Exhibit A.3.a

OREGON DEPARTMENT OF TRANSPORTATION

Coopey Quarry

Figure 1

Overview

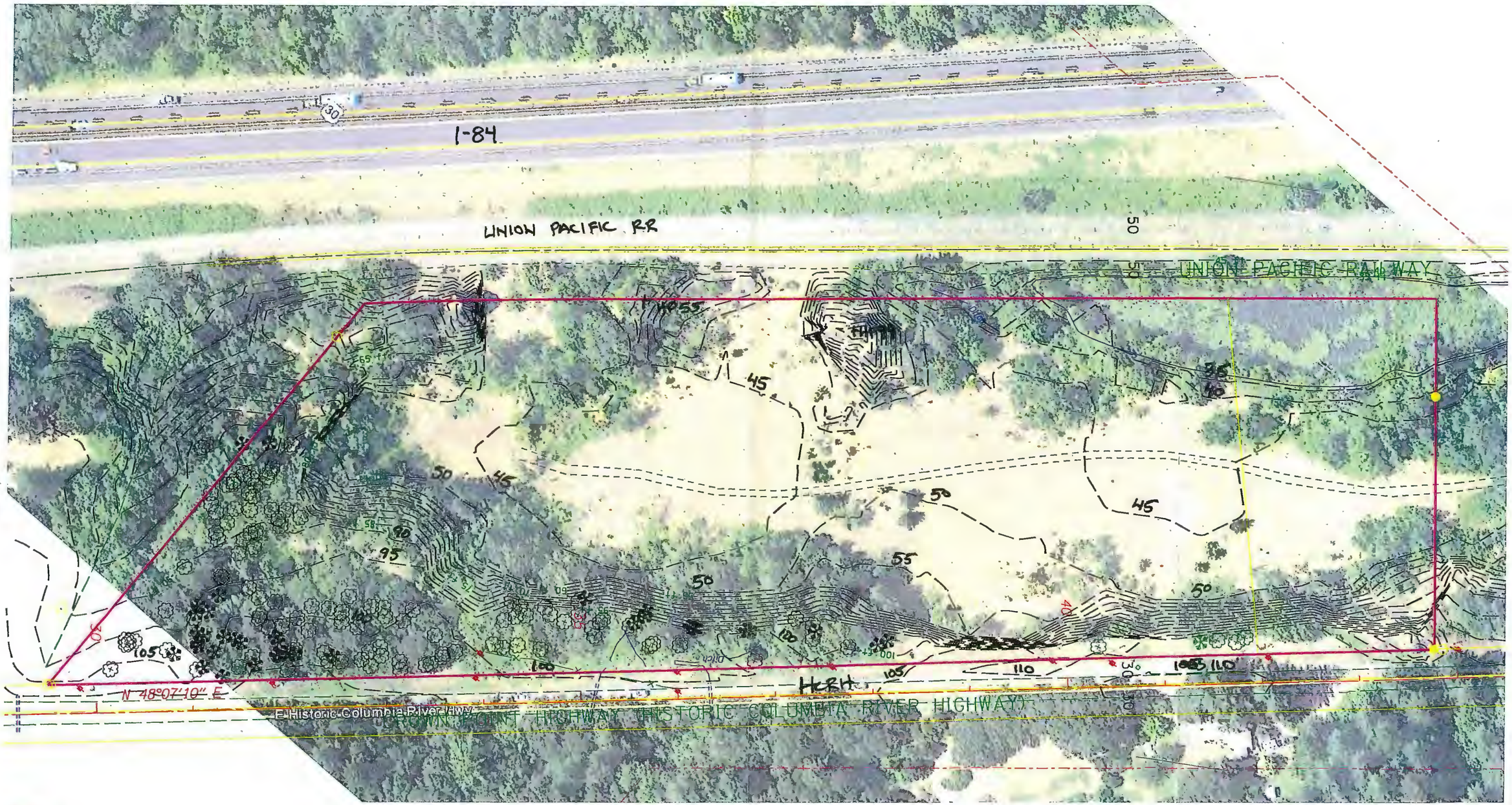
0 4,350 8,700 17,400 Feet

N

Legend

County

Coopey Quarry



COOPEY QUARRY - EXISTING TOPOGRAPHY

ODOT - PRE-APP 6.15.17

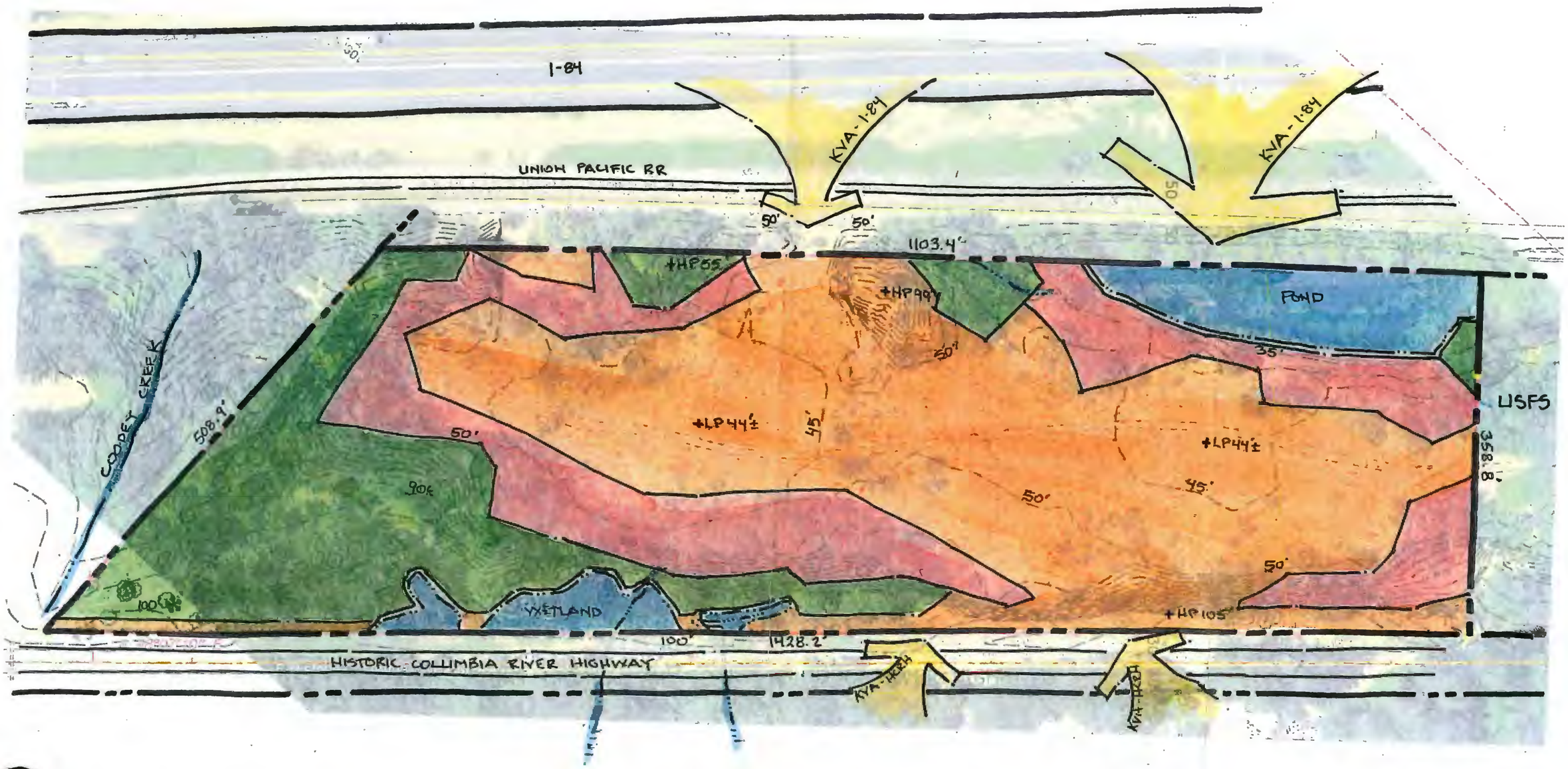
1"=100'

0 100 200 300

NOTE: CONTOUR INTERVALS 5'

LEGEND

- SECOND GROWTH FOREST
- STUNTED OPEN FOREST
- HERBACEOUS/GRAVEL
- POND/WETLAND
- WETLAND
- DRAINAGE/STREAM
- 5' CONTOURS
- +HP HIGH POINT
- +LP LOW POINT
- KEY VIEWING AREA (KVA)



COOPEY QUARRY - EXISTING CONDITIONS

ODOT - PRE-APP - 6.15.17

1"=100'

0 100 200 300

LEGEND

- PROPOSED ACCESS ROAD
- BERM/SCREEN/RESTORATION AREA
- POND/WETLAND
- FILL/RESTORATION PHASES & AREAS
- NO WORK AREA
- EXIST. PLANT COMMUNITIES
- 5' CONTOURS (EXISTING)
- KEY VIEWING AREAS (ADJACENT TO SITE.)

NOTE: BERM/SCREEN TO BE INSTALLED IN PHASES PRIOR TO CONSTRUCTION OF FILL AREAS. BERM HEIGHT WILL INCREASE WITH FILL HEIGHT.

I-84

UNION PACIFIC RR

KVA - I-84

KVA - I-84

A

1103.4'

POND

COOPEY CREEK

508.9'

PROPOSED ACCESS ROAD

4

5

3

2

1

USFS

368.9'

WETLAND

1428.2'

HISTORIC COLUMBIA RIVER HIGHWAY

A

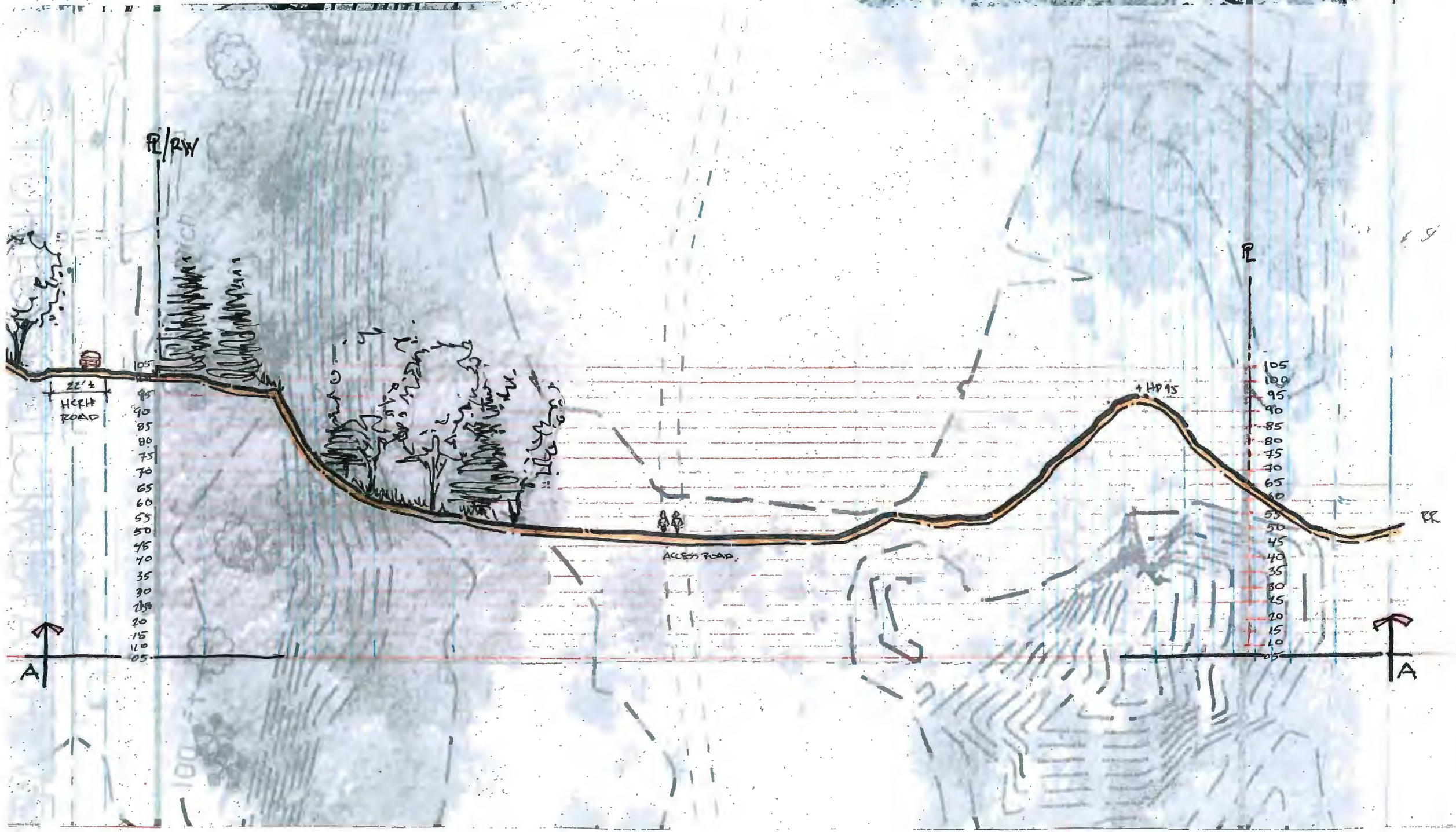
KVA

COOPEY QUARRY - PROPOSED PLAN CONCEPT

ODOT - PRE-APP - 6.15.17

1" = 100'

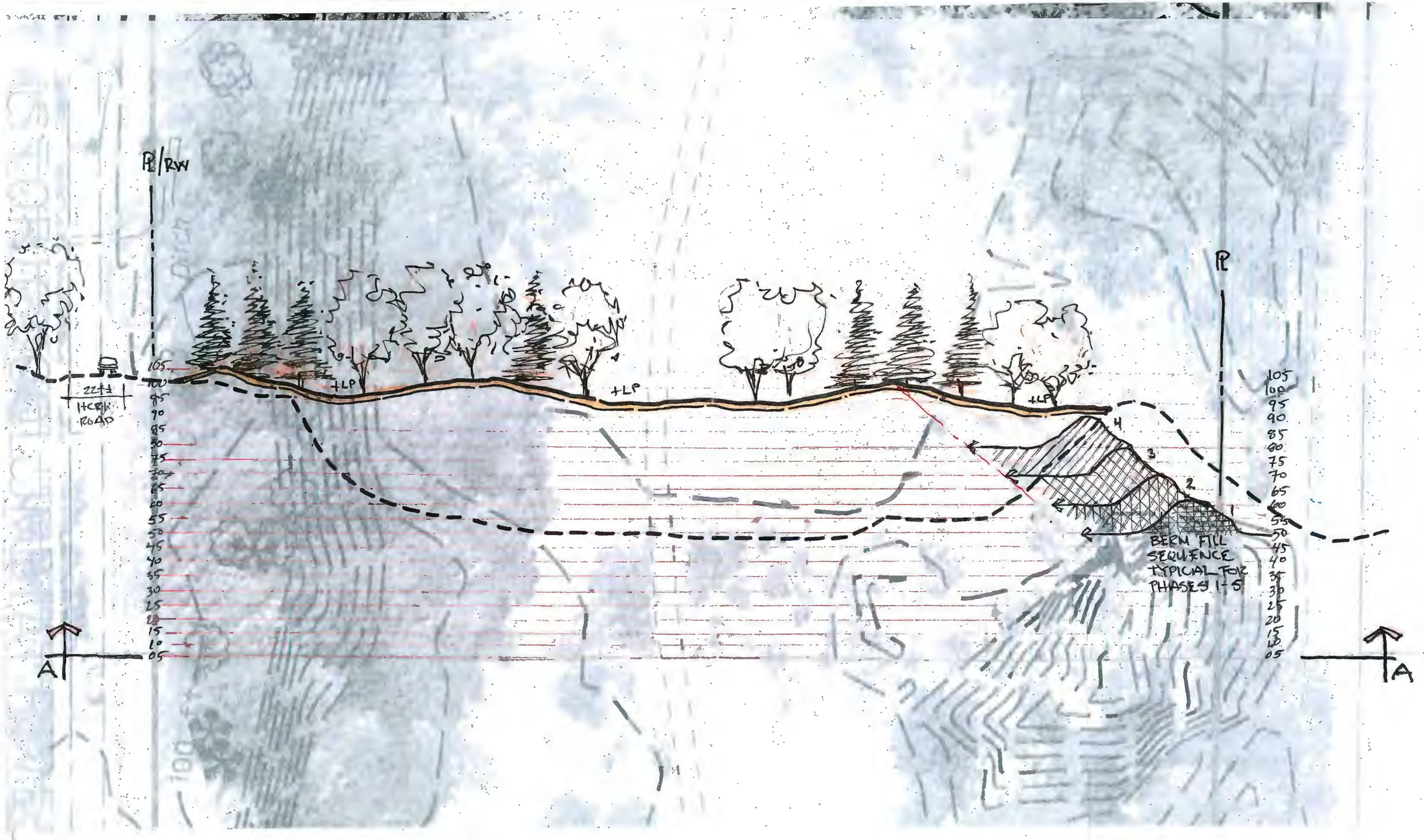
0 100 200 300



COOPEY QUARRY - EXISTING CONDITIONS

ODOT - PREAPP - 6.15.17 SECTION A/A

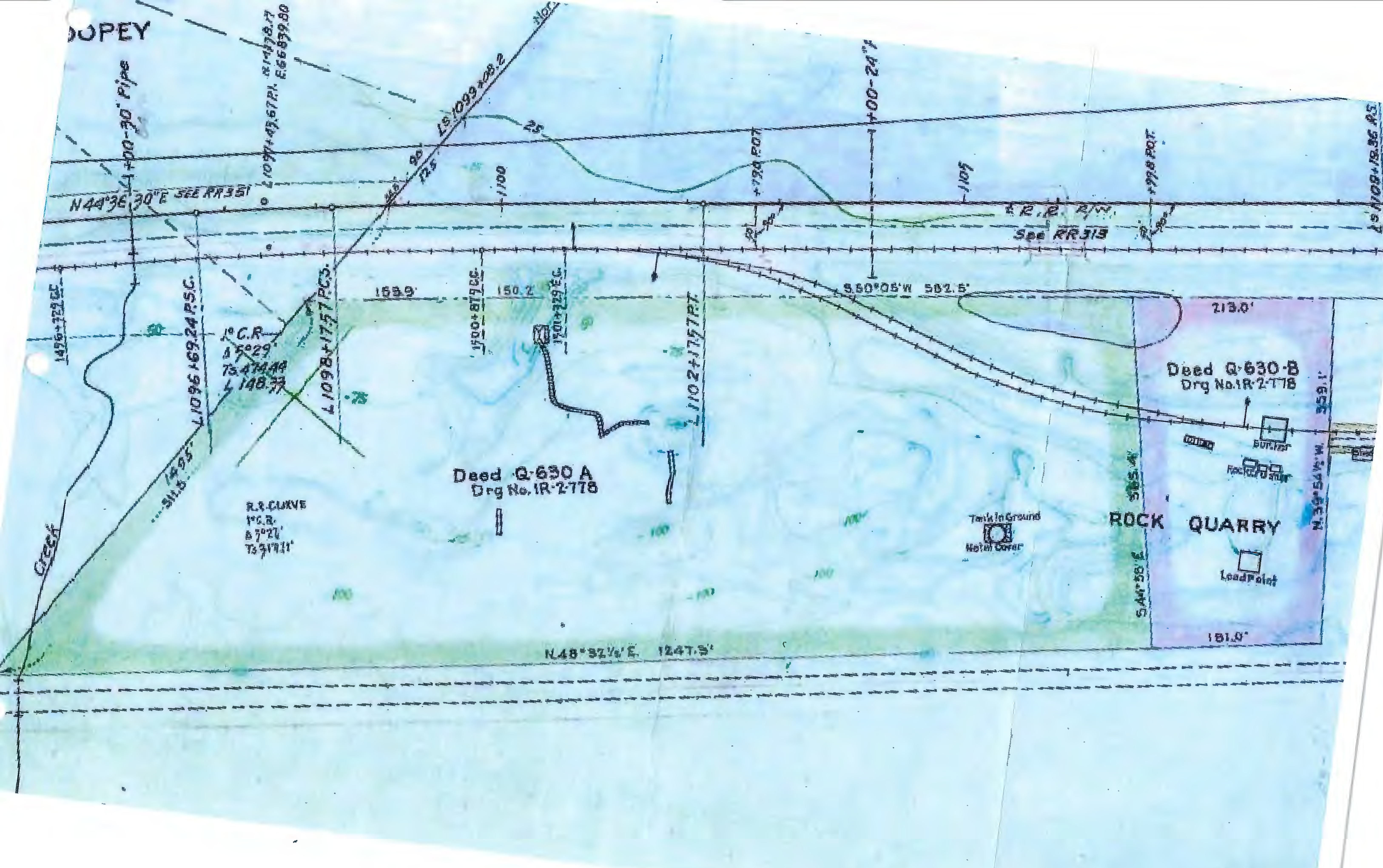
0 30 60 90



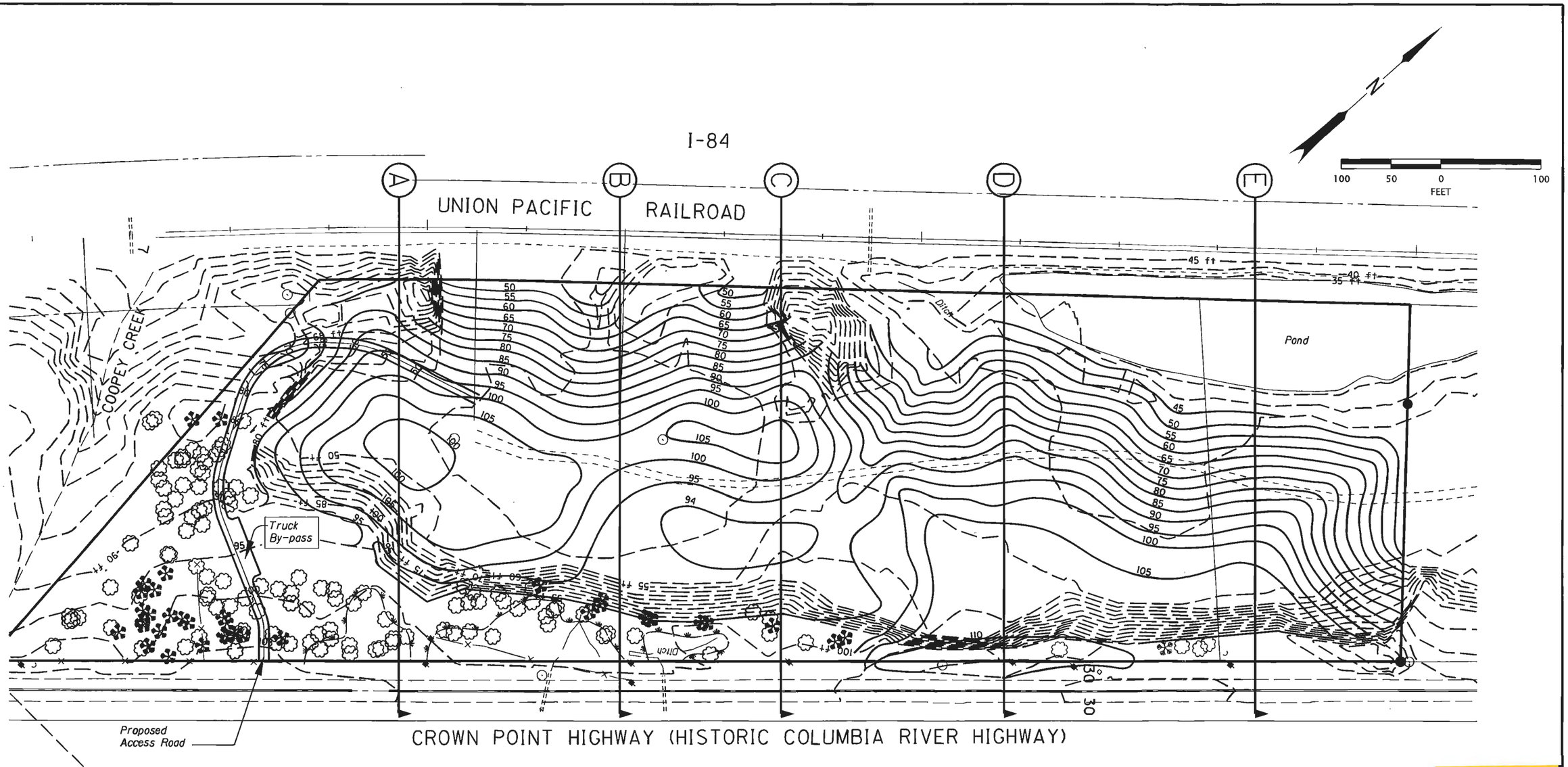
COOPEY QUARRY - PROPOSED FILL CONCEPT

OPOT - PREAPP - 6.15.17 SECTION A/A

0 30 60 90


OPEY
N44°36'30"E SEE RR351
See RR313
S.60°05'W 582.5'
213.0'
Deed Q-630-B
Drg No.1R-2-778
Deed Q-630 A
Drg No. 1R-2-778
R.R. CURVE
Tank In Ground
Metal Cover
ROCK QUARRY
Load Point
N.48°32½'E. 1247.5'
181.0'
359.1'
CREEK

1934



GENERAL PROJECT NOTES:

1. *Existing and proposed contours are shown at 5-foot intervals.*
2. *Topsoil will be stored at the west end when encountered during slide excavation. Topsoil may be brought in as a sourced material when needed.*
3. *Erosion control will be ongoing. A 2" compost erosion blanket will be placed on top of the topspoil prior to planting. Shredded wood check dams, aggregate check dams, perimeter aggregate berms and shredded wood will be the primary perimeter control.*
4. *Estimated proposed fill is 430,000 Cubic Yards and will be a variety of materials from slides and debris flows within the Columbia River Gorge Scenic Area.*
5. *See landscape plan for proposed vegetation.*

LEGEND

- *Existing Contours (5' intervals)*
- *Proposed Contours (5' intervals)*
- *Existing Deciduous Trees*
- *Existing Coniferous trees*
- *Wetlands*
- *Existing Quarry Rd.*
- *Proposed Quarry Access Rd.*
- *Section Lines (Sections Sht. 2)*

Exhibit A.3.b

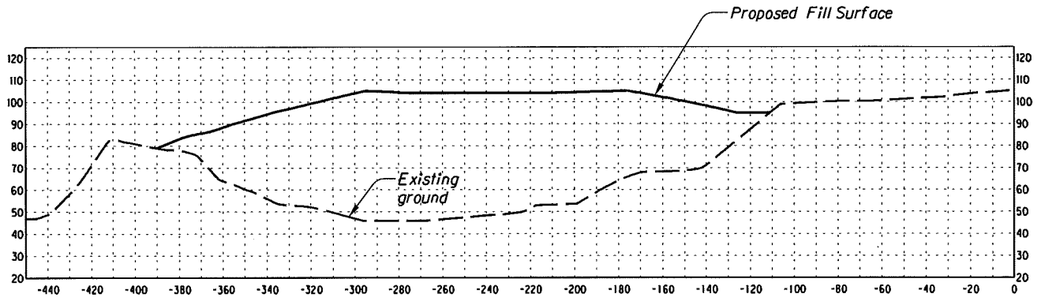
RECLAMATION PLAN

Coopey Quarry ODOT
T 1 N R 5 E Section 14, TL 00600
NSA Application

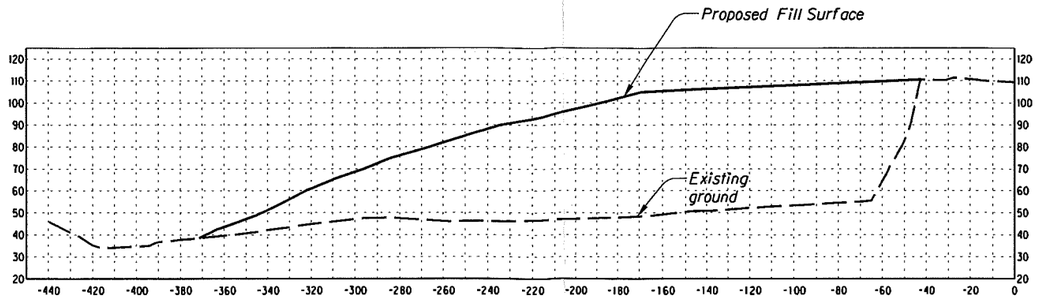
SHEET *1 of 5*

Coopey_Plan_Shts.dgn :: Default 11/7/2017 3:04:04 PM hwyr12y

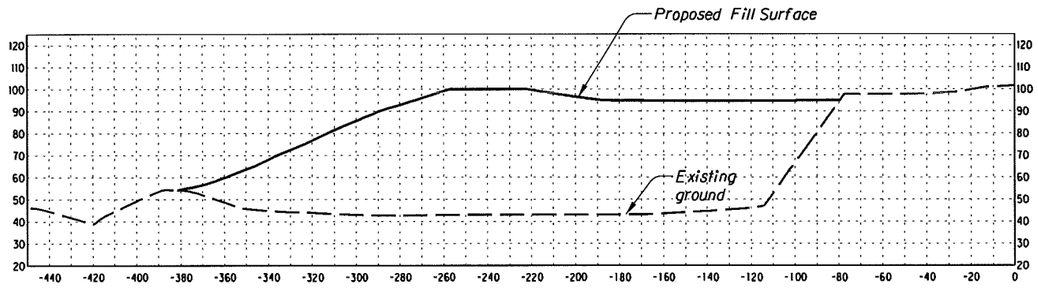
Rotation: 0° Scale: 1"=100'



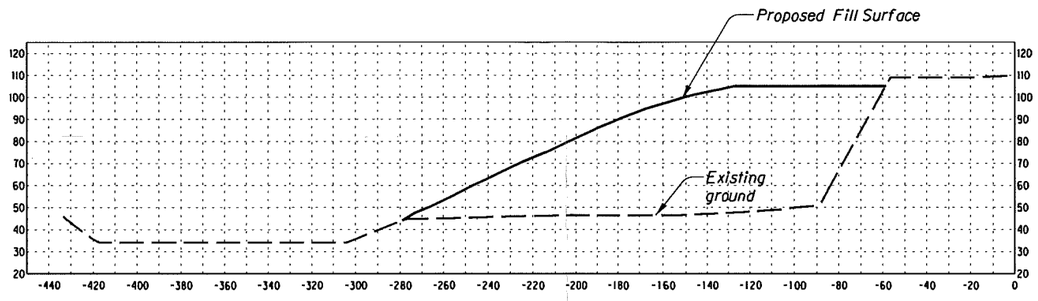
Cross Section A



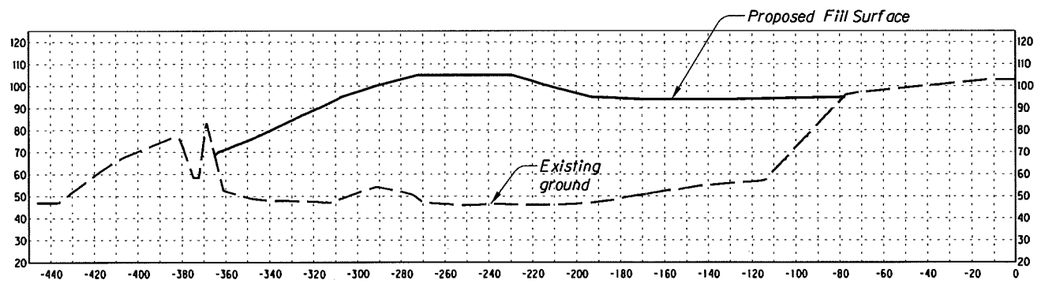
Cross Section D



Cross Section B



Cross Section E

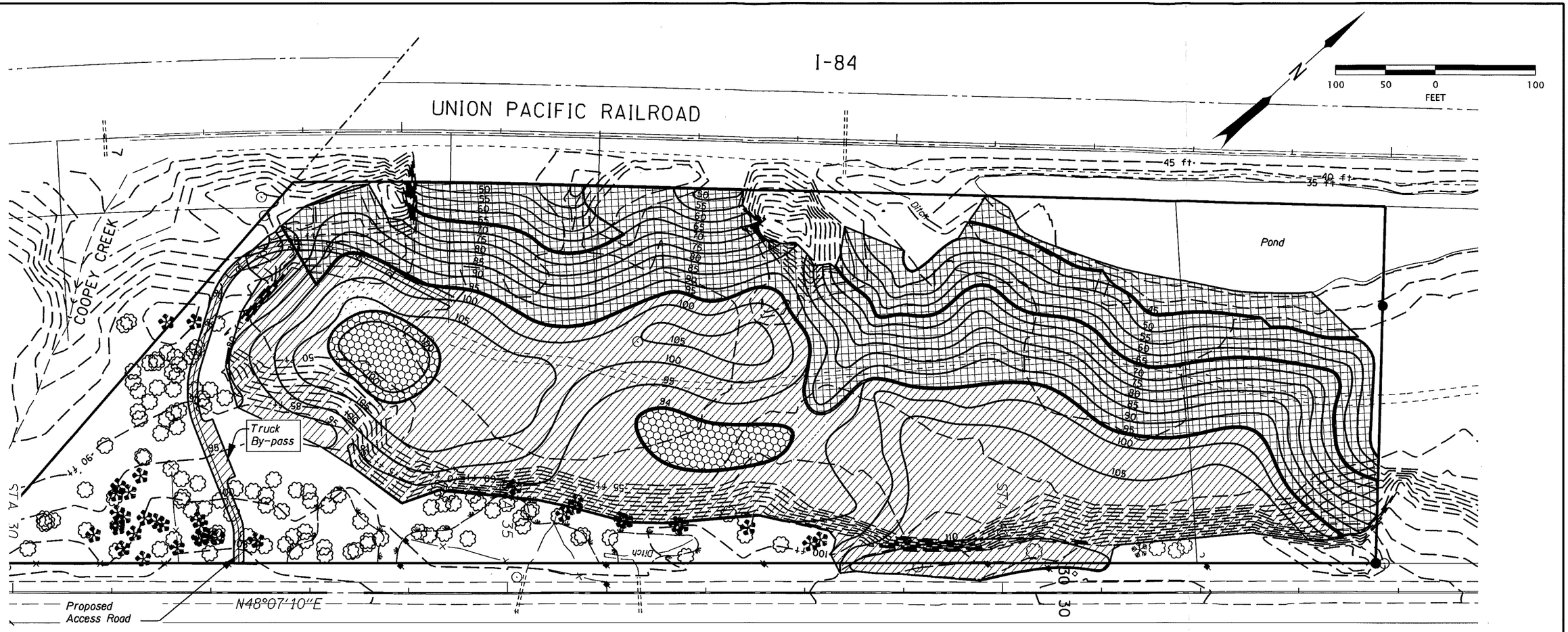


Cross Section C

CROSS SECTIONS

Coopey Quarry ODOT
T 1 N R 5 E Section 14, TL 00600
NSA Application

SHEET
2 of 5



CROWN POINT HIGHWAY (HISTORIC COLUMBIA RIVER HIGHWAY)

LEGEND
RESTORATION LANDSCAPE TYPES

- *Mix 'A' – Riparian upland – 157,000 S.F.(3.6 ac)*
- *Mix 'B' – Mixed Woodland Oak Dominate – 185,300 S.F.((4.25 ac)*
- *Mix 'C' – Vernal Pools – 13,700 S.F.(0.32 ac)*
- *Existing Contours (5' intervals)*
- *Proposed Contours (5' intervals)*
- *Existing Deciduous Trees*
- *Existing Coniferous trees*
- *Wetlands*
- *Existing Quarry Rd.*
- *Proposed Quarry Access Rd.*

NOTES:
1. *Permanent Seeding Mix No.1 to be applied to all landscape types, except vernal pools.*
2. *Vernal pools to receive Permanent Seeding Mix No. 2.*
3. *For Plant & Material Schedule, see Sheet 4 and 5.*

Landscape Plan for Revegetation

Coopey Quarry ODOT
T 1 N R 5 E Section 14, TL 00600
NSA Application

SHEET 3 of 5

PLANT and MATERIAL SCHEDULE - Coopey Quarry - Mixed Coniferous Woodland

Plant Type	Botanical Name	Common Name	Size	Spacing	Root Type	Percent Mix	Plant Condition	A.S.N.S.	Layout	Notes	Irrigation		TOTAL
Mix 'A'	Acer circinatum	vine maple	D60L	12' O.C.	D60L Container	5%	Multi-branched		As Staked/Approved	Contract grown			70
	Acer macrophyllum	big leaf maple	D60L	12' O.C.	D60L Container	15%	Single trunk		As Staked/Approved	Contract grown			210
	Alnus rubra	red alder	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown			70
	Amelanchier alnifolia	serviceberry	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown			70
	Fraxinus latifolia	Oregon Ash	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown			70
	Populus trichocarpa	black cottonwood	D60L	12' O.C.	D60L Container	20%	Single trunk		As Staked/Approved	Contract grown			270
	Quercus garryana	Oregon white oak	D60L	12' O.C.	D60L Container	25%	Single trunk		As Staked/Approved	Contract grown			350
	Pseudotsuga menziesii	Douglas fir	D60L	12' O.C.	D60L Container	15%	Single trunk		As Staked/Approved	Contract grown			210
	Thuja plicata	western red cedar	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown			70
	Total Trees In Mix A											Total	1,390
	Cornus sericea	red-osier dogwood	D40L	6' O.C.	D40L Container	5%			Groups 5-9	Contract grown			280
	Corylus cornuta	hazelnut	D40L	6' O.C.	D40L Container	10%			Groups 3-5	Contract grown			560
	Holodiscus discolor	ocean spray	D40L	6' O.C.	D40L Container	15%			Groups 3-5	Contract grown			840
	Mahonia aquifolium	Oregon Grape	D40L	5' O.C.	D40L Container	15%			Groups 4-7	Contract grown			840
	Polystichum munitum	sword fern	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown			280
	Oemleria cerasiformis	osoberry	D40L	6' O.C.	D40L Container	10%			Groups 4-3	Contract grown			560
	Ribes sanguineum	red flowering current	D40L	6' O.C.	D40L Container	10%			Groups 4-3	Contract grown			560
	Rosa gymnocarpa	baldhip rose	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown			280
	Rubus parviflorus	thimbleberry	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown			280
	Sambucus cerulea	blue elderberry	D40L	6' O.C.	D40L Container	10%			Groups 5-7	Contract grown			560
	Symphoricarpos albus	snowberry	D40L	5' O.C.	D40L Container	10%			Groups 5-7	Contract grown			560
	Total Shrubs In Mix A											Total	5,600
Mix 'B'	Acer macrophyllum	big leaf maple	D60L	12' O.C.	D60L Container	10%	Single trunk		As Staked/Approved				160
	Amelanchier alnifolia	serviceberry	D60L	12' O.C.	D60L Container	10%	Single trunk		As Staked/Approved				160
	Cornus nuttallii	dogwood	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved				80
	Pseudotsuga menziesii	Douglas fir	D60L	12' O.C.	D60L Container	20%	Single trunk		As Staked/Approved				330
	Quercus garryana	Oregon white oak	D60L	12' O.C.	D60L Container	50%	Single trunk		As Staked/Approved				820
	Thuja plicata	westernr red cedar	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved				80
	Total Trees In Mix B											Total	1,630
	Holodiscus discolor	ocean spray	D40L	6' O.C.	D40L Container	20%			Groups 3-9	Contract grown			1,320
	Polystichum munitum	sword fern	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown			330
	Physocarpus capitatus	ninebark	D40L	6' O.C.	D40L Container	20%			Groups 5-9	Contract grown			1,320
	Oemleria cerasiformis	osoberry	D40L	6' O.C.	D40L Container	5%			Groups 4-3	Contract grown			330
	Ribes sanguineum	red flowering current	D40L	6' O.C.	D40L Container	20%			Groups 4-3	Contract grown			1,320
	Rosa nutkana	nootka rose	D40L	5' O.C.	D40L Container	15%			Groups 5-9	Contract grown			990
	Sambucus cerulea	blue elderberry	D40L	6' O.C.	D40L Container	5%			Groups 3-5	Contract grown			330
	Symphoricarpos albus	snowberry	D40L	5' O.C.	D40L Container	10%			Groups 5-9	Contract grown			660
	Total Shrubs In Mix B												6,600
Mix 'C'	Cornus sericea	red-osier dogwood	D40L	6' O.C.	D40L Container	30%			Groups 5-9				120
	Rubus spectabilis	salmonberry	D40L	6' O.C.	D40L Container	30%			Groups 5-9				120
	Salix spp.	salix spp.	D40L	6' O.C.	D40L Container	40%			Groups7-12				120
	Total In Shrubs Mix C												360

PLANT AND MATERIALS

Coopey Quarry ODOT
T 1 N R 5 E Section 14, TL 00600
NSA Application

SHEET 4 of 5

PLANT and MATERIAL SCHEDULE - Coopey Quarry - Mixed Coniferous Woodland (Cont'd.)

Plant Type	Botanical Name	Common Name	Size	Spacing	Root Type	Percent Mix	Plant Condition	A.S.N.S.	Layout	Notes	Irrigation	Sheet Number & Quantity	TOTAL
Permanent Seeding Mix No.1	Achillea millifolium	common yarrow	Seed				PLS/Acre	0.14			N/A		7.9
	Anaphalis margaritaceae	pearly everlasting	Seed				PLS/Acre	0.08			N/A		
	Asclepias speciosa	showy milkweed	Seed				PLS/Acre	7.36			N/A		
	Aster subspicatus	aster spp.	Seed				PLS/Acre	0.91			N/A		
	Bromus carinatus	mountain brome	Seed				PLS/Acre	16.58			N/A		
	Collinsia grandiflora	giant blue-eyed Mary	Seed				PLS/Acre	1.33			N/A		
	Deschampsia elongata	slender hairgrass	Seed				PLS/Acre	0.87			N/A		
	Elymus glaucus	blue wildrye	Seed				PLS/Acre	4.37			N/A		
	Festuca rubra	red fescue	Seed				PLS/Acre	0.79			N/A		
	Heuchera glabra	piggyback plant	Seed				PLS/Acre	0.31			N/A		
	Lupinus rivularis	riverbank lupine	Seed				PLS/Acre	41.44			N/A		
	Poa secunda var. secunda	Sandberg's bluegrass	Seed				PLS/Acre	0.16			N/A		
	Prunella vulgaris	self-heal	Seed				PLS/Acre	1.30			N/A		
	Rosa gymnocarpa	baldhip rose	Seed				PLS/Acre	2.68			N/A		
	Solidago canadensis	goldenrod	Seed				PLS/Acre	0.10			N/A		
	Symphoricarpos mollis	creeping fescue	Seed				PLS/Acre	1.58				Acre	7.9
Permanent Seeding Mix No.2	Allium cernuum	nodding onion	Seed				PLS/Acre	4.79			N/A		0.32
	Agrostis exarata	spike bentgrass	Seed				PLS/Acre	0.28			N/A		
	Aster subspicatus	Douglas aster	Seed				PLS/Acre	0.43			N/A		
	Camassia leichtlinii	great Camas	Seed				PLS/Acre	9.90			N/A		
	Carex stipata var. stipata	sawbeaked sedge	Seed				PLS/Acre	1.22			N/A		
	Collinsia grandiflora	giant blue-eyed Mary	Seed				PLS/Acre	1.00			N/A		
	Delphinium nuttallii	Nuttall's larkspur	Seed				PLS/Acre	0.29			N/A		
	Deschampsia elongata	slender hairgrass	Seed				PLS/Acre	0.41			N/A		
	Downingia elegans	elegant calicoflower	Seed				PLS/Acre	0.14			N/A		
	Lupinus rivularis	riverbank lupine	Seed				PLS/Acre	19.50			N/A		
	Elymus glaucus	blue wildrye	Seed				PLS/Acre	6.58			N/A		
	Plagiobothrys figuratus	fragrant popcorn flower	Seed				PLS/Acre	0.51			N/A		
	Plectritis congesta	sea blush	Seed				PLS/Acre	0.99			N/A		
	Poa secunda var. secunda	Sandberg's bluegrass	Seed				PLS/Acre	0.49			N/A		
	Saxifraga oregana	Oregon saxifrage	Seed				PLS/Acre	2.76			N/A		
	Total In Mix											Acre	0.32

PLANT AND MATERIALS

Coopey Quarry ODOT
T 1 N R 5 E Section 14, TL 00600
NSA Application

Coopey_Plan_Shts.dgn :: Default 11/7/2017 3:04:10 PM hwyr12y

Rotation: 0° Scale: 1"=100'

Oregon
Kate Brown, Governor

Department of Transportation
Region 1 Headquarters
123 NW Flanders St
Portland, OR 97209-4012
Phone: (503)731-8200
Fax: (503) 731-8259

July 7, 2017

To: Dan Bacon, District 2 C Manager

From: Ben White, ODOT Region 1 Biologist

RE: Biological Resources Impact Memo
Coopey Quarry Disposal Site Maint Number: 17016
Multnomah County, Oregon

The following Biological Resources report satisfies Oregon Department of Transportation's (ODOT) requirement to address potential effects on the Columbia River Gorge National Scenic Area designated species for the land-use permit application administered by Multnomah County. The proposed disposal project is located between I-84 and the Historic Columbia River Highway (HCRH), approximately 2.5 miles west of Multnomah Falls at HCRH mile-post (MP) 15.3, in Multnomah County. The work will occur within Coopey Quarry parcel and adjacent ODOT right-of-way (ROW). The location is classified as a Special Management Area (SMA) in the Columbia River Gorge Management Plan (US Forest Service 1999). The report addresses species and resources only identified in the USFS Region 6 Sensitive Species (2015) as cited in the management plan.

Figure 1. Project Location Map and API

Exhibit A.3.c

Project Scope and Area

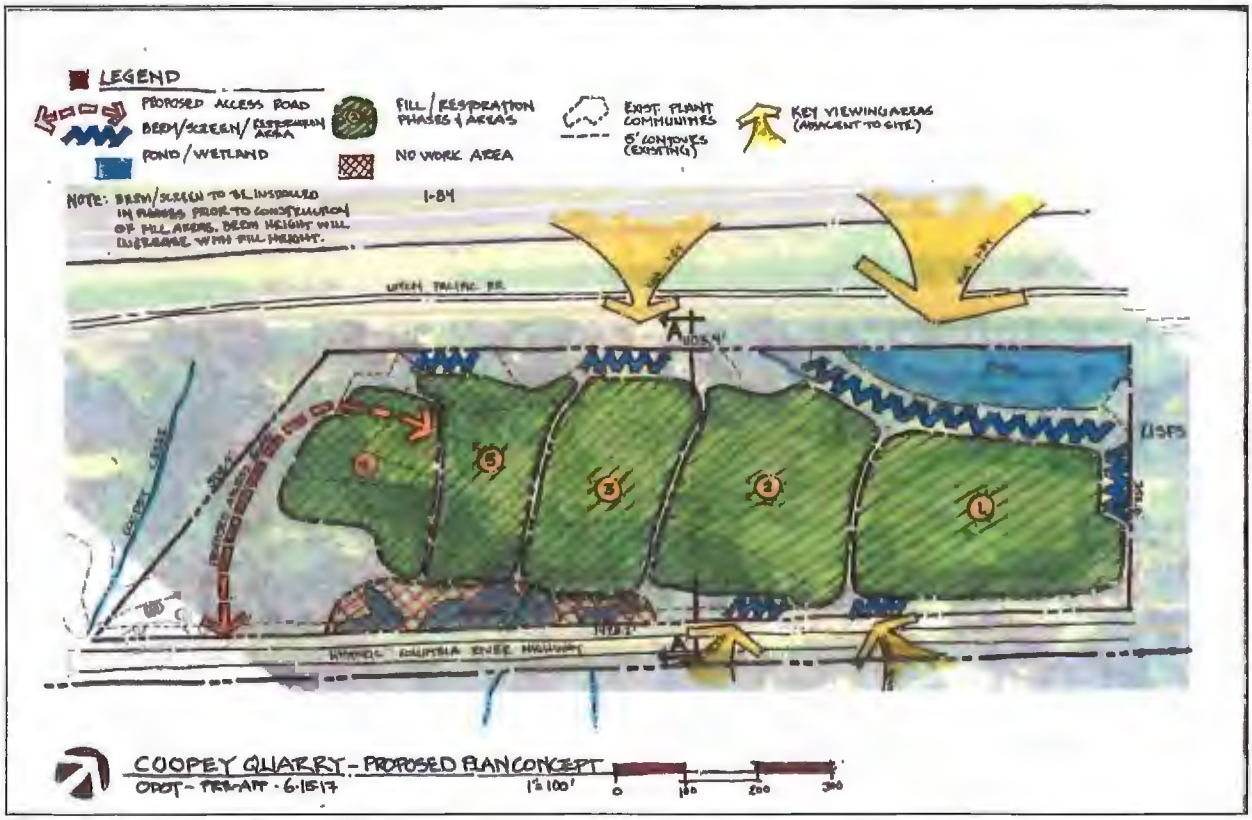


Figure 2. Preliminary disposal fill plan and sequencing showing work zones and berm locations.

The proposed project will create a local disposal site for slide material coming from ODOT owned facilities within the Columbia River Gorge National Scenic Area. In preliminary design, ODOT is planning for planted berms to visually screen the project from both the HCRH and I-84 as well as to act as a sediment barrier between the Beaver Pond and construction. Debris from local landslides will then be deposited in zones as marked in figure 2, starting on the east end of the property with disposal phase 1, and moving east to phase 4 as each area is filled to the final grade.

Access will be improved to the site location. An unimproved, existing access road will be improved for approximately 250 feet from the base of the quarry to up to the top of the hill and then approximately 12ft x 250ft of new roadway will be cut along the western end of the parcel to avoid wetlands to the east to connect to the HCRC. A small 24ft x 30ft truck bypass will be constructed approximately 30 yards from the highway to screen from HCRH view.

After the disposal activities are completed, the site will be graded and planted with native vegetation to mimic the surrounding mixed forest. Water draining from ephemeral wetlands above the quarry will be kept on site in ephemeral ponds as shown in the final grading plan (Figure 3, attached to document)

Sensitive Species and Available Habitat

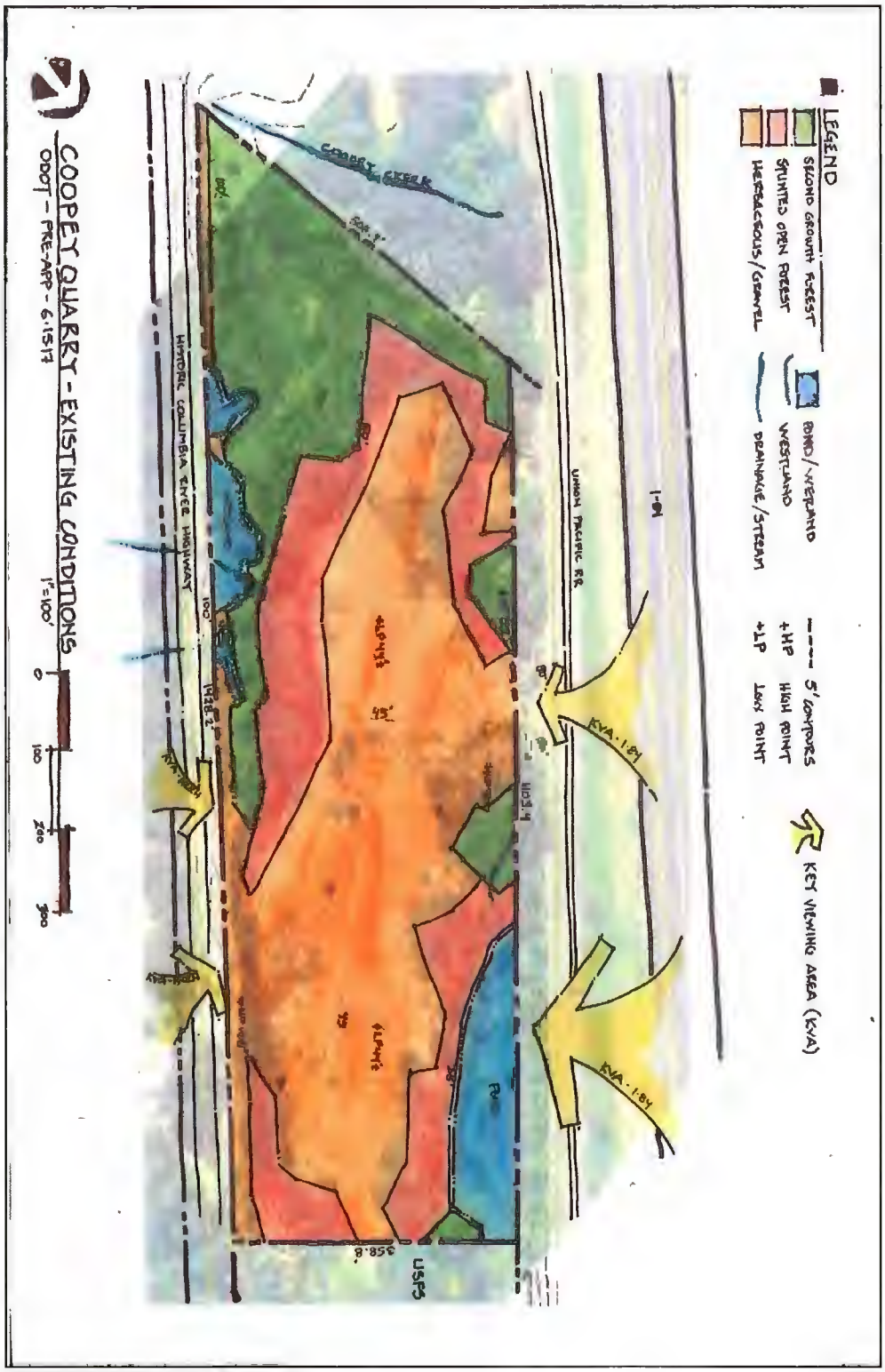


Figure 4. Existing Vegetated Habitat Types

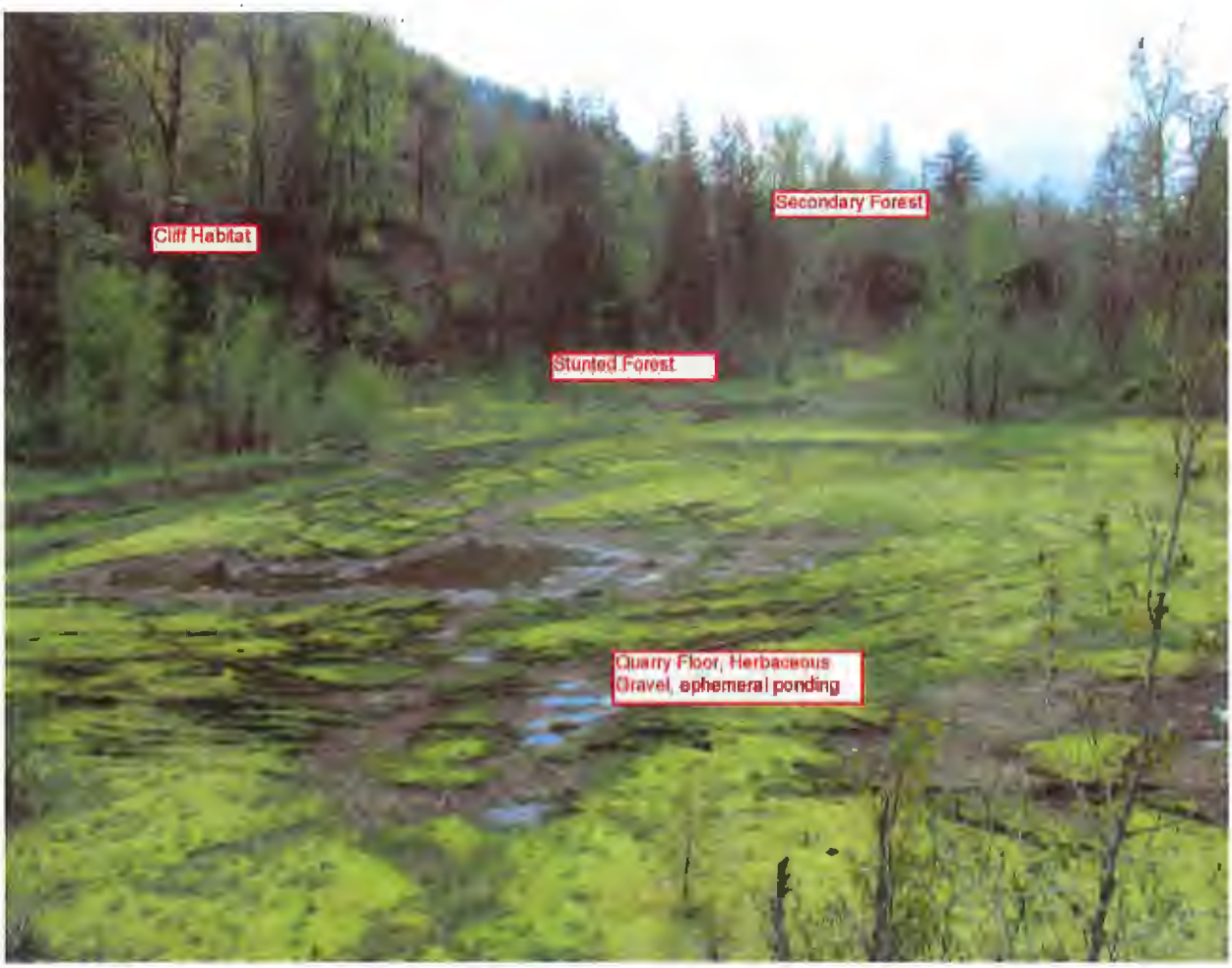


Figure 5. Representative photos of habitat within the quarry site including damage from recent mudding scars. Foreground has quarry bottom of mainly gravels over bedrock, background shows the limited cliff habitat and scrub forest. Secondary forest is restricted to above cliff face. Ephemeral runoff ponding from shallow bedrock shown.

The project is located within a quarry site owned by ODOT that was discontinued around 1970 and is bounded on the south by the HCRH and on the north by the railroad and I-84. Vegetative habitat within the project area consists predominantly of three habitat types (Figure 4), secondary forest above the rim of the old quarry consisting of Oregon oak (*Quercus garryana*), Douglas fir (*Pseudotsuga menziesii*), and black cottonwood (*Populus balsamifera*) and some big leaf maple (*Acer macrophyllum*) . The understory is patchy made up of predominantly poison oak (*Toxicodendron diversilobum*), English ivy (*Hedera helix*) and snowberry (*Symphoricarpos albus*) with blackberry (*Rubus armeniacus*), herb Robert (*Geranium robertianum*), red osier dogwood (*Cornus stolonifera*) and multiple species of fern being common. Invasives and poison oak were dominant closer to the road, transitioning to a higher native component as you move north.

The stunted forested grows along the base of the cliffs ringing the quarry. This area is mainly comprised of Black cottonwood and Red alder (*Alnus rubra*) with blackberry and grasses, and provides minimal cover and foraging for species in the area.

The majority of the quarry area is sparse. Due to compacted gravels and extremely shallow, poor soils mosses and grasses dominate this area. Seasonal inundation occurs from run-off and ponds seasonally on the quarry floor.

A March 24, 2017 review of the Oregon Biodiversity Index Center (ORBIC) records (GIS) lacked sensitive species occurrences within 1000ft of the project area. The nearest record was for the Steelhead (*Oncorhynchus mykiss*) and Coho salmon (*Oncorhynchus kisutch*) in Coopey Creek just over 1000 feet to the west of the project. In addition, occurrences of, Howells Daisy (*Erigeron howellii*) and Oregon Daisy (*Erigeron oreganus*) , approximately 0.35 and 0.45 miles respectively, southeast of the project at the Angel's Rest viewpoint.

The project area contains features have the potential to provide habitat for several sensitive species found in the Columbia River Gorge (Table 1). This assessment is based on potential species distribution and habitat availability. Site visits made on March 3, 2017, April 11, 2017, June 1, 2017, June 20, 2017 and June 27, 2017 did not locate any sensitive, or federally threatened or endangered species within the project with the exception of black swifts (*Cypseloides niger*).

On several site visits, black swifts were seen flying through the project site. Four individuals in total were seen flying in and out of the quarry over I-84. A fissure running along the cliff face could provide nesting habitat for this species, however after an exhaustive binocular search and stationary monitoring during the June 1, 2017 site visit, no signs of nesting by any species was located.

The only terrestrial federally threatened species in this part of the gorge is the Northern Spotted owl (*Strix occidentalis caurina*). Though critical habitat is located 1.35 miles southeast of the project site, the nearest recorded nest location is approximately 3.8 miles southeast of the project location.

Table 1. List of USFS Region 6 Forester Special Status Species with potential habitat within the project API.

Species	Status (Fed/OR/ORBIC)	Habitat Potentially Impacted	Species Presence
Avian			
Northern spotted owl (*Strix occidentalis caurina*)	FT/ST/1	Mixed old growth forests with high canopy structure.	No suitable habitat
Black Swift (*Cypseloides niger*)	-/-/2	Cliffs and crevice	No nesting at location
Vascular Plants			
Howell's bentgrass (*Agrostis howellii*)	-/SC/1	Moist Shady cliffs/canyon walls/ talus slopes/Waterfalls	No
Nutall's larkspur (*Delphinium nuttallii*)	-/-/2	undisturbed dry cliffs/open ground/moist lowlands	No
Howell's daisy (*Erigeron howellii*)	-/SC/1	Most Rocky Sites	No
Oregon daisy (*Erigeron oreganus*)	-/SC/1	wet basalt outcroppings / waterfalls	No
Columbia lewisia Lewisia (*columbiana var. Columbiana*)	-/-/2	grassy balds/rocky/talus/slopes	No
Suksdorf's desert parsley (*Lomatium suksdorfii*)	-/SC/1	Semi-open to open dry rocky hillsides	No
White fairypoppy (*Meconella oregana*)	-/SC/1	Open Grasslands/ moist spring/dry summer	No
Barrett's penstemon (*Penstemon barrettiae*)	-/SC/1	dry rocky places/basalt cliffs	No
Violet suksdorfia (*Suksdorfia violacea*)	-/-/2	wet shady areas/ rocks, cliffs, sandy banks	No
Oregon sullivantia (*Sullivantia oregana*)	-/SC/1	Moist shaded cliffs	No

Fed: (-) = no special status, FE = federally endangered, FT = federally threatened, FC = federal candidate. OR State: (-) = no special status, SE = state endangered, ST = state threatened, SC = state candidate, SV = state vulnerable. USFS: (-) = no special status, FE = federally endangered, FT = federally threatened, SEN = USFS Region 6 sensitive species.

Priority Habitats

The only special habitats found on the parcel include cliffs on the south boundary of the quarry, and including three above the quarry along the southern boundary and one beaver pond in the northeast corner of the parcel. The cliffs are approximately 1,000 linear feet long, of which approximately 500ft is vegetated by several species of fern, English ivy and blackberry and transitions into a vegetated steep slope. The remaining 500ft are relatively unvegetated and contain a fissure running horizontally approximately 15ft from the top. These cliffs are during the excavation of the quarry and were likely created in their final form sometime in the early 70s. As of yet, they do not appear to be providing habitat for any endemic or sensitive species.

Of the wetlands, three are located between the HCRH and the quarry. These wetlands fed from the highway runoff and local groundwater and eventually drain over the cliff onto the quarry floor. The beaver pond is located on the NE corner of the parcel. It is bounded on the north by the RR embankment, and the south and west by the quarry floor and on the east by the USFS property. The banks are dominated with reed canary grass, red alder, and yellow flag iris. No sensitive species were found utilizing this area and this portion of the parcel will not be impacted by disposal activities.

Potential Impacts

Multiple site visits were made to survey for species that either had recorded occurrences or possible habitat within the general area. Neither sensitive nor endangered floras were encountered on site. Several vertebrate species are also known to occur in the general area including the Northern Spotted owl and the Black swift. The site does not include any large old growth conifers/ nor large snags and therefore it is not anticipated that Northern Spotted owl will be impacted.

In addition, there was no bird activity along the cliff face throughout spring and early summer site visits and the project is not expected to impact cliff nesting birds such as black swifts. Finally, Construction noise levels are not expected to exceed current levels due to the project's location between the highways and the railroad. Lastly, ODOT best management practices (BMPs) and erosion control measures will ensure that effects will not exceed the immediate project area.

Project impacts to priority habitats are relegated to the 1000 feet of cliff face, which will be removed by the filling and restoration of the quarry. No removal or fill will occur within any of the wetlands on site. For impacts to the wetland buffers, please see provided mitigation memo.

In conjunction with ODOT's standard and special specifications, ODOT utilize the following actions to will minimize impacts to and enhance habitat within the quarry site.

1. Retain felled trees. All trees that are cut down during construction will be left on the parcel as downed woody debris.
2. New disturbances to upland forest habitat will be minimized by using existing skid roads where practical. The roadway will be the bare minimum required for equipment access.
3. Noxious weed treatment. In accordance with ODOT specifications, noxious weeds within the project site will be treated and removed.
4. Once disposal activities are complete, the quarry site will be regraded and restored to a natural setting mimicking the surrounding native vegetated communities, including mixed Oak-Conifer forests and shallow ephemeral ponds. See Restoration plan in permit.

No impacts are expected to Threatened, Endangered, or Sensitive species with this project. Though potential cliff habitat will be lost, it was created as recently as the early 70s and is not currently being utilized. The ephemeral ponding will be replaced with a new shallow ponding complex which will be protected from local access (currently from the forest service property). Altogether, at the end of this project, it is anticipated that there will be a net benefit to endemic gorge species and their habitats.

References

USDA Forest Service. 1991. Management Plan for the Columbia River Gorge National Scenic Area. USDA forest Service, Hood River, Oregon.

Oregon Natural Heritage Information Center. March 2017. Biotics, Element Occurrence Record Digital Data Set.

USDA Forest Service. 1999, 2004, 2008, 2011, 2015. Regional Forester's (R-6) Sensitive Species List.

Coopey Quarry.
ODOT M17016
Wetland and Waters Delineation Report
Multnomah County, Oregon

Prepared by:

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July 2017

Exhibit A.3.d

Table of Contents

Introduction

ODOT is considering Coopey Quarry as a disposal site for landslide debris. The winter of 2016-2017 saw heavy rains in the Columbia River Gorge National Scenic Area (CRGNSA). The rain combine with the steep topography and frequent freezing and thawing resulted in a series of landslides. These landslides have filled ODOT's current permanent and temporary disposal sites. Coopey Quarry represents ODOT's best option for a permanent disposal site in the Gorge. This delineation report documents the locations of wetlands on the Coopey Quarry project site. ODOT current plans will avoid these wetlands.

A) Landscape Setting and Land Use:

Coopey Quarry is located north of the Historic Columbia River Highway (HCRH) and south of the railroad tracks, just south of I-84 (see Appendix A, Figure 1). The quarry is east of the Bridal Veil exit and east of Bridal Veil Creek. The Columbia River is just to the north of the site about 500 feet. The old quarry bottom is at about the same elevation as I-84 and the railroad tracks. Steep sloped quarry walls extend up from the quarry bottom to the south and west. Above the quarry wall is Garry Oak and Douglas fir dominated forest. The HCRH runs along the southern boundary of the property at about the same elevation as the top of the quarry wall.

The land use is primarily a transportation corridor, with single family homes on large lots and US forest service land as the primary neighbors to the quarry. The quarry has not been used since the 1960s or 1970s. The forested area has a heavily disturbed understory with large amounts of non-native plants. Many of the trees are large and could date back to the 1950s or before.

B) Site Alterations:

Historic site alterations include construction of the HCRH to the south and the railroad and I-84 to the north. A topographic map from 1935 shows what is likely the pre-quarry topography (Appendix A Figure 5). Since then the site was excavated significantly and leveled creating a steep cliff face. The quarry is identified on ROW maps from late 1930s. Construction workers may have used the rock from the quarry for road or railroad base or for retaining walls. The site was used on and off into the 1960s or 1970s. Today the floor of quarry is basically rock or gravel and has soils no deeper than 4 inches. Vegetation grows in spots particularly near the shaded edge of the floor where there tends to be more soil sluffed from above. The top of the cliff wall is rimmed with forest on native soils. A large pond is located in the north east corner of the property and may have been dug or was once part of the Columbia River floodplain.

C) Precipitation Data Analysis:

Precipitation data was gathered from the National Weather Service Forecast Office – Portland Oregon web site, using the Daily Climate Report weather information for Troutdale, OR. The rainfall year to date was above normal (Table 1). That was primarily from high rainfall, about 50% above normal, for the three months before the April 18th Sampling Date (Table 2). Seasonal effects on hydrologic indicators were considered during the delineation. The WETS table for Bonneville Dam indicated that the growing season extends from February 7 to December 22.

Table 1. Precipitation Data

Field Dates	Observed Rainfall on Field Date(s) (in.)	Observed Rainfall Two Weeks Prior to Field Date (in.)	Percent of Normal Rainfall for the Water Year to Date (4/18/2017)	Percent of Normal Precipitation for Three Months Prior to the Field Date
January 15, 2015	0.09	2.45	113%	112%

Table 2. Monthly Precipitation Data			
Month	**Precipitation**	**Normal**	**%/Normal**
Feb-17	8.01	5.09	157%
Mar-17	7.38	4.64	159%
Apr-17	5.41	3.85	141%

D) Methods:

The routine methodology was used in determining the presence of wetlands and delineating wetland boundaries as described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Western Mountains, Valleys, and Coast Regional Supplement to the Army Corps of Engineers Manual* (ACOE 2010).

Prior to on-site investigation, the NRCS Soil Mapping data base was reviewed for soil types in the project area (Appendix A, Figure5). The NWI maps for the site were also reviewed (Appendix A, Figure 4). Research was conducted on whether other delineations had been conducted, or if the project area was included in any Local Wetland Inventory. The API was reviewed for evidence of areas that would meet the three wetland field criteria.

Paired plots, and sometimes a row of three, were located close to the wetland boundary to determine key characteristics that differentiated the upland from the wetland. Scattered upland plots documented potential wetland sites that did not meet all three criteria.

Plant communities were evaluated in three foot by three foot square plots for all vegetation classes. These small plots are useful for finding the small details that separate the upland plant community from the wetland plant community and allow for a more accurate delineation. Larger plots are useful for effectively sampling the diversity of trees, but the goal for delineating wetlands is not to characterize the overstory plant community but to find the wetland boundary within a few feet.

Potentially regulated waterways were also identified and flow duration and connections to regulated waters were reviewed during the site investigation. The Ordinary High Water line for each waterway was flagged for survey with blue and white flagging. Wetland boundaries were flagged with pink flagging.

Preliminary Jurisdictional Determinations for the US Army Corps of Engineers (USACE) were based on guidance in *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States*. Preliminary Jurisdictional determinations for the Oregon Department of State Lands (DSL) were made based on Oregon Administrative Rules (OAR) 141-085-0515.

E) Wetlands and Waters:

The Coopey Quarry site is highly disturbed. The site was extensively excavated from 1930-1970s creating a flat rock quarry floor and cliff walls. Two wetlands (A and B) above the top of the quarry wall have had three ditches trenched through them that drain into the quarry. This water drops from the quarry wall onto piles of rocks, created from freeze and thaw actions over the years and from these piles of rock the water spreads out onto the quarry floor. A seep at the base of the western cliff face drains east to meet the flow from the ditches which spreads out and infiltrates or ponds temporarily in depressions. The soils on the quarry floor are lacking and did not have a depth greater than four inches and therefore did not meet the hydric soil criteria. Even though water is found on the quarry floor during the spring the absence of hydric soils, disqualifies this site from meeting all three wetland criteria. Wetlands that lack hydric soils, need to be analyzed further to see if they meet the criteria for wetlands with problematic (absent hydric soil characteristics) soils (Regional Supplement for Western Mountain Valleys and Coast Problematic Hydric Soils

procedure). Of the problematic soil types, only "recently formed soils" had the potential to apply to this site. To qualify as a recently formed wetland without hydric soils, the wetland by definition has to be recently formed. The ponding on the quarry floor does not qualify as recent, having been in place seasonally for over 40 years. Further, if hydric soils indicators have not developed in that time, they are not likely to develop. Therefore, the ponding on the quarry floor does not qualify as a recently formed wetland and does not meet the criteria for wetlands with problematic (lacking hydric soil characteristics) soils. See datasheets 9, 10, 11, 12, 13 and 15 for the conditions on the quarry floor.

The flow of water across the quarry floor was dispersed enough to prevent formation of channel. In a few instances the water was routed in a tire track. Therefore there was no stream determined to occur in the quarry.

Wetlands

Four areas on the project site met the three criteria for wetlands (Table 3 and Appendix A Figure 2). These are all small depressions located above the quarry wall.

Table 3. Wetlands and Ponds

Feature	Cowardin Class[1]	HGM Class[2]	Lat-Long	Size in API (ac)	Sample Plots
Wetland A	PEM	Depressional closed nonpermanent	45.56529 -122.16512	0.02	SP 16-17
Wetland B	PEM	Depressional closed nonpermanent	45.56502 -122.16563	0.20	SP 1-2
Wetland C	PEM	Depressional closed nonpermanent	45.56476 -122.16606	0.04	SP 3-4
Wetland D	PFO	Depressional closed nonpermanent	45.56478 -122.16665	0.002	SP 7-8
Pond E	POW		45.46701 -122.16429	0.58	Not Applicable

[1] Cowardin et al 1979
[2] Adamus et al 2001

Wetland A: Wetland A is a narrow ditched wetland. It receives water from stormwater runoff from the HCRH and a small depressional wetland south of the HCRH. Water flows north through the wetland and over the quarry wall. The wetland is seasonally wet, drying out on most years by the end of June. The wetland is dominated by reed canarygrass with water parsley in the wetter portions and Douglas spirea along the edge. Large black cottonwood trees are found outside of the wetland to the north. A high water table in April demonstrated the presence of wetland hydrology. The soils are a mottled silt loam indicating seasonal saturation. The Wetland was delineated by a sharp topographic break, soil saturation, presence of mottles and a change from vegetation dominated by reed canary grass to one dominated by Armenian blackberry and Wood's rose.

Wetland B: Wetland B is a narrow ditched wetland. It receives water from stormwater runoff from the HCRH through a culvert under the roadway. Ditches direct water from the wetland to two locations where the water flows north over the quarry wall. The wetland is seasonally wet drying out on most years by June. The wetland is

dominated by reed canarygrass and velvetgrass, with some willow, and black cottonwood. A high water table in April demonstrated the presence of wetland hydrology. The soils are a mottled silt loam indicating seasonal saturation. The Wetland was delineated by a sharp topographic break, soil saturation, presence of mottles and a change from vegetation dominated by reed canary grass to one dominated by Armenian blackberry and Wood's rose.

Wetland C: Wetland C is a small shallow isolated depression. Water collects seasonally from rainfall and runoff from HCRH. The wetland is seasonally wet drying out on most years by June. The wetland is dominated by common broadleaf lupine and common camas. A high water table in April demonstrated the presence of wetland hydrology. The soils are a mottled silt loam indicating seasonal saturation. The Wetland was delineated by a sharp topographic break, soil saturation, presence of mottles and a change from vegetation dominated by Lupine and camas to one dominated by Oak and Snowberry.

Wetland D: Wetland D is a very small shallow isolated depression. This wetland was created when a road to the Quarry prevented water from flowing north. It collects water seasonally from rainfall and runoff. The wetland is seasonally wet drying out on most years by June. The wetland is dominated by Oregon ash and nootka rose. A high water table in April demonstrated the presence of wetland hydrology. The soils are a mottled silt loam indicating seasonal saturation. The Wetland was delineated by a sharp topographic break, soil saturation, presence of mottles and a change from vegetation dominated by Oregon ash to one dominated by Ox-eyed Daisy.

Ponds

The northeast corner of the quarry is a pond. On the property, the pond has formed on gravel with large boulders on its shore. It appears that it was excavated at some time in its past prior to 1935. The pond extends offsite and wetland conditions, including hydric soils likely exist on adjacent parcels. The pond is fringed with reed , red alder and yellow flag iris. The OHWM was identified by clear debris racks and changes in vegetation from reed canarygrass and red alder to Armenian blackberry.

F) Deviation from LWI or NWI:

The NWI and LWI map identified the pond but not the wetland areas (Appendix A, Figure 3).

G) Mapping Method:

The on-site wetland boundaries and all plots were flagged in the field by ODOT wetland professionals using the most appropriate methods to capture the wetland boundaries and locations of wetland data plots accurately. The mapping accuracy of the wetland boundaries is less than 1 meter.

H) Additional Information:

Preliminary Jurisdictional determinations were made by ODOT staff on the four areas meeting the wetland criteria and the pond (Table 3). Per the DSL regulation (OAR 141-085-0515(6 and 7)), artificially created wetlands and ponds created entirely in uplands are exempt. We have a topographic map of the quarry site in 1935. This map compared to the current topography shows the site was extensively excavated. Any wetland that would have formed on the quarry floor, would be considered exempt by DSL because it was formed in upland by surface mining (OAR 141-085-0515(7)(g)). The small Wetland D formed in the upland areas when a road was created blocking a natural drainage. This wetland was created artificially and should not be regulated by DSL. The other three wetland appear to have formed naturally and should be considered jurisdictional to DSL (OAR 141-85-0515(4)). Ponds are regulated by DSL to their OHWM (OAR 141-85-0515(3)).

Per USACE guidance, all four wetlands areas are isolated and not connected to traditional navigable waters. The four wetlands, which are small and poorly functioning, are unlikely to have a significant nexus or effect on the very

large Columbia River the closest traditional navigable waterway. It is unlikely that the USACE would take jurisdiction over these wetlands. The pond could have been part of the Columbia River. The geomorphologic location would suggest that the pond was once connected to the Columbia River, wetland and floodplain complex and therefore regulated by the USACE. There is no other evidence suggest that it is not. Additional evidence of how the historic nature of the site could change this determination.

Table 4. Preliminary Jurisdictional Determination for Wetlands and Ponds

Feature	Cowardin Class[1]	HGM Class[2]	DSL Determination	USACE Determination
Wetland A-C	PEM	Depressional closed nonpermanent	Regulated Wetland(OAR 141-085-0515 (4))	Non Jurisdictional – small low functioning wetland that does not meet nexus.
Wetland D	PFO	Depressional closed nonpermanent	Exempt (Not regulated)– as a an artificially created wetland (OAR 141-085-0515 (6))	Non Jurisdictional – small low functioning wetland that does not meet nexus.
Pond E	POW		Regulated Pond (OAR 141-085-0515 (3))	Jurisdictional – potential historic connection to the Columbia River

I) Results and Conclusions:

Preliminary jurisdictional determinations made by ODOT staff identified a pond regulated by the USACE and DSL and three wetland regulated by DSL. If impacts are expected to any of these wetlands the USACE and DSL can verify and formalize this preliminary determination.

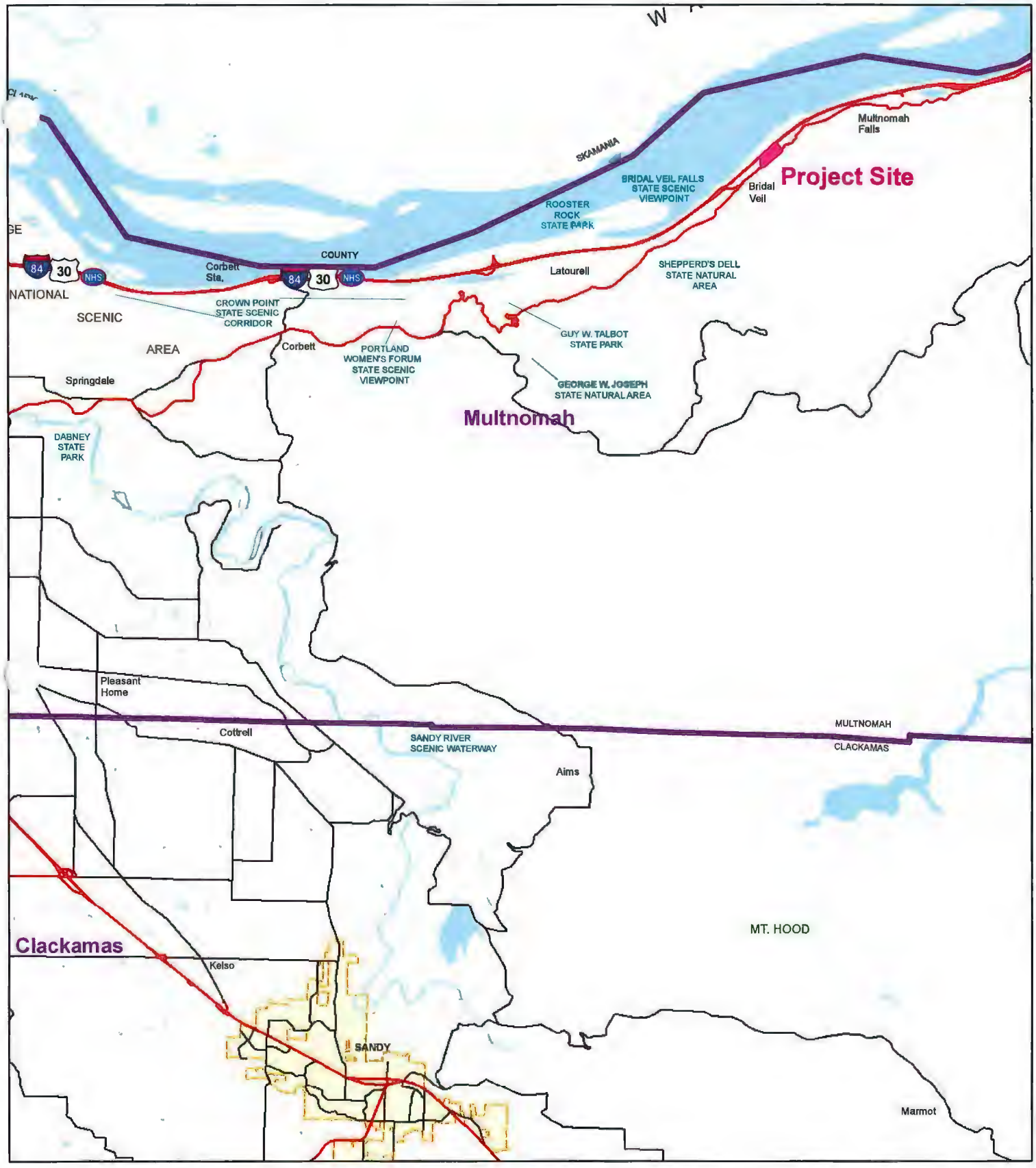
J) Disclaimer:

This report documents the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

K) List of Preparers

Ken Sargent	Wetland Specialist, ODOT Region 1	Lead Author
Ben White	Biologist, ODOT Region 1	Technical Reviewer
Mary Young	REC, Region 1	Technical Reviewer

Appendix A
Figures



OREGON DEPARTMENT OF TRANSPORTATION

Coopey Quarry

Figure 1

Overview

0 4,350 8,700 17,400 Feet

N

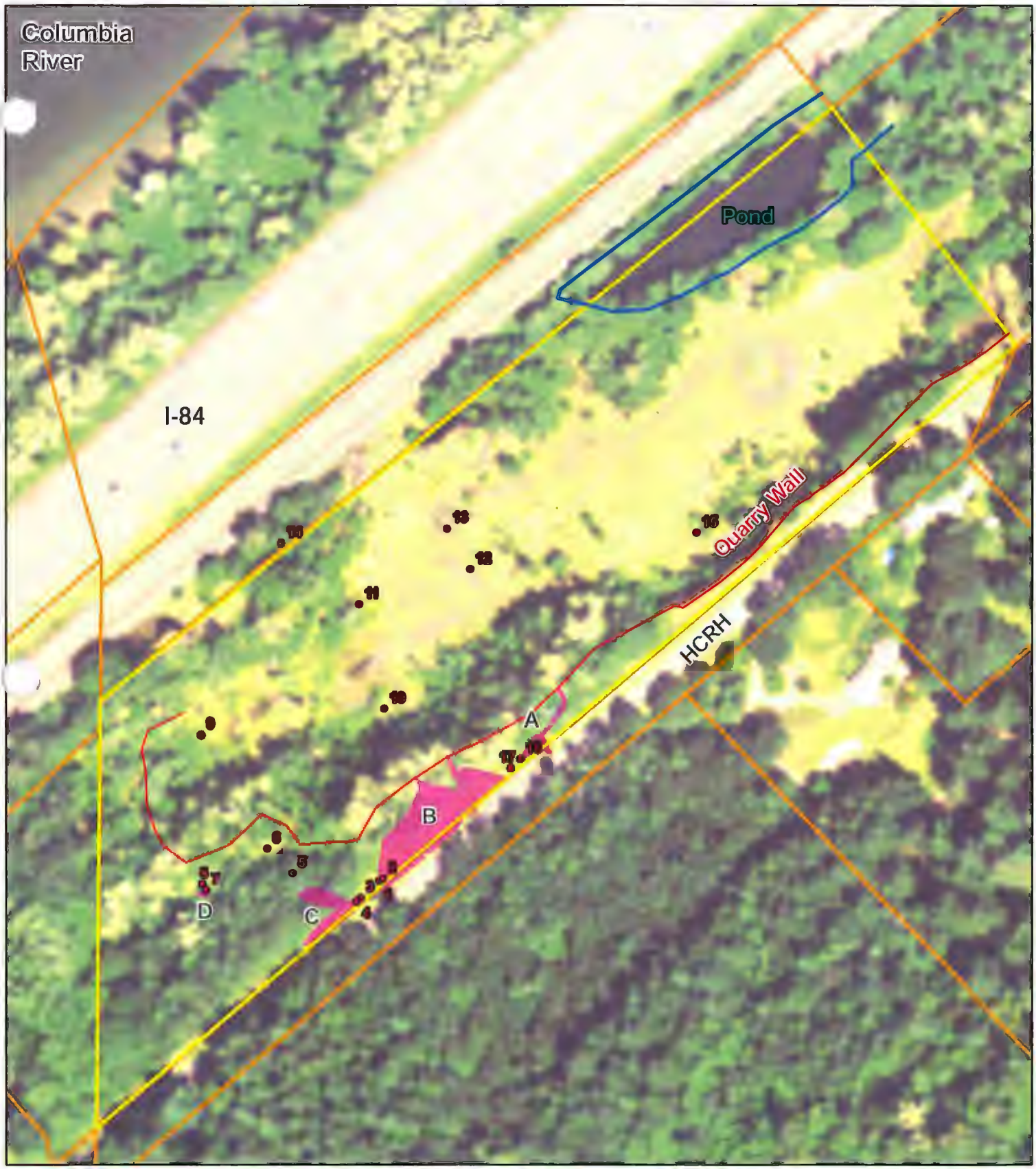
Legend

County

Coopey Quarry

File

Date



OREGON DEPARTMENT OF TRANSPORTATION

Coopey Quarry
Figure 2
Wetlands

0 75 150 300 Feet

N

Legend

- Wetland
- Pond
- Sample Plots
- Coopey Quarry
- Quarry Wall
- Taxlots

File

Date

OREGON DEPARTMENT OF TRANSPORTATION

Coopey Quarry

Figure 3

Wetland Inventory

0 280 560 1,120 Feet

N

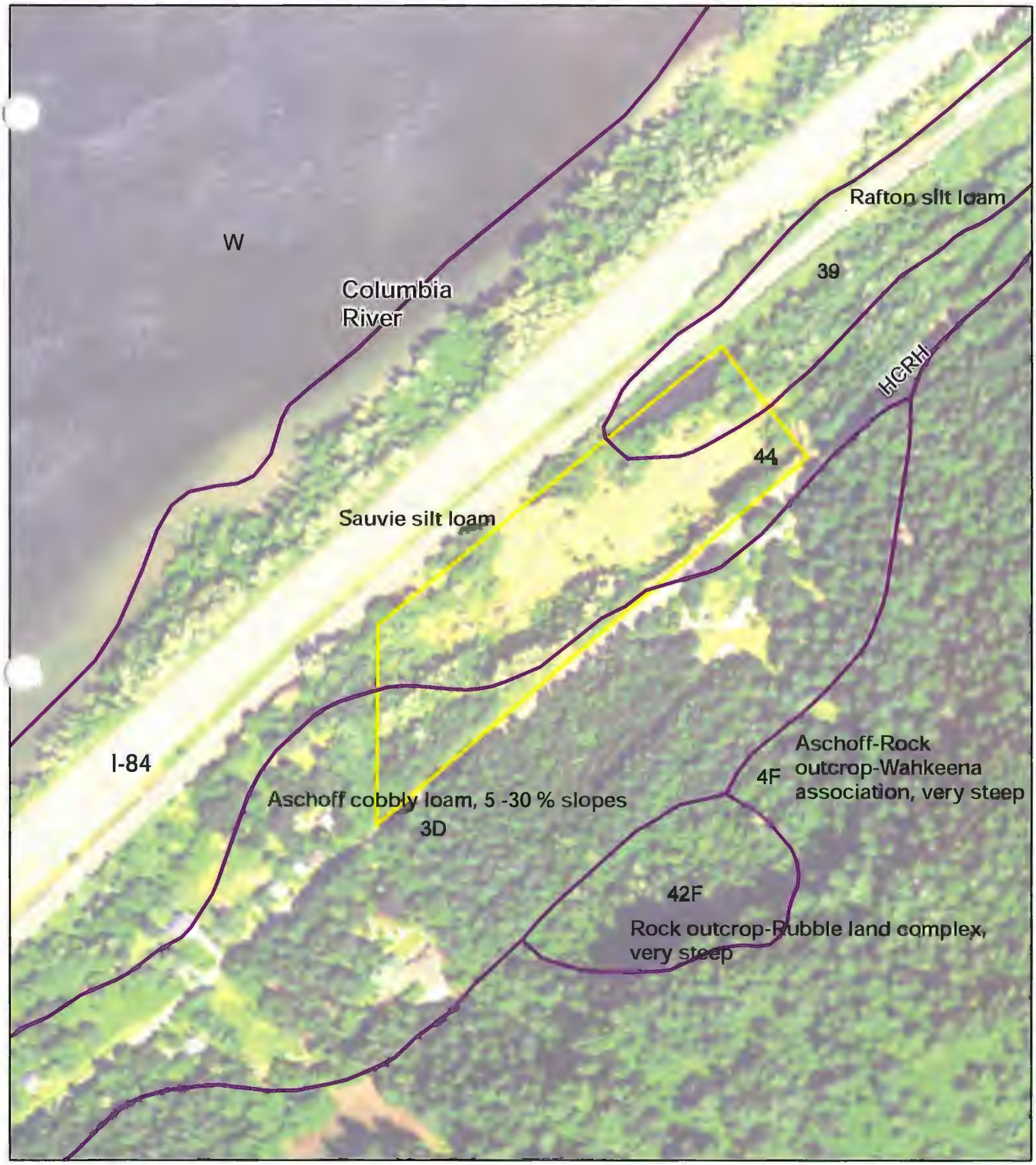
Legend

Wetland (NWI and LI)

Coopey Quarry

File

Date



OREGON DEPARTMENT OF TRANSPORTATION

Coopey Quarry

Figure 4

Soil Survey

0 162.5 325 650 Feet

N

Legend

soilmu_a_or051

Coopey Quarry

File

Date

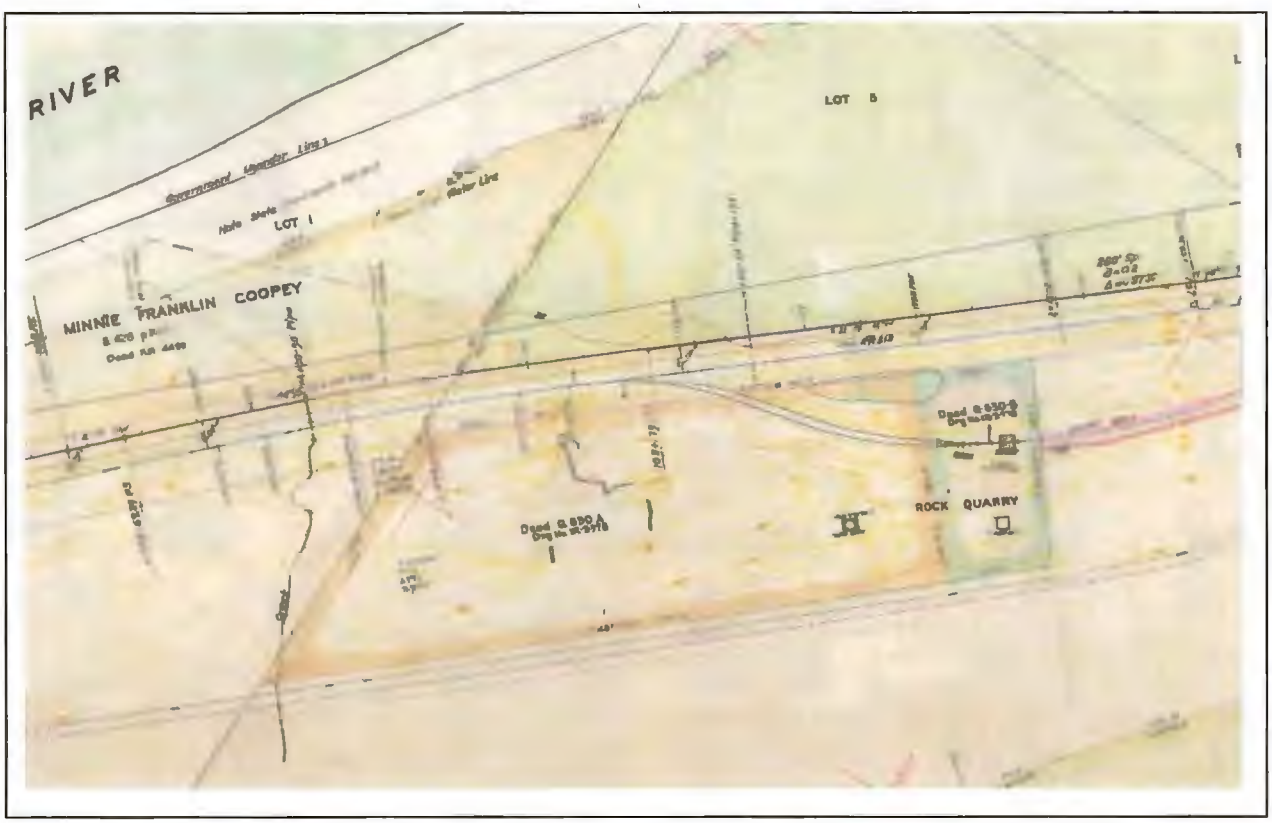


Figure 5. 1935 Topographic Map of Coopey Quarry,

Appendix B
Photos

Photo 1. Wetland A looking north from HCRH. June 1, 2017

Photo 2. Wetland B looking North from near the HCRH. April 18, 2017

Photo 3. Wetland C taken from near the HCRH looking northwest. April 18, 2017

Photo 4. Wetland D looking north west from edge of wetland. 5/31/2017

Photo 5. Pond. Showing debris rack at OHWM. 6/1/2017

Photo 6. Pond from western tip looking east. 6/1/2017

Photo 7. Quarry Floor on June 1, 2017. Looking west from quarry floor

Photo 8. Quarry floor on April 18, 2017. From above quarry wall looking east.

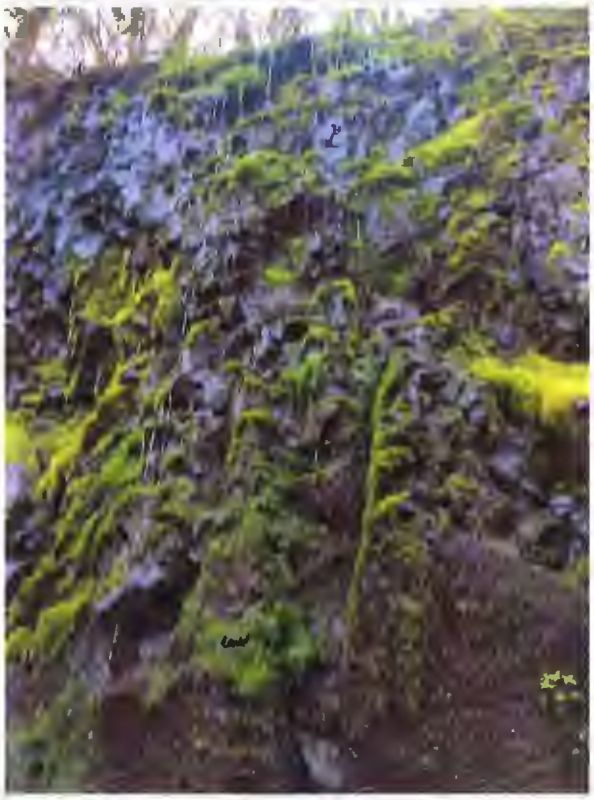


Photo 9. Rock face below wetland ditch.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 1
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56483 Long: -122.16585 Datum:
Soil Map Unit Name: Aschoff cobbly loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ___	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** x
Hydric Soil Present?	Yes ___	No x	
Wetland Hydrology Present?	Yes ___	No x	

Remarks: Site lacked hydric soils and wetland hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Rosa woodsii	10	Y	FACU
2. Rubus armeniacus	30	Y	FAC
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Dactylis glomerata	10		FACU
2. Daucus carota	20	Y	FAC
3. Anthoxanthum odoratum	5		FACU
4. Holcus lanatus	50	Y	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	100	x 3 =	300
FACU species	25	x 4 =	100
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = >3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** x **No** ___

Remarks: More upland than wetland plants.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 3/2						Silt loam	
6-16"	10YR 3/2.5-3	80	7.5YR 3/4	20			Gravelly Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- x Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 2
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56479 Long: -122.16591 Datum:
Soil Map Unit Name: Aschoff cobbly loam 5-30% slopes NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes x No ___
Hydric Soil Present? Yes x No ___
Wetland Hydrology Present? Yes x No ___

Is the Sampled Area within a Wetland? Yes x No ___

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Populus balsamifera (saplings)	30	Y	FAC
2. Rosa woodsii	5		FACU
3. Spirea douglasii	5		FACW
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Holcus lanatus	50	Y	FAC
2. Carex bolanderi	5		FAC
3. Tolmiea menziesii	5		FAC
4. Epilobium ciliatum	5		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	5	x 2 =	___
FAC species	95	x 3 =	___
FACU species	5	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ___

Remarks: site just meets the wetland vegetation criteria

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 2/1	90					Silt loam	
8-16	10YR 2/1	90	10YR 3/4	10	C	M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- x Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** x **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes x No ___ Depth (inches): 4

Saturation Present? (includes capillary fringe) Yes x No ___ Depth (inches): 0

Wetland Hydrology Present? **Yes** x **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 3
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): convex Slope (%): 2
Subregion (LRR): A Lat: 45.56477 Long: -122.16593 Datum:
Soil Map Unit Name: Aschoff cobbly loam 5-30% slopes NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes		No	x
Wetland Hydrology Present?	Yes		No	x

Is the Sampled Area within a Wetland? Yes ___ No x

Remarks: Site was dry , lacked true soil layers with rock predominating at 4".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Agrostis capillaris	40	Y	FAC
2. Blechnum spicant	30	Y	FAC
3. Lupinus latifolius	10		FAC
4. Camassia quamash	10		FACW
5. Fritillaria affinis	5		UPL
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	10	x 2 =	20
FAC species	80	x 3 =	240
FACU species		x 4 =	
UPL species	5	x 5 =	25
Column Totals:	95 (A)		285 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ___

Remarks: site just meets the wetland vegetation criteria

SOIL

Sampling Point:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	10YR 2/1						Gravelley loam	
4"+							Gravel/Rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 4
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56479 Long: -122.16591 Datum:
Soil Map Unit Name: Aschoff cobbly loam 5-30% slopes NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes x No ___
Hydric Soil Present? Yes x No ___
Wetland Hydrology Present? Yes x No ___

Is the Sampled Area within a Wetland? **Yes x No ___**

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Camassia quamash	40	Y	FACW
2. Lunariua annua	20	Y	UPL
3. Tolmiea menziesii	20	Y	FAC
4. Agrosti capillaris	20	Y	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	40	x 2 =	80
FAC species	40	x 3 =	120
FACU species	___	x 4 =	___
UPL species	20	x 5 =	100
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes x No ___**

Remarks: site just meets the wetland vegetation criteria

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 2/1	90	10YR 3/4	10	C	M	Silt loam	
8"+							Gravel/Rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- x Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** x **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes x No ___ Depth (inches): 4

Saturation Present? (includes capillary fringe) Yes x No ___ Depth (inches): 0

Wetland Hydrology Present? **Yes** x **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 5
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56477 Long: -122.16593 Datum:
Soil Map Unit Name: Aschoff cobbly loam 5-30% slopes NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes x	No ___		

Remarks: Site was dry , lacked true soil layers with rock predominating at 4".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus garryana	90	Y	FACU
2. Prunus emarginata	30	Y	FACU
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Symphoricarpos albus	5	Y	FACU
2. Rosa woodsii	5	Y	FACU
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Geranium robertianum	5	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1. Hedera helix	30	Y	FACU
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 17 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	___	x 3 =	___
FACU species	160	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = >3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ___ No x**

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3"	10YR 2/1						Silt loam	
3-10"	10YR 2/2						Silt loam	
10-14	10Y$ 3/3	95	10YR 3/2	5	c	M	Gravelly mixed	
14+"							Rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes x No ___ Depth (inches): 12"

Wetland Hydrology Present? **Yes** x **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 6
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): convex Slope (%): 2
Subregion (LRR): A Lat: 45.56494 Long: -122.16636 Datum:
Soil Map Unit Name: Aschoff cobbly loam 5-30% slopes NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes		No	x
Wetland Hydrology Present?	Yes		No	x

Is the Sampled Area within a Wetland? Yes ___ No x

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Symphoricarpos albus	5	Y	FACU
2. Rubus armeniacus	5	Y	FAC
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Camassia quamash	50	Y	FACW
2. Daucus carota	20		FACU
3. Leucanthemum vulgare	15		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1. Hedera helix	30	Y	FACU
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	50	x 2 =	100
FAC species	5	x 3 =	15
FACU species	40	x 4 =	160
UPL species	___	x 5 =	___
Column Totals:	95 (A)		275 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ___

Remarks: site just meets the wetland vegetation criteria

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	10YR 2/1						Gravelly Silt loam	
2+"							Rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 7
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56479 Long: -122.16664 Datum:
Soil Map Unit Name: Aschoff cobbly loam 5-30% slopes NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes x No ___
Hydric Soil Present? Yes x No ___
Wetland Hydrology Present? Yes x No ___

Is the Sampled Area within a Wetland? **Yes** x **No** ___

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 3'sq)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus latifolia	100	Y	FACW
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: 3'sq)			
1. Rosa nutkana	50	Y	FAC
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	100	x 2 =	200
FAC species	50	x 3 =	150
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	150 (A)		350 (B)

Prevalence Index = B/A = <3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** x **No** ___

Remarks:

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 3/2	90	10YR 3/4	5	C	M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- x Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes x No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes x No ___ Depth (inches): 1

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes x No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 8
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): convex Slope (%): 2
Subregion (LRR): A Lat: 45.56481 Long: -122.16666 Datum:
Soil Map Unit Name: Aschoff cobbly loam 5-30% slopes NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes x No ___
Hydric Soil Present? Yes ___ No x
Wetland Hydrology Present? Yes ___ No x

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Populus balsamifera (seedlings)	5	Y	FAC
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Camassia quamash	50	Y	FACW
2. Lamium purpureum	15		UPL
3. Leucanthemum vulgare	30	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1. Hedera helix	30	Y	FACU
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	50	x 2 =	100
FAC species	5	x 3 =	15
FACU species	30	x 4 =	120
UPL species	15	x 5 =	75
Column Totals:	100 (A)		310 (B)

Prevalence Index = B/A = 3.1

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** x **No** ___

Remarks: site just meets the wetland vegetation criteria

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2"	10YR 2/1						Gravelly Silt loam	
2+"							Rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 9
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56529 Long: -122.16668 Datum:
Soil Map Unit Name: Sauvie silt loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ___	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes x	No ___		

Remarks: Site lacked hydric soils (gravel). The site had seasonal standing water, and wetland vegetation growing basically hydroponically in shallow gravel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Juncus ensifolius	30	Y	FACW
2. Agrostis stolinfera	30	Y	FAC
3. Juncus effusus	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	40	x 2 =	80
FAC species	30	x 3 =	90
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	70 (A)		170 (B)

Prevalence Index = B/A = <3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ___

Remarks:

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	10YR 2/1						Gravelly Silt loam	
2+"							Rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- x Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes x No ___ Depth (inches): 1

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 10
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56538 Long: -122.16584 Datum:
Soil Map Unit Name: Sauvie silt loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ___	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes x	No ___		

Remarks: Site lacked hydric soils (gravel). The site had seasonal standing water, and wetland vegetation growing basically hydroponically in shallow gravel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Populus balsamifera	30	Y	FAC
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Schedonorus arundinaceus	10	Y	FAC
2. Agrostis stolinfera	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	60	x 3 =	___
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ___

Remarks: Facultative plant community capable of growing in upland or wetland.

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	10YR 2/1						Gravelly Silt loam	
2+"							Rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- x Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes x No ___ Depth (inches): 2

Saturation Present? (includes capillary fringe) Yes x No ___ Depth (inches): 0

Wetland Hydrology Present? **Yes** x **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 11
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56584 Long: -122.16546 Datum:
Soil Map Unit Name: Sauvie silt loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes x	No ___		

Remarks: Site lacked hydric soils (gravel). The site had seasonal standing water, and some vegetation growing

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Rubus armeniacus	15	Y	FAC
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1. Festuca rubra	50	Y	FAC
2. Agrostis capillaris	30	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ___	x 1 =	___
FACW species ___	x 2 =	___
FAC species ___	x 3 =	___
FACU species ___	x 4 =	___
UPL species ___	x 5 =	___
Column Totals: ___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ___

Remarks:
Facultative community capable of growing in upland or wetland.

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3"	10YR 2/2						Gravelly Silt loam	
3+"							Rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- x Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes 2 No ___ Depth (inches): 2

Wetland Hydrology Present? **Yes** x **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 12
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56584 Long: -122.16546 Datum:
Soil Map Unit Name: Sauvie silt loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes** ___ **No** x
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes x	No ___		

Remarks: Site lacked hydric soils (gravel). The site had seasonal standing water and no vegetation growing

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ___ (A)
Total Number of Dominant Species Across All Strata: ___ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ___ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	___	x 3 =	___
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ___ **No** x

Remarks:
No Vegetation

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3"	10YR 2/2						Gravelly Silt loam	
3+"							Rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- x Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes 2 No ___ Depth (inches): 2

Wetland Hydrology Present? **Yes** x **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 13
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56584 Long: -122.16546 Datum:
Soil Map Unit Name: Sauvie silt loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes		No	x
Wetland Hydrology Present?	Yes		No	x

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Populus balsamifera (saplings)	10	Y	FAC
2. Fraxinus latifolia	10	Y	FACW
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1. Schedonorus arundinaceus	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ___ (A)

Total Number of Dominant Species Across All Strata: ___ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ___ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	10	x 2 =	___
FAC species	20	x 3 =	___
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = <3

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** x **No** ___

Remarks:
No Vegetation

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0"							Rock spalls and gravel to surface	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry but appears to hold water seasonally.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/19/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 14
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56483 Long: -122.16585 Datum:
Soil Map Unit Name: Sauvie silt loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ___	**Is the Sampled Area within a Wetland?** Yes ___ No x
Hydric Soil Present?	Yes ___	No x	
Wetland Hydrology Present?	Yes ___	No x	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	100	Y	FAC
2.			
3.			
4.			
	___ = Total Cover		

Sapling/Shrub Stratum (Plot size: ___)			
1. Cornus sericea	50	Y	FACW
2.			
3.			
4.			
5.			
	___ = Total Cover		

Herb Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		

Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	___	x 3 =	___
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = <3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ___

Remarks:

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1						Silt loam	
6-16	10YR 3/2	98	10YR 3/4	2			Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry but appears to hold water for short periods of time

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/19/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 15
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56598 Long: -122.164442 Datum:
Soil Map Unit Name: Sauvie silt loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes x No ___
Hydric Soil Present? Yes ___ No x
Wetland Hydrology Present? Yes x No ___

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Populus balsamifera (saplings)	40	Y	FACW
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1. Camassia quamash	80	Y	FAC
2. Cichorium intybus	2		
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	___	x 3 =	___
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = <3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** x **No** ___

Remarks:

SOIL

Sampling Point: 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1						Silt loam	
2+-							Rock	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes x No ___ Depth (inches): 2

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry but appears to hold water for short periods of time

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/19/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 16
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.56524 Long: -122.16521 Datum:
Soil Map Unit Name: Sauvie silt loam NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes	x	No	
Wetland Hydrology Present?	Yes	x	No	

Is the Sampled Area within a Wetland? Yes x No

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Phalaris arundinacea	70	Y	FACW
2. Oenanthe sarmentosa	20	Y	OBL
3. Spirea Douglasii	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	
FACW species	80	x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = <3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
x 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks:

SOIL

Sampling Point: 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 2/1						Silt loam	
8-16"	10YR 2/1	90	10YR 3/4	10	C	M	Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- x Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** x **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes x No ___ Depth (inches): 4

Saturation Present? (includes capillary fringe) Yes x No ___ Depth (inches): 0

Wetland Hydrology Present? **Yes** x **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Coopey Quarry City/County: Multnomah County Sampling Date: 4/18/2016
Applicant/Owner: ODOT Region 1 State: OR Sampling Point: 17
Investigator(s): Ken Sargent Section, Township, Range: 13, T1N, R5E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): A Lat: 45.5652 Long: -122.16525 Datum:
Soil Map Unit Name: Aschoff cobbly loam NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes ___	No x		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Rosa woodsii	30	Y	FACU
2. Rubus armeniacus	30	Y	FAC
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 3'sq)			
1. Vicia cracca	1		FACU
2. Daucus carota	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1. Hedera helix	30	Y	FACU
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	50	x 3 =	300
FACU species	61	x 4 =	100
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = >3

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ___ No x**

Remarks: More upland than wetland plants.

SOIL

Sampling Point: 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3"	10YR 2/1						Silt loam	
3"+							Quarry spalls	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Dry

Coopey Quarry
ODOT M17016
Mitigation Report

Multnomah County, Oregon

Prepared by:

Oregon Department of Transportation (ODOT)
Region 1
123 NW Flanders
Portland, OR 97209-4012
503-731-8427

November 8, 2017

Exhibit A.3.e

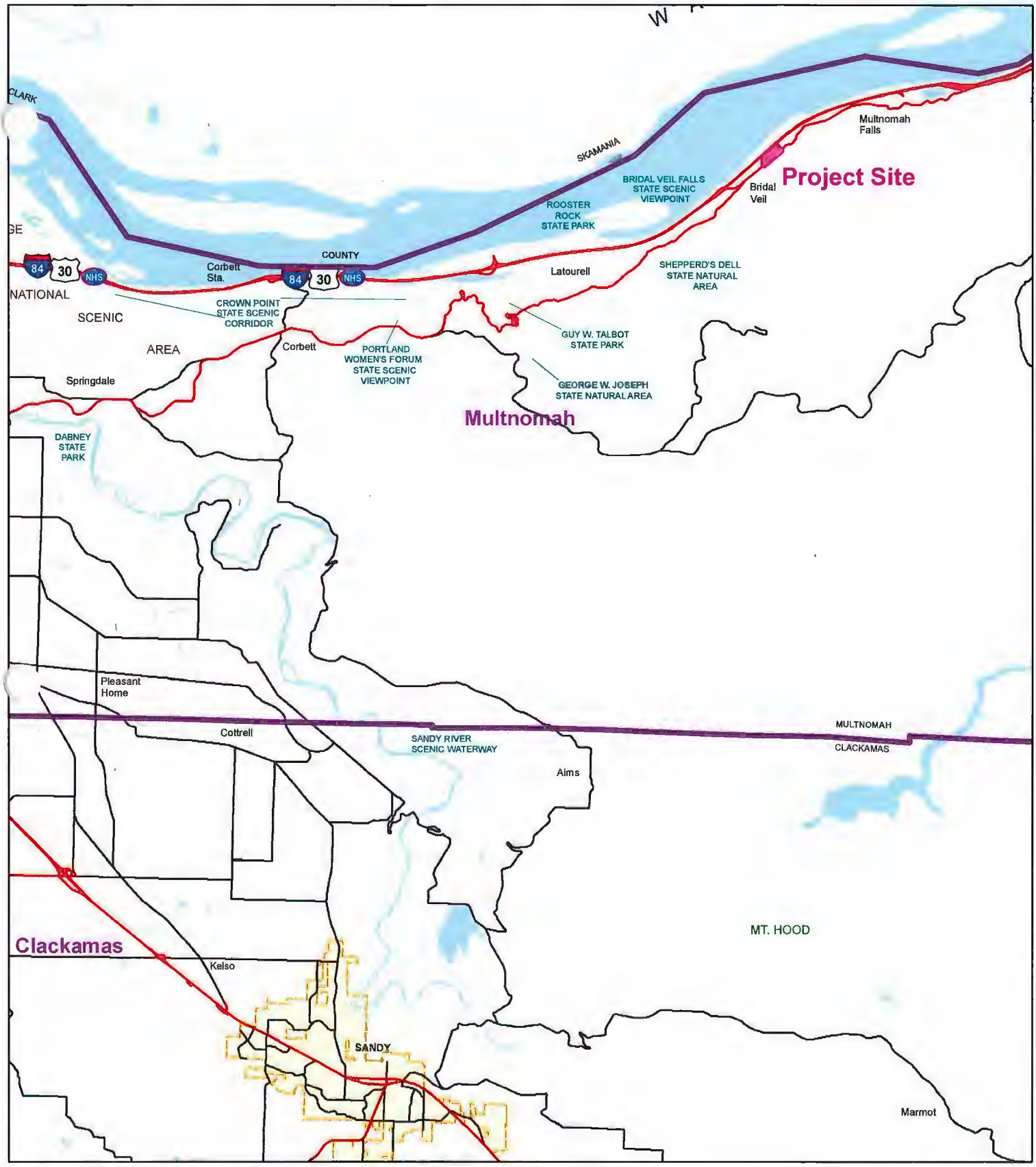
Table of Contents

1. Introduction

ODOT is considering Coopey Quarry as a disposal site for landslide debris (**Figure 1, next page**). The winter of 2016-2017 saw heavy rains in the Columbia River Gorge National Scenic Area (CRGNSA). The rain combined with the steep topography and frequent freezing and thawing resulted in a series of landslides. These landslides have filled ODOT's current permanent and temporary disposal sites. In addition, the Eagle Creek fire of this past summer has created more slides and debris. Barren slopes have increased the potential for more slides this coming winter. Coopey Quarry represents ODOT's best option for a permanent disposal site in the Gorge. It could take five to thirty years to fill the quarry. This will depend on how much slide debris is produced in the Gorge which fluctuates considerably from year to year. To access the old quarry site, a new roadway is proposed through existing buffer around priority habitats. This mitigation report documents impacts to the priority habitats and buffers and proposes mitigation for these impacts in compliance with Multnomah County's CRGNSA Ordinance, Chapter 38.

Coopey Quarry was chosen as a potential disposal site in part because of its disturbed nature. Historic site alterations include construction of the Historic Columbia River Highway (HCRH) to the south and the railroad and I-84 to the north. A topographic map from 1935 shows the likely pre-quarry topography (**Figure 2**). Since then, the site was excavated significantly creating a steep cliff face and flat quarry floor. The quarry is identified on ROW maps from late 1930s. The site was used on and off into the 1960s or 1970s. Today the floor of the quarry is rock or gravel with some interstitial soils; where soils are no deeper than 4 inches. Grasses, weeds, moss and lichen cover most of the quarry floor. Within the quarry floor, woody vegetation grows in spots particularly near the shaded southern edge of the floor where there tends to be more soil sluffed from above (**Photo 1).** Red alder (Alnus rubra), Himalayan blackberry (Rubus armeniacus), California brome (Bromus carinatus) are the common dominants with patches of chickory (Cichorium intybus), common camas (Camassia quamash) and black cottonwood (Populus balsamifera) saplings. The top of the cliff wall is rimmed with forest on native soils. This forest is dominated by Oregon oak (Quercus garryana), Douglas fir (Pseudotsuga menziesii), and black cottonwood (Populus balsamifera) with some big leaf maple (Acer macrophyllum) . The understory is patchy made up of predominantly poison oak (Toxicodendron diversilobum), English ivy (Hedera helix) and snowberry (Symphoricarpos albus) with blackberry (Rubus armeniacus), herb Robert (Geranium robertianum), red osier dogwood (Cornus stolonifera) and multiple species of fern being common.

Photo 1. Photo of Coopey Quarry from center of site looking southeast.



OREGON DEPARTMENT OF TRANSPORTATION

Coopey Quarry

Figure 1

Overview

0 4,350 8,700 17,400 Feet

N

Legend

County

Coopey Quarry

File

Date

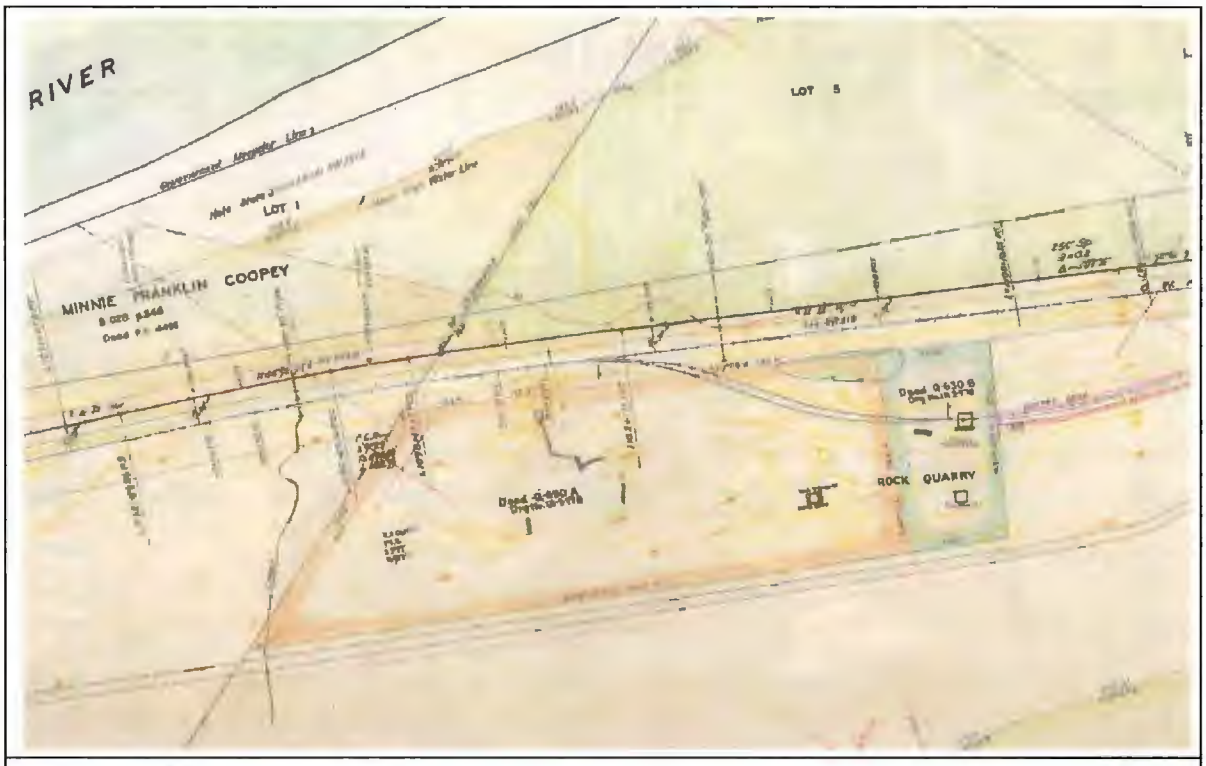


Figure 2. 1935 Topographic sketch of Coopey Quarry.

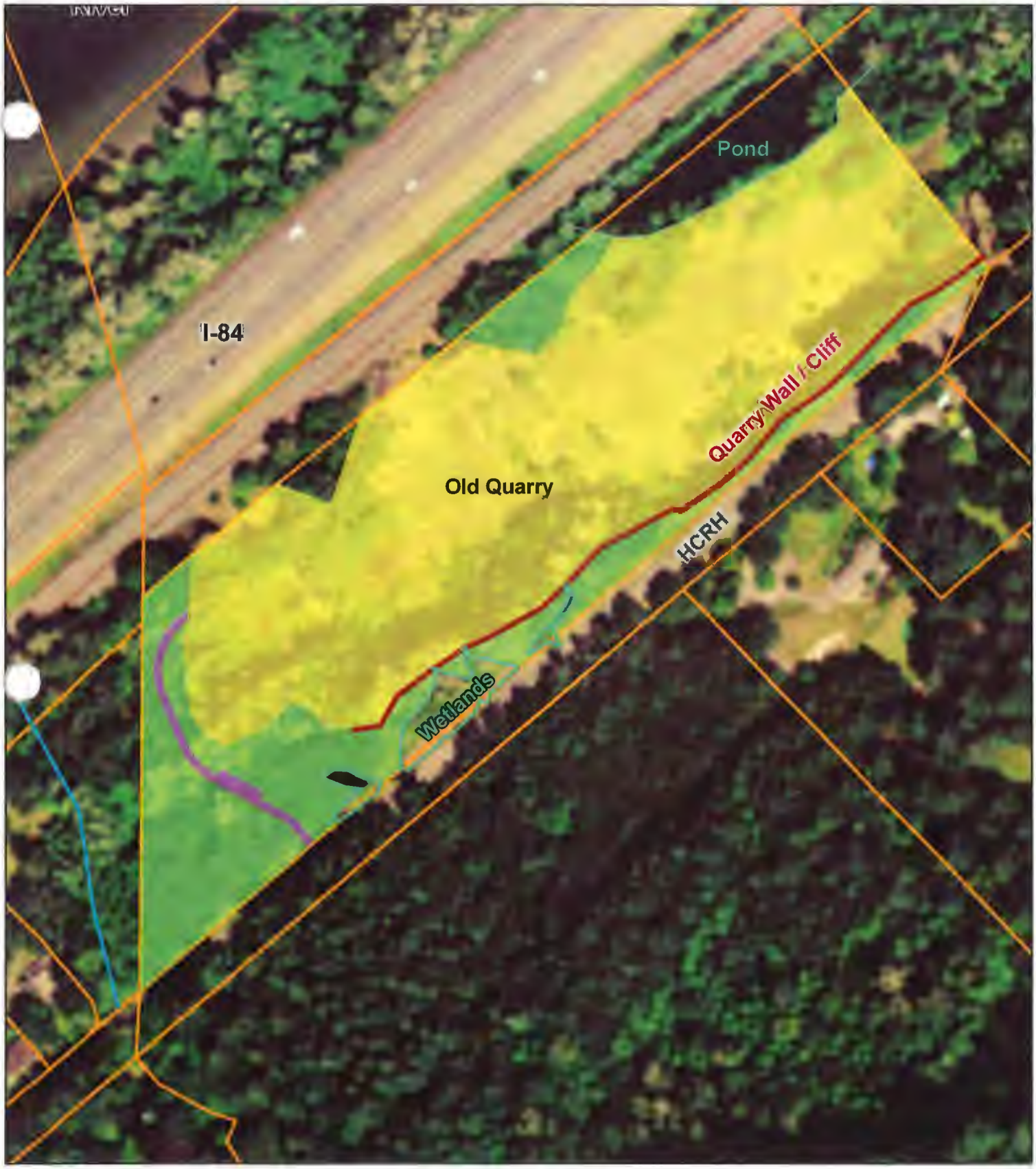
2. Priority Habitats

Several Priority Habitats, as defined by Multnomah County Code (MCC Chapter 38) are located on the project site (**Figure 3**). A large pond is located in the northeast corner of the property and may have been dug in what once was part of the Columbia River floodplain. The shores of the pond are gravel with large boulders indicating that the pond was excavated. Three seasonal wetlands are located along the southern property line, adjacent to the HCRH (See Wetland Delineation Report). Coopey Creek is located off site to the west and appears to be perennial.

The quarry wall, although man-made, provides cliff habitat. The cliffs are approximately 1,000 linear feet long and 20-50 feet tall, of which approximately 500 feet is vegetated by several species of fern, English ivy and blackberry and transitions into a vegetated steep slope. The remaining 500 feet are relatively un-vegetated and contain a fissure running horizontally approximately 15 feet from the top. There are no sensitive plant or wildlife sites on the property (See Biological Resource Impact Memo).

3. Buffers

The pond, wetlands, Coopey Creek and the quarry wall (cliff) were all considered to require a 200 foot NSA buffer. Previously developed areas that provide few if any buffer functions were excluded. This is similar to the NSA analysis used for ODOT's HCRH Trail: Wyeth to Starvation Creek. For the Wyeth to Starvation Creek Trail, existing but abandoned roadways (HCRH) and a gravel parking area were considered existing structures and not buffer. For the Coopey Quarry site, the old quarry was considered and previously developed existing structure. This area is mostly gravel and after fifty years has had some regrowth of vegetation in some areas that may provide "de minimis" buffer functions. Without intervention to restore the site establishment of soils, forest growth and a functioning buffer are centuries away. Excluding the wetlands, pond, and Quarry, the remaining area is mostly buffer (Appendix A, Figure 2). The buffers for different resources overlapped and merged with other buffers. Buffers were not separated by resource.



OREGON DEPARTMENT OF TRANSPORTATION

Coopey Quarry

Figure 3

Buffers and Impacts

0 80 160 320 Feet

N

Legend

- Regulated Wetland
- Quarry Wall
- Stream
- Quarry Area
- Combined Buffer
- Impact Area

File

Date

4. Impacts

No impacts are proposed to wetlands or the pond.

The man-made quarry wall / cliff face will be lost when the disposal site is filled. The quarry wall is about 20-50 feet high and extends 1,000 feet along the southern edge of the project. The wall is not currently used by nesting birds and does not support sensitive cliff dwelling plant species. However, there is potential for this quarry wall to support nesting birds and support cliff dwelling sensitive plant species in the future.

Buffer impacts were determined by calculating the area of the access road passing through the existing buffer. This includes a ten foot lane plus two feet on each side for additional impacts from fill slopes and grading. The access road will impact 0.15 acre of buffer. This impact is not permanent and ODOT will restore the roadway once the disposal site is filled, which is estimated to take between 5-30 years.

The buffer is second growth forest consisting of Oregon white oak (Quercus garryana), Douglas fir (Pseudotsuga menziesii), and black cottonwood and some big leaf maple (Acer macrophyllum) (**Photo 2**). The understory is patchy made up of predominantly poison oak (Toxicodendron diversilobum), English ivy (Hedera helix) and snowberry (Symphoricarpos albus) with blackberry (Rubus armeniacus) and herb Robert (Geranium robertianum).

Photo 2. Photo of buffer habitat. 4/11/2017

5. Mitigation

The project will remove 1,000 linear feet of man-made quarry wall/cliff and 0.15 acre of NSA buffer.

As mitigation for these impacts ODOT will

- Restore Coopey Quarry creating 7.26 acres of buffer
- Restore the original 0.15 acre of buffer impact.
- Remove English Ivy and Himalayan blackberry from 2.60 acre of existing NSA buffer

Approach

The overall goal is to restore a forested hillslope on the current quarry site. Key design elements include

1) Retaining pond and wetlands
2) Using vegetated berms to hide disposal activity from I-84 travelers
3) Creating topography similar to what the site was like in 1935
4) Creating ephemeral ponds to increase plant community and habitat diversity

The Coopey Creek Disposal Site Reclamation Plan (**Appendix A**) will start with planting berms along I-84. These initial berms are designed to hide disposal activity from I-84 travelers. The berms will be planted on the north slopes with native tree species shortly after construction. Other initial restoration activities will include removal of English Ivy and Himalayan blackberry from the retained buffers.

The existing pond shoreline is ringed with smaller red alder, willow, Douglas fir and black cottonwood trees with an understory of Himalayan blackberry (Photo 3). The rocky very shallow soils limit plant growth. ODOT proposes to remove the Himalayan blackberry and retain the larger trees.

ODOT will restore the quarry site continuously as it gets filled. ODOT proposes to fill the quarry from the east to the west in phases (Figure 4). We are anticipating about five phases that create cells within the disposal site. The berms along I-84 will be increased as the cells are filled. When a cell is completely filled, it will be restored with a foot of topsoil, compost and native forest plantings. When the final phase is complete and the cell is filled, ODOT will remove the access road and replant the access route.

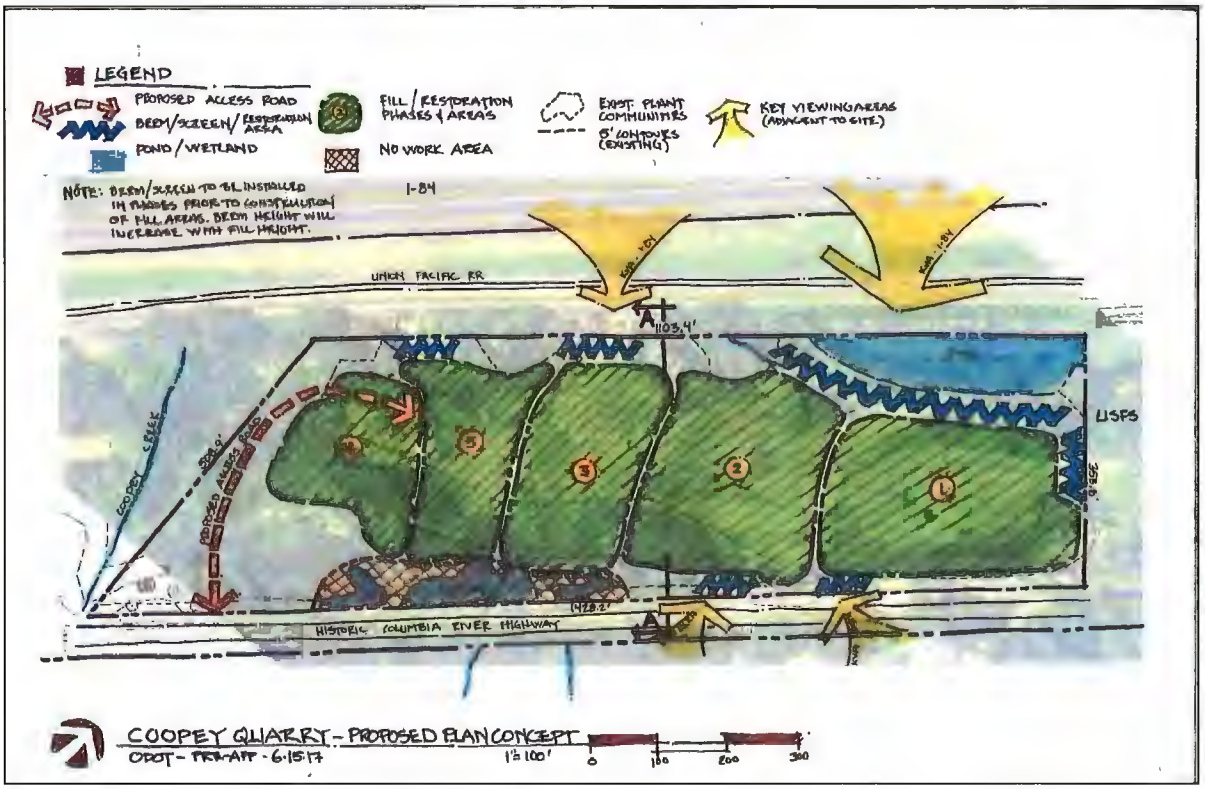


Figure 4. Coopey Quarry restoration concept.

Photo 3. Pond edge. 3/30/2017

ODOT will create some shallow depressions on top the restoration site. These depressions will have hard compacted subspoils with only a shallow soil layer (<6") on the surface to favor herbaceous growth. These shallow depressions will be fed by rainfall and runoff. At least one will receive runoff from the existing wetlands. These ponds will hold water seasonally increase the hydraulic diversity of the site and increase plant diversity. These depressions will be seeded with a variety of native grasses and herbs including common camas (Camassia quamash) and Lupine (Lupinus latifolius). See Reclamation Plan for more details.

The Reclamation Plan (Appendix A) identifies the initial palette of woody plant species selected for the site. The landscape to the south and upslope of the HCRH near the site was the reference landscape that was used to help direct plant selection. The Reclamation Plan shows the proposed grades and includes a landscaping plan identifying the final plant species selected and shows the general planting locations. ODOT will plant the native overstory with Oregon White Oak and Douglas fir. Western red cedar and black cottonwood will increase the diversity of the overstory. High habitat quality shrub species (hazelnut, thimbleberry, snowberry, Oregon grape, oso berry, and serviceberry) were chosen to provide good wildlife food sources. Vine maple and oceanspray were selected to provide habitat for small passerine birds.

Downed large wood along the pond edge and within the buffer could be placed to provide wildlife habitat. It was not included because there was concern the wood could be considered a fire hazard. Further discussion of wood use on the site is warranted before a final decision.

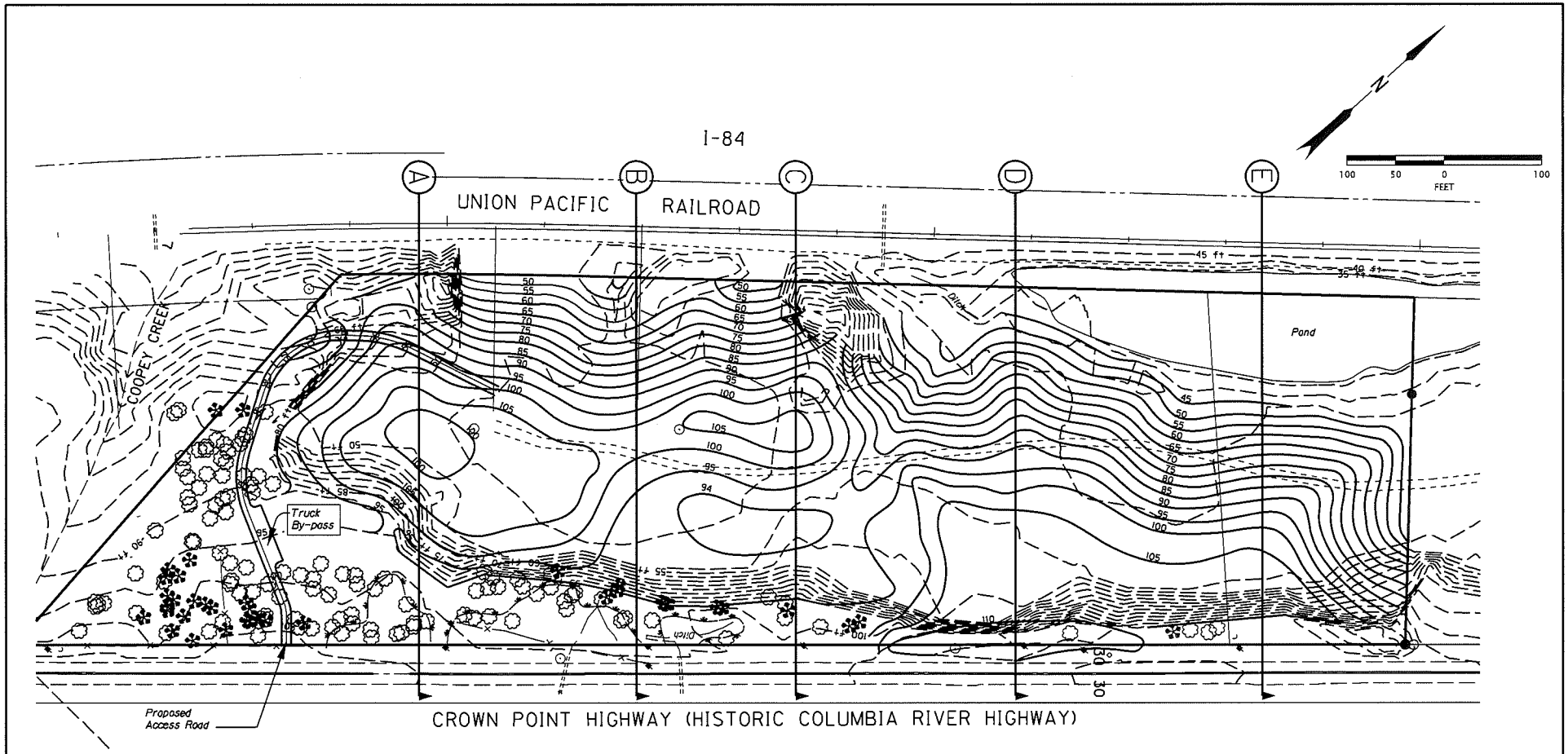
6. Performance Standards and Monitoring

The performance standards described below provide benchmarks for measuring achievement of the goals and objectives of the mitigation site on year five.

1. Cover. Percent Cover of native species shall exceed 70 percent.
2. Diversity. Five or more species will be present in native plant cover and contribute to at least 5 percent of total cover.
3. Noxious weed cover. Noxious weed cover (see Oregon Noxious Weed Lists A and B) will be reduced below 10%.
4. Planting Density. Initial plantings within the restoration site shall total 200 native woody stems per acre.

ODOT will quantitatively monitor the restoration site on years 1, 3 and 5 after completion of the disposal site. If all the performance standards are achieved in less, ODOT may terminate monitoring with approval of the review agencies after year 3. Qualitative assessments of the will occur on years 2 and 4. Restoration site maintenance may be necessary and could occur each year.

Appendix A:
Coopey Quarry Reclamation Plan



GENERAL PROJECT NOTES:

1. *Existing and proposed contours are shown at 5-foot intervals.*
2. *Topsoil will be stored at the west end when encountered during slide excavation. Topsoil may be brought in as a sourced material when needed.*
3. *Erosion control will be ongoing. A 2" compost erosion blanket will be placed on top of the topspoil prior to planting. Shredded wood check dams, aggregate check dams, perimeter aggregate berms and shredded wood will be the primary perimeter control.*
4. *Estimated proposed fill is 430,000 Cubic Yards and will be a variety of materials from slides and debris flows within the Columbia River Gorge Scenic Area.*
5. *See landscape plan for proposed vegetation.*

LEGEND

- *Existing Contours (5' intervals)*
- *Proposed Contours (5' intervals)*
- *Existing Deciduous Trees*
- *Existing Coniferous trees*
- *Wetlands*
- *Existing Quarry Rd.*
- *Proposed Quarry Access Rd.*
- *Section Lines (Sections Sht. 2)*

RECLAMATION PLAN

Coopey Quarry ODOT
T 1 N R 5 E Section 14, TL 00600
NSA Application

SHEET
1 of 5

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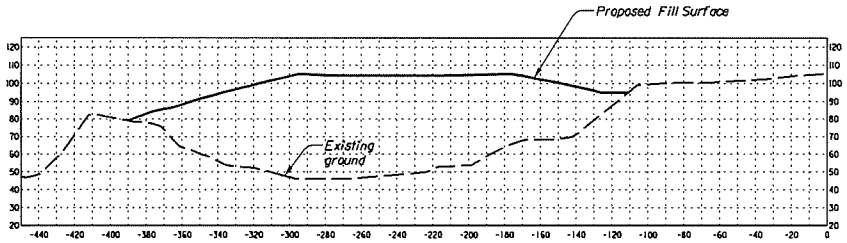
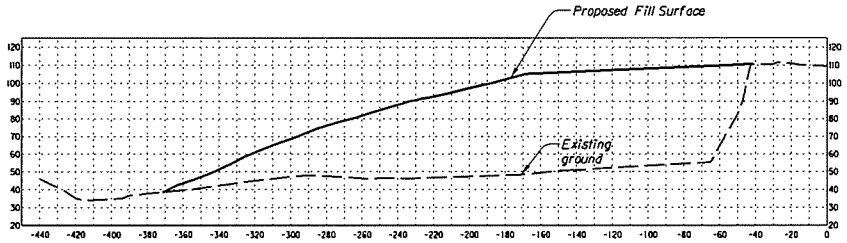
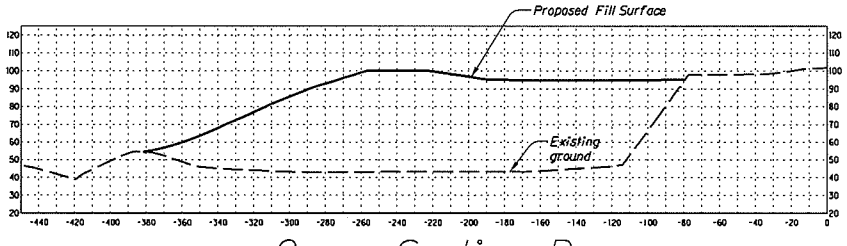
Rotation: 0° Scale: 1"=100'



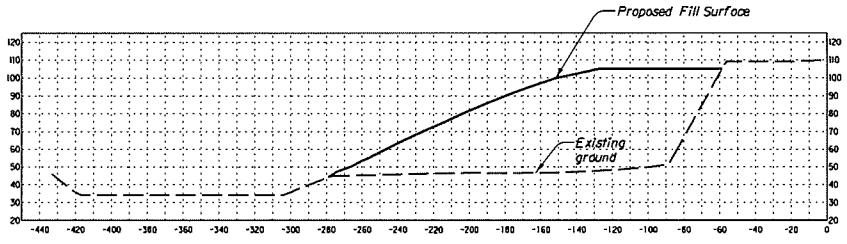
Cross Section A



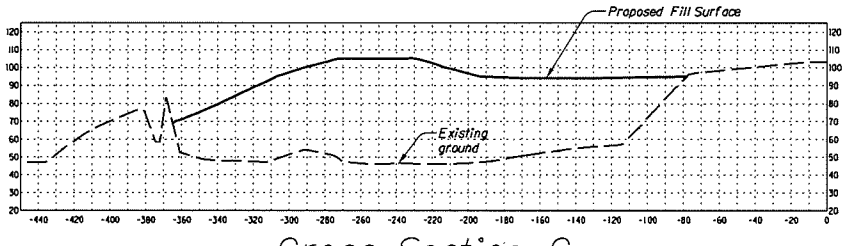
Cross Section D



Cross Section B



Cross Section E

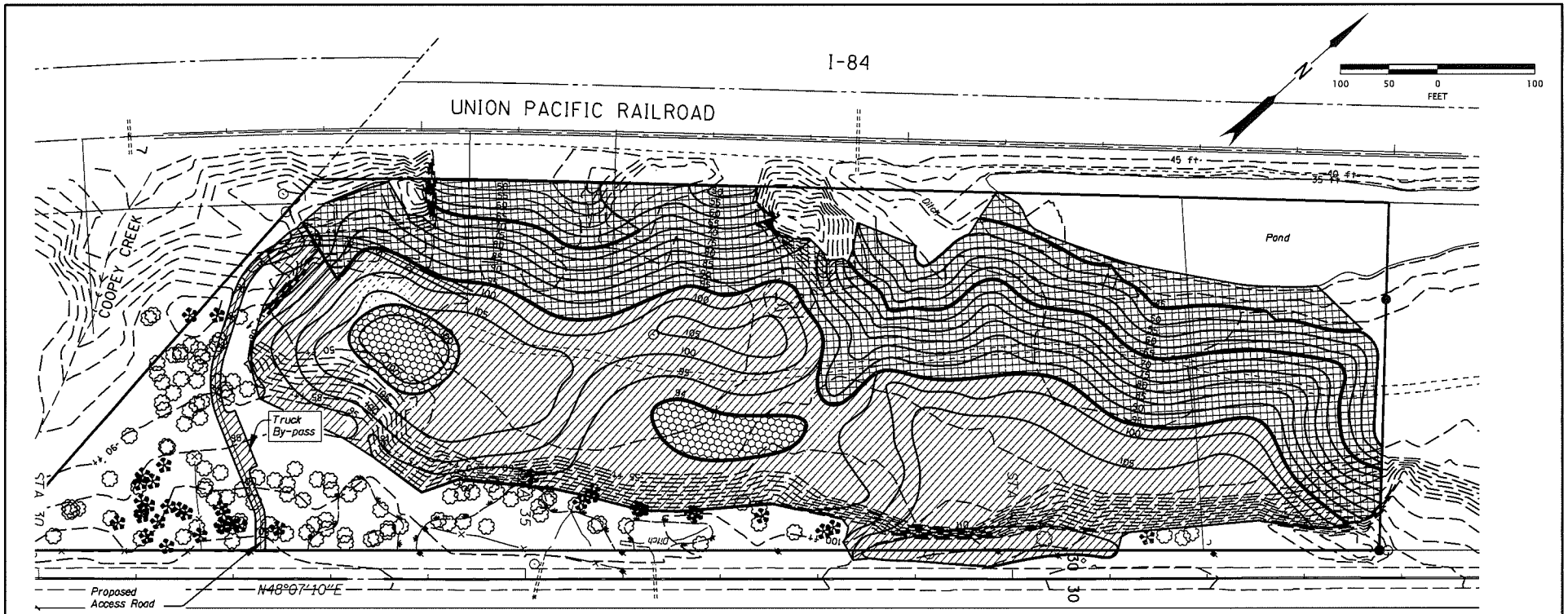


Cross Section C

CROSS SECTIONS

Coopey Quarry ODOT
T 1 N R 5 E Section 14, TL 00600
NSA Application

SHEET
2 of 5



LEGEND
RESTORATION LANDSCAPE TYPES

- Mix 'A' – Riparian upland – 157,000 S.F.(3.6 ac)
- Mix 'B' – Mixed Woodland Oak Dominate – 185,300 S.F.((4.25 ac)
- Mix 'C' – Vernal Pools – 13,700 S.F.(0.32 ac)
- Existing Contours (5' intervals)
- Proposed Contours (5' intervals)
- Existing Deciduous Trees
- Existing Coniferous trees
- Wetlands
- Existing Quarry Rd.
- Proposed Quarry Access Rd.

NOTES:
1. Permanent Seeding Mix No.1 to be applied to all landscape types, except vernal pools.
2. Vernal pools to receive Permanent Seeding Mix No.2.
3. For Plant & Material Schedule, see Sheet 4 and 5.

Landscape Plan for Revegetation

Coopey Quarry ODOT
T 1 N R 5 E Section 14, TL 00600
NSA Application

SHEET 3 of 5

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Rotation: 0° Scale: 1"=100'

PLANT and MATERIAL SCHEDULE - Coopey Quarry - Mixed Coniferous Woodland

Plant Type	Botanical Name	Common Name	Size	Spacing	Root Type	Percent Mix	Plant Condition	A.S.N.S.	Layout	Notes	Irrigation		TOTAL
	Acer circinatum	vine maple	D60L	12' O.C.	D60L Container	5%	Multi-branched		As Staked/Approved	Contract grown			70
	Acer macrophyllum	big leaf maple	D60L	12' O.C.	D60L Container	15%	Single trunk		As Staked/Approved	Contract grown			210
	Alnus rubra	red alder	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown			70
	Amelanchier alnifolia	serviceberry	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown			70
	Fraxinus latifolia	Oregon Ash	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown			70
	Populus trichocarpa	black cottonwood	D60L	12' O.C.	D60L Container	20%	Single trunk		As Staked/Approved	Contract grown			270
	Quercus garryana	Oregon white oak	D60L	12' O.C.	D60L Container	25%	Single trunk		As Staked/Approved	Contract grown			350
	Pseudotsuga menziesii	Douglas fir	D60L	12' O.C.	D60L Container	15%	Single trunk		As Staked/Approved	Contract grown			210
Mix 'A'	Thuja plicata	western red cedar	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown			70
	Total Trees In Mix A											Total	1,390
	Cornus sericea	red-osier dogwood	D40L	6' O.C.	D40L Container	5%			Groups 5-9	Contract grown			280
	Corylus cornuta	hazelnut	D40L	6' O.C.	D40L Container	10%			Groups 3-5	Contract grown			560
	Holodiscus discolor	ocean spray	D40L	6' O.C.	D40L Container	15%			Groups 3-5	Contract grown			840
	Mahonia aquifolium	Oregon Grape	D40L	5' O.C.	D40L Container	15%			Groups 4-7	Contract grown			840
	Polystichum munitum	sword fern	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown			280
	Oemleria cerasiformis	osoberry	D40L	6' O.C.	D40L Container	10%			Groups 4-3	Contract grown			560
	Ribes sanguineum	red flowering current	D40L	6' O.C.	D40L Container	10%			Groups 4-3	Contract grown			560
	Rosa gymnocarpa	baldhip rose	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown			280
	Rubus parviflorus	thimbleberry	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown			280
	Sambucus cerulea	blue elderberry	D40L	6' O.C.	D40L Container	10%			Groups 5-7	Contract grown			560
	Symphoricarpos albus	snowberry	D40L	5' O.C.	D40L Container	10%			Groups 5-7	Contract grown			560
	Total Shrubs In Mix A											Total	5,600
	Acer macrophyllum	big leaf maple	D60L	12' O.C.	D60L Container	10%	Single trunk		As Staked/Approved				160
	Amelanchier alnifolia	serviceberry	D60L	12' O.C.	D60L Container	10%	Single trunk		As Staked/Approved				160
	Cornus nuttallii	dogwood	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved				80
	Pseudotsuga menziesii	Douglas fir	D60L	12' O.C.	D60L Container	20%	Single trunk		As Staked/Approved				330
	Quercus garryana	Oregon white oak	D60L	12' O.C.	D60L Container	50%	Single trunk		As Staked/Approved				820
Mix 'B'	Thuja plicata	westernr red cedar	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved				80
	Total Trees In Mix B											Total	1,630
	Holodiscus discolor	ocean spray	D40L	6' O.C.	D40L Container	20%			Groups 3-9	Contract grown			1,320
	Polystichum munitum	sword fern	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown			330
	Physocarpus capitatus	ninebark	D40L	6' O.C.	D40L Container	20%			Groups 5-9	Contract grown			1,320
	Oemleria cerasiformis	osoberry	D40L	6' O.C.	D40L Container	5%			Groups 4-3	Contract grown			330
	Ribes sanguineum	red flowering current	D40L	6' O.C.	D40L Container	20%			Groups 4-3	Contract grown			1,320
	Rosa nutkana	nootka rose	D40L	5' O.C.	D40L Container	15%			Groups 5-9	Contract grown			990
	Sambucus cerulea	blue elderberry	D40L	6' O.C.	D40L Container	5%			Groups 3-5	Contract grown			330
	Symphoricarpos albus	snowberry	D40L	5' O.C.	D40L Container	10%			Groups 5-9	Contract grown			660
	Total Shrubs In Mix B												6,600
	Cornus sericea	red-osier dogwood	D40L	6' O.C.	D40L Container	30%			Groups 5-9				120
Mix 'C'	Rubus spectabilis	salmonberry	D40L	6' O.C.	D40L Container	30%			Groups 5-9				120
	Salix spp.	salix spp.	D40L	6' O.C.	D40L Container	40%			Groups7-12				120
	Total In Shrubs Mix C												360

PLANT AND MATERIALS

Coopey Quarry ODOT
T 1 N R 5 E Section 14, TL 00600
N5A Application

SHEET
4 of 5

PLANT and MATERIAL SCHEDULE - Coopey Quarry - Mixed Coniferous Woodland (Cont'd.)

Plant Type	Botanical Name	Common Name	Size	Spacing	Root Type	Percent Mix	Plant Condition	A.S.N.S.	Layout	Notes	Irrigation	Sheet Number & Quantity	TOTAL
Permanent Seeding Mix No.1	Achillea millifolium	common yarrow	Seed				PLS/Acre	0.14			N/A		7.9
	Anaphalis margaritacea	pearly everlasting	Seed				PLS/Acre	0.08			N/A		
	Asclepias speciosa	showy milkweed	Seed				PLS/Acre	7.36			N/A		
	Aster subspicatus	aster spp.	Seed				PLS/Acre	0.91			N/A		
	Bromus carinatus	mountain brome	Seed				PLS/Acre	16.58			N/A		
	Collinsia grandiflora	giant blue-eyed Mary	Seed				PLS/Acre	1.33			N/A		
	Deschampsia elongata	slender hairgrass	Seed				PLS/Acre	0.87			N/A		
	Elymus glaucus	blue wildrye	Seed				PLS/Acre	4.37			N/A		
	Festuca rubra	red fescue	Seed				PLS/Acre	0.79			N/A		
	Heuchera glabra	piggyback plant	Seed				PLS/Acre	0.31			N/A		
	Lupinus rivularis	riverbank lupine	Seed				PLS/Acre	41.44			N/A		
	Poa secunda var. secunda	Sandberg's bluegrass	Seed				PLS/Acre	0.16			N/A		
	Prunella vulgaris	self-heal	Seed				PLS/Acre	1.30			N/A		
	Rosa gymnocarpa	baldhip rose	Seed				PLS/Acre	2.68			N/A		
	Solidago canadensis	goldenrod	Seed				PLS/Acre	0.10			N/A		
	Symphoricarpos mollis	creeping fescue	Seed				PLS/Acre	1.58				Acre	7.9
Permanent Seeding Mix No.2	Allium cernuum	nodding onion	Seed				PLS/Acre	4.79			N/A		0.32
	Agrostis exarata	spike bentgrass	Seed				PLS/Acre	0.28			N/A		
	Aster subspicatus	Douglas aster	Seed				PLS/Acre	0.43			N/A		
	Camassia leichtlinii	great Camas	Seed				PLS/Acre	9.90			N/A		
	Carex stipata var. stipata	sawbeaked sedge	Seed				PLS/Acre	1.22			N/A		
	Collinsia grandiflora	giant blue-eyed Mary	Seed				PLS/Acre	1.00			N/A		
	Delphinium nuttallii	Nuttall's larkspur	Seed				PLS/Acre	0.29			N/A		
	Deschampsia elongata	slender hairgrass	Seed				PLS/Acre	0.41			N/A		
	Downingia elegans	elegant calicoflower	Seed				PLS/Acre	0.14			N/A		
	Lupinus rivularis	riverbank lupine	Seed				PLS/Acre	19.50			N/A		
	Elymus glaucus	blue wildrye	Seed				PLS/Acre	6.58			N/A		
	Plagiobothrys figuratus	fragrant popcorn flower	Seed				PLS/Acre	0.51			N/A		
	Plectritis congesta	sea blush	Seed				PLS/Acre	0.99			N/A		
	Poa secunda var. secunda	Sandberg's bluegrass	Seed				PLS/Acre	0.49			N/A		
	Saxifrage oregana	Oregon saxifrage	Seed				PLS/Acre	2.76			N/A		
	Total In Mix											Acre	0.32

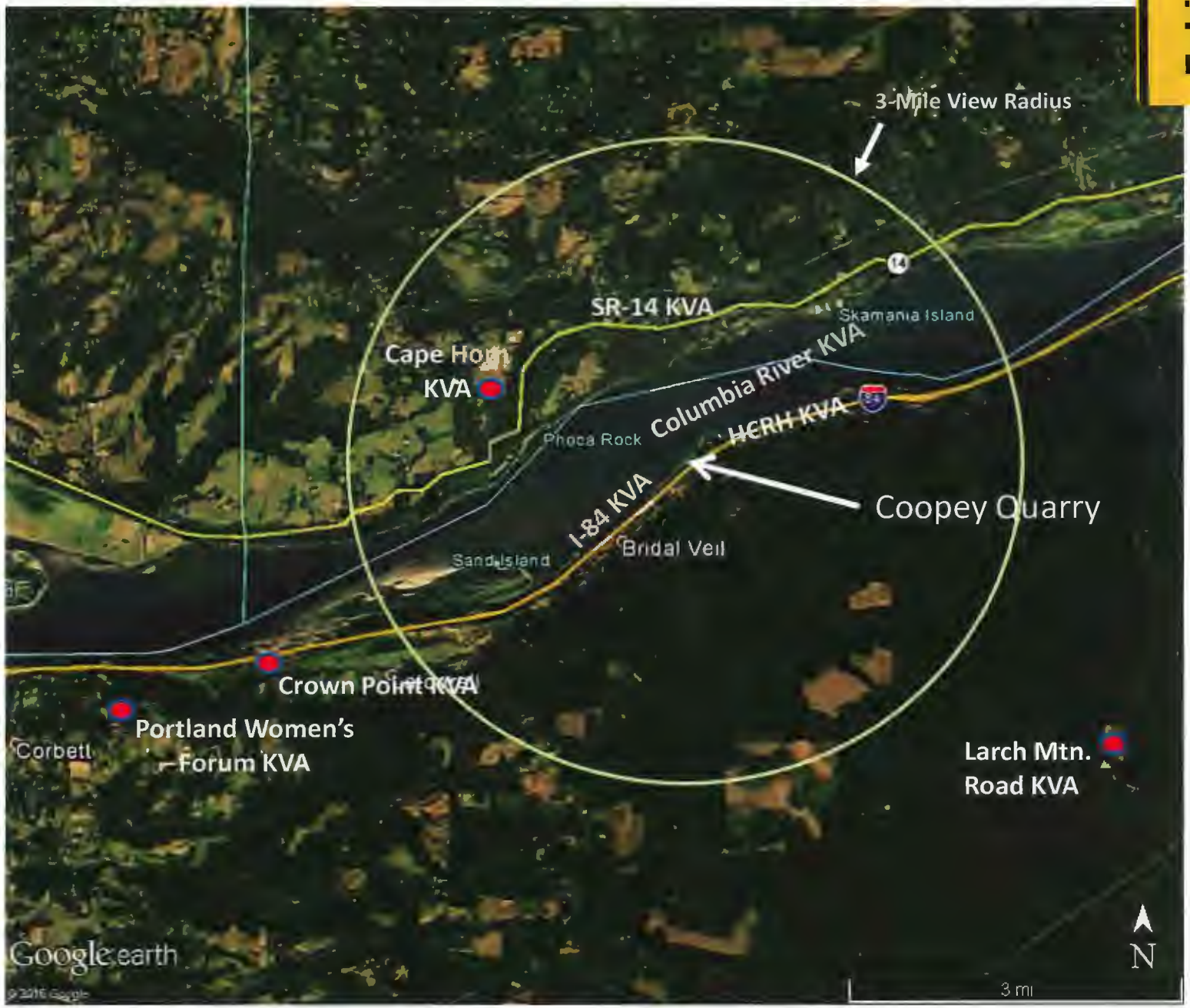
PLANT AND MATERIALS

Coopey Quarry ODOT
T 1 N R 5 E Section 14, TL 00600
NSA Application

5 of 5

KEY VIEWING AREAS

Exhibit A.3.f



Panoramic photo from Portland Women's Forum

KEY VIEWING AREA
Portland Women's Forum

Panoramic photo from Crown Point

KEY VIEWING AREA Crown Point

Telephoto lens image

KEY VIEWING AREA

Cape Horn

SR-14 Pull-out

KEY VIEWING AREA
Cape Horn
SR-14 and Trail Viewpoints

Photo 1

Photo 2

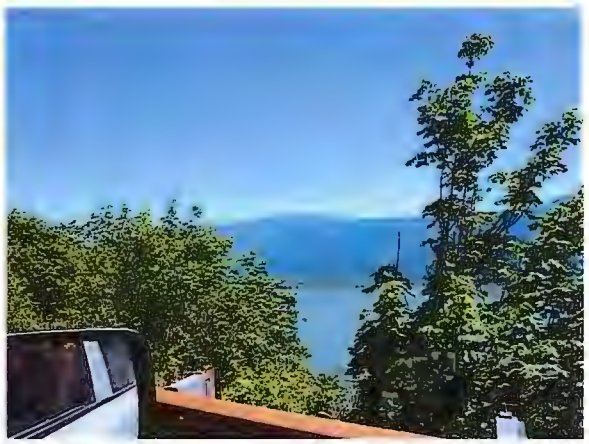


Photo 3

KEY VIEWING AREA

Cape Horn

SR-14 Views –Eastbound

Photo 4

Photo 7

Photo 6

Photo 5

Photo 8

Photo 9

Photo 10

KEY VIEWING AREA
Cape Horn
SR-14 Views –Eastbound

Photo 11

Photo 14

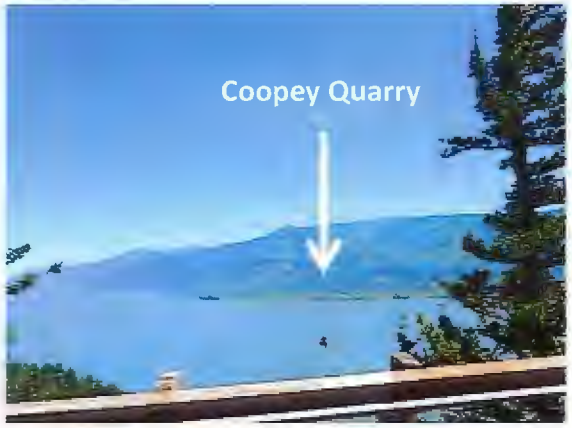


Photo 13

Photo 12

KEY VIEWING AREA
Cape Horn
SR-14 Views –Eastbound

Photo 15

Photo 16


Photo 17

Photo 18

Photo 21

Photo 20

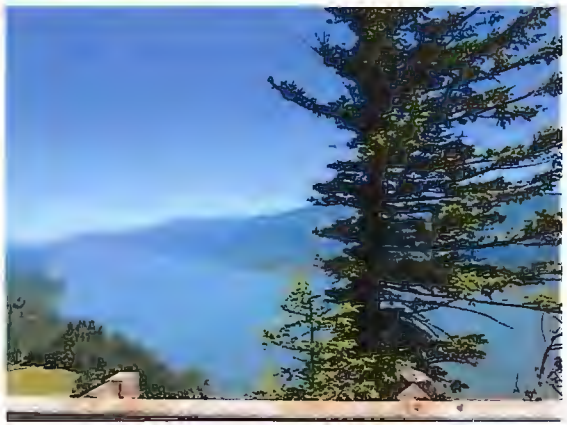


Photo 19

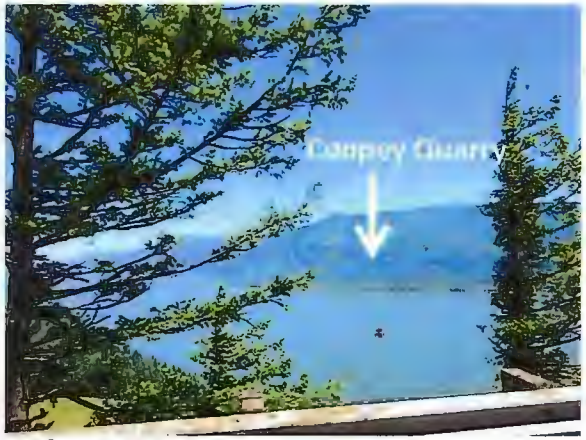


Photo 22

Photo 23

Photo 24

KEY VIEWING AREA

SR-14

Views along the highway-Eastbound

Photo 25

Photo 28

Photo 27

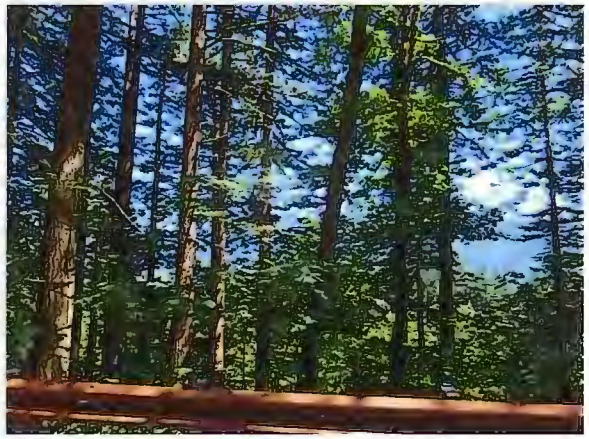


Photo 26

KEY VIEWING AREA

Cape Horn

Nancy Russell Overlook

KEY VIEWING AREA

Cape Horn

Pioneer Point Viewpoint

KEY VIEWING AREA

HCRH Eastbound

EB HCRH - Approach to Coopey Quarry

EB HCRH - Coopey Quarry is below edge of highway

EB HCRH - Coopey Quarry – Berm conceals quarry

EB HCRH – Past Coopey Quarry location

KEY VIEWING AREA
HCRH Westbound

WB HCRH - Approach to Coopey Quarry

WB HCRH - Coopey Quarry is below edge of highway

WB HCRH - Coopey Quarry is below the highway, screened by the rock cut

WB HCRH - Coopey Quarry is below the elevation of the highway, screened by the trees

KEY VIEWING AREAS

I-84 KVA Eastbound

PP 1

PP 2

KEY VIEWING AREAS

I-84 KVA Eastbound

PP 3

PP 4

PP 5

KEY VIEWING AREAS

I-84 KVA Westbound

KEY VIEWING AREAS

PHOTOS - I-84 KVA

Westbound

Oregon
Kate Brown, Governor

Department of Transportation
Highway Division/Technical Services
Geo-Environmental Section, MS#6
4040 Fairview Industrial Dr SE
Salem, OR 97302
Phone: (503) 986-3252
Fax: (503) 986-3249

November 8, 2017

To: Mary Young
Region 1 Environmental Coordinator
Oregon Department of Transportation

From: Roy Watters
ODOT Archaeologist

RE: **Maintenance Memo – No Effect**
Coopey Quarry Disposal Site
T1N, R5E, Section 14; Bridal Veil Quad
Multnomah County, Oregon
ODOT Key No. M17016

The Oregon Department of Transportation (ODOT) proposes to convert Coopey Quarry, a state-owned parcel previously used as a material source, into a disposal site for material generated by landslides and other maintenance activities within the Columbia River Gorge. ODOT is planning on restoring the quarry to match the existing landscape contours and to restore the vegetation as each segment of the quarry is filled to capacity (Project Area Map). ODOT Maintenance will need to cut a 12-foot wide, 250-foot long access road from the Historic Columbia River Highway (HCRH) into the quarry to obtain access to the quarry floor (APE Map). The quarry is located within the Columbia River Gorge National Scenic Area (NSA).

Following the NSA General Management Area (GMA) Cultural Resources Review Criteria (MCC 38.7045) for large-scale uses, the Museum of Natural and Cultural History (OSMA) was contracted to conduct a cultural resource inventory of the project area on August 7 and 8, 2017. Their survey identified that previous operation of the quarry has disturbed more than 90% of the APE (McAlister and Connolly 2017). The surface survey identified domestic debris, appearing to be late 1960s to the 1970s in age, which was dumped in the southwest portion of the quarry. Materials noted include a trailer, tires, refrigerators, galvanized pipe, garden equipment, carpeting, and domestic refuse. A subsurface investigation was conducted along the proposed access road leading from the HCRH into the quarry. No historic sites or features were noted during the current investigation. No further work was recommended.

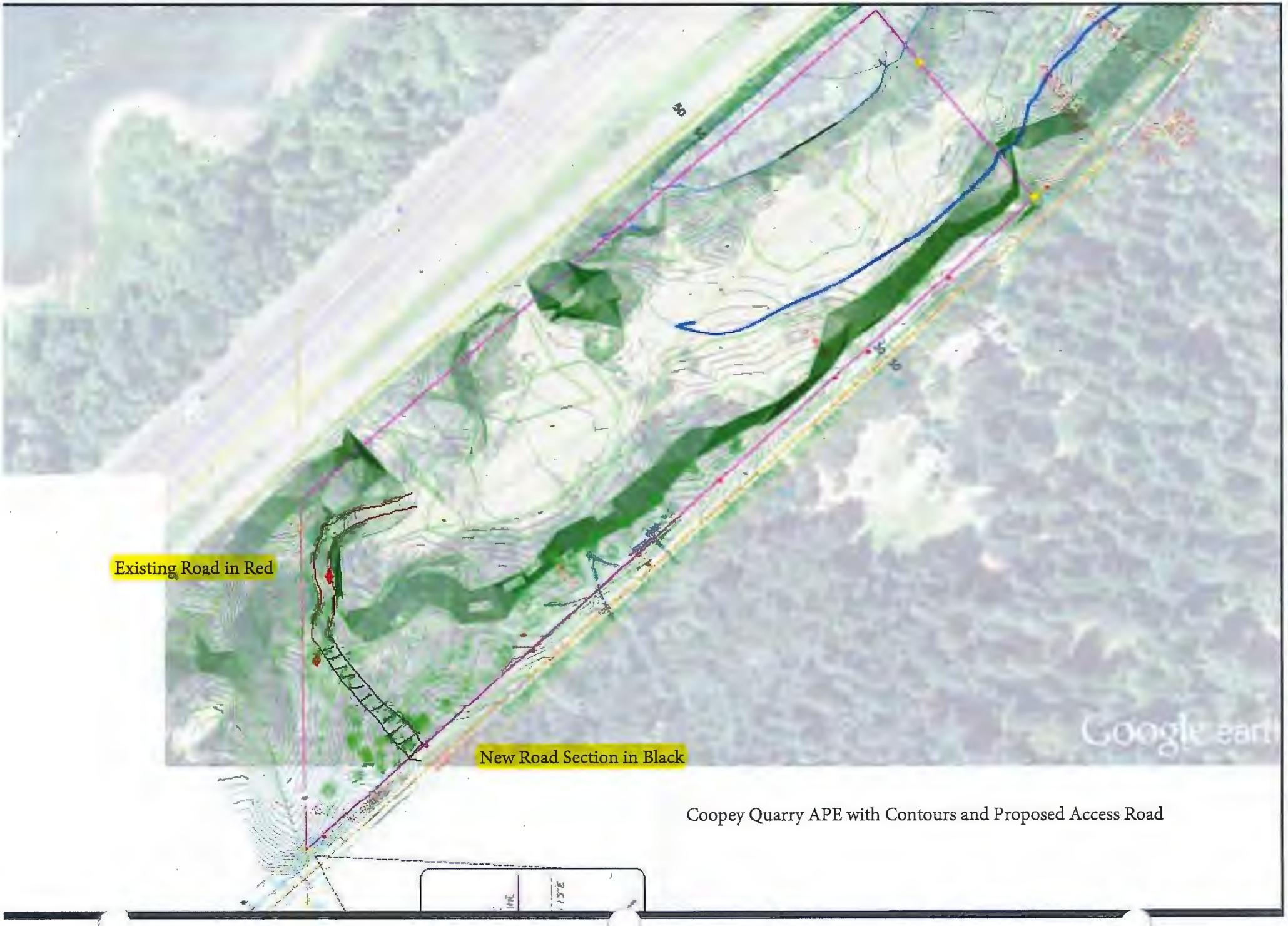
Given the scope of the project, the highly disturbed context and negative survey results, impacts to archaeological resources are unlikely. Therefore, no further archaeological investigations are required and the project can proceed.

Exhibit A.3.g

If you have any questions, please contact Roy Watters, ODOT Archaeologist, at 503-986-3375, or roy.watters@odot.state.or.us.

Attachments:

McAlister, Kaylon, and Thomas Connolly
2017 Coopey Quarry: Archaeological Investigation with Technical Report, Multnomah County (ODOT Key M17016; Museum Report No. 2017-051). Museum of Natural & Cultural History, University of Oregon.



Coopey Quarry APE with Contours and Proposed Access Road

OREGON DEPARTMENT OF TRANSPORTATION

Coopey Quarry (M17016)

T1N, R5E, Section 14; Bridal Veil Quadrangle, Multnomah County

0 1.25 2.5

Miles

DISCLAIMER:
This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

1:28,820

ESRI Topo Maps Service (2015).

N W E S

UNIVERSITY OF OREGON

County:	Multnomah
Legal location:	Sec. 14 of T1N R5E
USGS quads:	Bridal Veil 7.5' series USGS
Project type:	Pedestrian survey, Subsurface Reconnaissance
Survey area:	Approx. 10.6 acres
Permit:	AP-2377
Findings:	Negative
Records:	OSMA

September 15, 2017

TO: Roy Watters, Archaeologist
Oregon Department of Transportation
Geo-Environmental Services
4040 Fairview Industrial Drive SE
Salem, OR 97302-1142

FR: Kaylon McAlister and Thomas Connolly

RE: Coopey Quarry: Archaeological Investigation with Technical Report, Multnomah County (ODOT Key M17016; Museum Report No. 2017-051)

The Coopey Quarry is located in Multnomah County, bordering the north side of the Historic Columbia River Highway (HCRH) between MP 15.15 and MP 15.4 (Figures 1 and 2). It was established as a quarry in 1906 for railroad construction, and later purchased by a private construction company for use during building of the HCRH. The quarry was purchased by the Oregon Department of Transportation (ODOT) in 1939 and used as a material source for building the water-level highway and interstate highway during the 1950s and '60s. Its use as a quarry was abandoned by the early 1970s, and ODOT now intends to use the 10.6 acre parcel as a disposal site, and to eventually reclaim the property to a more natural condition. As part of the planned project to fill and rehabilitate the quarry, the ODOT will build an access road in the southwestern corner of the parcel, which will link to an existing access ramp cut into the western edge of the quarry wall.

The quarry is within the Columbia River Gorge National Scenic Area (NSA), and a cultural resource inventory of the parcel must follow the General Management Area (GMA) Cultural Resources Review Criteria (MCC 38.7045) for large-scale uses, including subsurface exploratory survey in areas of potential impact to previously undisturbed terrain.

It is expected that for most of the project area, structures or artifacts associated with the 1906-1960s quarry operations will be the most likely cultural expressions present. Based on historic aerial photos (Figure 3), it is estimated that less than two acres of the 10.6 acre property, primarily in the southwest corner, have potential for earlier historic or prehistoric cultural materials.

Project Setting

The project area is located just east of the historic community of Bridal Veil, in Multnomah County. It is bordered on the south by the Historic Columbia River Highway and on the north by the Union Pacific Railroad and I-84 corridors. It appears on the Bridal Veil USGS map in section 14 of Township 1N, Range 5E, Willamette Meridian. The project area is located on a secondary terrace above the Columbia River, and is bounded to the west by Coopey Creek. Coopey Creek, though displaying large

Figure 1. General location of the Coopey Quarry parcel east of Portland (Bridal Veil USGS map).

Figure 2. Aerial view of the 10.6 acre Coopey Quarry parcel, Multnomah County.

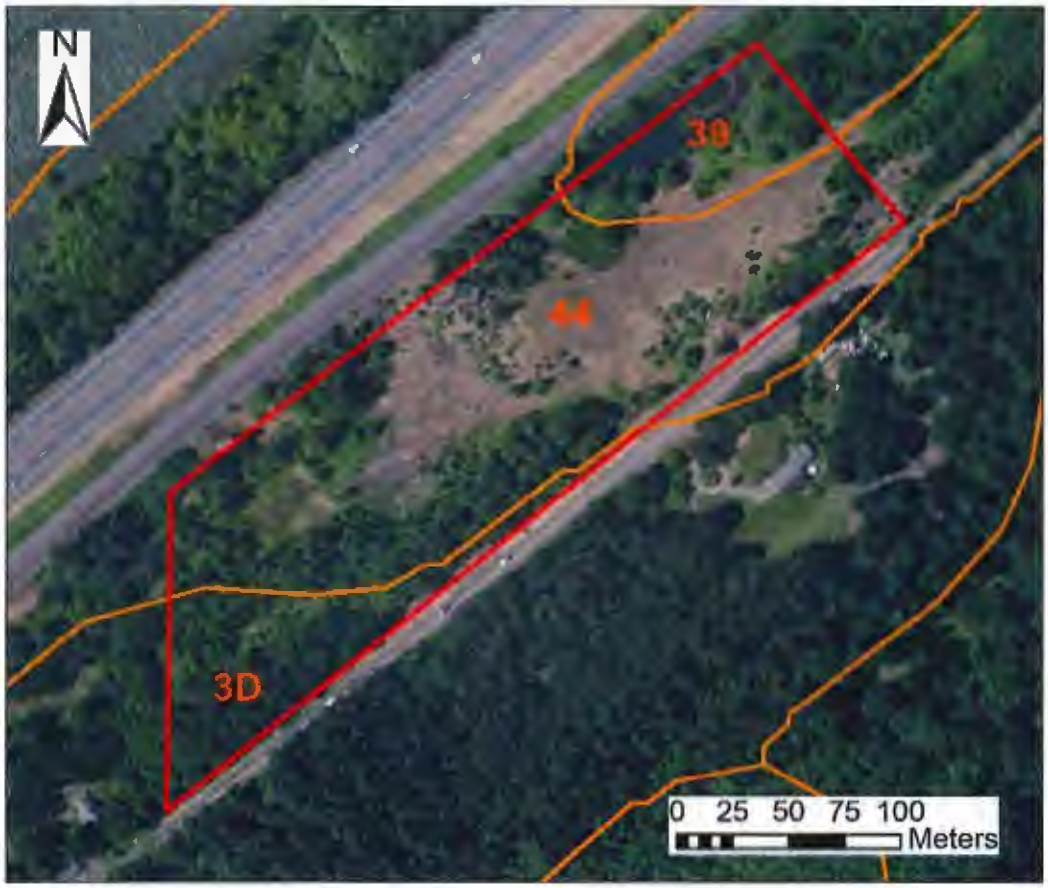


Figure 3. Map showing the mapped soil units within the current project area.

variations in seasonal flow rates, is a perennial stream. The terrain rises steeply to the south of the project area, gaining 2000 ft. in less than a half mile along the Coopey Creek watershed, to an overlook named Angels Rest. The Columbia River is located 500 feet to the north of the project area and may have periodically inundated portions of the project area prehistorically, prior to the massive water control efforts upriver during the early 20th century.

The physiography of the Columbia Gorge greatly affects local climate and vegetation, and provides a unique corridor for plant and animal migration between the typically arid east and maritime west. The high relief created by the deeply eroded Columbia River Gorge also places varied botanical zones in close proximity. The current project APE lies at the northern extent of the Western Cascades physiographic region. Vegetation cover is mapped as a forested region in the *Tsuga hetrophylla* Zone, the mesic Douglas fir/western hemlock forests typical of the west side of the Cascades. Within the current project vicinity, the steep hills extending to the south of the APE consist of Douglas fir-dominated conifer forests. Interspersed with Douglas fir, within and continuing to the north of the project APE to the Columbia River, are riparian areas with cottonwood, Oregon ash, big leaf maple, western red cedar, and various shrubs. Thickets of blackberry, wild hazelnut, and English ivy, burdock and fern occupy much of the understory within the project area at present (Franklin and Dyrness 1988).

Soils in the project area have been mapped by the Natural Resources Conservation Service (Figure 3; NRCS 2017). The majority of the project area has been previously excavated by quarrying

activities, but the soil mapping provides information on the original setting. Most of the parcel is mapped as Sauvie silt loam (soil unit 44) and Rafton silt loam (soil map unit 39), which form on flood plains from a parent material of recent alluvium with some mixing of volcanic ash in areas experiencing season flooding. The relatively undisturbed southwest corner of the parcel is mapped as Aschoff cobbly loam (soil map unit 3D) which forms in parent material of colluvium derived from andesite and basalt mixed with volcanic ash, eroding from the steep canyon walls to the south.

Cultural Background

The Five Mile Rapids site near The Dalles provides the most complete cultural record for the Columbia River corridor, spanning some 11,000 years. The site contained thousands of salmon bones in its earliest levels, providing evidence that salmon harvesting has been important from the time of the earliest human presence in the region (Cressman et al. 1960; Butler 1993). Within the Columbia Gorge proper, however, the archaeological record is largely limited to more recent times, a legacy of the extensive landslide and flooding processes which have combined to inhibit the preservation and discovery of more ancient sites.

Excavations have shown that archaeological sites in the vicinity of Cascade Locks tend to post-date the Bonneville Landslide, which is believed to post-date ca. AD 1425 (O'Connor and Burns 2009) and probably occurred as late as AD 1700 (Orr et al. 1992:154; Pringle et al. 2002). At all but two sites, Bradford Island and Clahclehlah Village (45SA11), occupations appear to have ceased prior to historic contact. This apparent population decline is likely the result of the introduction of exotic infectious diseases (Boyd 1999), which devastated populations and precipitated consolidation of some formerly independent bands into composite communities. The work at Clahclehlah suggests that the earliest occupants built oval pithouses, indistinguishable from those found throughout the Columbia Plateau. Overlying these oval pithouses are rectangular plank houses, more consistent with Chinookan houses found downstream and along the Pacific coast. This change in house form may signal increasing Chinookan influence up the Columbia River corridor in late pre-contact times (Beckham et al. 1988).

Chinookans occupied the project corridor in the nineteenth century. On the Oregon side, villages were documented in the Cascades-Bonneville Dam vicinity (Cascades Chinook), and in the neighborhood of Hood River (Hood River/Dog River Chinook). Winter villages–typically featuring oblong, gabled-roofed, upright-cedar plank houses aligned in rows parallel to the river–were connected to one another through trade, political ties, and marriage (Silverstein 1990). The Chinook diet was balanced primarily between fishing and root/berry gathering. Fishing was productive from March to November. Hunting of large and small game was often coordinated with root and berry harvests, when these activities would not conflict with salmon fishing (Silverstein 1990:533-546). The Cascades Chinook Indians, who controlled the Cascades area, exacted tolls from river travelers (Ruby and Brown 1992).

The first contact between Indians and whites in the project vicinity was in 1805, when the Lewis and Clark party made its way down River. In 1806 they passed upstream on their return trip. By 1811 fur trappers of the Northwest Company had descended the Columbia River from Canada, and trappers for the Pacific Fur Company had ascended the river from Fort Astoria.

Smallpox swept through the region in the latter 1700s, and again just prior to the Lewis and Clark visit in 1805-06. Another devastating wave of disease swept through the Lower Columbia region in the 1830s, eliminating entire villages (Beckham 1984:39-44). Estimated to have had a population exceeding 10,000 in the 1770s, only 233 Chinookans were listed on reservation rolls in the 1930s (French and French 1998:374). Other epidemics may have preceded these historically documented diseases by centuries; introduced to the Americas by the Spanish Conquest or by trade ships plying the coasts, Native

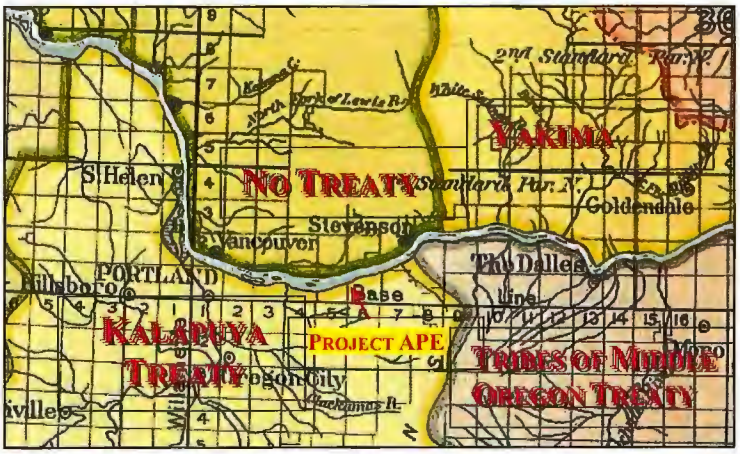


Figure 4. Ceded lands in the project area; base map after Royce (1899).

populations may have experienced devastating population declines beginning in the 16th century (Campbell 1990; Dobyns 1983; Ramenofsky 1987).

The great population movement associated with the Oregon Trail began in the 1840s, and by 1845 5000 people had made their way down the Columbia to take up land in Oregon. By 1850 the town of Cascades was established on the river's north bank at the upper Cascades, with construction of a store.

The year 1855 was pivotal for the area's native groups. The Oregon shore from the Cascades downriver to the Portland Basin was ceded in 1855 under terms of the "Treaty with the Kalapuya, Etc." executed at Dayton, Oregon (Figure 4). Participants included the "Wah-lal-la band of Tum-waters," commonly identified as Cascades Indians, who controlled the Columbia shore downriver from the Cascades of the Columbia (Kappler 1904). Also in 1855, the area from the Cascades and upstream was ceded under terms of the "Treaty with the Tribes of Middle Oregon," which included The Dalles, Dog (Hood) River and "Ki-gal-twal-la band of Wascoes" who occupied the Columbia shore between the Cascades and Hood River.

The Yakama Treaty was also signed in 1855, which ceded lands on the north side of the river approximately east of Wind Mountain. The Yakama Treaty included the Wishram, as well as the Sahaptin-speaking Klickitat, Cayuse, Umatilla, Walla Walla, Nez Perce, and Yakama. Treaty negotiations with groups north of the Columbia and downriver from Wind Mountain (including Chinook and Chehalis) failed, and the U.S. took possession of these lands without any treaty; the Shoalwater Bay and Chehalis reservations were established by executive order in 1866 to accommodate these groups.

Though divided by the treaties, most of the people who lived in the Columbia River corridor spoke Kiksht, the Upper Chinook language. Following the treaties, some Wishram and Wascos continued to live near their traditional homes along the river. Most Wishram were enrolled at Yakama, and "most of the others were assigned to the Warm Springs Reservation in central Oregon" (French and French 1998:360). The Cascades Indians who participated in the Dayton Treaty went initially to the Oregon Coast (Siletz) Reservation, then to Grand Ronde when the reservation was created by executive order in 1857. Because of the dispersal of the people of the Columbia River corridor, descendants with ancient ties and enduring interest in the project area are now affiliated with multiple modern tribal communities.

The treaties did not resolve conflicts. The Yakama Treaty called for the relocation of treaty participants "within one year after the ratification of this treaty" (the 1855 treaty was ratified in 1859), but Washington governor Isaac Stevenson declared Indian lands open for white settlement within two weeks of the treaty signing. And, in spite of assurances that white miners and settlers would not be allowed to

trespass on tribal lands, the discovery of gold on the newly formed Yakama Reservation lured invading miners; some stole Indian horses or greatly mistreated Indian women. Some treaty participants, under the Yakama leader Kamiakin, actively opposed this betrayal. A number of violent encounters, initially with trespassing miners, escalated to a series of raids and counter raids known as the Yakama War.

In 1856 the Cascades portage became a target, as development of the portage was regarded as an unlawful usurpation of one of the Indians' most important fisheries. Military officers soon came to recognize that their control of the Cascades denied the Indians critical food and economic stability, significantly weakening their position. The Indians attacked on March 26, killing 17 and burning the Bradford sawmill and lumberyard, as well as several houses and a warehouse under construction. The following day a contingent of dragoons under Lt. Philip Sheridan arrived; most of the Natives scattered, but some surrendered without a fight. Nine of the prisoners who had surrendered were executed by hanging (Wilma 2007; Healy 2010). According to one eye witness, "The local Indians who were hung had been on friendly terms to the white locals. . . . They were of the Cascade tribe. The motive behind the hangings was anger and racism. Quite a few of the white settlers had lost relatives besides homes in the attack and there was some kind of revenge wanted, and as the Yakimas had all returned back to their land, the Cascades were the only Indians to take revenge on, even though they were innocent" (Iman 2008).

As part of the treaties ratified in 1859, the right to fish at "usual and accustomed" places was reserved for the tribes. These fishing rights were upheld in 1905 and 1919 by the U. S. Supreme Court. Construction of the Bonneville Dam began in 1933, and the Bonneville pool inundated approximately 37 traditional fishing sites. In 1939, an agreement was negotiated to provide in-lieu fishing areas. Although implementation was delayed by World War II, by the 1950s five sites had been developed by the Army Corps of Engineers for preferential priority use by tribal fishers. The Bonneville Power Administration expanded the Bonneville Dam by constructing the second powerhouse on the north side of Bradford Island. As part of the feasibility studies for the increased capacity, the level of the Bonneville pool was raised further, which prompted the lawsuit *Confederated Tribes of the Umatilla Indian Reservation v. Callaway* in 1972. At issue was the effect on certain of the in-lieu sites and on fish migration. The settlement of the lawsuit, and subsequent lawsuits, led to the development of additional fishing access and support facilities (U.S. Army Corps of Engineers 1994).

A pack trail was reportedly present through the Columbia Gorge along the Oregon side by the mid-1850s (likely following an older Indian trail), but this was impractical for moving serious quantities of freight. The federal government began to explore a route through the gorge in 1855 for a wagon road from Fort Vancouver to The Dalles, favoring the north bank of the river; the head surveyor for the project characterized the south bank as a "wild & broken range of country, untrod by man or beast" (George H. Derby 1856, cited in Beckham et al. 1988). By 1855, Col. Joseph S. Ruckel (Ruckle in some sources) and a partner were operating the steamboat *Fashion* between Portland and the Cascades, and an allied steamboat operator was running the *Wasco* above the Cascades which allowed them to avoid the difficult terrain while still moving goods and people (Gill 1924:177-178). Ruckel can also be credited for building the first of several portage roads to help move goods around several dangerous sections of the river.

The discovery of gold in eastern Oregon in the early 1860s lured thousands to the gold fields, as well as others intent on farming and ranching to support the growing numbers. As developments progressed east of the Cascade Range, the need for a reliable connecting road became more acute, and public sentiment for a public road rose as rates charged by the ferry and portage monopolies increased.

The Territorial legislature passed legislation to build a road from The Dalles to the Sandy River as early as 1856, but the sections built by Ruckel and his partners around the Cascades were the only elements realized. Building the wagon road was a growing concern, especially to people east of the Cascades who were eager for better—and more economical—links to the lower Columbia and Willamette

Valley. The Dalles *Weekly Mountaineer* ran articles complaining about the monopoly of the Oregon Steam and Navigation Co., whom owned the steamships and controlled access to the portages, characterizing the company as "vampires of commerce," and eastern Oregonians launched a "free the Columbia River" movement to advocate for better transportation options.

Efforts to build a road were renewed by the state legislature in 1870, but it was not until October of 1872 that the first $50,000 (in the form of promissory warrants) "for the purpose of constructing a road up the south bank of the Columbia River, from near the mouth of Sandy, in Multnomah county, to The Dalles, in Wasco county" was authorized (Oregon, State of 1872). A route was surveyed from September 1 to October 1 of 1873, and work commenced in 1874. An additional $50,000 appropriation was made by the legislature during the 1876 session. The Portland *Oregonian* (August 6, 1878) reported that the road was finished and in use from The Dalles to a point one mile below the lower Cascades, and again on Jan 6, 1879, characterized the road as finished except for the segment from Sandy to the lower Cascades.

The catalyst for completion of an updated road came with the development of the automobile. In 1913, after viewing the private experimentation and development of road building technique carried out by entrepreneur Samuel Hill, a Good Roads supporter and a principal advocate for a quality road through the gorge, and assisted by noted road engineer Samuel Lancaster and Major H. L. Bowlby (who would become the first State Highway Engineer), the Oregon State Highway commission was born. Portions of the new Columbia River Highway would follow the original wagon road and the segment from Sandy to Hood River, which passes just south the current project area, was completed in 1915 (Davison and Knapp 2010; Hadlow 2000).

By the 1930s, the limitations of a touring highway for commercial truck traffic were increasingly apparent, and designs for a faster, water-level route were started. The new two-lane road (US Highway 30) was completed by 1953. The Interstate Highway system, now considered the largest public works project in history, was launched in 1956. Design standards were focused on speed, safety, and efficiency, including features such as controlled access and lane separations. The new freeway partially incorporated the earlier US 30 roadbed. The section between Portland and The Dalles, initially designated as Interstate 80N and later renamed Interstate 84, was largely in place by1963, but not completed to interstate standards until 1969 (Hadlow 2000; Kramer 2004). The construction of these later, water-level roads damaged or destroyed large portions of the original Columbia River Highway, particularly between Dodson and Hood River.

The current project area is just east of the historic community of Bridal Veil. Legend has it that while traveling on the Columbia River a passenger on the sternwheeler, *Baily Gatzert*, saw Bridal Veil Falls and remarked that it looked like a "delicate, misty bride's veil." As the years went by people began to refer to this spot along the Columbia River Gorge as Bride's Veil, Oregon. When the first post office opened in about 1886, and the railroad built a small station there, the community was officially named Bridal Veil. McArthur and McArthur (2006) credit the name of Bridal Veil to no one in particular, only noting that "the romantically inclined never fail to name at least one water fall in the state Bridal Veil."

Bridal Veil was established in 1886, beginning with the Bridal Veil Falls Lumbering Company sawmill, located about a mile up Larch Mountain. The company operated in Bridal Veil and the surrounding area from 1886-1936. A mile and half up the timber-rich mountain was the logging town of Palmer. Palmer and Bridal Veil shared common ownership as company mill towns. Together, the two towns produced lumber and were codependent. A V-shaped log flume was built for the rough cut timber to get down the mountain to the planing mill at the railroad tracks in Bridal Veil (Nesbit 2006). After timber was logged on the mountain, it was brought to the Palmer sawmill. As the rough-cut lumber exited the Palmer mill it traveled down the flume the mile and a half to the finishing mill in Bridal Veil. The dependency between the two towns ended in 1936 when the mill at Palmer was shut down.

In 1936, fire struck the mill as the timber resources on Larch Mountain were running out. The Bridal Veil Falls Lumbering Company ended its ownership of the mill and ceased to operate in the town. In 1937, the entire town and its mills were bought by a company that became Bridal Veil Lumber and Box Company, which made wooden cheese boxes for Kraft Food Company. The company continued to operate in Bridal Veil until 1960 when it closed its doors. Today the boxes made in Bridal Veil are considered collectible antiques (Nesbit 2006). From 1955 to 1960, the company's president, Leonard Kraft, published a newsletter that covered such issues as business and prospects but also provided society information about potluck dinners, who was sick, who was visiting in Bridal Veil, and who had marked a recent anniversary with the company. Bridal Veil Lumber & Box Co. News Letter was the company newsletter, it also became a general newspaper for Bridal Veil and its 100 residents. The mill continued to operate under various owners through 1988.

In 1990, the Trust for Public Land acquired Bridal Veil and its buildings. Despite a ten-year fight from the Crown Point Country Historical Society to preserve the mill houses and buildings in Bridal Veil, the trust had them demolished in 2001.

Previous Archaeology in the Project Vicinity

There have been no previous archaeological investigations within or overlapping the current project APE and there are no previously recorded archaeological resources within the project area. There are, however, several archaeological sites recorded within close proximity of the quarry.

Site 35MU108, the Coopey Creek Site, is a lithic scatter and possible temporary camp located high above the Columbia River on an upper terrace of the canyon walls approximately 0.2 miles to the south of the quarry location (Boyton 1997). Thick ground cover obscures much of the site which is only visible due to the exposure provided by the hiking trail to Angels Rest.

Site 35MU132 is the historic town side of Bridal Veil located approximately 0.5 miles to the southwest of the project APE. Features noted on the site form include historic structural remains of the logging camp and sawmill, a refuse scatter, and the presence of the historic cemetery (Fagan 1988a). The site was revisited and subjected to subsurface testing in 1999 and 2001; a site record update was created at that time (McIlrath 2002). During the 1999 investigation five shovel probes and 73 shovel tests were excavated around the margins of 16 buildings slated for demolition. During the 2001 investigation 51 shovel tests and 10 backhoe trenches were excavated in areas not previously investigated.

Site 35MU137, the Dead Horse Site, is located approximately 0.2 miles to the northeast of the project area on the shores of the Columbia River. The site is normally inundated by the river so when the water level is low, there is very little vegetation obscuring the surface of the ground. The site consists of a complex arrangement of wooden slats, wooden stakes and posts, historic debris, and the remains of a horse in a confined area on the flat, silty beach. The site is historic aged and is comprised of domestic refuse (Fagan 1988b).

Current Investigation

Prior to the investigation a background literature search of documents, site forms, and survey records was conducted and aerial photographs were scrutinized. Archaeological pedestrian survey of the proposed project area was conducted August 7 and 8, 2017 by the University of Oregon's Museum of Natural and Cultural History archaeologists Kaylon McAlister and Rick Jensen. During the course of the

field work portion of the investigation 100% of the project area was subjected to pedestrian survey with additional subsurface exploration, in the form of exploratory shovel probes, conducted along a proposed access road near the west rim of the quarry pit.

The quarry was established as a quarry in 1906 for railroad construction, and later purchased by a private construction company for use during building of the Historic Columbia River Highway. The Final Report on Real Property Negotiations, by the Oregon State Highway Commission in 1939, indicates that the pit had been operated for years by the Warren Construction Co.

The first aerial photograph of the project area dates to 1935 and shows an access road to the northern portion of the parcel from the railroad bounding the northern edge of the quarry, as well as an access road entering the quarry from the east (Figure 5). The photograph also indicates that the earlier excavations began in the eastern portion of what would be become the much larger quarry pit. Soon after this, in 1939, the property was purchased from Minnie Franklin Coopey (9.24 acres for $2,755) and First National Bank of Portland (1.6 acres and easement for $495) by the Oregon State Highway Commission.

In 1951 a request to utilize a spring on the State's quarry property, which included the installation of a water line, was made by Mrs. W. J. Butcher of Corbett. The request was granted though was revocable at any time at the request of the Highway Commission should they need use of the area.

The next available aerial photograph of the project area dates to 1961 and indicates a vastly expanded quarry pit, as well as the new two lane interstate highway to the north (Figure 6). It shows stockpiled rock/gravels and a well developed access road on the eastern edge of the excavation and continuing to the northeast before intersecting with Highway 30 (the Historic Columbia River Highway), well outside the project area.

The next available aerial photograph of the project area dates to 1977; the quarry appears to be no longer in use at this time, as vegetation has begun to reclaim many portions of the southern and western

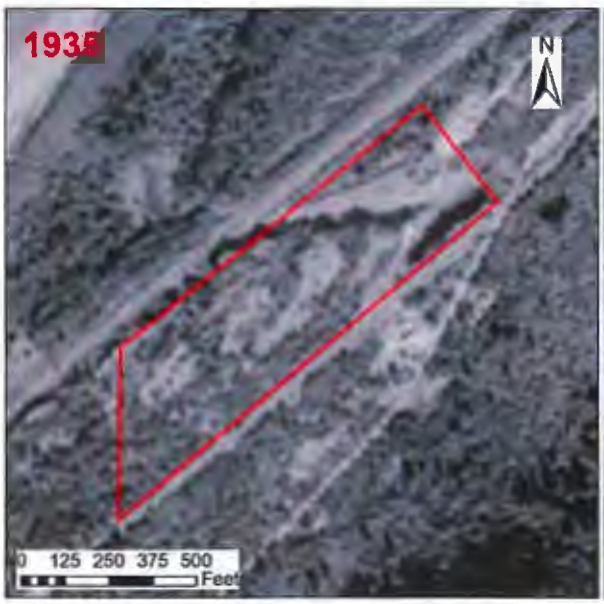


Figure 5. 1935 aerial photograph showing minimal excavations in the Coopey Quarry.

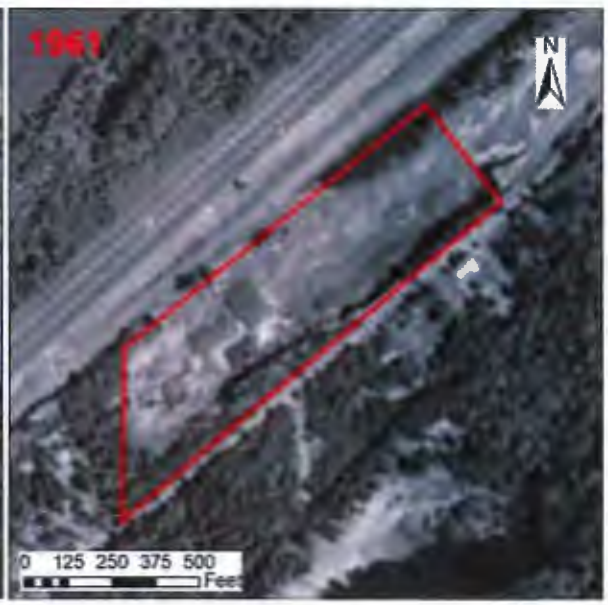


Figure 6. 1961 Photograph showing extensive quarrying of Coopey Quarry.

Figure 7. 1977 photograph appearing to show excavations at the quarry had ceased.

Figure 8. Modern satellite imagery showing additional vegetation growth in the quarry.

portion of the quarry (Figure 7). The access road connecting the eastern portion of the quarry to Highway 30 is still visible, but vegetation has increased substantially in this area as well. The primary change between the 1977 photograph and modern satellite imagery (Figure 8) is additional vegetation growth along the boundaries of the quarry pit.

Pedestrian Survey

Prior to the subsurface investigation, a pedestrian survey of the project area was conducted. Transects were walked at 20 meter intervals where possible with additional scrutiny in the southwestern corner of the APE as this appeared to be the only portion of the current project area not previously impacted by quarrying activities. Surface visibility ranged from excellent within the quarry, in areas of exposed gravel, and in the access roadbeds, to poor and non-existent areas to the west and south of the quarry (Figures 9 and 10). Dense vegetation along the periphery of the quarry floor and in the forest surrounding the quarry created the limited surface visibility in these areas.

Vegetation noted includes a mixed canopy of cottonwood, Big Leaf maple, Douglas fir, birch, ash, and wild hazelnut. The under story in the forested areas was very dense and included ferns, Burdock, poison oak, blackberry, trillium, and ivy. Within the quarried areas grows various field grasses, cattails near the areas with standing water, blackberries thickets, and dense moss.

Disturbances to the project area are cover more than 90% of the APE due to the previous quarrying activities conducted here. These include the removal of a large quantity of gravels and rock, and construction of east and west access roads. Dumping of domestic debris, appearing to be late 1960s to the 1970s in age, has occurred in the southwest portion of the quarry. Materials noted include a trailer, tires, refrigerators, galvanized pipe, garden equipment, carpeting, and domestic refuse (Figure 11).

Figure 9. Dense vegetation limited surface visibility in the southwest portion of the APE.

Figure 10. The quarry floor offered many areas of exposed ground surface.

Figure 11. A large pile of modern debris has been dumped over the quarry edge and rests in the southwest portion of the quarry.

Among the domestic items recorded were two bottle bases, which have an Owen-Illinois "I-in-an-O" logo used from the 1950s into the 21st century (Figure 12). The "21" left of the logo is a factory code for the Portland, Oregon plant which has operated continuously since 1956; the "2" to the right of the logo is a date code, indicating production in a year ending in 2 after 1960, but the decade is uncertain (Lockhart 2004; Lockhart and Hoenig 2015). Another artifact identified is part of a Mattel Toy Co. VRROOM! X-15 recumbent trike from the mid 1960s (Figure 13). In summary, dumped items may date as early as the mid 1960s, but the dumping episode certainly post-dates that time, likely after the quarry was abandoned in the early 1970s.

Additonal cultural material noted during the pedestrian survey is limited to a length of cable rope near the ponds in the northern portion of the quarried area, and shattered glass bottles as a result of target shooting in the central portion of the project area (Figure 14). Neither of these items could be identified as having antiquity to classify as historic.

Figure 12. Bottle bases with the Owens-Illinois plant in Portland, Oregon produced during the latter half of the 20th century.

Figure 13. Part of a Mattel Co. VRROOM! X-15 trike from the mid 1960s.

Subsurface Exploration

The subsurface investigation of the proposed route of the new access road to the quarry was conducted on August 8, 2017. Five 30x30 cm exploratory probes were excavated in the southwest portion of the project area, along the proposed access road alignment. Probes were placed at 10 meter intervals along the proposed route. All excavated sediments were passed through 1/8" hardware screen. All exploratory probes were excavated to at least 50 cm depth, in 10 cm intervals, and only terminated upon reaching two consecutive sterile levels when applicable.

Sediment encountered during the subsurface investigation is consistent with those mapped by the NRCS (mapped as 3D); cobbly and very cobbly loam capped by an organic layer of decomposing plant material. Rock was subrounded to subangular and ranged from pebble to cobble in size in a medium brown loam matrix (Figure 15). Excavations began in the south, adjacent to the highway right-of-way and continued to the north, toward an existing quarry access road. Sediment became increasingly rocky and

Figure 14. Location of probes and cultural material noted within the current project area.

Figure 15. Probes 1, 2, and 3, showing the cobbly loam sediment matrix.

shallow as the subsurface investigation approached the existing quarry access road and the land surface, while completely obscured by thick ground cover, appeared hummockier and was likely disturbed by historic quarry activities. Exploratory 4 was terminated at level 4 due to a rock impasse while probe 5, just adjacent to the existing access road, was terminated at level two because of rock impasse. During the course of the subsurface investigation a single artifact, a short piece of non-diagnostic metal strapping, was recovered from Level 1 of Probe 2.

Summary and Recommendations

Archaeological pedestrian survey and subsurface exploration of the proposed project area was conducted on August 7 and 8, 2017 by the University of Oregon's Museum of Natural and Cultural History archaeologists Kaylon McAlister and Rick Jensen. With plans to rehabilitate the quarry, and to use the quarried area as a possible fill disposal site, the ODOT requested the archaeological investigations to ensure no cultural materials would be impacted. While the vast majority of the project area has been previously impacted by historic quarrying activities, plans include building an access road through an area in the southwest corner of the parcel which appears only minimally disturbed. Subsurface exploration using 30x30 cm exploratory probes, was conducted along the proposed road corridor.

No historic sites or features were noted during the current investigation. A dump of domestic debris was identified. Although a few of the items present could date as early as the mid-1960s, the dump episode itself likely dates from the early 1970s or later.

No additional subsurface archaeological investigations are recommended prior to the current planned construction project. If, however, in the course of construction activity, previously unidentified prehistoric or historic cultural remains are exposed in areas not previously mentioned—such as concentrations of fire-cracked rock, charcoal, chipped or ground stone tools, animal bones, bottles and cans, or building foundations—work should be halted immediately at that location until a qualified archaeologist can be consulted. This caution applies especially to Indian burials, which are specifically protected under Oregon law (ORS 97.745). Disturbance to such graves is prohibited, even "through inadvertence, including construction."

Distribution:

Matt Diederich, Oregon State Historic Preservation Office
Chris Bailey, Confederated Tribes of the Grand Ronde
Ms. Catherine Dickson, Confederated Tribes of the Umatilla
Kathleen Sloan, Confederated Tribes of the Warm Springs
Chris Donnermeyer, Columbia River Gorge National Scenic Area

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OREGON INVENTORY OF HISTORIC PROPERTIES

ORS 358.653 LEVEL OF EFFECT FORM

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016	
Property Name: Columbia River Highway National Historic Landmark District, NRIS 83004168	
Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

Preliminary Finding of Effect:

☐No Historic Properties Affected ☒No Historic Properties Adversely Affected ☐Historic Properties Adversely Affected

State Historic Preservation Office Comments:

☐Concur ☐Do Not Concur: ☐No Historic Properties Affected
☐No Historic Properties Adversely Affected
☐Historic Properties Adversely Affected

Signed _____ Date _____

Comments:

INTRODUCTION

This statement of finding is made pursuant to the requirements of Oregon Revised Statute 358.653. It discusses the effect of the Coopey Disposal Site Project on the Columbia River Highway National Historic Landmark District, NRIS 83004168. It is the finding of the Oregon Department of Transportation that the project will have No Adverse Effect on the Columbia River Highway (CRH) National Historic Landmark (NHL) District. ORS 358.653 states that "Any state agency or political subdivision responsible for real property of historic significance in consultation with the State Historic Preservation Officer shall institute a program to conserve the property and assure that such property shall not be inadvertently transferred, sold, demolished, substantially altered or allowed to deteriorate." The owners of the CRH NHL district include the Oregon Department of Transportation, the Oregon Parks and Recreation Department, and the USDA Forest Service.

PROJECT DESCRIPTION

ODOT proposes to convert Coopey Quarry, a state owned parcel previously used as a quarry for basalt, into a disposal site for material generated from landslides and other maintenance activities. Coopey Quarry was active as far back as the first decade of the 20th century, when it provided rock for the Oregon-Washington Railroad and Navigation Company for reworking its nearby mainline, which dated from 1882. By the teens, a private contractor obtained some from the quarry to construct the Columbia River Highway. The quarry's south boundary buts up against the north right-of-way line of the Historic Columbia River Highway, which is the northern boundary of the CRH NHL district at this location.

Right-of-way maps and land sale records indicate that the Oregon State Highway Department acquired the quarry parcel in 1939 and used rock from it to construct Interstate 84. By the 1970s, the quarry had been mined out and an access easement through a nearby private parcel to the east had expired. The Coopey Disposal Site Project will reclaim and restore the quarry to match existing landforms and generally conform with the topographic survey data from the ODOT right-of-way map from the 1935. Since historical access to the quarry from the parcel to the east is no longer available, the Coopey Disposal Site Project calls for a new access road coming directly north from the HCRH near the west end of the quarry parcel. Coopey Quarry is not eligible for the National Register of Historic Places.

ODOT is planning to create planted berms to visually screen the project area from both the CRH NHL district and Interstate 84. The agency's crews will deposit debris from local landslides as marked in Figure 3, starting on the eastern end of the property with disposal phase 1, and generally moving west as each area is filled to the final grade.

The project will also cut a 12-foot-wide, 250-foot-long access road from the HCRH into the quarry. The location, at the western end of the quarry, avoids wetlands to the east to connect to the highway.

After the disposal activities are completed, ODOT will grade the site and plant it with native vegetation to complement the surrounding mixed forest.

IDENTIFICATION AND DESCRIPTION OF HISTORIC PROPERTY

Columbia River Highway National Historic Landmark District

The CRH NHL district is located in the state of Oregon, along the south side of the Columbia River between the cities of Troutdale (14.2 miles east of Portland) and The Dalles (88 miles east of Portland). The Columbia River Highway was the first modern highway in the Pacific Northwest and the first scenic highway in the United States. The road became a trunk route from Portland's large commercial center to eastern Oregon and points beyond. The highway's alignment remains true to the plan that Samuel C. Lancaster, Samuel Hill, and others envisioned for its original configuration. The road was the pinnacle of early-20th-century rural highway design created to take visitors to the Columbia River Gorge's most breathtaking and beautiful

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016	
Property Name: Columbia River Highway National Historic Landmark District	
Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

natural wonders and scenic vistas. Construction on the CRH took place from 1913 to 1922. The Keeper of the National Register listed the "Columbia River Highway Historic District" on December 12, 1983 (NRIS 83004168). On May 16, 2000, Secretary of the Interior Bruce Babbitt designated major portions of the Columbia River Highway as a National Historic Landmark. The project location is within both the NR and NHL districts.

The CRH NHL district is narrow and linear shaped. It runs 73.8 miles, the length of the original highway from the Sandy River to The Dalles. The nominated highway within that 73.8-mile distance is 51 of the extant 55 miles. The NHL district is divided into three discontinuous segments. Segment 1 includes the road and contributing features from the Sandy River to Warrendale (HMP 14.2 to 38.5). Segment 2 includes the road and contributing features from Tanner Creek to Cascade Locks (HMP 41.7 to 45.8). Segment 3 includes the road and contributing features from Hood River to The Dalles (HMP 65.8 to 88.4).

The 1983 National Register nomination for the Columbia River Highway Historic District defined a linear resource that was 60-feet wide (30-feet either side of the roadway's centerline) and equal to its original right-of-way. The district was wider at several locations to incorporate slopes, other geological or highway-related engineering features, and the public recreation areas intertwined with the route's history. The district also traversed cities and communities on the streets where the CRH passed. There, the district was confined to the curb line or edge of pavement. The NHL district relies on the same general boundary definitions, but has excluded short, isolated segments of the NR district in Multnomah and Hood River counties that did not possess high integrity. (This accounts for the 51 vs. 55 miles of extant road noted above.) The NHL district has 54 contributing features (buildings, structures, and objects). Coopey Quarry is not a contributing feature of the NHL district.

The CRH NHL district meets **NHL Criterion 1** as an outstanding example of modern highway development in 20th-century America for its pioneering advances in road design. These include the adherence to grade and curve standards, and the use of comprehensive drainage systems, dry and mortared masonry walls, reinforced-concrete bridges, and asphaltic concrete pavement on a rural, mountain road during the formative years of modern highway building in the United States. The district meets **NHL Criterion 4** as the single most important contribution to the fields of civil engineering and landscape architecture by Samuel C. Lancaster and as an exemplar example of American landscape architecture, specifically as the first scenic highway in the United States. The CRH's aesthetic and engineering achievements greatly influenced the design and construction of other scenic highways, including national park roads, in the 1920s and 1930s. A combination of advanced engineering with landscape architectural elements as embodied in the CRH put in practice the concept of "landscape engineering" in modern highway design a decade before it was employed by the National Park Service on the Going-to-the-Sun Road and throughout the national park system.

The CRH, and its associated designed landscape, was a technical and civic achievement of its time, successfully mixing sensitivity to the magnificent landscape with ambitious engineering. In the CRH, Lancaster emulated the European style carriage roads in the Columbia River Gorge, while also designing and constructing a highway to advanced engineering standards. Throughout the route, Lancaster and subsequent locating engineers held fast to a design protocol that he developed after years of practical engineering experience and experimentation. It included accepting no grade greater than 5 percent, nor laying out a curve with less than a 200-foot turning radius. The use of reinforced-concrete bridges, combined with masonry guard walls and retaining walls, both on the road and on associated pedestrian trails, brought together the new with the old—the most advanced highway structures with the tried and tested, and all made by hand.

Multnomah County constructed the portion of the CRH within its jurisdiction, under the direction of Lancaster, from the Sandy River to the Hood River County line, beginning in the fall of 1913. It opened for traffic in 1915 and a patented Warrenite asphaltic concrete pavement in 1916. The rest of the highway, in Hood River and Wasco counties, opened a few miles at a time, from west to east, through 1922.

AVOIDANCE ALTERNATIVES CONSIDERED
(including No Build Alternative and Minimization Efforts)

EVALUATION OF EFFECTS

No Build Alternative
The No Built Alternative does not meet the Coopey Disposal Site Project's purpose and need statement. Without an access road from the CRH, ODOT cannot reclaim and restored the quarry, which is the purpose of the project.

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016	
Property Name: Columbia River Highway National Historic Landmark District	
Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

Build Alternative

Application of the Criteria of Adverse Effect (36 CFR 800.5)

An application of the Criteria of Adverse Effect required evaluating the project for both how it affects Segment 1 of the CRH NHL district and how it affects the entire NHL district.

Affects to Segment 1 of the Columbia River Highway National Register Historic District

The activities called out in the Coopey Disposal Site Project include reclaiming Coopey Quarry and building an access road. ODOT will accomplish the quarry reclamation over an indeterminate amount of time that could range from a few years to a few decades, depending on the availability of fill material. Much more definite is the need for direct access to the quarry from the CRH. The project will accomplish this with a single-lane gravel road that heads north from the north shoulder of the highway. (See Figure 1). Reclaiming the quarry will have No Effect on the NHL district. Construction of the road will result in No Adverse Effect on Segment 1 of the CRH NHL district, which includes about 24.3 miles of CRH roadway from Troutdale to Warrendale.

The project will affect a twelve foot-wide segment of the NHL district from the edge of pavement of the Columbia River Highway to the north edge of the 60-foot-wide right-of-way (30 feet either side of roadway centerline. The project will preserve those materials, features, finishes, spaces, and spatial relationships that, together, give this Columbia River Highway NHL segment its historic character.

The Coopey Disposal Site Project will not introduce any atmospheric or audible elements that diminish the significant historic features of this segment of the NHL district. It will not neglect this segment of the district, nor will it transfer the property out of federal ownership [the portion of the NHL district within the project's Area of Potential Effect is not under federal ownership].

Affects to the entire Columbia River Highway National Historic Landmark District

The reclamation activities called out in the Coopey Disposal Site Project will have No Effect on the CRH NHL district, which includes 51 of the 74 original miles of roadway from Troutdale to The Dalles. Construction of the access road to the quarry will result in No Adverse Effect on the CRH NHL district. (See activities called out above.)

The project will affect a twelve foot-wide segment of the NHL district from the edge of pavement of the Columbia River Highway to the north edge of its 60-foot-wide right-of-way (30 feet either side of roadway centerline). The project will preserve those materials, features, finishes, spaces, and spatial relationships that, together, give the CRH NHL district its historic character.

The Coopey Disposal Site Project will not introduce any atmospheric or audible elements that diminish the significant historic features of the NHL district as a whole. It will not neglect the district, nor will it transfer the property out of federal ownership [the portion of the NHL district within the project's Area of Potential Effect is not under federal ownership].

COORDINATION AND PUBLIC INVOLVEMENT

ODOT informed the neighbors and interested parties, including the Tribes and agencies, of its pre-application conference for its Columbia River Gorge National Scenic Area permit with the Multnomah County Land Use Planning Department. The project will be on the agenda for upcoming Historic Columbia River Highway Advisory Committee meetings, which take place quarterly.

CONCLUSION

It is the determination of the Oregon Department of Transportation that pursuant to ORS 358.653, the Coopey Disposal Site Project will have No Adverse Effect on the Columbia River Highway National Historic Landmark District (Segment 1 of the NHL district or the entire NHL district). ODOT recommends a Finding of No Historic Properties Adversely Affected for the Coopey Disposal Site Project.

REFERENCES

National Historic Landmark Nomination, Columbia River Highway Historic District, Multnomah, Hood River, and Wasco counties, Oregon, National Register #83004168, by Robert W. Hadlow, 2000.

National Register of Historic Places Nomination, Columbia River Highway Historic District, Multnomah, Hood River, and Wasco counties, Oregon, National Register #83004168, by Dwight A. Smith, 1983.

OREGON INVENTORY OF HISTORIC PROPERTIES

ORS 358.653 LEVEL OF EFFECT FORM

Continuation Sheet

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016	
Property Name: Columbia River Highway National Historic Landmark District	
Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

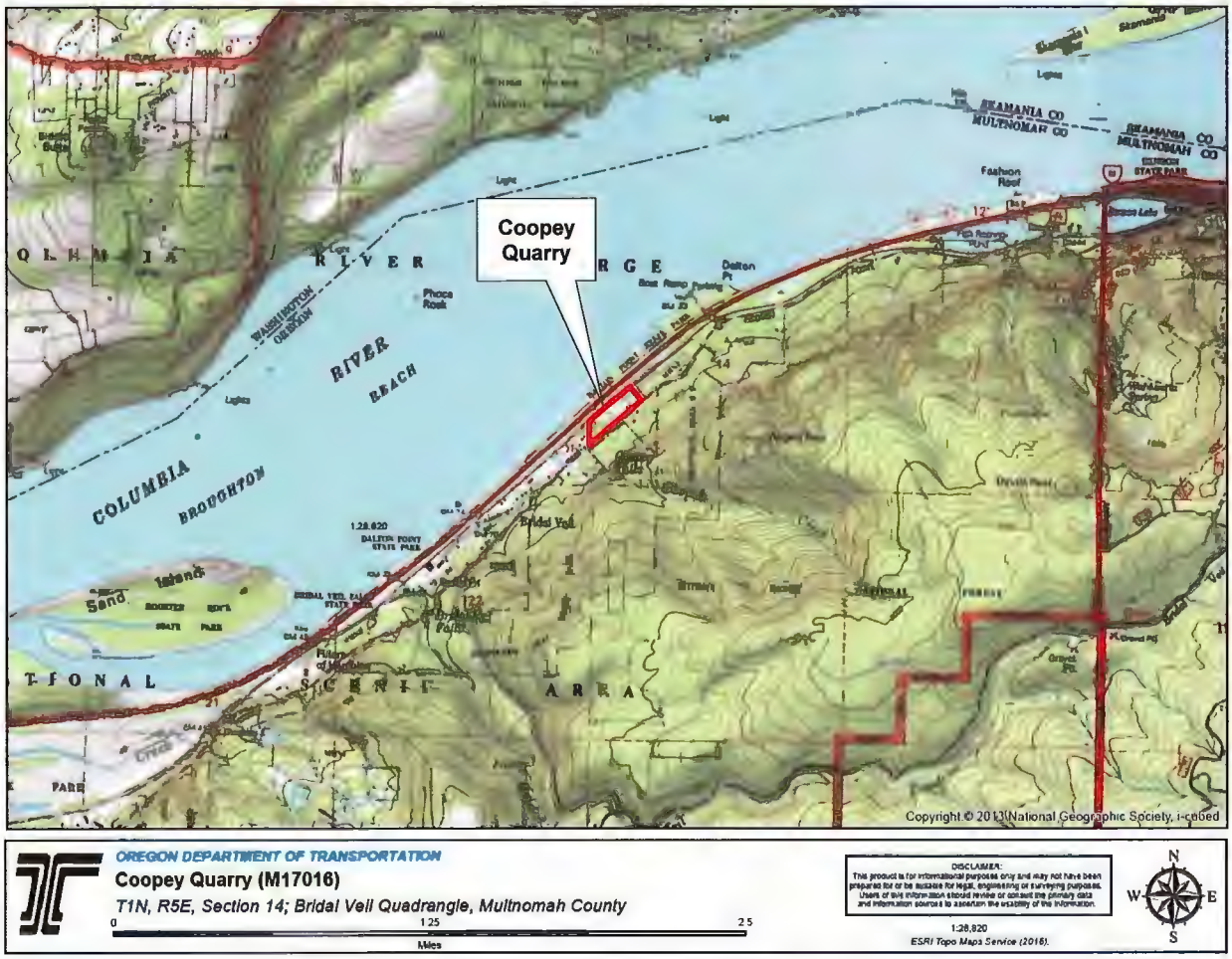

Figure 1. Project Location Map.

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016	
Property Name: Columbia River Highway National Historic Landmark District	
Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

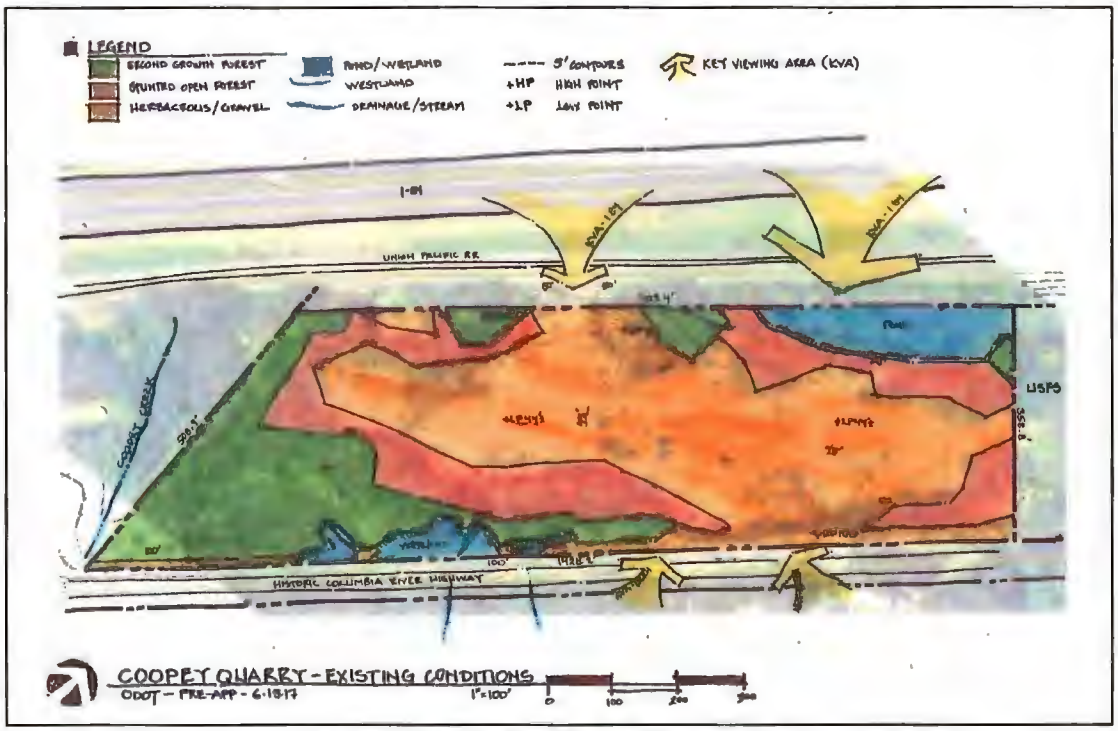

Figure 2. Existing Conditions at Cooley Quarry.

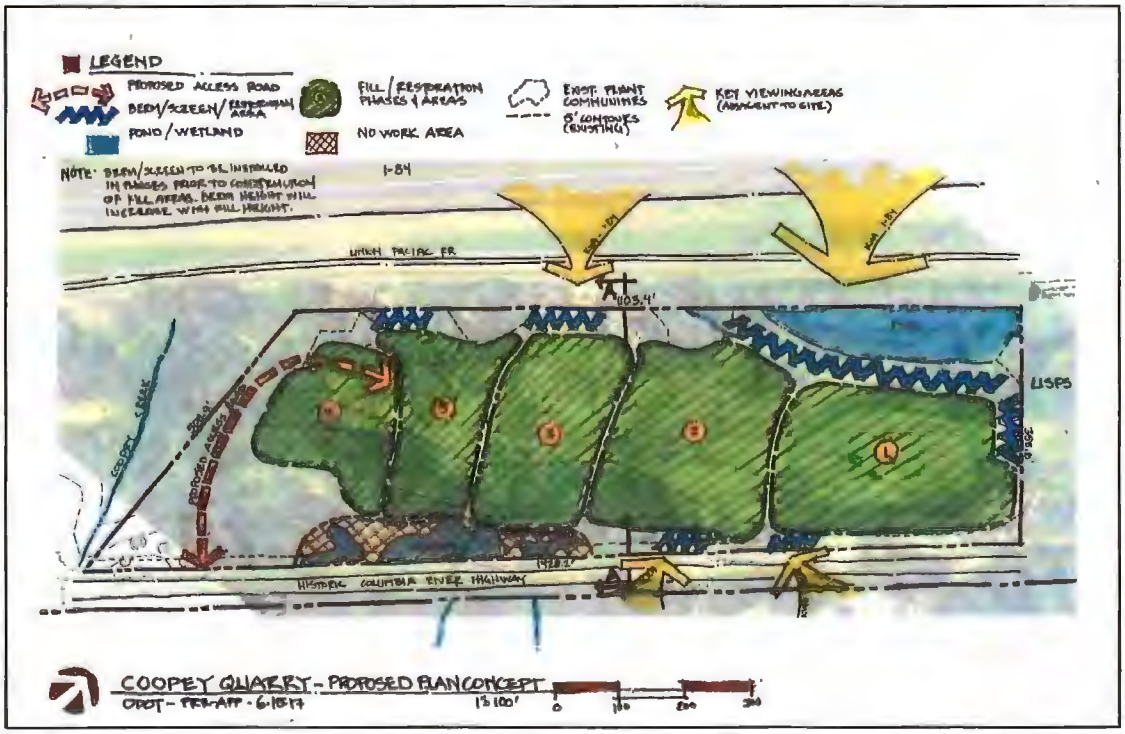

Figure 3. Proposed Plan Concept at Coopey Quarry showing location for the access road at west end of the quarry.

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016	
Property Name: Columbia River Highway National Historic Landmark District	
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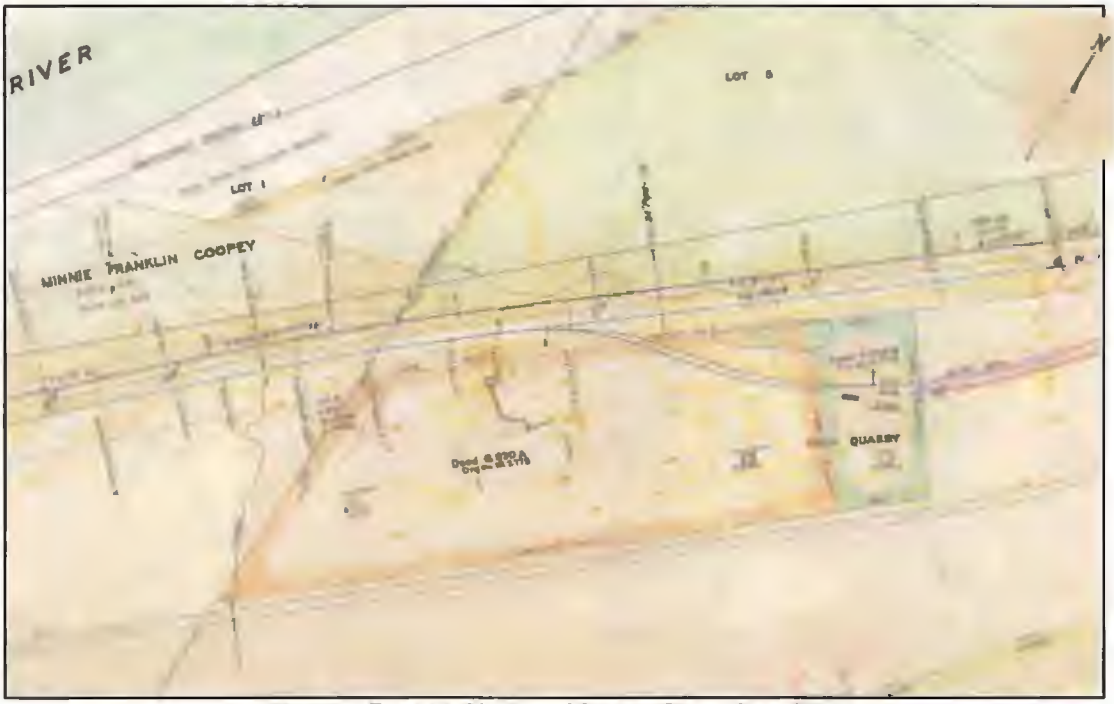

Figure 4. Topographic Map of Coopey Quarry from 1935.

Figure 5. Existing Topography at Coopey Quarry.

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016	
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Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

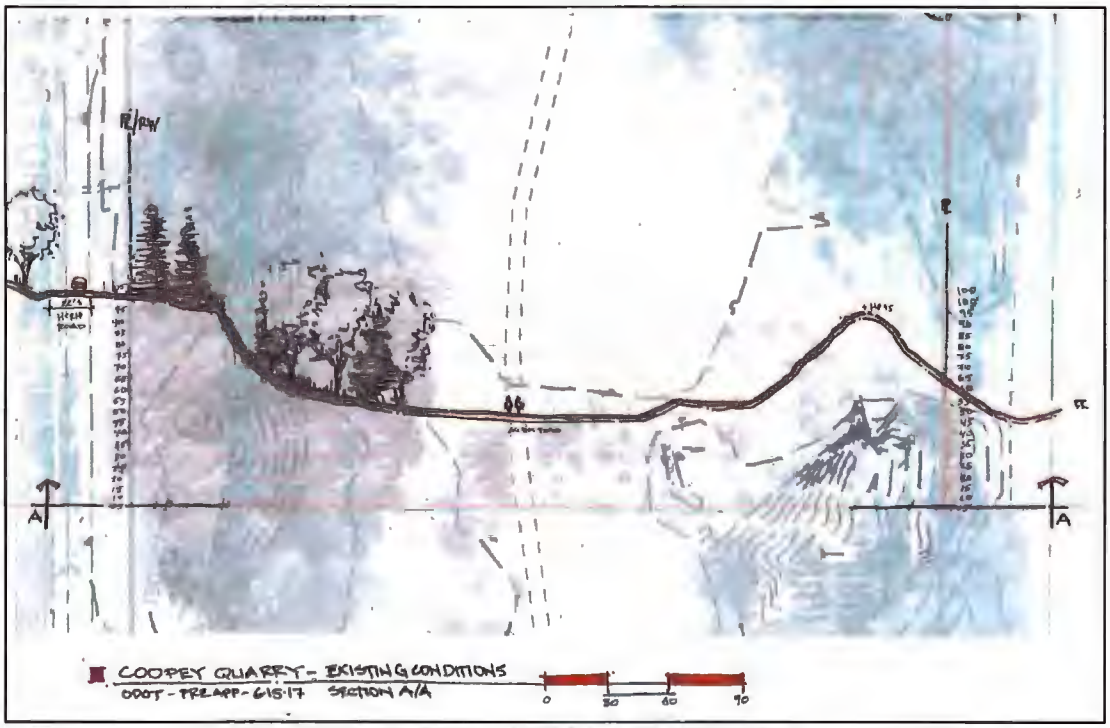

Figure 6. Existing Conditions at Coopey Quarry

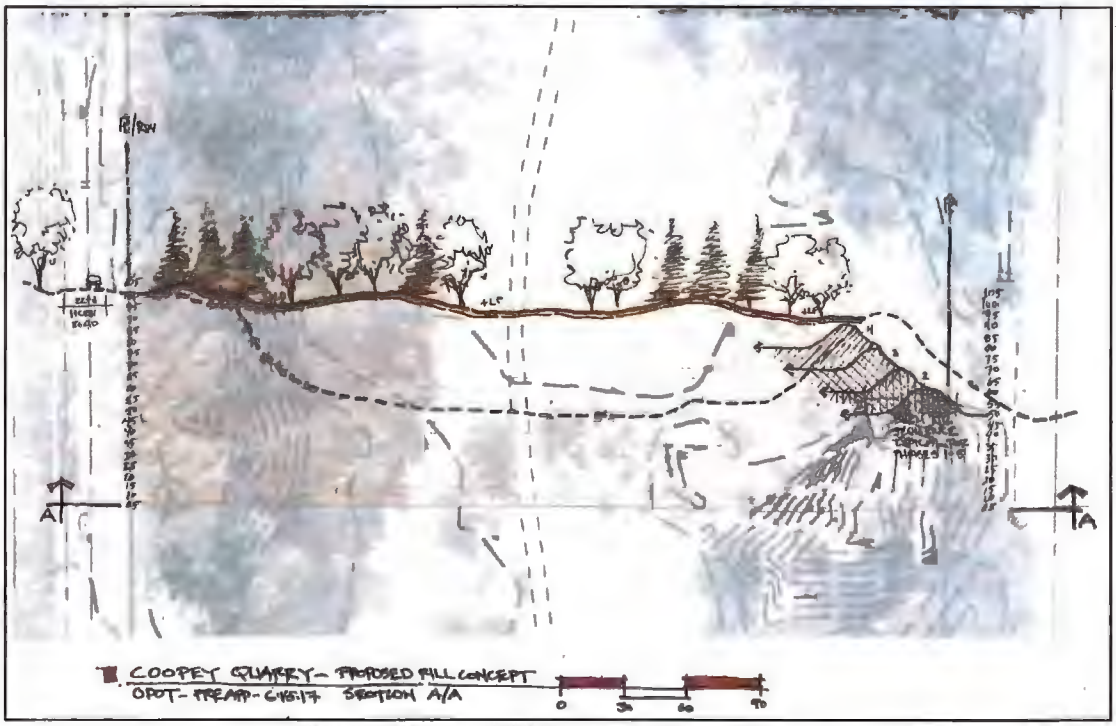

Figure 7. Proposed Fill Concept for Coopey Quarry

OREGON INVENTORY OF HISTORIC PROPERTIES

ORS 358.653 LEVEL OF EFFECT FORM

Continuation Sheet

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016	
Property Name: Columbia River Highway National Historic Landmark District	
Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

Photo 1. Looking north at the proposed Coopey Quarry access road, where it will connect with north side of CRH NHL District.

Photo 2. Looking west along the Historic Columbia River Highway (in the CRH NHL) showing location where quarry access road will enter highway.

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016	
Property Name: Columbia River Highway National Historic Landmark District	
Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

Photo 3. Looking SE at Coopey Quarry floor, CRH NHL beyond vegetation above basalt cliffs at the right.

Photo 4. Looking West at Coopey Quarry floor. Cliffs and vegetation and CRH NHL to the left.

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016	
Property Name: Columbia River Highway National Historic Landmark District	
Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

Photo 5. Looking NW from CRH NHL district toward Coopey Quarry. Vegetation obstructs view of quarry.

Photo 6. Looking North from CRH NHL towards Coopey Quarry.

Coopey Disposal Site

Feasibility and Suitability Analysis

Oregon Department of Transportation

Columbia River Gorge National Scenic Area Application

The Coopey Quarry is a state owned abandoned quarry used during the development of Interstate 84 through the 1940s and 1950s as a gravel source for the construction of the water level route through the Gorge. The site sits south of Interstate 84 and UPRR and north of the Historic Columbia River Highway. The site is zone GSF 40. A disposal site can be permitted as a conditional use within this zone. According to Chapter 38 of MCC the applicant is required to demonstrate that it is not practicable to locate the site outside the Scenic Area or inside an Urban Area.

ODOT is proposing to use the abandoned quarry as a disposal site with the intent of eventually reclaiming the site to its pre-quarry condition using native fill material. The material used to fill the quarry will be native to the Gorge generated from during geologic events and subsequent maintenance activities within the roadway prism. Material will include rocks, soil and woody material.

ODOT maintenance staff identified the need for a new disposal site in the Columbia River Gorge following recent geologic activities and extreme weather conditions. Winter weather causes rock fall and trees to fall across the roadway requiring removal by ODOT staff.

All ODOT managed existing disposal sites are at capacity and/or are permitted for temporary storage. A long term solution to store debris is needed within the Columbia River Gorge. The Coopey Quarry was identified as a practicable alternative due to its size, ability access, scenic subordinance, location (its close proximity to where much of the debris is being generated) and the opportunity to reduce scenic impacts.

Just this past spring a major slide event occurred in the vicinity of the Coopey Quarry which closed the Historic Columbia River Highway for several weeks. On March 15, 2017 a debris flow at milepost 16.63 blocked the highway. The highway was closed overnight and several weeks following. While clearing the roadway on March 16, 2017, two more debris flows occurred in close succession. Work was suspended. The highway remained closed and ODOT staff scheduled a helicopter reconnaissance the following day to locate and evaluate the source of the debris flow. The flight revealed that the source was a large, shallow landslide located at the top of the drainage. ODOT is monitoring this slide but it is likely that future debris flows will

occur in this vicinity necessitating the need for a nearby disposal site in preparation for the upcoming rainy season.

ODOT geologists have prepared a survey of existing ODOT owned lands that could provide opportunities to store materials. Seven sites were identified within the I-84 corridor. The matrix is attached. Additionally, ODOT has a stock pile "bone yard" area within the city limits of Cascade Locks. This area is not ideal for long term storage because it is required for temporary storage of sanding and sweeping material and construction staging.

The Columbia River Gorge is a geologically dynamic place. Transportation through the Gorge is critical. Removal of debris that falls on or across the road is an important function of the Oregon Department of Transportation to maintain access for life and safety through the Gorge. Expedited removal of debris is paramount during emergency events. The Coopey Quarry is located in the Gorge, an area prone to landslides and geologic events. During severe weather events multiple slides or debris flows may occur impacting the transportation corridors. Proximity between the event and the disposal site is critical. The faster the ODOT maintenance trucks can haul and remove the debris from the travel way the faster the road can be opened for emergency vehicles and police.

Sites outside the Columbia Gorge National Scenic Area would require extensive travel time. ODOT staff reached out to Multnomah County Road Maintenance Crews. Multnomah County presently trucks their road debris to a disposal site in the Portland West Hills. Trucking debris to the West Hills of Portland is not practicable assuming the life line function of ODOT's facilities. Geologic events most often occur during winter. Keeping the transportation corridors open is critical during these times. Access for police and emergency vehicles is very important to public safety especially during emergency events. Interstate 84 and the Historic Columbia River Highway are critical transportation corridors though the Gorge.

Closures of these facilities (I-84 and HCRH) require long detours (SR-14/Hwy 26 around Mt Hood) which may also be impacted by slides and rock fall during severe weather conditions. During winter operations maintenance crews have access to only one dump truck. The other trucks in the fleet are set up with plows and sanding equipment necessary to maintain access through the Gorge. During these times maintenance staffing is limited and often spread across the region plowing or sanding to maintain access on the Interstate or along the Historic Columbia River Highway. With one truck available, a flagger and loader operator would need to sit idle waiting for the truck to return from a site located outside the National Scenic Area. The Coopey Quarry is ideally located near I-84 and the Historic Columbia River Highway. The site has limited scenic visibility and provides an area to store debris which will allow the degraded site to be reclaimed over time.

COOPEY DISPOSAL SITE FEASIBILITY AND SUITABILTY ANALYSIS OF COMPARABLE ODOT SITES IN THE COLUMBIA RIVER GORGE NSA

	Quarry/Site Name	Location	Description		Impacts	Visible from I-84, SR 14, or HCRH?	Size	Access	Applicant Findings
RW file #43519	**Fountain Slide**	I-84 MP 49.4, Hood River County	Currently an active site - disturbed area is 200 feet wide by 400 feet long/Used for temporary storage by ODOT maintenance.	3N 8E 34	Not visisble	No		Via gated access road (locked) that connects to an abandoned section of the Historic Columbia River Highway. The easement was temporary and expired in 1971	Not practicable. Active slide area not appropriate for disposal.
RW file #17802, Q01365	**Mitchell Point Talus**	I-84 MP 58.8, Hood River County. 100 meters south o I-84	Original easement to site is no longer avialable - would need to get another (?) easement/Future location of the HCRH State Trail.	3N 10E 31	Recreaton Impacts	Yes - from I-84, SR 14, Columbia River, and Union Pacific mainline/future HCRH State Trail	12.93 acres	0.71 acre Haul Road easement - original easement to the site is no longer available	Not practicable. Future aligment of HCRH State Trail.
RW# 1R-2-803	**Corbett Quarry**	I-84 MP 21.89, Multnomah County. Take Exit 22 to Corbett Hill Road, proceed 177 feet. Site is on right and visisble from Highway.	Site is currently used. Presently the site is at capacity. Maintenance crews are storing here.	1N 4E 27	visible from I-84	I-84	25.48 acres	Access by locked gate	Not practicable. Quarry floor is not large enough. Maintenance currently uses it as temporary storage area.
RW# 1R-4-538	**Dodson Material Source**	I-84, east and take the Dodson Exit MP 35. The site is located on the south side of Frontage Road near Tumalt Creek.	Potential crushed aggregate and riprap source. Inactive mine plan permit as of 1976. The site is strewn with fragments of basalt talus ranging size from 3" to 6" in size.	1N6E 1	Visible from i-84 and HCRH	I-84 HCRH	160	Site is located on south side of Frontage Road.	Not for debris storage. Active slide location.
1R-5-1117	**Good Earth Talus**	Take Exit 28, 2 miles east of Coopey Quarry	Access from HCRH on tight corner just west of Multnomah Falls. Purchased in 1958 from Stebco, Inc. Mature trees stand in the borrow area. Property is an areas that is very steep and overgrown.	1N 5E 13	Visible from HCRH	HCRH			Not practicable. Steep. Vegetated. Owned by OPRD
1R-1-1008	**Yeon Talus Pit**	On the south side of 84 east of Moffett Creek	Property is really just a talus slope next to I-84. The HCRH State Trail traverses the site.	2N 7E 31	visible from I-84/recreation impacts	HCRH state Trail	284.48	HCRH State Trail	Not practicalbe. HCRH State Trail has been developed in this location.
1R-2-959	**Wilhelm Filler Pit**	Take I-84 east from Portland to milepost 17.82. Take 18 towards Lewis and Clark State Park and proceed .002 miles. Turn left at Jordan Road and proceed 138 to site. Site is located on the south side of I-84 and adjecnet ot the Union Pacific mainline.	Site is used as stock pile and waste site. Maintenance has placed a berm of slide material along the north side of property. Site is flat and partially wooded. This berm was built a visual buffer from I-84.	1N 3E 25	visible from I-84	HCRH	86.24	From Jordan Road	Applicable. Permitted for temporary storage of materials following the 1996 Dodson debris flow.

Cascade Locks Bone Yard	WaNaPa, Cascade Locks across from Cascade Locks maintenance facility.	Used for temporary storage for sanding and sweeping material and construction staging.	Partially visible from I-84	WaNaPa	No additional capacity. Construction staging, sanding and sweeping material storage in addition and storage of road maintenance supplies.