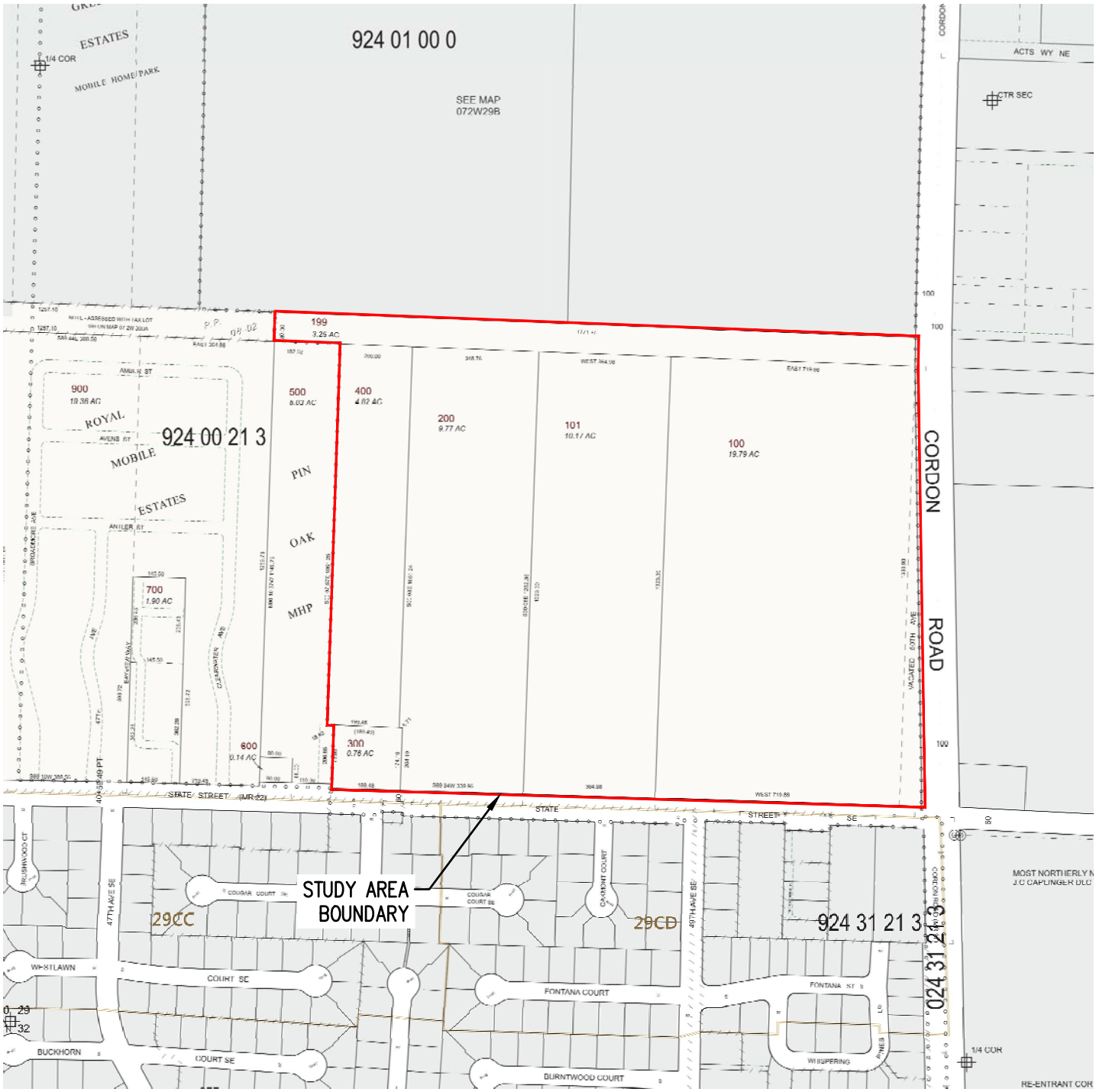
SCALE: 1"= 2000 FEET

2000 0 800 1200 1600 2000

DATE: 10/07/2019

USGS VICINITY MAP **EAST PARK ESTATES P.U.D. SOUTH WETLAND DELINEATION REPORT**	FIGURE **1**
AKS ENGINEERING & FORESTRY, LLC 3700 RIVER RD N, STE 1 KEIZER, OR 97303 503.400.6028 WWW.AKS-ENG.COM	DRWN: SAS CHKD: SAR AKS JOB: 7669

DWG: 7669 20190918 NR FIGURES SOUTH | FIGURE 1



MARION COUNTY
TAX LOTS 100, 101, 199,
200, 300, AND 400
TAX MAP 7S 2W 29C

N

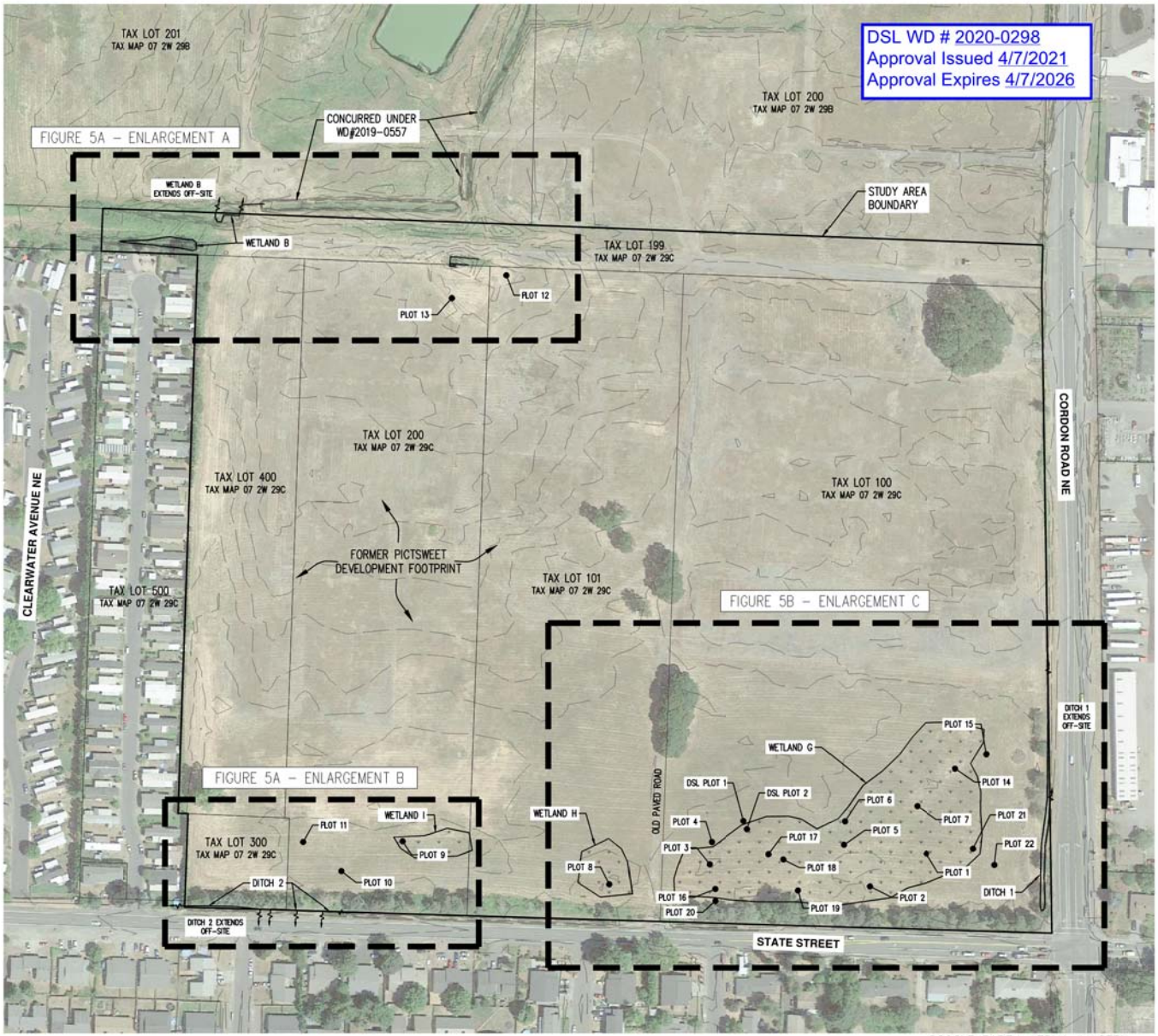
SCALE: 1" = 400 FEET

400 0 160 240 320 400

DATE: 10/07/2019

TAX MAP EAST PARK ESTATES P.U.D. SOUTH WETLAND DELINEATION REPORT	FIGURE 2
AKS ENGINEERING & FORESTRY, LLC 3700 RIVER RD N, STE 1 KEIZER, OR 97303 503.400.6028 WWW.AKS-ENG.COM	DRWN: SAS CHKD: SAR AKS JOB: 7669

DWG: 7669 20190918 NR FIGURES SOUTH | FIGURE 2



GOOGLE EARTH AERIAL IMAGERY
JULY 2018

LEGEND:

ON-SITE PEM SLOPE/FLATS WETLAND AREA:
124,159 SF± (2.85 ACRES±)

WETLAND B: 2,061 SF± (0.05 ACRES±)
WETLAND G: 108,144 SF± (2.48 ACRES±)
WETLAND H: 8,249 SF± (0.19 ACRES±)
WETLAND I: 5,705 SF± (0.13 ACRES±)

ON-SITE PORTION OF DITCHES:
2,488 SF± (0.06 ACRES±)

DITCH 1: 2,015 SF± (0.05 ACRES±)
DITCH 2: 473 SF± (0.01 ACRES±)

WETLAND BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC. (AKS) ON OCTOBER 3, 2019 AND APRIL 10, 2020 AND REVISED BY AKS AND DEPARTMENT OF STATE LANDS (DSL) ON MARCH 18, 2021. REVISED WETLAND BOUNDARIES WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MARCH 24, 2021.

STUDY AREA BOUNDARIES WERE LAND SURVEYED BY AKS.

1-FOOT INTERVAL GROUND CONTOURS SURVEYED BY MULTI/TECH ENGINEERING, SEPTEMBER-DECEMBER 2018.

N

SCALE: 1"= 200 FEET

200 0 40 100 200

ORIGINAL PAGE SIZE: 11" x 17"

DATE: 03/30/2021

WETLAND DELINEATION MAP OVERVIEW	FIGURE **5**
EAST PARK PUD - SOUTH HALF WETLAND DELINEATION REPORT	

AKS ENGINEERING & FORESTRY, LLC
3700 RIVER RD N, STE 1
KEIZER, OR 97303
503.400.6028 WWW.AKS-ENG.COM

DRWN: JRI
CHKD: SAR
AKS JOB: 7669

DWG: 7669 WDR EXCOND - SOUTH | FIGURE 5

DSL WD # 2020-0298
Approval Issued 4/7/2021
Approval Expires 4/7/2026

LEGEND:

ON-SITE PEM SLOPE/FLATS WETLAND AREA:
124,159 SF± (2.85 ACRES±)

WETLAND B: 2,061 SF± (0.05 ACRES±)
WETLAND G: 108,144 SF± (2.48 ACRES±)
WETLAND H: 8,249 SF± (0.19 ACRES±)
WETLAND I: 5,705 SF± (0.13 ACRES±)

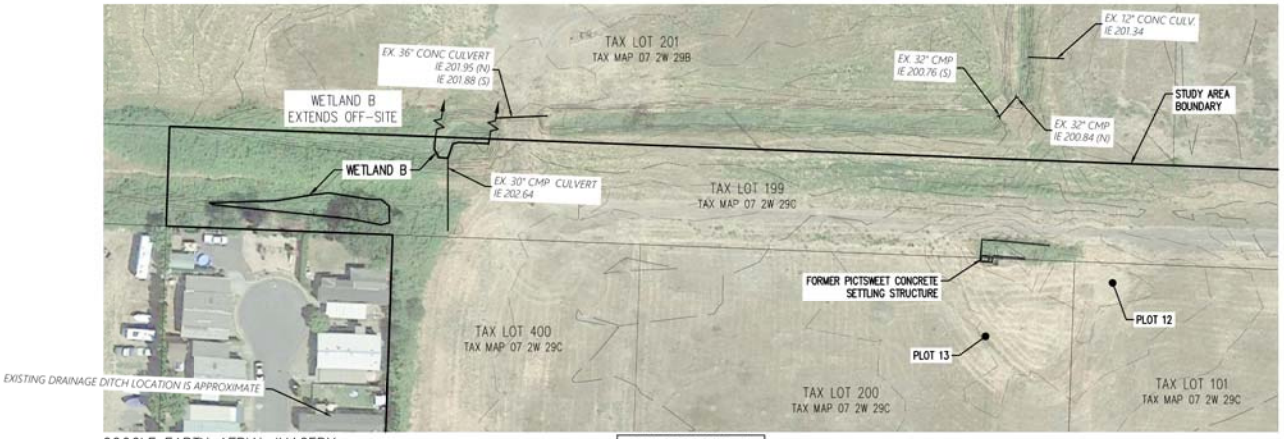
ON-SITE PORTION OF DITCHES:
2,488 SF± (0.06 ACRES±)

DITCH 1: 2,015 SF± (0.05 ACRES±)
DITCH 2: 473 SF± (0.01 ACRES±)

WETLAND BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC. (AKS) ON OCTOBER 3, 2019 AND APRIL 10, 2020 AND REVISED BY AKS AND DEPARTMENT OF STATE LANDS (DSL) ON MARCH 18, 2021. REVISED WETLAND BOUNDARIES WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MARCH 24, 2021.

STUDY AREA BOUNDARIES WERE LAND SURVEYED BY AKS.

1-FOOT INTERVAL GROUND CONTOURS SURVEYED BY MULTI/TECH ENGINEERING, SEPTEMBER-DECEMBER 2018.



GOOGLE EARTH AERIAL IMAGERY
JULY 2018

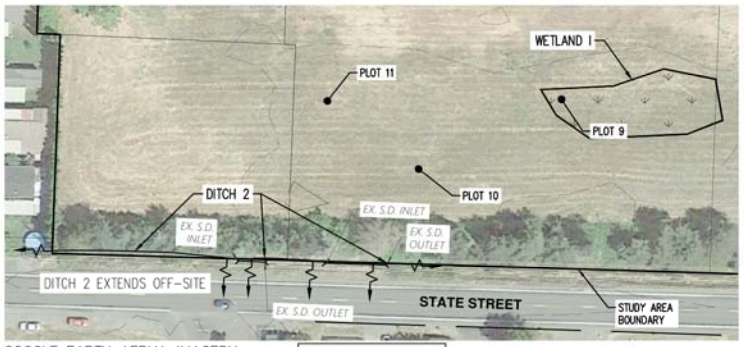
ENLARGEMENT A

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 11" x 17"

N



GOOGLE EARTH AERIAL IMAGERY
JULY 2018

ENLARGEMENT B

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 11" x 17"

N

DATE: 03/30/2021

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 11" x 17"

N

WETLAND DELINEATION MAP

FIGURE **5A**

EAST PARK PUD - SOUTH HALF WETLAND DELINEATION REPORT

AKS ENGINEERING & FORESTRY, LLC
3700 RIVER RD N, STE 1
KEIZER, OR 97303
503.400.6028 WWW.AKS-ENG.COM

DRWN: JRI
CHKD: SAR
AKS JOB: 7669

DSL WD # 2020-0298
Approval Issued 4/7/2021
Approval Expires 4/7/2026

LEGEND:

ON-SITE PEM SLOPE/FLATS WETLAND AREA:
124,159 SF± (2.85 ACRES±)

WETLAND B: 2,061 SF± (0.05 ACRES±)
WETLAND G: 108,144 SF± (2.48 ACRES±)
WETLAND H: 8,249 SF± (0.19 ACRES±)
WETLAND I: 5,705 SF± (0.13 ACRES±)

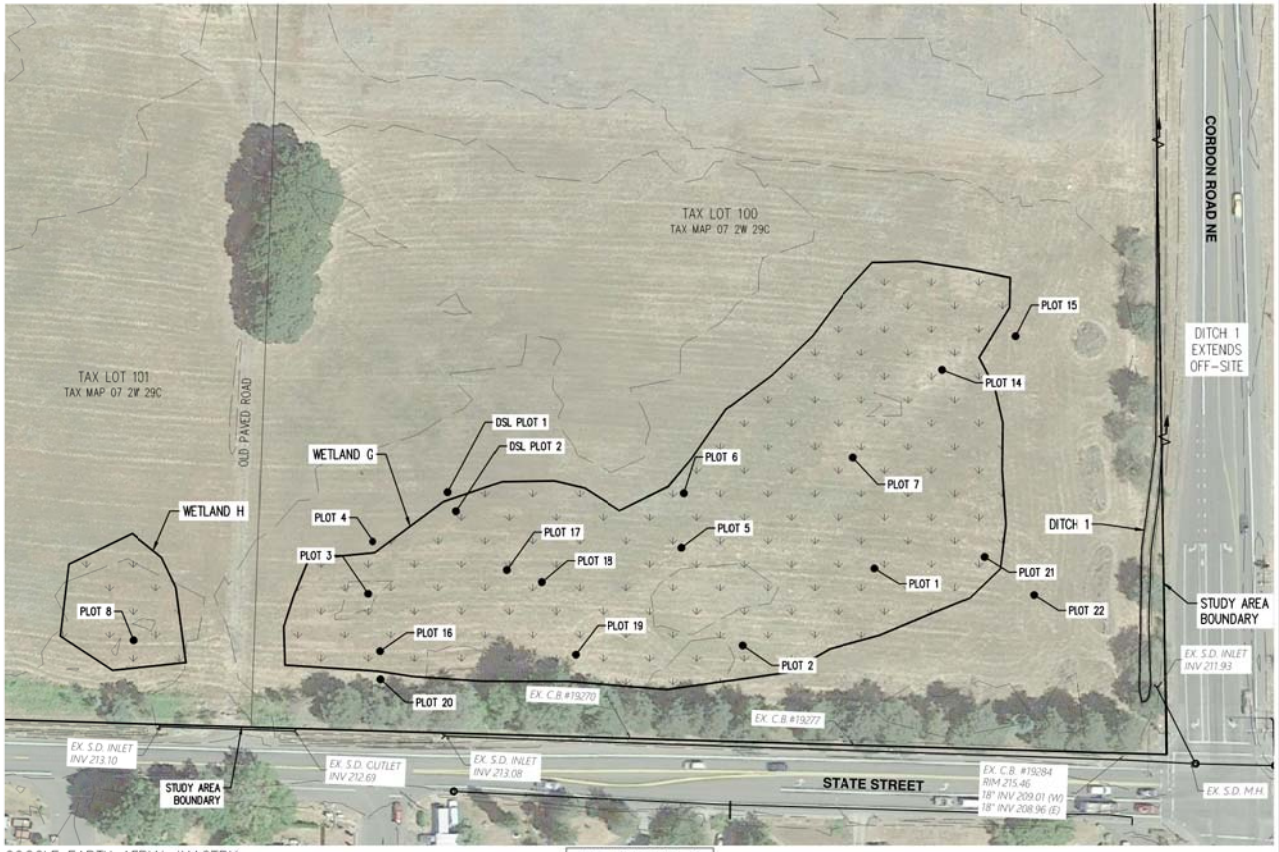
ON-SITE PORTION OF DITCHES:
2,488 SF± (0.06 ACRES±)

DITCH 1: 2,015 SF± (0.05 ACRES±)
DITCH 2: 473 SF± (0.01 ACRES±)

WETLAND BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING & FORESTRY, LLC. (AKS) ON OCTOBER 3, 2019 AND APRIL 10, 2020 AND REVISED BY AKS AND DEPARTMENT OF STATE LANDS (DSL) ON MARCH 18, 2021. REVISED WETLAND BOUNDARIES WERE PROFESSIONALLY LAND SURVEYED BY AKS ON MARCH 24, 2021.

STUDY AREA BOUNDARIES WERE LAND SURVEYED BY AKS.

1-FOOT INTERVAL GROUND CONTOURS SURVEYED BY MULTI/TECH ENGINEERING, SEPTEMBER-DECEMBER 2018.



GOOGLE EARTH AERIAL IMAGERY
JULY 2018

ENLARGEMENT C

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 11" x 17"

N

DATE: 03/30/2021

WETLAND DELINEATION MAP	FIGURE
EAST PARK PUD - SOUTH HALF WETLAND DELINEATION REPORT	**5B**

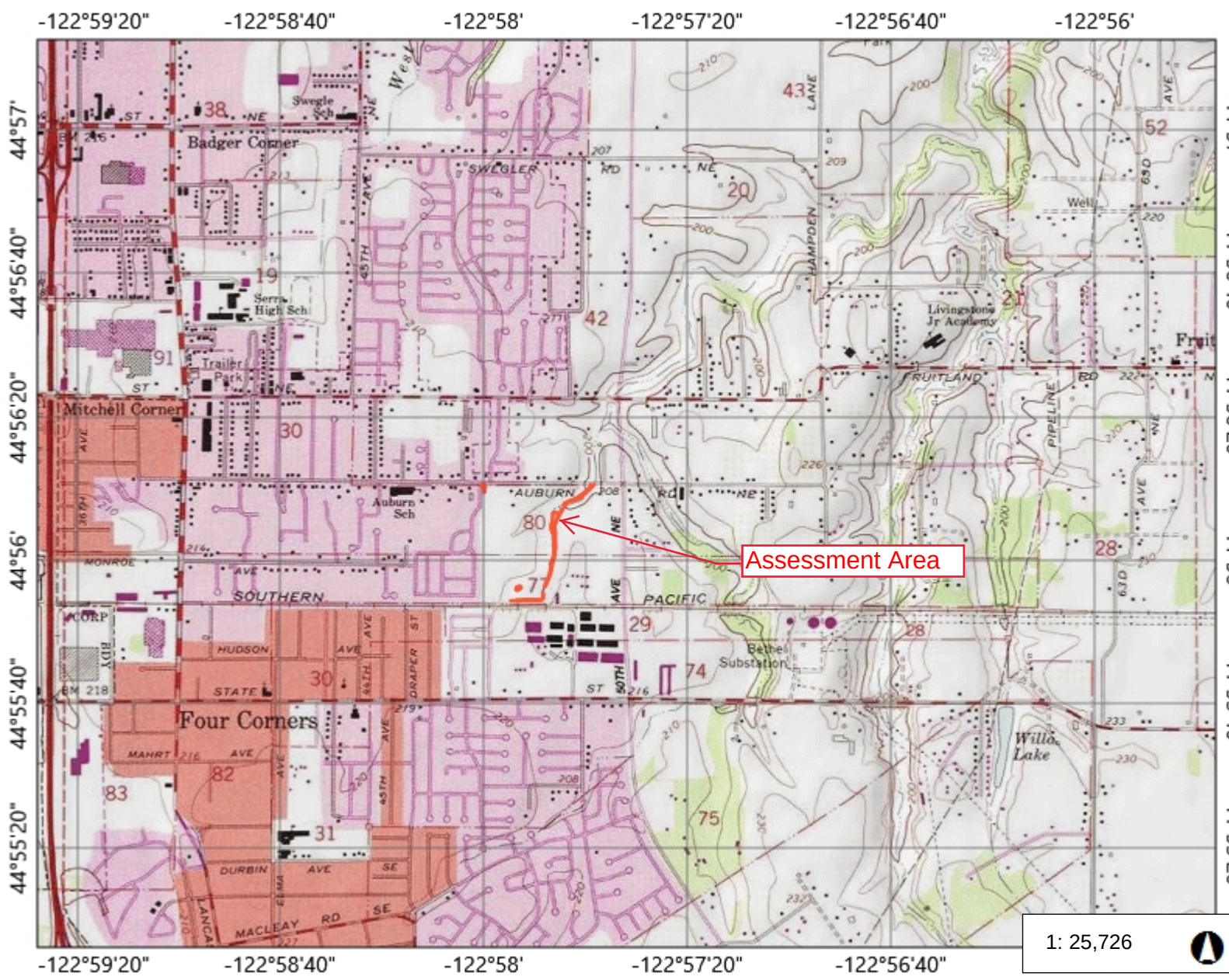
AKS ENGINEERING & FORESTRY, LLC
3700 RIVER RD N, STE 1
KEIZER, OR 97303
503.400.6028 WWW.AKS-ENG.COM

DRWN: JRI
CHKD: SAR
AKS JOB: 7669

DWG: 7669 WDR EXCOND - SOUTH | FIGURE 5B

Attachment 4: ORWAP Maps and Data Sheets

255 Cordon Road NE Salem- Vicinity Map



Legend

States & Provinces

- Other States and Provinces
- Oregon

Notes

Add your notes here

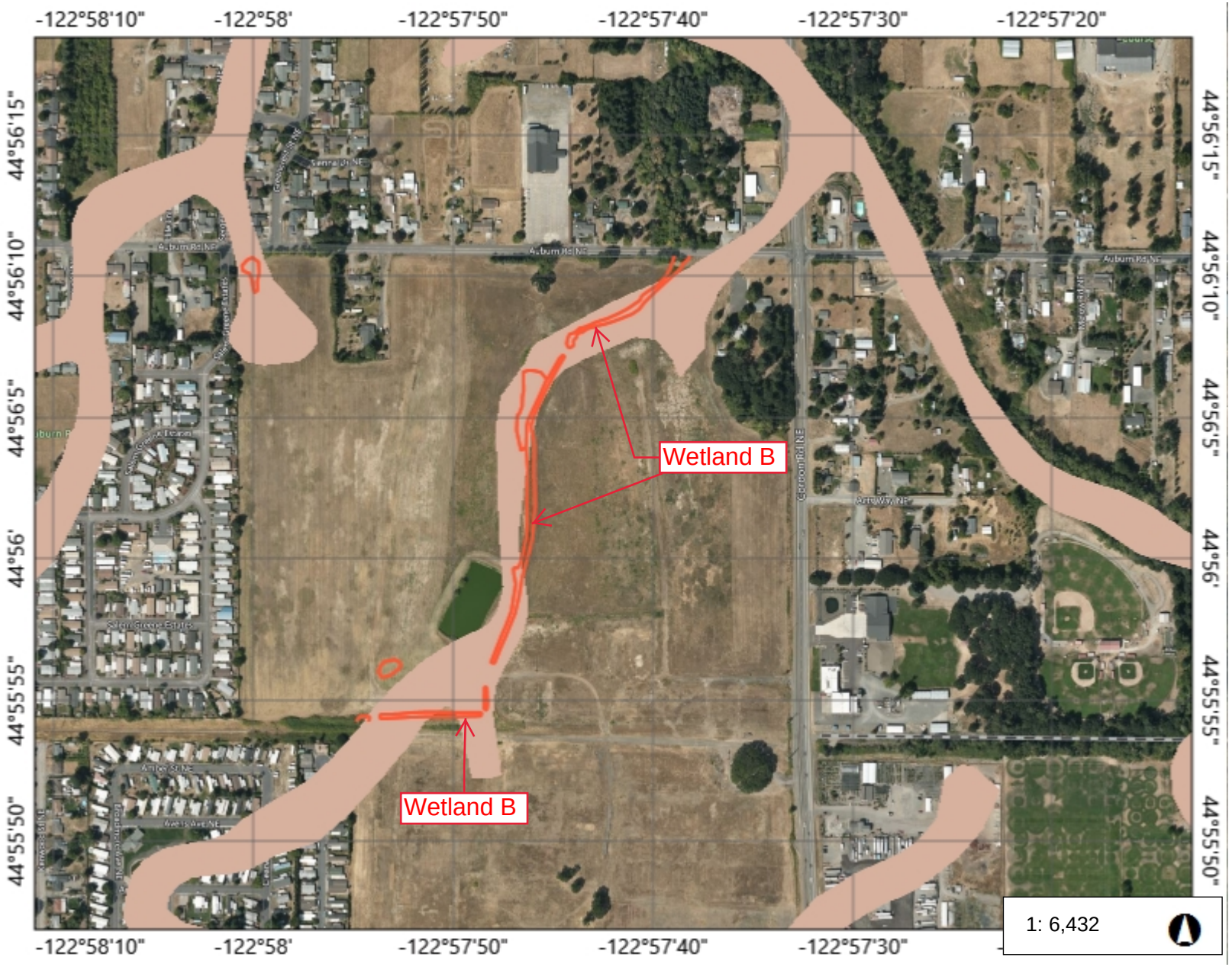
0.8 0 0.41 0.8 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from the Oregon Explorer Map Viewer (http://tools.oregonexplorer.info/oe_map_viewer/Viewer.html?Viewer=OE) and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

255 Cordon Road NE Salem- Soil Map



Legend

States & Provinces

- Other States and Provinces
- Oregon

NRCS Predominantly Hydric Soil Map Units

NRCS Agate-Winlo Soils in Jackson County

Notes

Add your notes here

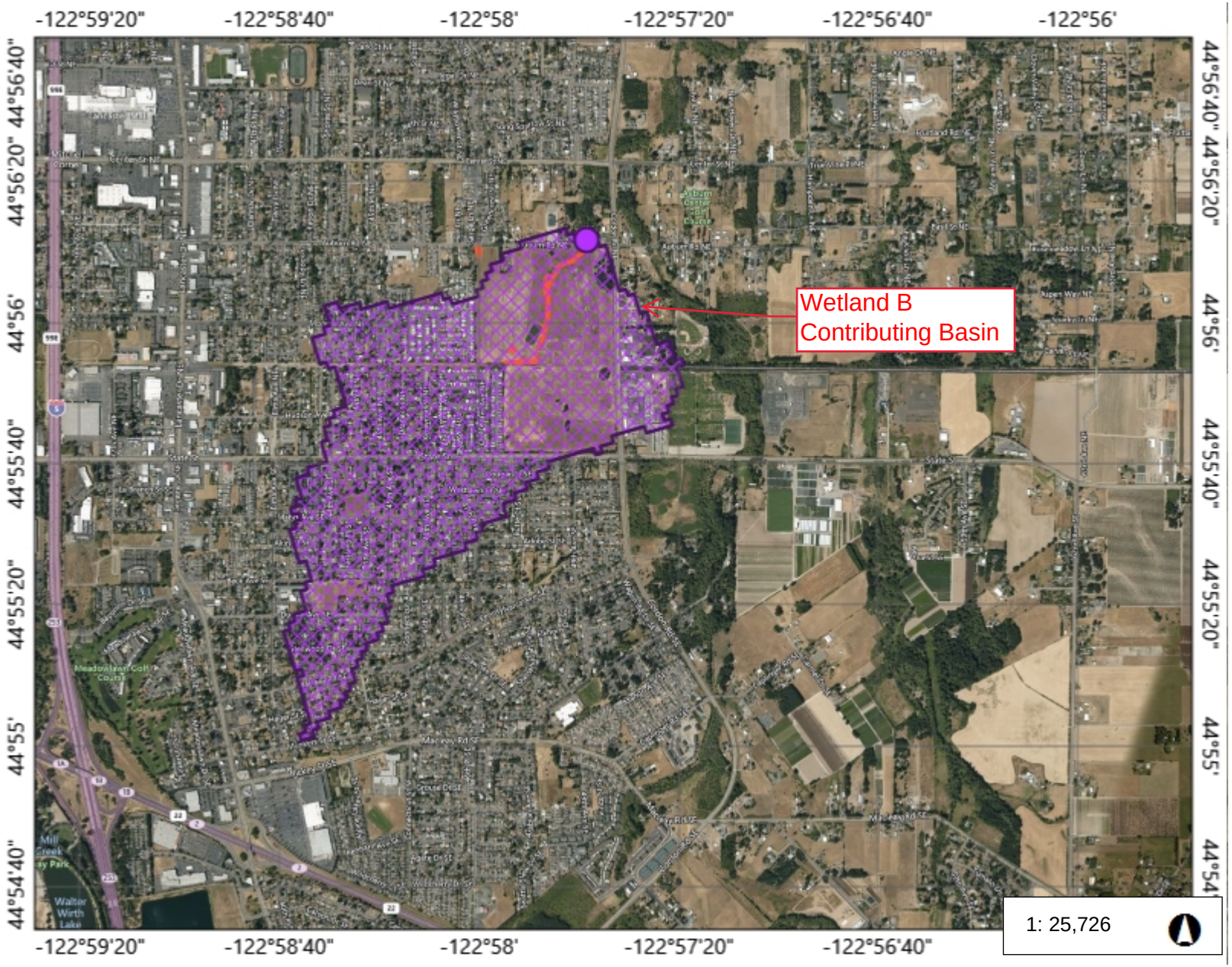
0.2 0 0.10 0.2 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from the Oregon Explorer Map Viewer (http://tools.oregonexplorer.info/oe_map_viewer/Viewer.html?Viewer=OE) and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

255 Cordon Road NE Salem- Contributing Basin



Legend

States & Provinces

- Other States and Provinces
- Oregon

Notes

Add your notes here

1: 25,726

0.8 0 0.41 0.8 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from the Oregon Explorer Map Viewer (http://tools.oregonexplorer.info/oe_map_viewer/Viewer.html?Viewer=OE) and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

ORWAP Version 3.1. Cover Page: Basic Description of Assessment	
Site Name:	East Park Estates Phases 3-6 **(Wetland B)**
Investigator Name:	Julie Wirth McGee
Date of Field Assessment:	11/26/2019
County:	Marion
Nearest Town:	Salem
Latitude (decimal degrees):	44.933768
Longitude (decimal degrees):	-122.9628
TRS, quarter/quarter section and tax lot(s):	T.7., R.2W., Sec. 29B. Tax Lot 200 and 201
Approximate size of the Assessment Area (AA, in acres):	40,328 SF
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	100%
If delineated, DSL file number (WD #) if known:	WD#2019-0557
Cowardin Systems & Classes (indicate all present, based on field visit and/or aerial imagery): Systems: Palustrine =P, Riverine =R, Lacustrine =L, Estuarine =E Classes: Emergent =EM, Scrub-Shrub =SS, Forested =FO, Aquatic Bed (incl. SAV) =AB, Open Water =OW, Unconsolidated Bottom =UB, Unconsolidated Shore =US	PEM1C
Predominant HGM Class: Estuarine=E, Lacustrine=L, Riverine=R, S= Slope, F= Flats, D= Depressional	Slope
Soil Unit Mapped in Most of the AA:	Units Da and WuC: Dayton and Woodburn silt loam
If tidal, the tidal phase during most of visit:	NA
What percent (approximate) of the **wetland** were you able to visit?	100
What percent (approximate) of the **AA** were you able to visit?	100
Have you attended an ORWAP training session? If so, indicate approximate month & year.	Yes (March, 2010)
How many wetlands have you assessed previously using ORWAP (approximate)?	20+
Comments about the site or this ORWAP assessment (attach extra page if desired):	

Date: 11/26/2019	Name: Julie Wirth McGee	Site: East Park Estates Phases 3-6 (Wetland B)	
Office Data Form OF ORWAP V 3.1	Conduct an assessment only after reading the accompanying Manual and explanations in column E below. Answering many of the following questions requires viewing aerial imagery and maps, covering an area up to within 2 miles of the AA. For each affirmative answer, change the 0 in the "Data" column to a "1". Answer all items except where directed to skip to others. Questions whose cells in "Data" column have a "W" MUST be answered for the ENTIRE wetland and bordering waters.	For a list of functions to which each question pertains, see bracketed codes in column E. Codes for functions and their benefits are: WS= Water Storage, WC= Water Cooling, SR= Sediment Retention, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Aquatic Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibians & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PD= Native Plant Diversity PU= Public Use & Recognition, EC= Ecological Condition, Sens= Sensitivity, STR= Stressors.	For guidance and detailed descriptions of how Excel calculates the numbers in the Scores worksheet, see the Technical Supplement and Appendix B of the Manual. For a documented rationale for each indicator, open each of the worksheet tabs at the bottom (one for each function or value) and see column H.

#	Indicators	Condition Choices	Data	Explanations, Definitions (Column E)	Cell Name	Comments
OF1	Distance to Extensive Perennial Cover (DistPerCov)	The distance from the AA edge to the edge of the closest patch or corridor of perennial cover (see definition in column E) larger than 100 acres is:		Corridor - is simply an elongated patch of perennial cover that is not narrower than 150 ft at any point. Perennial cover - is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground is disturbed less than annually, such as hayfields, lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads. [AM, WBN, SBM, PD, POL, Sens]		
		<100 ft.	1			
		100 to <300 ft.	0			
		300 to <1000 ft.	0			
		1000 ft. to <0.5 mile.	0			
		0.5 mile to 2 miles.	0			
		> 2 miles.	0			
OF2	Distance to Tidal Waters (DistTidal)	The distance from the AA edge to the closest body of tidal water is:		Tidal water - If unclear whether a water body is tidal, check the ORWAP Map Viewer's Headtide layer (under Water Source & Quality), or check with local sources. Assume Columbia River is tidal east to Bonneville Dam and the Willamette River south to the Oregon City Falls. [WBF]		
		<1 mile.	0			
		1-5 miles.	0			
		>5 miles.	1			
OF3	Distance to Ponded Water (DistPond)	The distance from the AA edge to the closest (but separate) body of nontidal fresh water (wetland, pond, or lake) that is ponded all or most of the year is:		Use field observations, aerial imagery, and/or the ORWAP Map Viewer's Persistent Nontidal layer (under Wetlands). [AM,WBF,WBN,SBM,PD,Sens]		
		<100 ft.	0			
		100 to <300 ft.	0			
		300 to <1000 ft.	1			
		1000 ft. to < 0.5 mile.	0			
		0.5 mile to 2 miles.	0			
		>2 miles.	0			
OF4	Distance to Lake (DistLake)	The distance from the AA edge to the closest (but separate) body of nontidal fresh water that is ponded during most of the year and is larger than 20 acres (about 1000 ft on a side) is:		Use field observations, aerial imagery, and/or the ORWAP Map Viewer's Persistent Nontidal layer (under the Wetlands). [WBF,WBN]		
		<1 mile.	0			
		1-5 miles.	1			
		>5 miles.	0			
OF5	Distance to Herbaceous Open Land (DistOpenL)	The distance from the AA edge to the closest patch of herbaceous openland larger than 10 acres and in flat terrain is:		Herbaceous openland - includes both perennial and non-perennial cover. For example, it can include pasture, herbaceous wetland, meadow, prairie, ryegrass fields, row crops, herbaceous rangeland, golf courses, grassed airports, and hayfields. Do not include open water of lakes, ponds, or rivers; or unvegetated surfaces; or areas with woody vegetation. In dry parts of the state, croplands in flat areas are often irrigated and are distinctly greener in aerial images. Flat terrain - means slope of less than 5%. [WBF,WBN,POL]		
		<100 ft.	1			
		100 to <300 ft.	0			
		300 to <1000 ft.	0			
		1000 ft. to < 0.5 mile.	0			
		0.5 mile to 2 miles.	0			
		>2 miles.	0			

OF6	Distance to Nearest Busy Road (DistRd)	The distance from the AA center to the nearest road with an average daytime traffic rate of at least 1 vehicle/ minute is:		Estimate this traffic rate threshold using your judgment and considering the road width, local population, distance to densely settled areas, alternate routes, and other factors. [AM,SBM,PD,PUv,STR]		
		<100 ft.	0			
		100 to <300 ft.	0			
		300 to < 0.5 mile.	1			
		0.5 to <1 miles.	0			
		1 to 2 miles.	0			
		>2 miles.	0			
OF7	Size of Largest Nearby Patch of Perennial Cover (SizePerenn)	Including the AA's vegetated area, the largest patch or corridor that is perennial cover and is contiguous with vegetation in the AA , occupies:		Contiguous - i.e., not separated by roads or channels that create gaps wider than 150 ft Perennial cover - See OF1. Disqualify any patch or corridor of perennial cover where it becomes separated from the AA by a gap of >150 ft, if the gap is comprised of unvegetated land or if the corridor narrows to less than 150 ft. [AM,SBM,PD,POL,Sens,STR]		
		<.01 acre.	0			
		.01 to < 1 acre.	0			
		1 to <10 acres.	0			
		10 to <100 acres.	1			
		100 to <1000 acres.	0			
		1000 to 10,000 acres.	0			
		>10,000 acres.	0			
OF8	Wetland Type Local Uniqueness (UniqPatch)	Select EACH of the vegetation types below that comprise more than 10% of the AA AND less than 10% of a 0.5 mile radius around the AA. (See Column E).		This is a 2-part question: (1) if no vegetation class comprises more than 10% of the AA, answer "none of the above." (2) If a vegetation class does comprise more than 10%, determine if that vegetation class also comprises less than 10% of a 0.5 mile buffer (~50 acres). [INVv,AMv,WBFv,WBNv,SBMv,PDv,POLv,Sens]		
		Herbaceous vegetation (perennial grasses, sedges, forbs; not under a woody canopy; not crops).	1			
		Unshaded shrubland (woody plants shorter than 20 ft).	0			
		Trees (woody plants taller than 20 ft).	0			
		None of above.	0			
OF9	Perennial Cover Percentage (PerCovPct)	Within a 2-mile radius of the AA center, the percentage of land that has perennial cover is:		Perennial cover - is vegetation that includes wooded areas, native prairies, sagebrush, vegetated wetlands, as well as relatively unmanaged commercial lands in which the ground is disturbed less than annually, such as hayfields, lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, row crops (e.g., vegetable, orchards, Christmas tree farms), lawns, residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads. [FA,AM,SBM,POL,Sens,STR]		
		<5% of the land.	0			
		5 to <20% of the land.	1			
		20 to <60% of the land.	0			
		60 to 90% of the land.	0			
		>90% of the land.	0		PerennAll	
OF10	Forest Percentage (ForestPct)	Within a 2-mile radius of the AA center, the cumulative amount of forest (regardless of forest patch sizes, and including any in the AA) is:		Forested patch - is a land cover patch that currently has >70% cover of woody plants taller than 20 ft. May be in a plantation. [FA,SBM,STR]		
		<5% of the circle.	1			
		5 to <20%.	0			
		20 to <50%.	0			
		50 to 80%.	0			
		>80%.	0			
OF11	Herbaceous Open Land Percentage (OpenLpct)	Within a 2-mile radius of the AA center, the amount of herbaceous openland in flat terrain is:		Herbaceous openland - can include both perennial and non-perennial cover. For example, it can include pasture, herbaceous wetland, meadow, prairie, ryegrass fields, row crops, herbaceous rangeland, golf courses, grassed airports, and hayfields. Do not include open water of lakes, ponds, or rivers; or unvegetated surfaces; or areas with woody vegetation. Flat terrain - means slope of less than 5%. [WBF,WBN,POL]		
		<5% of the land.	0			
		5 to <20%.	0			
		20 to <50%.	1			
		50 to 80%.	0			
		>80%.	0			

OF12	Landscape Wetland Connectivity (ConnScapeW)	Within a 2-mile radius of the AA center:		Corridor - is simply an elongated patch of perennial cover that is not narrower than 150 ft at any point. Regular traffic - is at least 1 vehicle per hour during the daytime throughout most of the growing season. Assess this based on local knowledge, type of road, and proximity to developed areas. Perennial - see OF9 for definition. [WBN,SBM,Sens,STR]		
		There are NO other wetlands.	0			
		There are other wetlands (or a wetland), but NONE are connected to the AA by a corridor of perennial vegetation. The corridor must be at least 150 ft wide along its entire length and not interrupted by roads with regular traffic.	0			
		There are other wetlands (or a wetland), and ALL are connected to the AA by the type of corridor described.	0			
		There are other wetlands (or a wetland), and ONE or MORE (but not all) are connected to the AA by the type of corridor described.	1			
OF13	Local Wetland Connectivity (ConnLocalW)	Within a 0.5 mile radius of the AA center:		Regular traffic - is at least 1 vehicle per hour during the daytime throughout most of the growing season. Assess this based on local knowledge, type of road, and proximity to developed areas. Perennial - see OF9 for definition. IF possible, field verify [AM,WBN,SBM,PD,Sens,STR]		
		There are NO other wetlands.	0			
		There are other wetlands (or a wetland), but NONE are connected to the AA by a corridor of perennial vegetation. The corridor must be at least 150 ft wide along its entire length and not interrupted by roads with regular traffic.	0			
		There are other wetlands (or a wetland), and ALL are connected to the AA by the type of corridor described.	0			
		There are other wetlands (or a wetland), and ONE or MORE (but not all) are connected to the AA by the type of corridor described.	1			
OF14	Wetland Number & Diversity Uniqueness (HUCbest)	According to the ORWAP Report, this AA is located in one of the HUCs that are listed as having a large diversity, area, or number of wetlands relative to the area of the HUC. Select All of the following that are true:		In the ORWAP Report, under the Watershed Information section and the HUC Best table, look at the columns "Is HUC Best?" and "Greatest Criteria Met." [AM,WBF,WBN,SBM,Sens]		
		Yes, for the HUC8 watershed	1			
		Yes, for the HUC10 watershed	1			
		Yes, for the HUC12 watershed	0			
		None of above.	0			
		Data are inadequate (NWI mapping not completed in HUC).	0			
OF15	Landscape Functional Deficit (GISscore)	In the ORWAP Report, find the AA's 12-digit HUC code. Then, find that HUC code in the FuncDeficit worksheet in the accompanying Supp_Info file. Select All functions below that have a notation for that HUC code.		In the ORWAP Report, under the Watershed Information section, find the HUC 12 code. These are HUCs in which a relatively small number, or proportional area, of the wetlands are likely to be performing the named function, thus adding value to those that are. In the Supp_Info file, open the FuncDeficit worksheet and find the 12-digit HUC code. See Technical Supplement for explanation of how the FuncDeficit was calculated. [WSv,WCv,SRv,PRv,NRv,INVv,FAv,AMv,WBNv]		
		Water storage (WS)	0			
		Sediment retention (SR)	0			
		Nutrient transformation (NT)	0			
		Thermoregulation (WC)	0			
		Aquatic invertebrate habitat (INV)	0			
		Amphibian habitat (AM)	0			
		Fish habitat (FH)	0			
		Waterbird habitat (WB)	0			
		None of above.	1			
		No data.	0			
OF16	Conservation Designations of the AA or Local Area (ConDesig)	On the ORWAP Map Viewer, use the layers indicated below to answer. Select All of the following that are true:		In the ORWAP Map Viewer, use the applicable layers.		
		The AA is within or connected to a stream or other water body and this stream or water body has been designated as ESH within 0.5 miles of the AA, according to the Essential Salmonid Habitat (ESH) layer.	0	Include areas not shown as ESH, if ODFW has confirmed they qualify as ESH. [WCv, FA, FAv]		
		The AA is within or contiguous to a designated Wetland Priority Area, according to the map layer of that name.	0	The Wetland Priority Area is officially designated as such by ODFW (Oregon Wildlife Conservation Strategy), The Wetlands Conservancy, and/or the Oregon Natural Heritage Program. [PU]		
		The AA is within an Important Bird Area (IBA), as officially designated, according to the map layer of that name.	0	[WBFv, WBNv]		
		None of above.	1			

OF17	Non-anadromous Fish Species of Conservation Concern (RareFR)	According to the ORWAP Report, the score for occurrences of rare non-anadromous fish species in the vicinity of this AA is:		Use ORWAP Report 's Rare Species Scores max and sum scores. See Supp_Info file for a list of species. Species include Miller Lake lamprey, Goose Lake lamprey, Pit sculpin, Lahontan cutthroat trout, Inland Columbia Basin redband trout, Steelhead (Snake River Basin ESU), Alvord chub, Goose Lake tui chub, Borax Lake chub, Lahontan redside, Oregon chub, Goose Lake sucker, Tahoe sucker, Warner sucker, Shortnose sucker, Lost River sucker. Note that for some of these species, only specific geographic populations are designated. [FRv] This question may need to revised after the field visit.		
		High (≥ 0.75 for maximum score, or ≥ 0.90 for this group's sum score), or there is a recent (within 5 years) onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0			
		Intermediate (i.e., not as described above or below).	0			
		Low (≤ 0.33 for both the maximum score this group's sum score, but not 0 for both).	0			
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	1			
OF18	Amphibian or Reptile of Conservation Concern (AmphRare)	According to the ORWAP Report, the score for occurrences of rare amphibian or reptile species in the vicinity of this AA is:		Use ORWAP Report 's Rare Species Scores max and sum scores. See Supp_Info file for a list of species. Species include: Black salamander, California slender salamander, Cope's giant salamander, Rocky Mountain tailed frog, Woodhouse's toad, Foothill yellow-legged frog, Northern leopard frog, Oregon spotted frog, Columbia spotted frog. [AMv] This question may need to revised after the field visit.		
		High (≥ 0.60 for maximum score, or >0.90 for sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0			
		Intermediate (i.e., not as described above or below).	0			
		Low (≤ 0.21 for maximum score AND <0.15 for sum score, but not 0 for both).	0			
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	1			
OF19	Feeding (Non-breeding) Waterbird Species of Conservation Concern (RareWBF)	According to the ORWAP Report, the score for occurrences of rare non-breeding (feeding) waterbird species in the vicinity of this AA is:		Use ORWAP Report 's Rare Species Scores max and sum scores. See Supp_Info file for a list of species. Non-breeding - mainly refers to waterbird feeding during migration and winter. California brown pelican, Aleutian cackling goose, Dusky Canada goose [WBFv] This question may need to revised after the field visit.		
		High (≥ 0.33 for maximum score, or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0			
		Low (< 0.33 for maximum score and for sum score, but not 0 for both).	0			
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	1			
OF20	Nesting Waterbird Species of Conservation Concern (RareWBN)	According to the ORWAP Report, the score for occurrences of rare nesting waterbird species in the vicinity of this AA is:		Use ORWAP Report 's Rare Species Scores max and sum scores. See Supp_Info file for a list of species. Species include: Horned grebe, Red-necked grebe, Western grebe, Clark's grebe, American white pelican, Least bittern, Snowy egret, Trumpeter swan, White-faced ibis, Harlequin duck, Bufflehead, Yellow rail, Western snowy plover, Upland sandpiper, Franklin's gull, Marbled murrelet. [WBNv] This question may need to revised after the field visit.		
		High (≥ 0.60 for maximum score, or ≥1.00 for this group's sum score), or there is a recent breeding-season observation of any of these species onsite by a qualified observer under conditions similar to what now occur.	0			
		Intermediate (i.e., not as described above or below).	0			
		Low (≤ 0.09 for maximum score and for sum score, but not 0 for both).	0			
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species during breeding season by a qualified observer under conditions similar to what now occur.	1			
OF21	Songbird, Raptor, Mammal Species of Conservation Concern (RareSBM)	According to the ORWAP Report, the score for occurrences of rare songbird, raptor, or mammal species in the vicinity of this AA is:		Use ORWAP Report 's Rare Species Scores max and sum scores. See Supp_Info file for a list of species. Species include: Bald eagle, American peregrine falcon, Arctic peregrine falcon, Greater sage-grouse, Columbian sharp-tailed grouse, Yellow-billed cuckoo, Northern spotted owl, Short-eared owl, Black swift, Lewis's woodpecker, Purple martin, Northern waterthrush, Bobolink, Tricolored blackbird, Fringed myotis, Spotted bat, Townsend's big-eared bat, Pallid bat, Northern sea lion, Fisher, Sea otter, Canada lynx, Columbian white-tailed deer. [SBMv] This question may need to revised after the field visit.		
		High (≥ 0.60 for maximum score, or >1.13 for sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0			
		Intermediate (i.e., not as described above or below).	0			
		Low (≤ 0.09 for maximum score AND <0.13 for sum score, but not 0 for both).	0			
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	1			
OF22	Invertebrate Species of Conservation Concern (RareInvert)	According to the ORWAP Report, the score for occurrences of rare invertebrate species in the vicinity of this AA is:		Use ORWAP Report 's Rare Species Scores max and sum scores. See Supp_Info file for a list of species. See the Supp_Info file's RareAnimals worksheet for list of species addressed by this question. [INVv] This question may need to revised after the field visit.		
		High (≥ 0.75 for maximum score, or for this group's sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0			
		Low (< 0.75 for maximum score AND for this group's sum score, but not 0 for both).	0			
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	1			

OF23	Plant Species of Conservation Concern (RarePspp)	According to the ORWAP Report, the score for occurrences of rare wetland-indicator plant species in the vicinity of this AA is:		Use ORWAP Report 's Rare Species Scores max and sum scores. See Supp_Info file for a list of species. See the Supp_Info's RareWetPlants worksheet for list of species addressed by this question. [PDv,POLv] This question may need to revised after the field visit.		
		High (≥ 0.75 for maximum score, or > 4.00 for sum score), or there is a recent onsite observation of any of these species by a qualified observer under conditions similar to what now occur.	0			
		Intermediate (i.e., not as described above or below).	0			
		Low (≤ 0.12 for maximum score AND < 0.20 for sum score, but not 0 for both).	0			
		Zero for both this group's maximum and its sum score, and no recent onsite observation of these species by a qualified observer under conditions similar to what now occur.	1			
OF24	River Proximity (RiverProx)	There is a nontidal river within 1 mile and it is adjacent to, OR downslope from, the AA (connected or not). Enter 1, if true. If not, SKIP to OF27.	0	River - as used here is a channel wider than 50 ft between its banks. In the ORWAP Map Viewer, use the Rivers and Streams layer and the Headtidelayer (under Water Source & Quality).[WSv]	NearRiver	
OF25	Floodable Property (FloodProp)	Select ONE of the below:		Row crops - do not include pasture or other perennial cover. In the ORWAP Map Viewer, use the 100-year floodplain layer [not available for all parts of Oregon]. Also, the Seasonal Nontidal Wetland layer (under Wetlands) may indicate some floodplain areas. [WSv] Supplement with field observations at multiple seasons if possible.		
		Floodplain boundaries within 1 mile downslope or downriver from the AA have not been mapped. Enter 1 and SKIP TO OF27.	0			
		Floodplain boundaries within 1 mile downslope from the AA have been mapped BUT there is neither infrastructure nor row crops vulnerable to river flooding located within the floodplain and within that distance. Enter 1 and SKIP TO OF27.	0			
		Floodplain boundaries have been mapped AND infrastructure or row crops are present within 1 mile downslope or downriver and those are not protected from 100-year floods, but actual damage has not been documented.	0			
		Damage to infrastructure or row crops from river flooding has been documented within that distance.	0			
OF26	Type of Flood Damage (DamageType)	The greatest financial damage in the floodplain is (or would be) to:		Row crops - do not include pasture or other perennial cover. On the ORWAP Map Viewer, use the 100-year floodplain layer. [WSv]		
		Buildings, roads, bridges.	1			
		Row crops (during some years).	0			
OF27	Hydrologic Landscape (Arid)	According to the ORWAP Report, the wetland is in a hydrologic landscape unit classified as:		In the ORWAP Report, under the Location Information table, find the Hydrologic Landscape Class. [AM,WBNv,SBMv,Sens]		
		Arid.	0			
		Semi-arid.	0			
		Dry.	0			
		Moist.	0			
		Wet.	1			
		Very Wet.	0			
OF28	Input Water - Recognized Quality Issues (WQin)	According to ORWAP Map Viewer's Water Quality Streams layer and Water Quality Lakes layers, ALL of the following are true: (a) within 1 mile upstream from the AA edge, a water body or stream reach is labeled as being 303d, Water Quality Limited (categories 3B-5); Potential Concer; or TMDL Approved AND (b) the problem concerns one or more of the parameters listed below. Select All that apply.		In the ORWAP Map Viewer, open the Water Quality Streams layer and the Water Quality Lakes layer (under Water Source & Quality). Use the Point Identy tool to determine the reason for the listings. You may also obtain this information online at DEQ's web at http://deq12.deq.state.or.us/lasar2/default.aspx. If the AA receives both inflow and outflow from river flooding, consider the polluted water to be both "upstream" and "downstream". [SRv,PRv,NRv,INV,FA,FR,AM,WBF,WBN,STR] This may need to be verified in the field.		
		Total suspended solids (TSS), sedimentation, or turbidity.	0			
		Phosphorus, chlorophyll-a, or algae.	0			
		Nitrates, ammonia, chlorophyll-a, or algae.	0			
		Petrochemicals, heavy metals (iron, manganese, lead, zinc, etc.), other toxins.	0			
		Temperature or dissolved oxygen.	0			
		None of above, or no data. If true, enter 1 and SKIP to OF30.	1		NoDataWQup	
OF29	Duration of Connection Beween Problem Area & the AA (ConnecUp)	The upstream problem area mentioned above (OF28) has a surface water connection to the AA:		In the ORWAP Map Viewer, use the Rivers & Streams layer and the Persistent, Seasonal, or Saturated nontidal layers (under Wetlands) to determine duration of surface water connection. [SRv,PRv,NRv,INV,FA,FR,AM,WBF,WBN,STR] This may need to be determined or verified in the field.		
		For 9 or more continuous months annually.	0			
		Intermittently (at least once annually, but for less than 9 months continually).	0			
		Never (or less than annually).	1			

OF30	Downslope Water Quality Issues (ContamDown)	According to ORWAP Map Viewer's Water Quality Streams layer and Water Quality Lake map layer, ALL of the following are true: (a) within 1 mile downhill or downstream from the AA's edge, a water body is labeled as being 303d, Water Quality Limited (categories 3B-5); Potential Concern; or TMDL Approved AND (b) the problem concerns one or more of the parameters listed below. Select All that apply.		In the ORWAP Map Viewer open the Water Quality Streams layer and the Water Quality Lakes layer (under Water Source & Quality). Use the Point Identy tool to determine the reason for the listings. [WCv,SRv,PRv,NRv,FA]		
		Total suspended solids (TSS), sedimentation, or turbidity.	0			
		Phosphorus, chlorophyll-a, or algae.	0			
		Nitrates, ammonia, chlorophyll-a, or algae.	0			
		Petrochemicals, heavy metals (iron, manganese, lead, zinc, etc.), other toxins.	0			
		Temperature or dissolved oxygen.	0			
		None of above, or no data. Enter 1 and SKIP to OF32.	1		NoDataWQdo	
OF31	Duration of Connection Beween AA & Water Quality Problem Area (ConnDown)	The connection between the downstream problem area mentioned above (OF30) and the AA:		In the ORWAP Map Viewer, use the Rivers & Streams layer and the Persistent, Seasonal, or Saturated nontidal layers (under Wetlands) to determine duration of surface water connection. [WCv,SRv,PRv,NRv,FA] This may need to be determined or verified in the field.		
		Is a stream or water body that connects these areas for 9 or more continuous months annually.	0			
		Is a stream or water body that connects these areas intermittently (at least once annually, but for less than 9 months continually).	0			
		Is a probable groundwater connection, or connection via direct runoff only (no channel connection).	0			
		Never exists (a topographic ridge probably prevents all the AA's runoff and groundwater from reaching the problem area).	0			
OF32	Drinking Water Source (DEQ) (DWsource)	According to ORWAP Map Viewer's Surface Water Drinking Source Water Areas layer and the Ground Water Drinking Source Water Areas layer, the AA is within:		In the ORWAP Map Viewer, the water source layers are under Water Source & Quality. [NRv]		
		The source area for a surface-water drinking water (DW) source.	0			
		The source area for a groundwater drinking water source.	1			
		Neither of above.	0			
OF33	Groundwater Risk Designations (GWrisk)	Based on maps in the ORWAP Manual, Appendix A, the AA is: Select All that apply		See the ORWAP Manual, Appendix A, OF33 on pages 45 - 47 [NRv]		
		Within a designated Groundwater Management Area (ODEQ).	0			
		Within a designated Sole Source Aquifer area (EPA): the North Florence Dunal Aquifer.	0			
		Neither of above.	1			
OF34	Relative Elevation in Watershed (Elev)	In the ORWAP Map Viewer, based on the Hydrologic Boundaries 4th Level (HUC 8) layer (under Watersheds), determine if the AA is: (See Column E)		1) Consider which end of the HUC is the bottom. Where streams join, the "V" that they form on the map points towards the bottom of the HUC. 2) If the AA is closer to the HUC's outlet than to its upper end, and is closer to the river or large stream that exits at the bottom of the HUC than it is to the boundary (margin) of the HUC, then check "lower 1/3" If not near that river, check "middle 1/3". 3) If the AA is not in a 100-yr floodplain, is closer to the HUC upper end than to its outlet, and is closer to the boundary (margin) of the HUC than to the river or large stream that exits at the bottom of the HUC, then check "upper 1/3" 4) For all other conditions, check "middle 1/3". [WCv,SRv,PRv,OE,FA,Sens]		
		In the upper one-third of its watershed.	0			
		In the middle one-third of its watershed.	0			
		In the lower one-third of its watershed.	1		LowerShed	
OF35	Runoff Contributing Area (RCA) - Wetland as % of (WetPctRCA)	Delimit the wetland's Runoff Contributing Area (RCA) using a topographic base map. The area of the AA's wetland is:	W	See the ORWAP Manual for specific protocol for delimiting the RCA. The RCA includes only the areas that potentially drain directly to the AA's wetland rather than to channels that flow or flood into that wetland. Exact precision in drawing the boundary is not required. [WS,WCv,SR,PR,NR]		
		<1% of its RCA.	0			
		1 to <10% of its RCA.	1			
		10 to 100% of its RCA.	0			
		Larger than the area of its RCA. Enter 1 and SKIP TO OF39.	0		NoRCA	
OF36	Unvegetated % in the RCA (ImpervRCA)	The proportion of the RCA comprised of buildings, roads, parking lots, exposed bedrock, and other surface that is usually unvegetated at the time of peak annual runoff is about:	W	See the ORWAP Manual for instructions. [WSv,WCv,SRv,PRv,INV,FA,Sens,STR]		
		<10%.	1			
		10 to 25%.	0			
		>25%.	0			

OF37	Transport From Upslope (TransRCA)	A relatively large proportion of the precipitation that falls farther upslope in the RCA reaches this wetland quickly as indicated by the following: (a) RCA slopes are steep, and/or (b) upslope wetlands historically present have been filled or drained extensively, and/or (c) land cover is mostly non-forest, and/or (d) most RCA soils are shallow. This statement is:	W	Refer to aerial imagery and/or consult local sources. See the ORWAP Manual for instructions. [WSv,SRv,PRv,STR]		
		Mostly true.	1			
		Somewhat true.	0			
		Mostly untrue.	0			
OF38	Upslope Soil Erodibility Risk (ErodeUp)	According to ORWAP Map Viewer's Oregon Soils layer, the erosion hazard rating of the soil within 200 ft away and upslope of the AA is:		See the ORWAP Manual for instructions on how to determine the erosion hazard rating. [SRv,PRv,STR]		
		Slight.	1			
		Moderate.	0			
		Severe.	0			
		Very severe.	0			
		Could not determine.	0			
OF39	Streamflow Contributing Area (SCA) - Wetland as % of (WetPctSCA)	Delimit (or visualize, for large river basins) the wetland's Streamflow Contributing Area (SCA) using a topographic base map. The area of the AA's wetland is:	W	See the ORWP Manual for specific protocol for delimiting the SCA. The SCA is all upland areas that drain into streams, rivers, and lakes that feed the AA's wetland either directly or during semi-annual floods. In addition, for wetlands intercepted by a mapped stream, the SCA can be delineated automatically and its area reported at these USGS web sites: http://streamstats.usgs.gov/orstreamstats/index.asp http://water.usgs.gov/osw/streamstats/oregon.html . Enter the coordinates, zoom to scale of 1:24,000 or finer, click on the stream, and click on Basin Delineation, then BasinChar. [WS,WCv,SR,PR,NR]		
		<1% of its SCA, or wetland is in the floodplain of a major river.	1			
		1 to <10% of its SCA.	0			
		10 to 100% of its SCA.	0			
		Larger than the area of its SCA. Enter 1 and SKIP TO OF41.	0		NoSCA1	
		Wetland lacks tributaries and receives no overbank water. Enter 1 and SKIP to OF41.	0		NoSCA	
OF40	Unvegetated % in the SCA (ImpervSCA)	The proportion of the SCA comprised of buildings, roads, parking lots, exposed bedrock, and other surface that is usually unvegetated at the time of peak annual runoff is about :	W	See the ORWAP Manual for instructions. [WCv,SRv,PRv,FA,STR]		
		<10%.	0			
		10 to 25%.	1			
		>25%.	0			
OF41	Upland Edge Shape Complexity (EdgeShape)	Most of the edge between the AA's wetland and upland is (select one):	W	See ORWAP Manual's illustrations in Figure 3-12 (pg 31) [NR, SBM, Sens]		
		Linear: a significant proportion of the wetland's upland edge is straight, as in wetlands bounded partly or wholly by dikes or roads, or the AA is entirely surrounded by water or other wetlands.	0			
		Intermediate: Wetland's shape is (a) ovoid, or (b) mildly ragged edge, and/or (c) contains a lesser amount of artificially straight edge.	1			
		Convoluted: Wetland perimeter is many times longer than maximum width of the wetland, with many alcoves and indentations ("fingers").	0			
OF42	Zoning (Zoning)	According to ORWAP Map Viewer's Oregon Zoning layer, the dominant zoned land use designation for currently undeveloped parcels upslope from the AA and within 300 ft. of its upland edge is:		See the ORWAP Manual for instructions on how to determine the zoning designation. If information is not provided, check local zoning maps. [WSv,WCv,SRv,PRv,INVv,FAv,FRv,AMv,WBFv,WBNv,SBMv,PDv,POLv]		
		Development (Commercial, Industrial, Urban Residential, etc.), or no undeveloped parcels exist upslope from the AA.	1			
		Agriculture or Rural Residential.	0			
		Forest or Open Space, or entirely public lands.	0			
		Not zoned, or no information.	0			

OF43	Growing Degree Days (GDD)	According to ORWAP Map Viewer's Growing Degree Days layer, the long term normal Growing Degree Days category at the approximate location of the AA is:		See the ORWAP Manual for instructions on how to determine the growing degree days category. [WCv,NR,CS,OE,AM,WBN,SBM,Sens]		
		<256.	0			
		256 - 1020.	0			
		1021-1785.	0			
		1786 - 2550.	1			
		2551 - 3315.	0			
		3316 - 4079.	0			
		> 4079.	0			

Date: 11/26/2019	Name: Julie Wirth-McGee	Site: East Park Estates Phases 3-6 (Wetland B)	
Field Data Form F (nontidal Wetlands) ORWAP V 3.1	Conduct an assessment only after reading the accompanying Manual and explanations in column E below. For each affirmative answer, change the 0 in the "Data" column to a "1". Answer all items except where directed to skip to others. Questions whose cells in "Data" column have a "W" MUST be answered for the ENTIRE wetland and bordering waters.	For a list of functions to which each question pertains, see bracketed codes in column E. Codes for functions and their benefits are: WS= Water Storage, WC= Water Cooling, SR= Sediment Retention, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Export, INV= Invertebrates, FA= Anadromous Fish, FR= Resident Fish, AM= Amphibians, WBF= Feeding Waterbirds, WBN= Nesting Waterbirds, SBM= Songbirds, Mammals, & Raptors, POL= Pollinators, PH= Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sens= Sensitivity, STR= Stressors.	For guidance and detailed descriptions of how Excel calculates the numbers in the Scores worksheet, see the Technical Supplement and Appendix B of the accompanying Manual. For a documented rationale for each indicator, open each of the worksheet tabs at the bottom (one for each function or value) and see column H.

#	Indicators	Condition Choices	Data	Explanations, Definitions (Column E)	Cell Name	Comments
F1	Tidal Wetland (Tidal)	This is a tidal wetland (either freshwater or saltwater). If yes, GO TO worksheet " T ". Do not enter any data here. If nontidal, continue with F2.		Tidal wetland - a wetland that receives tidal water at least once during a normal year, regardless of salinity, and dominated by emergent or woody vegetation. Tidal flooding occurs on a 6-hour cycle DURING THE TIME it is flooded by tide, which may be as infreuent as once per year. If NWI map shows the wetland with a code beginning with E (for estuarine), assume the wetland to be tidal. However, some wetlands lacking that code are also tidal.		
F2	Ponded Condition (Lentic)	At least once every 2 years, some part of the AA contains a cumulative total of >900 sq.ft. of surface water that is ponded. The water persists for >6 days and may be hidden beneath emergent vegetation or scattered in small pools. Enter 1, if true.	0	Ponded - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle). [OE,AM,WBF,WBN,PD]	Lentic	
Reminder: For all questions, the AA should include all persistent waters in ponds smaller than 20 acres that are adjacent to the AA. The AA should also include part of the water area of adjacent lakes or rivers larger than 20 acres -- specifically, the open water part adjacent to wetland vegetation and equal in width to the average width of that vegetated zone.				Adjacent - is used synonymously with abutting, adjoining, bordering, contiguous -- and means no upland (manmade or natural) completely separates the described features along their directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent -- a large portion of their edges must match. The features do not have to be hydrologically connected in order to be considered adjacent.		
F3	Water Regime (Hydropd)	The water regime (hydroperiod) of the most permanent (usually deepest) part of the AA is: Select only ONE. [To meet any of the definitions other than Ephemeral, there must be >100 sq ft of surface water for the duration described, otherwise mark the type listed above it.]		In the NRCS county soil survey, the Water Features table provides information about periods of flooding, ponding, and highwater table depths. Descriptions of the soil units may include information on saturation persistence. Also consider the hydroperiod label on NWI wetland polygons.		
		Ephemeral. Surface water in the wettest part of the AA is present for fewer than 7 consecutive days during an average growing season. Includes some of the areas mapped as Saturated Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F25.	0	[WS,FA,FR]	NeverWater	
		Temporary. Surface water present for 1-4 weeks consecutively during an average growing season, OR if persists for longer, it is almost entirely in scattered pools, each smaller than 1 sq.m. Dries up completely during part of most average years. Includes some of the areas mapped as Saturated Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F25.	1		TempWet	
		Seasonal. Surface water present for 5-17 weeks (1-4 months) consecutively during an average growing season, but dries up completely during part of most average years. Includes some of the areas mapped as Seasonal Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F5.	0		ShallowType	
		Semi-Persistent. Surface water present for more than 17 weeks (4 months) consecutively during an average growing season, but dries up completely during part of most average years. Includes some of the areas mapped as Seasonal Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and SKIP to F5.	0		DeepType	
		Permanent. Does not dry up completely during most average years. Includes some of the areas mapped as Persistent Nontidal in the ORWAP Map Viewer (which is not comprehensive). Enter 1 and continue.	0	Permanent - usually has significant groundwater input, higher conductivity, less annual water level fluctuation. No woody vegetation in most persistently flooded parts. Often with extensive open water and subsurface aquatic plants.	PermType	

F4	Flooded Persistently - % of AA (PermW)	Identify the parts of the AA that still contain surface water even during the **driest times of a normal year** . At that time, the percentage of the AA that still contains surface water is:		**driest times of a normal year** - i.e., when the AA's surface water is at its lowest annual level. Sites fed by unregulated streams that descend on north-facing slopes, tend to remain wet longer into the summer. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [PR,NR,CS,INV,FR,AM,WBF,WBN]		
		1 to <25% of the AA.	0			
		25 to <50% of the AA.	0			
		50 to 95% of the AA.	0			
		>95% of the AA.	0		AllPermWater	
F5	Depth Class (Predominant) (DepthDom)	When water is present in the AA, the depth most of the time in most of inundated area is: [Note: NOT necessarily the maximum spatial or annual depth]		This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the AA is brief, the answer will be based on the depth of the most persistently inundated part of the AA. Include surface water in channels and ditches as well as ponded areas. In the ORWAP Manual, se the diagram in Appendix A (pg.48). [WC,SR,PR,CS,OE,INV,FA,FR,WBF,WBN,PD,Sens]		
		>0 to <0.5 ft.	0			
		0.5 to < 1 ft deep.	0			
		1 to <3 ft deep.	0			
		3 to 6 ft deep.	0			
		>6 ft deep.	0			
F6	Depth Class Distribution (DepthEven)	Within the area described above, and during most of the time when surface water is present, the water area has: **Select only one.**		Estimate these proportions by considering the gradient and microtopography of the site. In the ORWAP Manual, see the diagram in Appendix A (pg.48). [INV,FR,WBF,WBN,PD]		
		One depth class covering >90% of the AA's inundated area (use the classes in the question above).	0			
		One depth class covering 51-90% of the AA's inundated area (use the classes in the question above).	0			
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0			
F7	Emergent Plants -- Area (EmArea)	Consider just the area that has surface water for >1 week during the growing season. Herbaceous plants (not moss, not woody) whose foliage extends above a water surface in this area (i.e., emergents) cumulatively occupy an annual maximum of:	W	If multiple small patches are separated by less than 150 ft, they may be combined when evaluating this question. [SR,PR,OE,INV,FR,WBF,WBN,SBM,PD]		
		<0.01 acre (< 400 sq.ft). Enter 1 and SKIP TO F10, unless only part of a wetland is being assessed.	0		NoEm	
		0.01 to< 0.10 acres (3,920 sq. ft).	0			
		0.10 to <0.50 acres (21,340 sq. ft).	0			
		0.50 to <5 acres.	0			
		5 to 50 acres.	0			
		>50 acres.	0			
F8	% Emergent Plants (EmPct)	Emergent plants occupy an annual maximum of:		[WC,SR,PR,NR,CS,OE,INV,FA,FR,AM,WBF,WBN,SBM]		
		<5% of the parts of the AA that are inundated for >7 days at some time of the year.	0			
		5 to <30% of the parts of the AA that are inundated for >7 days at some time of the year.	0			
		30 to <60% of the parts of the AA that are inundated for >7 days at some time of the year.	0			
		60 to 95% of the parts of the AA that are inundated for >7 days at some time of the year.	0			
		>95% of the parts of the AA that are inundated for >7 days at some time of the year.	0			
F9	Cattail or Tall Bulrush Cover (Cttail)	The percentage of the emergent vegetation cover in the AA that is cattail (*Typha* spp.) or tall bulrush is:		[WBN, SBM]		
		<1% of the emergent vegetation, or cattail and bulrush are absent.	0			
		1 to <25% of the emergent vegetation.	0			
		25 to 75% of the emergent vegetation.	0			
		>75%, of the emergent vegetation.	0			

F10	Water Shading by AA's Woody Vegetation - Driest (WoodyDryShade)	During an average growing season, when water levels are lowest (but surface water still occupies >400 sq ft or >1% of the AA), the percentage of the remaining surface water within the AA that is shaded by trees and/or shrubs located within the AA is:		[WC,FA,WBN,SBM]		
		<5% of the water, and fewer than 10 woody plants taller than 3 ft shade it, or all surface water is flowing.	0			
		<5% of the water, but more than 10 woody plants taller than 3 ft shade it.	0			
		5 to <25% of the water.	0			
		25 to <50% of the water.	0			
		50 to 95% of the water.	0			
		>95% of the water.	0			
F11	Open Water - Extent	During most of the growing season, the largest patch of **open water** that is in or adjacent to the AA is >1 acre and mostly deeper than 1 ft. **Enter 1, if true.**	0	**Open Water** - is surface water of any depth that contains no emergent herbaceous or woody vegetation (may contain floating-leaved or completely submersed plants). It may be partially shaded by a tree canopy.	OpenW	
F12	All **Ponded** Water as Percentage - Wettest (PondWpctWet)	When water levels are <u>highest</u>, during a normal year, the surface water that is **ponded** continually for >6 days occupies:		**Ponded** - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle). [WS,WC,CS,OE,INV,AM,WBF,WBN]		
		<1% or none of the AA. Surface water is completely or nearly absent then, or is entirely flowing. **Enter 1 and SKIP TO F22.**	0		NoPond	
		1-5% of the AA.	0			
		5 to <30% of the AA.	0			
		30 to <70% of the AA.	0			
		70 to 95% of the AA.	0			
		>95% of the AA.	0			
F13	Ponded Open Water Area - Wettest (OWareaWet)	When water levels are <u>highest</u>, during a normal year, the AA's **ponded open water** occupies a cumulative area of:	W	**Ponded** - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle). **Open water** - is surface water of any depth that contains no emergent herbaceous or wood vegetation (may contain floating-leaved or completely submersed species). It may be partially shaded by a tree canopy. [WS,WBF,WBN]		
		<0.10 acre (< 4356 sq. ft) of the AA and adjacent ponded waters. **Enter 1 and SKIP TO F16.**	0		NoPondOW	
		0.10 to <0.50 acres (21,340 sq. ft) of the AA and adjacent ponded waters.	0			
		0.50 to <1 acres of the AA and adjacent ponded waters.	0			
		1 to <5 acres of the AA and adjacent ponded waters.	0			
		5 to <50 acres of the AA and adjacent ponded waters.	0			
		50 to <640 acres (1 sq. mi) of the AA and adjacent ponded waters.	0			
		64 to <1000 acres of the AA and adjacent ponded waters.	0			
		1000 to 2500 acres of the AA and adjacent ponded waters.	0			
		>2500 acres (>4 sq.mi) of the AA and adjacent ponded waters.	0			

F14	Ponded Open Water Distribution - Wettest (WaterMixWet)	When water levels are highest, during a normal year, the distribution (in aerial view) of ponded open water patches larger than 0.01 acre (400 sq. ft) within the AA is:		[NR,AM,WBF,WBN,PD]		
		(a) Vegetation and open water EACH comprise 30-70% of the AA (including its bordering waters if any) AND (b) There are many small patches of open water scattered widely within vegetation or many small vegetation clump "islands" scattered widely within open water. Typical (for example) of some extensive bulrush and cattail marshes.	0			
		(a) Vegetation and open water EACH comprise 30-70% of the AA (including its bordering waters if any) AND (b) There are only a few (or no) small patches of open water scattered widely within vegetation or a few small vegetation clump "islands" scattered widely within open water.	0			
		(a) Vegetation OR open water comprise >70% of the AA (and its bordering waters) AND (b) There are several small patches of open water scattered within vegetation or several small vegetation clump "islands" scattered within open water.	0			
		(a) Vegetation OR open water comprise >70% of the AA (and its bordering waters) AND (b) Open water is mostly in a single area (e.g., center of the wetland) and vegetation is in the rest (e.g., periphery), with almost no intermixing. (Typical of many ponds excavated for livestock watering, stormwater treatment, mineral extraction as well as many wetlands that are inundated only temporarily each year).	0			
F15	Width of Vegetated Zone - Wettest (WidthWet)	When water levels are highest, during a normal year, the width of the vegetated wetland that separates the largest patch of open water within or bordering the AA from the closest adjacent uplands, is predominantly: [Note: This is not asking for the maximum width.]		Vegetated wetland - in this case does not include underwater or floating-leaved plants, i.e., aquatic bed. In farmed wetlands that have different crops from year to year, consider vegetation condition as it probably existed during most of the past 5 years. If open water exists as many patches, use the distance between the majority of those patches and uplands. [WC,SR,PR,NR,CS,OE,AM,WBF,WBN,SBM,PD,Sens,EC]		
		<5 ft, or no vegetation between upland and open water.	0			
		5 to <30 ft.	0			
		30 to <50 ft.	0			
		50 to <100 ft.	0			
		100 to 300 ft.	0			
		> 300 ft.	0			
F16	All Ponded Water as a Percentage (Driest) (PondWpctDry)	When water levels are lowest, during a normal year, but surface water still occupies >1,076 sq feet (100 sq meter) OR >1% of the AA (whichever is more), the water that is ponded (either visible or concealed by vegetation) in the AA occupies:		Ponded - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle). [WC,FA,FR,AM,WBN,Sens]		
		<1% or none. Surface water is completely or nearly absent then, or is entirely flowing. Enter 1 and SKIP TO F22.	0		NoPond2	
		1 to 5% of the AA.	0			
		5 to <30% of the AA.	0			
		30 to <70% of the AA.	0			
		70 to 95% of the AA.	0			
		>95% of the AA.	0			

F17	Ponded Open Water Area (Driest) (OWareaDry)	When water levels are lowest, during a normal year, the AA's **ponded open water** occupies a cumulative area, including adjacent ponded waters, of:	W	**Ponded** - Most surface water is not visibly flowing. Flow, if any, is not sufficient to suspend fine sediment. These include pools in floodplains and may be either large (e.g., an off-channel pond) or small (size of a puddle). **Open water** - is surface water of any depth that contains no emergent herbaceous or wood vegetation (may contain floating-leaved or completely submersed species). It may be partially shaded by a tree canopy. [WBN,PUv]		
		<0.10 acre (< 4356 sq. ft). **Enter 1 and SKIP TO F24.**	0		NoPondOW2	
		0.10 to <0.50 acres (21,340 sq. ft).	0			
		0.50 to <1 acres.	0			
		1- 4 acres.	0			
		5 to <50 acres.	0			
		50 to <640 acres (1 sq. mi).	0			
		640 to <1000 acres.	0			
		1000 to 2500 acres.	0			
		>2500 acres (>4 sq.mi).	0			
F18	Ponded Open Water Distribution - (Driest) (WaterMixDry)	When water levels are lowest, during a normal year, the distribution of ponded open water patches larger than 0.01 acre (400 sq. ft) within the AA is:		[NR,INV,AM,WBN,SBM]		
		(a) Vegetation and **open water** EACH comprise 30-70% of the AA (including its bordering waters if any) AND **(b)** There are many small patches of open water scattered widely within vegetation or many small vegetation clump "islands" scattered widely within open water. Typical (for example) of some extensive bulrush and cattail marshes.	0			
		(a) Vegetation and **open water** EACH comprise 30-70% of the AA (including its bordering waters if any) AND **(b)** There are only a few (or no) small patches of open water scattered widely within vegetation or a few small vegetation clump "islands" scattered widely within open water.	0			
		(a) Vegetation OR **open water** comprise >70% of the AA (and its bordering waters) AND **(b)** There are several small patches of open water scattered within vegetation or several small vegetation clump "islands" scattered within open water.	0			
		(a) Vegetation OR **open water** comprise >70% of the AA (and its bordering waters) AND **(b)** Open water is mostly in a single area (e.g., center of the wetland) and vegetation is in the rest (e.g., periphery), with almost no intermixing. Typical of many ponds excavated for livestock watering, stormwater treatment, mineral extraction as well as many wetlands that are inundated only temporarily each year.	0			
F19	Floating Algae & Duckweed (Algae)	At some time of the year, most of the AA's otherwise-unshaded water surface is covered by floating mats of algae, or small (<1 inch) floating plants such as duckweed, *Azolla* , *Wolffia* , or *Riccia* . **Enter 1, if true.**	0	This includes most nontidal wetlands labeled as Aquatic Bed (AB) on NWI maps. If wetland can be visited only during winter, it may not be possible to answer this question with much certainty unless local sources are contacted or indicators (e.g., dried remains of algae) are found. [FA,WBF,WBN,EC]		
F20	Floating-leaved & Submerged Aquatic Vegetation (SAV)	SAV (submerged & floating-leaved aquatic vegetation, excluding the species listed above) occupies an annual maximum of:		SAV - are herbaceous plants that characteristically grow at or below the water surface, i.e., whose leaves are primarily and characteristically under or on the water surface during most of the part of the growing season when surface water is present. Some species are rooted in the sediment whereas others are not. If pond lily (*Nuphar*) is the predominant species, consider its maximum extent only during the period when surface water is present beneath the leaves. [OE,INV,FR,AM,WBF,WBN]		
		none, or <5% of the water area.	0		NoSAV	
		5 to <25% of the water area.	0			
		25 to <50% of the water area.	0			
		50 to 95% of the water area.	0			
		>95% of the water area.	0			
		many SAV plants present, but impossible to select from the above categories.	0			

F21	Width of Vegetated Zone (Driest) (WidthDry)	When water levels are lowest, during a normal year, but surface water still occupies >400 sq feet or >1% of the AA (which ever is more), the width of the **vegetated wetland** that separates the largest patch of open water within or bordering the AA from the closest adjacent uplands, is predominantly:		Measure the width perpendicular to the open water part. **Vegetated wetland** - in this case does not include underwater or floating-leaved plants, i.e., aquatic bed. In farmed wetlands that have different crops from year to year, consider vegetation condition as it probably existed during most of the past 5 years. Note: For most sites larger than 1 acre and with persistent water, measure the width using aerial imagery rather than estimating in the field. [WBN]		
		<5 ft, or no vegetation between upland and open water.	0			
		5 to <30 ft.	0			
		30 to <50 ft.	0			
		50 to <100 ft.	0			
		100 to 300 ft.	0			
		> 300 ft.	0			
F22	Beaver (Beaver)	Use of the AA by beaver during the past 5 years is: **Select most applicable ONE.**		**Valley width** - is delimited by an abrupt increase in slope on both sides of the channel. [AM,SBM,PD,Sens]		
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, or lodges.	0			
		Very likely based on known occurrence in this part of the region and proximity to ALL of the following (a) a persistent freshwater wetland, pond, or lake, or a perennial low-gradient (<5%) channel, and (b) average valley width is > 150 ft and (c) >20% cumulative cover of aspen, cottonwood, alder, and willow in vegetated areas within 150 ft of the AA's edge. Or there is evidence of beaver just outside the AA.	0			
		Somewhat likely based on known occurrence in this part of the region and proximity to ALL of the following (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) average valley width is >50 ft, and (c) >20% cumulative cover of hardwood trees and shrubs in vegetated areas within 150 ft of the AA's edge.	0			
		Unlikely because site characteristics above are deficient, and/or this is an area where beaver are routinely removed. But beaver occur within 2 miles.	0			
		None. Beaver are absent from this part of the region.	0			
F23	Isolated Island (Island)	During June, the wetland contains (or is part of) an island that is isolated from the shore by water depths >3 ft. The island may be solid, or it may be a floating vegetation mat suitable for nesting waterbirds. The island must be larger than 400 sq.ft and without inhabited buildings. **Enter 1, if true.**	0	[WBF,WBN]		
F24	Ice-free (IceDura)	During most years, most of the AA's surface water (if any) does **not** freeze, or freezes for fewer than 4 continuous weeks. **Enter 1, if true.**	0	[PR,FR,WBF]		
F25	Water Fluctuation Range - Maximum (Fluctu)	The **maximum vertical fluctuation** in surface water within the AA, during a normal year is:		**maximum vertical fluctuation** - is the difference between the highest annual and lowest annual water level during an average year. Use field indicators to assess this indicator. [WS,SR,PR,NR,CS,OE,INV,AM,WBN,PD]		
		<0.5 ft or stable.	0			
		0.5 to < 1 ft.	0			
		1 to <3 ft.	1			
		3 to 6 ft.	0			
		>6 ft.	0			
F26	% Only Saturated or Seasonally Flooded (SeasPct)	Identify the parts (if any) of the AA that never contain surface water (only saturated soil) or where the water (either ponded or flowing) usually remains on the land surface for less than the entire growing season. The percentage of the AA containing such areas is:		If you can identify plants, use their wetland indicator status to infer the possible extent of seasonal-only inundation within a wetland. Vegetation may be patterned in concentric or parallel zones, as one moves outward & away from the deepest part of the wetland or channel. Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) may be evident when not fully inundated. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualizing where that would intercept the land along the river. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. Although useful only as a general guide, the NRCS county soil survey descriptions of the soil units and water feature table usually includes information on flooding frequency and saturation persistence. [WS,SR,NR,CS,OE,INV,FA,WBF,WBN,SBM,PD,Sens]		
		<5% of the AA, or none (i.e., all water persists for >4 months).	0		NoSeasonal	
		5 to <25% of the AA.	0			
		25 to <50% of the AA.	0			
		50 to 75% of the AA.	0			
		>75% of the AA.	1			

F27	Salinity, Alkalinity, Conductance (Salin)	The AA's surface water is mostly:		Saline or brackish conditions are commonly indicated by a prevalence of particular plant species. Consult the ORWAP_SuppInfo file's P_Salt worksheetfor a list of these. **Brackish or saline** - conductance of >5000 µS/cm, or >3200 ppm TDS **Slightly brackish** - conductance of 500- 5000 µS/cm, or 320 - 3200 ppm TDS **Fresh** - conductance of < 500 µS/cm, or <320 ppm TDS [PR,CS,AM,SBM]		
		Brackish or saline. Plants that indicate saline conditions dominate the vegetation. Salt crust may be obvious around the perimeter and on flats.	0			
		Slightly brackish. Plants that indicate saline conditions are common. Salt crust may or may not be present along perimeter.	0			
		Fresh. [Note: *Assume this to be the condition unless wetland is known to be a playa or there is other contradicting evidence].*	1		FreshW	
		Unknown.	0			
F28	Fish & Waterborne Pests (FishAcc)	Select All that apply:		[INV,FA,FR,AM,WBF]		
		A regularly-used boat dock is present within or contiguous to the AA.	0			
		A regularly-used boat dock is not within the AA, but there is one within 300 ft. of the AA and there is a persistent surface connection between the dock and the AA.	0			
		Fish (native or stocked) are known to be present in the AA, or can access it during at least one day annually.	0			
		None of the above, and could not estimate fish presence/absence.	1			
F29	Non-native Aquatic Animals (PestAnim)	The following are known or likely to have reproducing populations in this AA, its wetland, or in water bodies within 300 ft that connect to the AA at least seasonally. Select All that apply:		Assume non-native fish to be present if wetland is associated with a nearby reservoir, fish pond, or perennial stream flowing through an agricultural or residential area. Assume bullfrog, nutria, and/or carp to be present if (a) the AA contains persistent water or is flooded seasonally by an adjoining body of permanent water, and (b) not a forested wetland, and (c) in western Oregon, elevation is lower than about 3000 ft. In the ORWAP_SuppInfo file, see Inverts_Exo worksheet for more complete list of non-native invertebratesf or Oregon, and WetVerts worksheet for more complete list of fish that are not native to Oregon. You may also consult: http://nas.er.usgs.gov/queries/default.aspx http://www.dfw.state.or.us/conservationstrategy/invasive_species.asp [FA,AM,EC]		
		Non-native amphibians (e.g., bullfrog) or reptiles (e.g., red-ear slider).	0			
		Carp.	0			
		Non-native fish that prey on tadpoles or turtles (e.g., bass, walleye, crappie, brook trout).	0			
		Non-native invertebrates (e.g., New Zealand mudsnail, mitten crab, rusty crayfish).	0			
		Nutria.	0			
		None of above.	1			
F30	Shorebird Feeding Habitats (Shorebd)	The extent of mudflats, very shallow waters, or shortgrass meadows, within the AA, that meet the definition of **shorebird habitat** for at least 3 months during the period of late summer through the following May is:		**Shorebird habitat** - areas must have (a) grasses shorter than 6", or a mudflat, during any part of this period, AND (b) soils that either are saturated or covered with <2 inches of water during any part of this period, AND (c) no detectable surrounding slope (e.g., not the bottom of an incised dry channel), AND (d) not shaded by shrubs or trees. See photograph in Appendix A of manual. This addresses needs of most migratory sandpipers, plovers, curlews, and godwits. [WBF]		
		None, or <100 sq. ft.	1			
		100 to <1000 sq. ft. within AA.	0			
		1000 to 10,000 sq. ft. within AA.	0			
		>10,000 sq. ft. within AA.	0			
F31	Outflow Duration (OutDura)	The most persistent surface water connection (outlet channel, pipe, ditch, or overbank water exchange) between the AA and the closest stream or lake located downslope is: [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of its wetland, OR the surface connection between the AA's wetland and a mapped stream or lake located within 300 ft downslope from this wetland].	W	The emphasis is on the connection to a mapped stream network. A larger difference in elevation between the wetland-upland boundary and the bottom of the wetland outlet (if any) indicates shorter outflow duration. Do not rely only on topographic maps or NWI maps to show this; inspect while in field if possible, and ask landowner. The durations given are only approximate and are for a "normal" year. The connection need not occur during the growing season. Assume that depressions with effective nearby ditches or tile drains will connect for shorter periods. [WS,WCv,SR,PR,NR,CS,OE,FA,FR,Sens]		
		Persistent (>9 months/year).	0			
		Seasonal (14 days to 9 months/year, not necessarily consecutive).	1			
		Temporary (<14 days, not necessarily consecutive).	0			
		None -- no surface water flows out of the wetland except possibly during extreme events (<once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. Enter 1 and SKIP TO F33.	0		NoOutlet	

F32	Outflow Confinement (Constric)	During **major runoff events**, in the places described above where surface water exits the AA, it:	W	**Major runoff events** - would include biennial high water caused by storms and/or rapid snowmelt.		
		Is **impeded** as it mostly passes through a pipe, culvert, tidegate, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography).	1	**Impeded** - means causing a delay or reduction in water velocity or volume.		
		Leaves mainly through natural surface exits, not largely through artificial or temporary features which **impede** or accelerate outflow.	0	[WS,SR,PR,NR,CS,OE,Sens,STR]		
		Is exported more quickly than usual as it mostly passes through ditches or pipes intended to accelerate drainage. They may be within the AA or connected to its outlet or within 30 ft of the AA's edge.	0			
F33	Tributary or Overbank Inflow (Inflow)	At least once annually, surface water from upstream or another water body moves into the AA. It may enter directly, or as unconfined overflow from a contiguous river or lake. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. **Enter 1, if true. If false, SKIP to F36.**	1	[SRv,PRv, PD]	Inflow	
F34	Input Channel Gradient (SlopeInChan)	The gradient of the tributary with the largest inflow, averaged over the 150 ft. before it enters the AA (but excluding any portion of the distance where water travels through a pipe) is:		[SRv, PRv]		
		<1%.	0			
		1 to <3%.	1			
		3 to 6%.	0			
		>6%.	0			
F35	Throughflow Complexity (ThruFlo)	**[Skip this question if the AA lacks both an inlet and outlet.]** During peak annual flow, water entering the AA in channels encounters which of the following conditions as it travels through the AA: **Select the ONE encountered most.**		This mainly refers to surface water that moves between the inlet and outlet. Some judgment is required in assessing straight vs. indirect flow path. See ORWAP Manual Appendix A diagram (pg 50). [WS,SR,PR,NR,OE,INV,FA,FR,WBF,WBN,PD]		
		Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel within unvegetated (often incised) channels and has minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0			
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0			
		Bumps into herbaceous vegetation and mostly spreads throughout, or follows a fairly indirect path (in widely meandering, multi-branched, or braided channels).	1			
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0			
		Bumps into tree trunks and/or shrub stems and follows a fairly indirect path (meandering, multi-branched, or braided) from entrance to exit.	0			
F36	Internal Gradient (Gradient)	The gradient from the lowest to highest point of land within the AA (or from outlet to inlet) is:		Wetlands with no outlet, and wetlands where most surface water is impounded on site, should be considered flat (<2%). For other wetlands, estimate gradient as the elevation difference between the inlet and outlet (if any) divided by the distance between them, or the difference between the highest and lowest points in the wetland divided by the distance between them. [WS,SR,PR,NR,CS,OE,AM,WBF,WBN]		
		<2% (internal flow is absent or barely detectable; basically flat).	1			
		2 to <6%.	0			
		6 to 10%.	0		TooSteep1	
		>10%.	0		TooSteep2	

F37	Groundwater Strength of Evidence (Groundw)	Select first one that applies:		[WS,WC,NR,CS,OE,INV,FA,FR,PD]		
		In the AA or its wetland: (a) Springs are observed, OR (b) Water is markedly cooler in summer and warmer in winter (e.g., later ice formation) than in other local wetlands, OR (c) Measurements from shallow wells indicate groundwater is discharging to the wetland, OR (d) Water visibly seeps into pits dug within the AA during the driest time of the year and located >30 ft from the closest surface water.	0			
		The AA's wetland: (a) Is very close to the base of a natural slope steeper than 15% and longer than 300 ft or is located at a geologic fault, OR (b) Has no persistently flowing tributary AND one or more is true: (b1) Is on a natural slope of >5%, OR (b2) Has rust deposits ("iron floc"), colored precipitates, or dispersible natural oil sheen, OR (b3) Is in an Arid or Semi-arid hydrologic unit.	0	Arid or Semi-arid hydrologic unit - See the ORWAP Report's Hydrologic Landscape Class (under Location Information).		
		The AA is not in an Arid or Semi-arid hydrologic unit, but has persistent ponded water, no tributary, and is not fed by wastewater, concentrated stormwater, or irrigation water, or by an adjacent river or lake.	0			
		None of above is true, OR AA contains a hot spring. Some groundwater may nonetheless discharge to or flow through the wetland.	1			
F38	Unshaded Herbaceous Vegetation (Extent) (HerbExpos)	The annual maximum areal cover of herbaceous vegetation (excluding SAV, ferns, and mosses, but including forbs & graminoids) that is not beneath a woody canopy reaches:		Do not include submersed and floating-leaved aquatics (SAV) in the category of "herbaceous vegetation", or when defining the "vegetated part" of the site.		
		<5% of the vegetated part of the AA. Enter 1 and SKIP to F42.	0	For sites larger than 10 acres, this should be determined from aerial imagery rather than estimated in the field.	NoHerb	
		5 to <25% of the vegetated part of the AA.	0			
		25 to <50% of the vegetated part of the AA.	0			
		50-95% of the vegetated part of the AA.	0	[WBF,WBN]		
		>95% of the vegetated part of the AA.	1			
F39	Forb Cover (Forb)	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs - are flowering non-woody vascular plants (excludes grasses, sedges, ferns, mosses). [POL]		
		<5% of the herbaceous part of the AA.	0			
		5 to <25% of the herbaceous part of the AA.	1			
		25 to <50% of the herbaceous part of the AA.	0			
		50 to 95% of the herbaceous part of the AA.	0			
		>95% of the herbaceous part of the AA.	0			
F40	Species Dominance - Herbaceous (HerbDom)	Determine which two native herbaceous (forb, fern, and graminoid) species comprise the greatest portion of the herbaceous cover that is unshaded by a woody canopy. Then select one:		[INV,WBF,WBN,SBM,PD,POL,Sens,EC]		
		Those species together comprise more than half of the areal cover of native herbaceous plants at any time during the year, i.e., one dominant species or two co-dominants. Also mark this if <20% of the vegetated cover is native species.	1			
		Those species together comprise less than half of the areal cover of native herbaceous plants at any time during the year.	0			

F41	Invasive or Non-native - % of Vegetative Cover (Invas)	Vegetative cover (annual maximum) is:		In the ORWAP_SuppInfo, see P_Invas worksheet for list of invasives and P_Exo for non-native species list. Examples of woody invasives are Himalayan blackberry, English ivy, scotch broom, and gorse. For known distributions of invasive plants in your area see: http://inr.oregonstate.edu/orbic/invasive-species and http://www.weedmapper.org/maps.html but do not limit your answer based only on that information. Consider most crops to be non-native. [PD,POL,Sens,EC]		
		Overwhelmingly (>80% cover) non-native species AND >10% of the herbaceous cover is invasive species. (See ORWAP SuppInfo file for species designations).	1		InvasDom	
		Overwhelmingly (>80% cover) non-native species AND <10% of the herbaceous cover is invasive species; OR 50-80% of cover is non-native species regardless of invasiveness.	0			
		Mostly (50-80%) native species.	0			
		Overwhelmingly (>80%) native species.	0			
F42	Mowing, Grazing, Fire (VegCut)	There is evidence that grazing by domestic or wild animals -- or mowing (multiple times per year), plowing, herbicides, harvesting, or fire -- has **repeatedly** reduced the AA's vegetation cover (plants that normally grows taller than 4") to less than 4 inches, or has created an obvious browse line, over the following extent:		**Repeatedly** - means the condition occurred in at least half of the last 10 years. [SR,AM,WBN,SBM,PD,EC]		
		0% (No evidence of such activities).	1		NoMowGraze	
		Trace to 5% of the normally vegetated AA (grazing, mowing, or fire have occurred but vegetation height effects are mostly unnoticeable).	0			
		5 to <50% of the normally vegetated AA.	0			
		50 to 95% of the normally vegetated AA.	0			
		>95% of the normally vegetated AA.	0			
F43	Historically Lacking Trees (HistVeg)	According to the ORWAP Report, the presettlement vegetation class in the vicinity of the AA was prairie, sagebrush, or other open lands not dominated by trees. In addition, the AA is not within the biennial floodplain of a river where trees and shrubs typically dominate when conditions are unaltered. **Enter 1, if true.**	0	In the ORWAP Report's Location Information table. This question is used as a classification variable mainly to set appropriate expectations for the extent of forest cover. [INV,FA,FR,SBM,PD,EC,SENS]	HistOpenland	
F44	Moss Wetland (Moss)	The AA's ground cover is primarily a deep layer of moss, and/or soils are mainly peat or organic muck. Also, the soil remains water-saturated to within 3 inches of the surface during most of a normal year. Surface water within the AA often is absent or confined to small scattered pools or ditches. **Enter 1, if true.**	0	Includes most bogs and fens. May be a floating island. [NR,CS,OE,WBF,WBN,Sens]		
F45	Woody Extent (WoodyPct)	Within the vegetated part of the AA, woody vegetation (trees, shrubs, **robust vines**) taller than 3 ft occupies:		**Robust vines** - include Himalayan blackberry and others that are generally erect and taller than 1 ft.		
		<5% of the vegetated AA, and fewer than 10 trees are present. **Enter 1 and SKIP to F51.**	1		NoWoody	
		<5% of the vegetated AA, but more than 10 trees are present.	0	**Vegetated part** - should not include floating-leaved or submersed aquatics.		
		5 to <25% of the vegetated AA.	0			
		25 to <50% of the vegetated AA.	0	For sites larger than 1 acre, this should be determined from aerial imagery rather than estimated only in the field. [WS,NR,CS,SBM,PD,Sens]		
		50 to 95% of the vegetated AA.	0			
		>95% of the vegetated part of the AA.	0			
F46	Woody Diameter Classes (TreeDiams)	**Select All the types** that comprise >5% of the woody canopy cover in the AA or >5% of its **wooded upland edge** if any:		**Wooded upland edge**- includes woody plants located within one tree-height of the wetland-upland boundary.		
		Deciduous 1-4" diameter (DBH) and >3 ft tall.	0	**DBH** is the diameter of the tree measured at 4.5 ft above the ground. [CS,SBM,POL,Sens]		
		Evergreen 1-4" diameter and >3 ft tall.	0			
		Deciduous 4-9" diameter.	0			
		Evergreen 4-9" diameter.	0			
		Deciduous 9-21" diameter.	0			
		Evergreen 9-21" diameter.	0			
		Deciduous >21" diameter.	0			
		Evergreen >21" diameter.	0			
F47	Snags (Snags)	The number of large **snags** (diameter >12 inches) in the AA plus 100 ft uphill of its edge is:		**Snags** - are standing trees at least 20 ft tall that are mainly without bark or foliage. [SBM,POL]		
		Few or none.	0			

		Several.	0			
F48	Abovewater Wood (WoodOver)	The number of horizontal wood pieces thicker than 4 inches that are partly submerged during most of the spring or early summer, thus potentially serving as basking sites for turtles, birds, or frogs and cover for fish is:		Only the wood that is at or above the water surface is assessed because of the impracticality of assessing underwater wood accurately when using a rapid assessment method.		
		None.	0	[FA,FR,AM]		
		Few.	0			
		Several (e.g., >3 per 300 ft of channel or shoreline).	0			
F49	Downed Wood (WoodDown)	The number of downed wood pieces longer than 6 ft and with diameter >4 inches that are not submerged during most of the growing season, is:		Exclude temporary "burn piles."		
		Few or none.	0	[INV,AM,SBM,POL]		
		Several.	0			
F50	Exposed Shrub Canopy (ShrExpos)	Within the vegetated part of the AA, shrubs shorter than 20 ft that are not overtopped by trees occupy: Select first statement that is true.		Vegetated part - should not include floating-leaved or submersed aquatics. [SBM,PD]		
		<5% of the vegetated AA and <0.01 acre (400 sq ft).	0			
		5 to <25% of the vegetated AA or the water edge (whichever is greater in early summer).	0			
		25 to <50% of the vegetated AA or the water edge (whichever is greater in early summer).	0			
		50 to 95% of the vegetated AA or the water edge (whichever is greater in early summer).	0			
		>95% of the vegetated part of the AA or the water edge (whichever is greater in early summer).	0			
F51	N Fixers (Nfix)	The percentage of the vegetated area in the AA or along its water edge (whichever has more) that contains nitrogen-fixing plants (e.g., alder, baltic rush, scotch broom, lupine, clover, alfalfa, other legumes) is:		For a more complete list, see ORWAP_SuppInfo, worksheet NFIX (includes native and non-native species). Do not include algae.		
		<1% or none.	1	[OE,INV,Sens]		
		1 to <25%.	0			
		25 to <50%.	0			
		50 to 75%.	0			
		>75%.	0			
Note for the next four questions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter and outward into whatever areas are adjacent. In many situations, these questions are best answered by measuring from aerial images.						
F52	Upland Perennial Cover - % of Perimeter (PerimPctPer)	The percentage of the AA's edge (perimeter) that is comprised of a band of upland perennial cover wider than 10 ft and taller than 6 inches, during most of the growing season is:		Perennial cover - vegetation that includes wooded areas, native prairies, sagebrush, as well as relatively unmanaged commercial lands in which the ground is disturbed less frequently than annually such as perennial ryegrass fields, hayfields, lightly grazed pastures, timber harvest areas, and rangeland. It does not include water, row crops (vegetable, orchards, Christmas tree farms), residential areas, golf courses, recreational fields, pavement, bare soil, rock, bare sand, or gravel or dirt roads. [WCv,SRv,PRv,INV,FA,AM,WBF,WBN,SBM,PD,POL,Sens,STR]		
		<5%.	0			
		5 to <25%.	0			
		25 to <50%.	0			
		50 to <75%.	0			
		75 to 95%.	1			
		>95%.	0			
F53	Upland Perennial Cover - Width (Buffer) (BuffWidth)	Along the greatest extent of the AA's upland edge, the width of perennial cover taller than 6 inches that extends upslope from the AA until mostly shorter or non-perennial cover is reached is: [Note: the width is not necessarily the maximum width. Base on vegetation that occurs most of the growing season.]		Upland edge - is the land within 3 ft of the wetland's perimeter that is not wetland. [WCv,SRv,PRv,INV,FA,AM,WBN,SBM,PD,POL,Sens,STR]		
		< 5 ft, or none.	0		NoUpPerCov	
		5 to <30 ft.	0			
		30 to <50 ft.	0			
		50 to <100 ft.	0			
		100 to 300 ft.	0			

		> 300 ft.	1		AllUpPerren	
F54	Upland Trees as % of All Perennial Cover (UpTreePctPer)	Within 100 f.t landward from the AA's edge (perimeter), the percentage of the upland perennial cover that is woody plants taller than 20 ft is:		Base this on the cumulative canopy width of the trees. [WSv,FA,WBF,WBN,SBM]		
		<5%, or there is no upland perennial cover along the upland edge.	0			
		5 to <25% of perennial cover.	1			
		25 to <50% of perennial cover.	0			
		50 to <75% of perennial cover.	0			
		75 to 95% of perennial cover.	0			
		>95% of perennial cover.	0			
F55	Weeds - % of Upland Edge (UpWeed)	Along the AA's edge (perimeter), the cover of invasive woody or herbaceous plants occupies: [If vegetation is so senesced that apparently-dominant edge species cannot be identified even to genus, answer "none"].		See ORWAP_SuppInfo file, worksheet P_Invas. Some of the most common invaders along upland edges of Oregon wetlands are Himalayan blackberry, knotweed, sweetbrier rose, Russian olive, English ivy, nightshade, pepperweed, medusahead, white clover, ryegrass, quackgrass, false brome, bentgrass, dandelion, oxeye daisy, pennyroyal, bull and creeping thistles, tansy ragwort, poison hemlock, and teasel. If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an invasive species, assume the unidentified plant to also be invasive. [PD,STR]		
		<5%, or none.	0			
		5 to <25%.	0			
		25 to <50%.	0			
		50 to <75%.	0			
		75 to 95%.	1			
		>95%.	0			
F56	Bare Ground & Accumulated Plant Litter (Gcover)	Consider the parts of the AA that go dry during a normal year. Viewed from 6 inches above the soil surface, the condition in most of that area just before the year's longest inundation period begins is:		Bare ground- includes unvegetated soil, rock, sand, or mud between stems if any. Bare ground under a tree or shrub canopy should be counted. Wetlands that are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season. [WS,WC,SR,PR,NR,CS,OE,INV,AM,SBM,POL,Sens,EC]		
		Little or no (<5%) bare ground is visible between erect stems or under canopy and there is little or no dead detached plant tisuse (thatch) remaining on top of the ground surface and ground surface is extensively blanketed by moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1			
		Some (5-20%) bare ground or remaining thatch is visible. Herbaceous plants have moderate stem densities and do not closely hug the ground.	0			
		Much (20-50%) bare ground or thatch is visible. Low stem density and/or tall plants with little living ground cover during early growing season.	0			
		Mostly (>50%) bare ground or thatch.	0			
		Not applicable. All of the AA is inundated throughout most years.	0			
F57	Ground Irregularity (Girreg)	In parts of the AA that lack persistent water, the number of small pits, raised mounds, hummocks, boulders, upturned trees, animal burrows, islands, natural levees, wide soil cracks, and microdepressions is:		Microtopography - refers mainly to vertical relief of <3 ft and is represented only by inorganic features, except where plants have created depressions or mounds of soil. Consider the microtopography to be "few or none" if one could walk easily through most of the AA once any slash and logs are removed. Consider it to be "several" if one has to constantly look down and check balance. [WS,SR,PR,NR,INV,AM,SBM,PD,POL,EC]		
		Few or none, or the entire AA is always water-covered. Minimal microtopography; <1% of the AA, e.g., many flat sites having a single hydroperiod.	1			
		Intermediate.	0			
		Several (extensive micro-topography).	0			
F58	Soil Composition (SoilTex)	Based on digging into the substrate and examining the surface layer of the soil (2 inch depth) that was mapped as being predominant, its composition (excluding duff and living roots) is mostly:		Do not base the texture on soil maps unless the AA is inaccessible. See ORWAP Manual's protocol (Step 7, pg 33) and chart (Appendix A, pg 52). Judge which soil type is predominant only in the part of the AA that is not inundated at the time of your visit. Duff - is loose organic surface material, e.g., dead plant leaves and stems). Organic soils are much less common in floodplains. [WS,PR,NR,CS,OE,PD,Sens]		
		Loamy: includes silt, silt loam, loam, sandy loam.	1			
		Clayey: includes clay, clay loam, silty clay, silty clay loam, sandy clay, sandy clay loam.	0			
		Organic: includes muck, mucky peat, peat, and mucky mineral soils (blackish or grayish). Exclude live roots unless they are moss.	0			
		Coarse: includes sand, loamy sand, gravel, cobble, stones, boulders, fluvents, fluvaquents, riverwash.	0			

F59	Cliffs or Banks (Cliff)	Within 300 ft of the AA, there are elevated terrestrial features such as cliffs, bluffs, talus slopes, or unarmored stream banks that extend at least 6 ft nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1, if true.	0	[SBM,POL]		
F60	Restored or Created Wetland (NewWet)	The AA is (or is within, or contains) a "new" wetland resulting from human actions (e.g., excavation, impoundment) or other factors affecting what was upland (non-hydric) soil. Or, some part of the AA was originally a wetland, was artificially drained for many years, and has since had its water regime partly or wholly restored or rehabilitated (e.g., by ditch plugs, berms, tile breakage, non-maintenance).		Include wetlands whose area was likely expanded by road berms which impeded runoff, but do not include wetlands created by beaver dams except for the part where flooding affected uplands (not just existing wetlands and streams). Determine this using historical aerial photography, old maps, soil maps, consultation with landowners, and/or permit files as available.		
		Yes, and constructed or restored mostly within last 3 years.	0	See ORWAP Map Viewer for hydric soil map. Also, locations of some restoration wetlands can be found by going to the ORWAP Map Viewer" layers under Restoration. Another potential source is the Conservation Registry: http://or.conservationregistry.org/. [NR,CS,OE,PD,Sens]		
		Yes, and constructed or restored mostly 3-7 years ago.	0			
		Yes, and constructed or restored mostly > 7 years ago.	0			
		Yes, but time of origin or restoration unknown.	0			
		No.	0		NotNewWet	
		Unknown if wetland is constructed, restored, or natural.	1			
F61	Ownership (Ownership)	Most of the AA is:		An initial indication of ownership can be found on the ORWAP Map Viewer under the Land Ownership layer. However, it is advisable to ask local sources or use local maps with higher precision. [PUv]		
		Publicly owned (municipal, county, state, federal).	0			
		Owned by non-profit conservation organization or easement holder who allows public access to this AA.	0			
		Other private ownership, including tribal. Enter 1 and SKIP to F63.	1		PrivateOwn	
F62	Special Protected Area Designation (Desig)	The AA is part of an area designated as a BLM Area of Critical Environmental Concern (ACEC) or Outstanding Natural Area (ONA), Federal Research Natural Area (RNA) or Special Interest Area (SIA), or Natural Heritage Conservation Area (NHCA). Enter 1, if true.	0	[PUv]		
F63	Conservation Investment (ConsInvest)	The AA is not a mitigation wetland, but public funds or community volunteer efforts have been applied to preserve, create, restore, or enhance the condition or functions of the wetland. (e.g. CRP or WRP wetlands, community projects). Enter 1, if true. (If unknown, leave 0).	0	Locations of some restoration wetlands can be found on the ORWAP Map Viewer under the Restoration heading. Another potential source is the Conservation Registry: http://or.conservationregistry.org/ [PUv]		
F64	Compensation Wetland (MitWet)	The AA is all or part of a compensation site used explicitly to offset impacts elsewhere. Enter 1, if true. (If unknown, leave 0).	0	Answer to the best of your knowledge. Sources for information include the property owner, DSL, and/or the ACOE. [PUv]		
F65	Sustained Scientific Use (SciUse)	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Enter 1, if true. (If unknown, leave 0)	0	[PUv]		
F66	Visibility (Visibil)	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 300 ft of the AA (select one) is:		[WBFv,WBNv,SBMv,PUv,STR]		
		<25%.	0			
		25 - 50%.	0			
		>50%.	1			
F67	Non-consumptive Uses - Actual or Potential (RecPoten)	Select all statements that are true of this AA as it currently exists:		The question assumes access is allowed. [PUv]		
		Walking is physically possible in >5% of the AA during most of year (e.g., free of deep water and dense shrub thickets).	0			
		All or part of the AA (or an area within sight of the AA and within 100 ft) would be physically accessible to people in wheelchairs (e.g., paved and flat).	0			
		Maintained roads, parking areas, or foot-trails are within 30 ft of the AA, or the AA can be accessed most of the year by boat.	0			
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0			

F68	Core Area 1 (VisitNo)	The percentage of the AA almost never walked or driven by humans during an average growing season probably comprises: [Note: If more than half the wetland is visible from areas within 100 ft of the AA, include visits by people to those areas that are actually walked or driven (not simply viewed from].		Judge this based on proximity to population centers, roads, trails, accessibility of the AA to the public, wetland size, usual water depth, and physical evidence of human visitation. Exclude visits that are not likely to continue and/or that are not an annual occurrence (e.g., by construction, maintenance, or monitoring crews). [AM,WBF,WBN,SBM,PD,PUv,STR]		
		<5% and no inhabited building is within 300 ft of the AA.	0			
		<5% and inhabited building is within 300 ft of the AA.	0			
		5 to <50% and no inhabited building is within 300 ft of the AA.	0			
		5 to <50% and inhabited building is within 300 ft of the AA.	0			
		50 to 95% with or without inhabited building nearby.	1			
		>95% of the AA with or without inhabited building nearby.	0			
F69	Core Area 2 (VisitOften)	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [The Note in the preceding question applies here as well].		See note above. [AM,WBF,WBN,SBM,PD,PUv,STR]		
		<5%.	1			
		5 to <50%.	0			
		50 to 95%.	0			
		>95% of the AA.	0			
F70	Consumptive Uses (Provisioning Services) (Hunt)	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select All that apply.		Evidence of these consumptive uses may consist of direct observation, or presence of physical evidence (e.g., recently cut stumps, fishing lures, shell cases), or might be obtained from communication with the land owner or manager. [FRv,WBFv,PUv]		
		Low-impact commercial timber harvest (e.g., selective thinning).	0			
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0			
		Waterfowl hunting.	0			
		Fishing.	0			
		Trapping of furbearers.	0			
		None of the above.	1			
F71	Domestic Wells (Wells)	Wells or water bodies that currently provide drinking water are:		Assume there are (when unknown), if there is an inhabited structure within the specified distance and the neighborhood is known to not be connected to a municipal drinking water system (e.g., is outside an urban growth boundary or other densely settled area). [NRv]		
		<300 ft and downslope from the AA or at same elevation.	0			
		300 - 1500 ft and downslope or at same elevation.	0			
		>1500 ft downslope, or none downslope, or no information.	1			

F72	Wetland Type of Conservation Concern (RareType)	Does the AA contain, or is it part of, any of these wetland types? Select All that apply.	W	Consult the ORWAP Report under the Location Information table for "Rare Wetland Type (within 1 mile)". But be aware that it may not apply to the exact AA you have delimited. [PDv]		
		Mature forested wetland (anywhere): a wetland in which mean diameter of trees (d.b.h., FACW and FAC species only) exceeds 18 inches, and/or the average age of trees exceeds 80 years, or there are >5 trees/acre with diameter >32 inches.	0	To qualify, the diameter of >18 inches must be the mean measured from at least 10 trees. [PDv]		
		Bog or Fen: contains a sponge-like organic soil layer which covers most of the AA and often has extensive cover of sedges and/or broad-leaved evergreen shrubs (e.g., Ledum). Often lacks tributaries, being fed mainly by groundwater and/or direct precipitation.	0	[CS,Sens]		
		Playa, Salt Flat, or Alkaline Lake: a nontidal ponded water body usually having saline (salinity >1 ppt or conductivity >1000 µS) or alkaline (conductivity >2000 µS and pH >9) conditions and large seasonal water level fluctuations (if inputs-outputs unregulated). If a playa or salt flat, vegetation cover is sparse and plants typical of saline or alkaline conditions (e.g., Distichlis, Atriplex) are common.	0	See ORWAP_SuppInfo file, worksheet P_Salt for species typically occurring in tidal or saline conditions. [PR, CS, INV ,FA, FR, AM, WBF]	Playa	
		Hot spring (anywhere in Oregon): a wetland where discharging groundwater in summer is >10 degrees (F) warmer than the expected water temperature.	0	[FA]		
		Native wet prairie (west of the Cascade crest): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, and dominated primarily by native graminoids often including species in column E.	0	Deschampsia caespitosa, Danthonia californica, Camassia quamash, Triteleia hyacinthina, Carex densa, C. aperta, and/or C. unilateralis [PDv,ECc]		
		Vernal pool (Willamette Valley): a seasonally inundated wetland, underlain by hardpan or claypan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and with native plant species distinctly different from those in slightly higher areas, and often including species in column E.	0	Downingia elegans, Isoetes nuttallii, Triteleia hyacinthina, Eleocharis spp., Eryngium petiolatum, Plagiobothrys figuratus, Plagiobothrys scouleri, Grindelia nana, Veronica peregrina, Lasthenia glaberrima , Cicendia quadrangularis, Kickxia elatine, Gnaphalium palustre, and/or Callitriche spp.[PDv]		
		Vernal pool (Medford area): a seasonally inundated acidic wetland, underlain by hardpan, with hummocky micro-relief, usually without a naturally-occurring inlet or outlet, and having concentric rings of similar native vegetation, often including species in column E.	0	Downingia vina, Isoetes nuttalli, Pilularia americana, Triteleia hyacinthina, Eleocharis spp., Eryngium petiolatum, Plagiobothrys brachteatus, Plagiobothrys scouleri, Grindelia nana, Veronica peregrina, Alopecurus saccatus, Lasthenia californica, Deschampsia danthonioides, and/or Callitriche spp. [PDv]		
		Vernal pool (Modoc basalt & Columbia Plateau): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located on shallow basalt bedrock and often having species in column E.	0	Blennosperma nanum, Camassia quamash, Epilobium densiflorum, Callitriche marginata, Cicendia quadrangularis, Eryngium vaseyi, Psilocarphus brevissimus, and/or Sedella pumila. [PDv]		
		Interdunal wetland (Coastal ecoregion): a seasonally inundated wetland, usually without a naturally-occurring inlet or outlet, located between sand dunes where wind has scoured the sand down to the water table (deflation plain, blowout pond), and often with significant cover of the native species in column E.	0	Carex obnupta, Argentina egedii, Juncus lesueurii, J. nevadensis, J. falcatus, Sisyrinchium californicum, and/or Salix hookeriana [PDv]		
		Ultramafic soil wetland (mainly southwestern Oregon): a low-elevation wetland, usually with a sponge-like organic soil layer, occurring in an area with exposed serpentine or peridotite rock, and/or in soils with very low Ca:Mg ratios.	0			
		None of above.	1			

Site: East Park Estates Phases 3-6 (Wetland B)	Name: Julie Wirth-McGee	Date: 11/26/2019

Data Form S. ORWAP Version 3.1. **NOTE**: Do not enter numbers in grayed-out cells.

					Data
S1	**Aberrant Timing of Water Inputs (AltTiming)**				
	*In the "Data" column, **place an X** next to any item that is likely to have caused the **timing** of water inputs (but not necessarily their volume) to shift by hours, days, or weeks, becoming either **more muted** (smaller or less frequent peaks spread over longer times, more temporal homogeneity of flow or water levels) **or more flashy** (larger or more frequent spikes but over shorter times).*				
	Control structure that regulates inflow to the AA (including tide gates), or flow regulation in tributaries, or water level in adjoining water body is regulated.				
	Irrigation runoff or seepage.				
	Snow storage areas that drain directly to the wetland.				
	Increased pavement and other impervious surface in the CA.				X
	Straightening, ditching, dredging, and/or lining of tributary channels in the CA.				
	*If **any** items were checked above, then for each row of the table below, you may assign points (3, 2, or 1). However, if you believe the checked items had no measurable effect on the timing of water conditions in any part of the AA, then leave the "0's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition, if the checked items never occurred or were no longer present.*				
		Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
	Spatial extent within the AA of timing shift.	>95% of AA.	5-95% of AA.	<5% of AA.	3
	When most of the timing shift began.	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	1
	Score the following 2 rows only if the altered inputs began within past 10 years, and only for the part of the AA that experiences those.				
	Input timing now vs. previously.	Shift of weeks.	Shift of days.	Shift of hours or minutes.	0
	Flashiness or muting.	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	0
				Sum=	4
				Final score=	0.33
S2	**Accelerated Inputs of Nutrients (NutrLoad)**				
	*In the "Data" column, **place an X** next to any item -- occurring in either the AA or its RCA -- that is likely to have accelerated the inputs of nutrients (nitrogen, phosphorus) to the AA.*				
	Stormwater or wastewater effluent (including failing septic systems), landfills.				X
	Fertilizers applied to lawns, ag lands, or other areas in the RCA.				X
	Livestock, dogs.				
	Artificial drainage of upslope lands.				
	Other waterborne human-related nutrient sources within the RCA.				
	*If **any** items were checked above, then for each row of the table below, you may assign points. However, if you believe the checked items did not cumulatively expose the AA to significantly more nutrients, then leave the "0's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.*				
		Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
	Usual load of nutrients.	Large (e.g., feedlots, extensive residential on septic) or or 303d* for nutrients.	Moderate (e.g., grazing, light residential on septic, light agriculture).	Limited (e.g., a few animals, lawns, sewered residential).	2
	Frequency & duration of input.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	2
	AA proximity to main sources (actual or potential).	0-50 ft.	50-300 ft. or in groundwater.	In other part of contributing area.	2
				Sum=	6
				Final score=	0.67
S3	**Accelerated Inputs of Contaminants and/or Salts (ContamIn).**				
	*In the "Data" column, **place an X** next to any item -- occurring in either the AA or its RCA -- that is likely to have accelerated the inputs of contaminants or salts to the AA.*				
	Stormwater or wastewater effluent (including failing septic systems), landfills, snow storage areas.				X
	Metals & chemical wastes from mining, shooting ranges, oil/ gas extraction, other sources.				
	Irrigation of lands, especially those with saline soils.				
	Oil or chemical spills (not just chronic inputs) from nearby roads.				
	Road salt.				
	Pesticides applied to lawns, ag lands, roadsides, or other areas in the RCA, but excluding spot applications for controlling non-natives in the AA.				X
	Artificial drainage of contaminated or saline soils.				
	Erosion of contaminated soils.				
	Other contaminant sources within the RCA.				
	*If **any** items were checked above, then for each row of the table below, you may assign points. However, if you believe the checked items did not cumulatively expose the AA to significantly higher levels of contaminants and/or salts, then leave the "0's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.*				
		Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
	Usual toxicity of most toxic contaminants.	Industrial effluent or 303d* for toxics.	Wastewater treatment plant, cropland, fossil fuel extraction, pipeline, power station, managed landfill.	Low density residential or commercial.	1
	Frequency & duration of input.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	1
	AA proximity to main sources (actual or potential).	0-50 ft.	50-300 ft. or in groundwater.	In other part of contributing area.	2
	* See ORWAP Map Viewer for waters designated as 303d; see Oregon DEQ web site for reasons.			Sum=	4
				Final score=	0.44

S4 **Excessive Sediment Loading from Runoff Contributing Area (SedRCA).**

In the "Data" column, place an X next to any item present in the RCA that is likely to have elevated the load of waterborne or windborne sediment reaching the AA from its RCA.

	Data
Erosion from plowed fields, fill, timber harvest, dirt roads, vegetation clearing, fires.	X
Erosion from construction, in-channel machinery in the RCA.	
Erosion from off-road vehicles in the RCA.	
Erosion from livestock or foot traffic in the RCA.	
Stormwater or wastewater effluent.	X
Sediment from road sanding, gravel mining, other mining, oil/ gas extraction.	
Accelerated channel downcutting or headcutting of tributaries due to altered land use.	
Other human-related disturbances within the RCA.	

If any items were checked above, then for each row of the table below you may assign points (3, 2, or 1) in the last column that describe the combined maximum effect of those items in increasing the amount or transport of sediment into the AA. To estimate that, contrast it with the condition if checked items never occurred or were no longer present.

	Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
Erosion in RCA.	Extensive evidence, high intensity*.	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	2
Recentness of significant soil disturbance in the RCA.	Current & ongoing.	1-12 months ago.	>1 yr ago.	3
Duration of sediment inputs to the AA.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & mainly during high runoff or severe wind events.	1
AA proximity to actual or potential sources.	0-50 ft., or farther but on steep erodible slopes.	50-300 ft.	In other part of contributing area.	2
			Sum=	8
			Final score=	0.67

* High-intensity= plowing, grading, excavation, erosion with or without veg removal; low-intensity= veg removal only with little or no apparent erosion or disturbance of soil or sediment.

S5 **Soil or Sediment Alteration *Within the Assessment Area* (SoilDisturb).**

In the "Data" column, place an X next to any item present in the AA that is likely to have compacted, eroded, or otherwise altered the AA's soil.

	Data
Compaction from livestock, machinery, off-road vehicles, or mountain bikes, especially during wetter periods.	X
Leveling or other grading not to the natural contour.	
Tillage, plowing (but excluding disking for enhancement of native plants).	
Fill, riprap, other armoring, excluding small amounts of upland soils containing organic amendments (compost, etc.) or small amounts of topsoil stockpiled or imported from another wetland.	
Excavation.	
Dredging in or adjacent to the AA.	
Boat traffic in or adjacent to the AA and sufficient to cause shore erosion or stir bottom sediments.	
Artificial water level or flow manipulations sufficient to cause erosion or stir bottom sediments.	

If any items were checked above, then for each row of the table below you may assign points (3, 2, or 1) in the last column that describe the combined maximum effect of those items in altering the AA's soils. To estimate that, contrast it with the soil condition if checked items never occurred or were no longer present.

	Severe (3 pts)	Medium (2 pts)	Mild (1 pt)	
Spatial extent of altered soil.	>95% of AA or >95% of its upland edge (if any).	5-95% of AA or 5-95% of its upland edge (if any).	<5% of AA and <5% of its upland edge (if any).	2
Recentness of significant soil alteration in AA.	Current & ongoing.	1-12 months ago.	>1 yr ago.	1
Duration.	Long-lasting, minimal veg recovery.	Long-lasting but mostly revegetated.	Short-term, revegetated, not intense.	1
Timing of soil alteration.	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & mainly during scattered events.	1
			Sum=	5
			Final score=	0.42

Site Name:	**East Park Estates Phases 3-6 (Wetland B)**
Investigator Name:	**Julie Wirth McGee**
Date of Field Assessment:	**43795**

Scores will appear below after data are entered in worksheets OF, F, T, and S. See Manual for definitions and descriptions of how scores were computed and ratings assigned.

Normalized Scores & Ratings for this Assessment Area (AA):

Specific Functions or Values:	Function Score	Function Rating	Rating Break Proximity	Values Score	Values Rating	Rating Break Proximity
Water Storage & Delay (WS)	6.08	Moderate		0.00	Lower	
Sediment Retention & Stabilization (SR)	4.77	Moderate		6.83	Higher	
Phosphorus Retention (PR)	2.75	Lower	LM	5.02	Moderate	
Nitrate Removal & Retention (NR)	4.34	Moderate	LM	10.00	Higher	
Anadromous Fish Habitat (FA)	0.00	Lower		0.00	Lower	
Resident Fish Habitat (FR)	0.00	Lower		0.00	Lower	
Amphibian & Reptile Habitat (AM)	7.64	Higher		4.60	Moderate	LM
Waterbird Nesting Habitat (WBN)	9.03	Higher		5.33	Moderate	
Waterbird Feeding Habitat (WBF)	5.12	Moderate		7.50	Higher	
Aquatic Invertebrate Habitat (INV)	6.38	Moderate	MH	3.04	Lower	LM
Songbird, Raptor, Mammal Habitat (SBM)	3.51	Lower	LM	5.33	Moderate	
Water Cooling (WC)	2.00	Lower	LM	6.04	Higher	
Native Plant Diversity (PD)	0.00	Lower		0.00	Lower	
Pollinator Habitat (POL)	4.74	Moderate		4.74	Moderate	MH
Organic Nutrient Export (OE)	7.27	Higher	MH			
Carbon Sequestration (CS)	2.39	Lower				
Public Use & Recognition (PU)				3.36	Lower	LM

Other Attributes:	Score	Rating	Rating Break Proximity
Wetland Sensitivity (SEN)	0.19	Lower	
Wetland Ecological Condition (EC)	1.67	Lower	
Wetland Stressors (STR)	6.67	Moderate	MH

GROUPS	Selected Function	Function Rating	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Moderate		Lower	
Water Quality Support (SR, PR, or NR)	Sediment Retention & Stabilization (SR)	Moderate		Higher	
Fish Habitat (FA or FR)	Anadromous Fish Habitat (FA)	Lower		Lower	
Aquatic Habitat (AM, WBF, or WBN)	Amphibian & Reptile Habitat (AM)	Higher		Moderate	LM
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Organic Nutrient Export (OE)	Higher	MH	0.00	0.00

Attachment 5: Compensatory Mitigation Eligibility & Accounting Determination Form

Draft Compensatory Mitigation Eligibility and Accounting Determination Form
STEP 1. ELIGIBILITY

INSTRUCTIONS: This eligibility worksheet is used to determine whether a proposed compensatory mitigation site is ecologically appropriate to offset proposed impacts. Final eligibility is determined by the agency. The expectation is that compensatory mitigation sites provide an ecological match (i.e. class, function, and value) to the impact site. In some circumstances, an exception to ecological match may be allowed if the permittee demonstrates that the proposed compensatory mitigation site addresses local or watershed needs or priorities. Enter data in red boxes only. Yellow boxes will populate automatically.

Criteria		RESPONSE	RESULT	COMMENTS
Expectation for providing ecological match for wetlands impacts	Does the mitigation site replace all of the following:			Aquatic Resources of Special Concern must be replaced in-kind and may not otherwise meet all criteria.
	a) HGM class(es) and subclass(es)? ▪ *Select yes or no from drop-down list.*	Yes	MET	
	b) Cowardin system(s) and class(es)? ▪ *Select yes or no from drop-down list.*	Yes	MET	
	c) Group-level functions and values? ▪ *Compare ORWAP ratings between the impact site and the mitigation site (predicted scores) to determine this. Select yes or no from drop-down list.*	Not applicable - see Comments	FALSE	This criterion does not apply when purchasing Legacy Credits, ILF credits not associated with a DSL-approved project, or PIL. Does not apply to non-tidal wetland impacts ≤0.2 acres purchasing credits.
Expectation for providing ecological match for stream impacts	ORKSHEET Does the mitigation site replace all of the following:			Aquatic Resources of Special Concern must be replaced in-kind and may not otherwise meet all criteria.
	a) Flow permanance (intermittent or perennial)? ▪ *Select yes or no from drop-down list.*			
	b) Stream size class (small, medium, or large)? ▪ *Select yes or no from drop-down list.*			Stream size class as set forth by Oregon Department of Forestry in OAR 629-635-0200 Sections (13) and (14). Mitigation Planning Map Viewer
	c) Essential Indigenous Anadromous Salmonid Habitat (ESH) designation, if the impact is to an ESH stream? ▪ *Select yes, no, or Impact site is not ESH from the drop-down list.*			
	d) Group-level functions and values? ▪ *Compare SFAM ratings between the impact site and the mitigation site (predicted scores) to determine this. Select yes or no from drop-down list.*			This criterion does not apply when purchasing Legacy Credits, ILF credits not associated with a DSL approved project, or PIL
If any criterion above are not met, determine whether the mitigation site might qualify for an exception (as a watershed priority) by answering the following two questions. If all criteria above were met, skip the next two questions and move to Step 2: Accounting.				Aquatic Resources of Special Concern are not eligible for an exception and must be replaced in-kind
Possible exception to ecological match	Does the mitigation site:			
	a) Address a watershed priority, as identified in a planning or assessment document, report, or other data? ▪ *Must be fully described in the permit application. Select yes or no from the drop-down list.*			
	b) Provide a high level of the functions and values that are relevant to the targeted priority (either currently or post-construction)? ▪ *Must be fully described in the permit application. Select yes or no from the drop-down list.*			

STEP 2. ACCOUNTING

INSTRUCTIONS: This accounting worksheet is used to estimate a permittee's wetland mitigation requirements, specific to a particular impact and proposed mitigation site. There are no minimum requirements defined for streams. Final requirements will be determined by the agency. Requirements are based on (1) the mitigation method, (2) the function/value replacement achieved, (3) function temporal loss factors, (4) level of function replacement, and (5) stewardship and site protection plans. Enter data in red boxes only. Yellow boxes will populate automatically. A separate column must be used for each mitigation method used (e.g. if a mitigation site includes both restoration and enhancement, the mitigation method for those distinct areas must be calculated in separate columns). A separate column may also be used to allow different function temporal loss factors to be applied to different acreages, even if the mitigation method being used on that acreage is the same.

Factor		Method 1	Method 2	Method 3	Notes
Mitigation method	What method(s) of mitigation is proposed? ▪ *Select an option from drop-down list.*	Credit purchase	Credit purchase		If purchasing credits, ILF or PIL, select "credit purchase." Minimum requirements for preservation and non-wetland waters are case-by-case, as determined by the Department.
	MINIMUM MITIGATION REQUIREMENT (acres of mitigation required per acre of impact)	1.00	1.00		

Note: Adjustments do not apply to non-tidal wetland impacts ≤0.2 acres purchasing credits as mitigation; select "Not applicable" for each factor.

Specific function and value replacement *(increase factor)*	How many specific functions and values from the impact site are replaced at the mitigation site? ▪ *Compare ORWAP ratings between the impact site and the mitigation site (predicted scores) to determine this. Select an option from drop-down list.*	Not applicable	Not applicable		Select "Not applicable" if the mitigation site is approved/seeking approval as an exception to in-kind replacement under a watershed priority approach, if purchasing legacy credits, or best professional judgement was used to assess functions and values.
		+ 0%	+ 0%		
Function temporal loss *(increase factor)*	Which factor, if any, will cause the greatest temporal loss of function? ▪ *Select **first** applicable option from drop-down list.*	Emergent/shrub impacted	Emergent/shrub impacted		Soil adjustment factors are not applicable to credit purchases or removal of historic fill. Vegetation and soil adjustments may not apply when the mitigation method is preservation.
		+ 20%	+ 20%		
High level of function replacement *(decrease factor)*	Does the CM site exceed at least 80% of the specific functions being lost at the impact site? ▪ *Compare ORWAP function ratings between the impact site and the mitigation site (predicted scores) to determine this. Select an option from drop-down list.*	Not applicable	Not applicable		"Exceed" means replaced beyond an overlapping rating break proximity. Select "Not applicable" if the mitigation site is approved/seeking approval as an exception to in-kind replacement under a watershed priority approach, if purchasing legacy credits, or best professional judgement was used to assess functions and values.
		- 0%	- 0%		
Mitigation site protection & stewardship *(decrease factor)*	What level of site protection and stewardship is proposed for the mitigation site? ▪ *Select an option from the drop-down list.*	Enhanced stewardship	Enhanced stewardship		Mitigation banks and ILFs typically have enhanced stewardship. Minimum mitigation requirement is 1 acre credit to 1 acre of impact.
		- 20%	- 20%		
	Total adjustment (percent increase)	0%	0%		
	ADJUSTED MITIGATION REQUIREMENT (acres of mitigation required per acre of impact)	1.00	1.00		

	Method 1	Method 2	Method 3	Notes
Acreage of impact* (*enter the acreage associated with each method)	0.43			Insert the area of unavoidable permanent impact
MITIGATION ACREAGE REQUIRED (adjusted mitigation requirement * impacted acreage)	0.43			

TOTAL MITIGATION REQUIRED WITHOUT BUFFERS	0.43	**This is the mitigation acreage required if a buffer is not required by DSL**

This section is only used if DSL requires a buffer at the compensatory mitigation project					
Factor		**Method 1**	**Method 2**	**Method 3**	**Notes**
Credit for DSL Required Buffers	Buffer acreage				Use multiple methods only if more than one ratio will be applied to the buffer.
	Buffer credit ratio				DSL will determine the credit ratio for required buffers. Enter the acres of buffer required per credit (e.g. for 10:1, enter 10).
	Buffer Credit				
	Total Buffer Credit	0			
	TOTAL MITIGATION REQUIRED WITH BUFFER CREDITS APPLIED		**This is the mitigation acreage required if buffers are required by DSL**		

WORKSHEET

Attachment 6: Adjoining Property Owner Address Labels

Attachment 7: Incumbency Certificate