



Oregon

Kate Brown, Governor

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MULTNOMAH COUNTY
PLANNING SECTION

Department of
Transportation

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July 7, 2017

Revised: February 21, 2018

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.
Project Scope and Area**

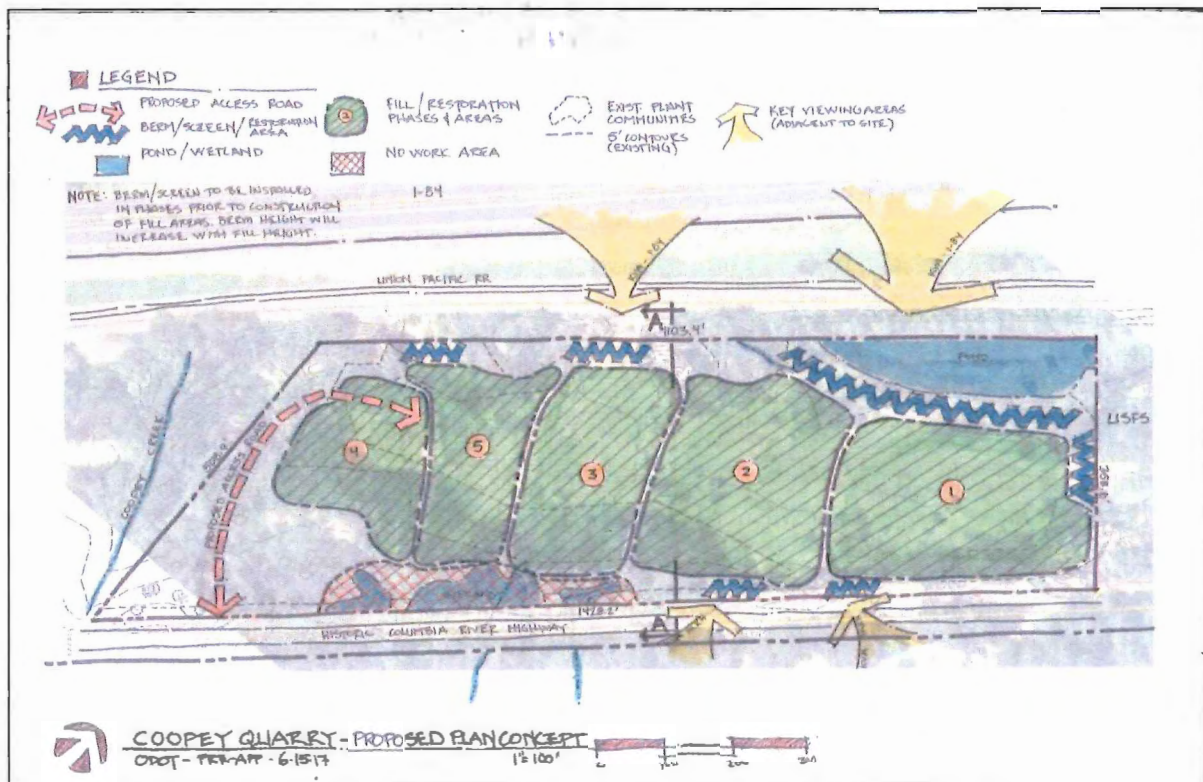


Figure 2. Preliminary disposal fill plan and sequencing showing work zones and berm locations.

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 HCRH. 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)

3

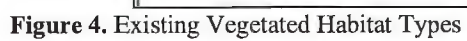




Figure 5. Representative photos of habitat within the quarry site including damage from recent mudding scars. Foreground has quarry bottom of mainly gravels over bedrock, background shows the limited cliff habitat and scrub forest. Secondary forest is restricted to above cliff face. Ephemeral runoff 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 (West Fork) just over 1000 feet to the west of the project. Note that another fork of Coopey lies less than 200ft from the access road. 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 (<i>Strix occidentalis caurina</i>)	FT/ST/1	Mixed old growth forests with high canopy structure.	No suitable habitat
Black Swift (<i>Cypseloides niger</i>)	-/-/2	Cliffs and crevice	No nesting at location
Vascular Plants			
Howell's bentgrass (<i>Agrostis howellii</i>)	-/SC/1	Moist Shady cliffs/canyon walls/ talus slopes/Waterfalls	No
Nuttall's larkspur (<i>Delphinium nuttallii</i>)	-/-/2	undisturbed dry cliffs/open ground/moist lowlands	No
Howell's daisy (<i>Erigeron howellii</i>)	-/SC/1	Most Rocky Sites	No
Oregon daisy (<i>Erigeron oregonus</i>)	-/SC/1	wet basalt outcroppings / waterfalls	No
Columbia lewisia (<i>Lewisia columbiana</i> var. <i>Columbiana</i>)	-/-/2	grassy balds/rocky/talus/slopes	No
Suksdorf's desert parsley (<i>Lomatium suksdorfii</i>)	-/SC/1	Semi-open to open dry rocky hillsides	No
White fairypoppy (<i>Meconella oregana</i>)	-/SC/1	Open Grasslands/ moist spring/dry summer	No
Barrett's penstemon (<i>Penstemon barrettiae</i>)	-/SC/1	dry rocky places/basalt cliffs	No
Violet suksdorfia (<i>Suksdorfia violacea</i>)	-/-/2	wet shady areas/ rocks, cliffs, sandy banks	No
Oregon sullivantia (<i>Sullivantia oregana</i>)	-/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, three wetlands above the quarry, along the southern boundary and one 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 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.

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MULTNOMAH COUNTY
PLANNING SECTION

**Coopey Quarry
ODOT M17016
Mitigation Report**

Multnomah County, Oregon



Prepared by:

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November 8, 2017
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Revised May 24, 2018

EXHIBIT

A.14

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Appendix A: Coopey Quarry Reclamation Plan

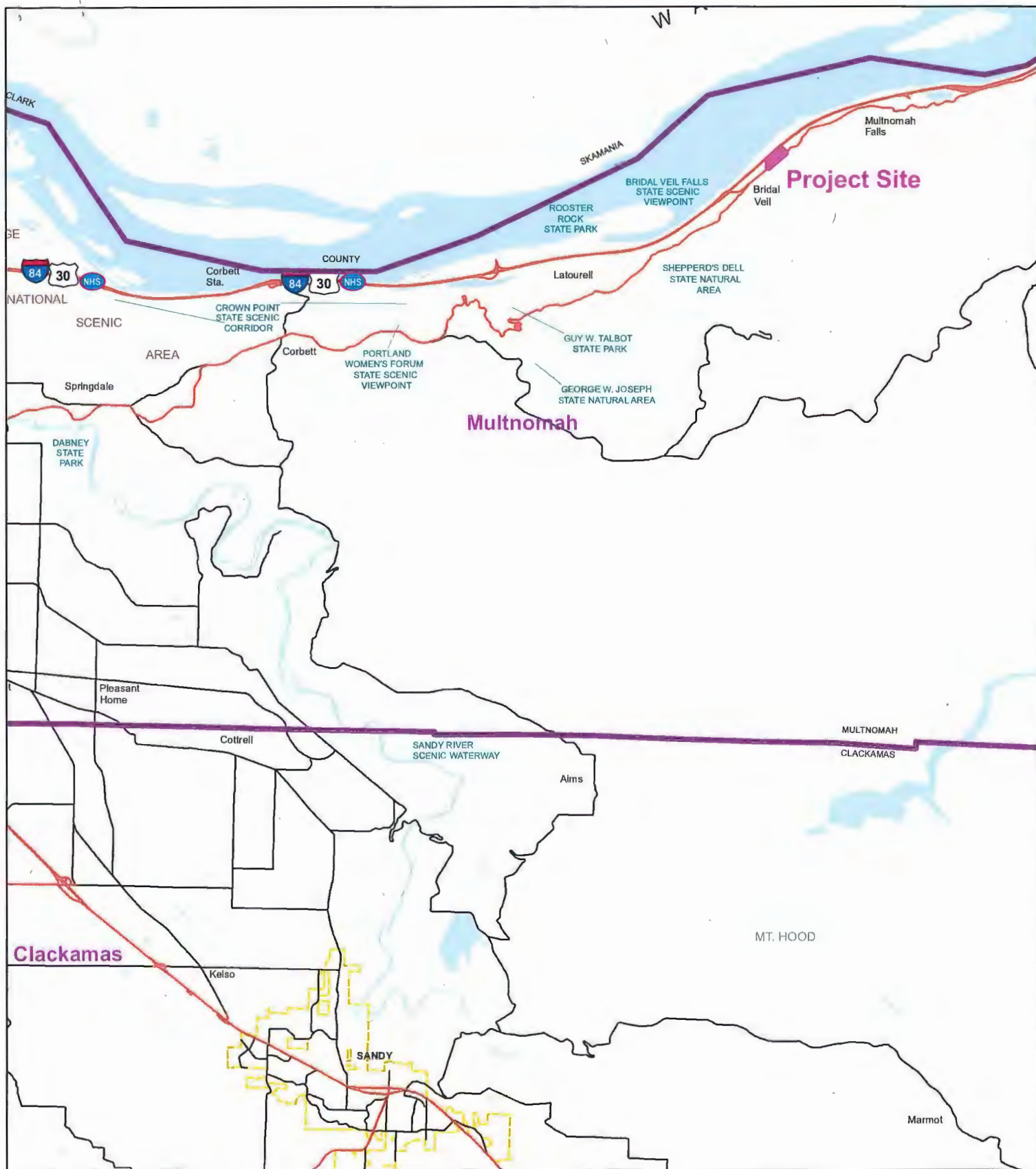
1. Introduction

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



Legend

- County
- Coopey Quarry

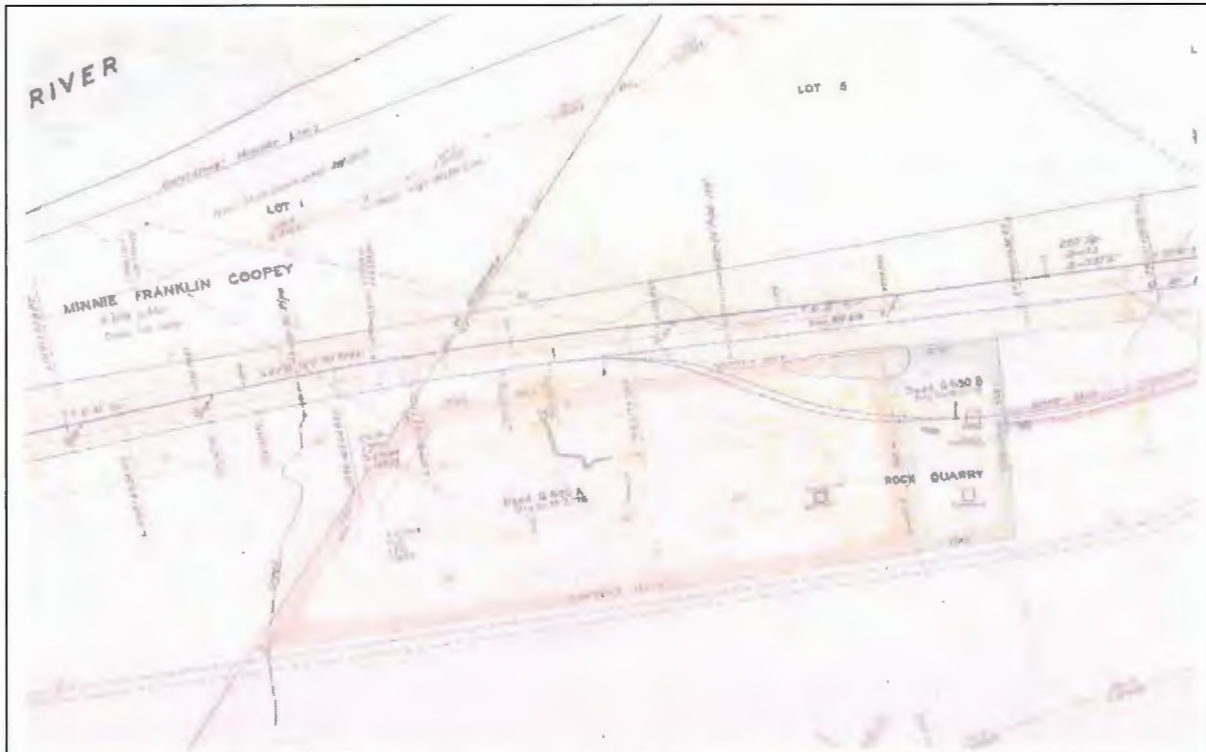


Figure 2. 1935 Topographic sketch of Coopey Quarry.

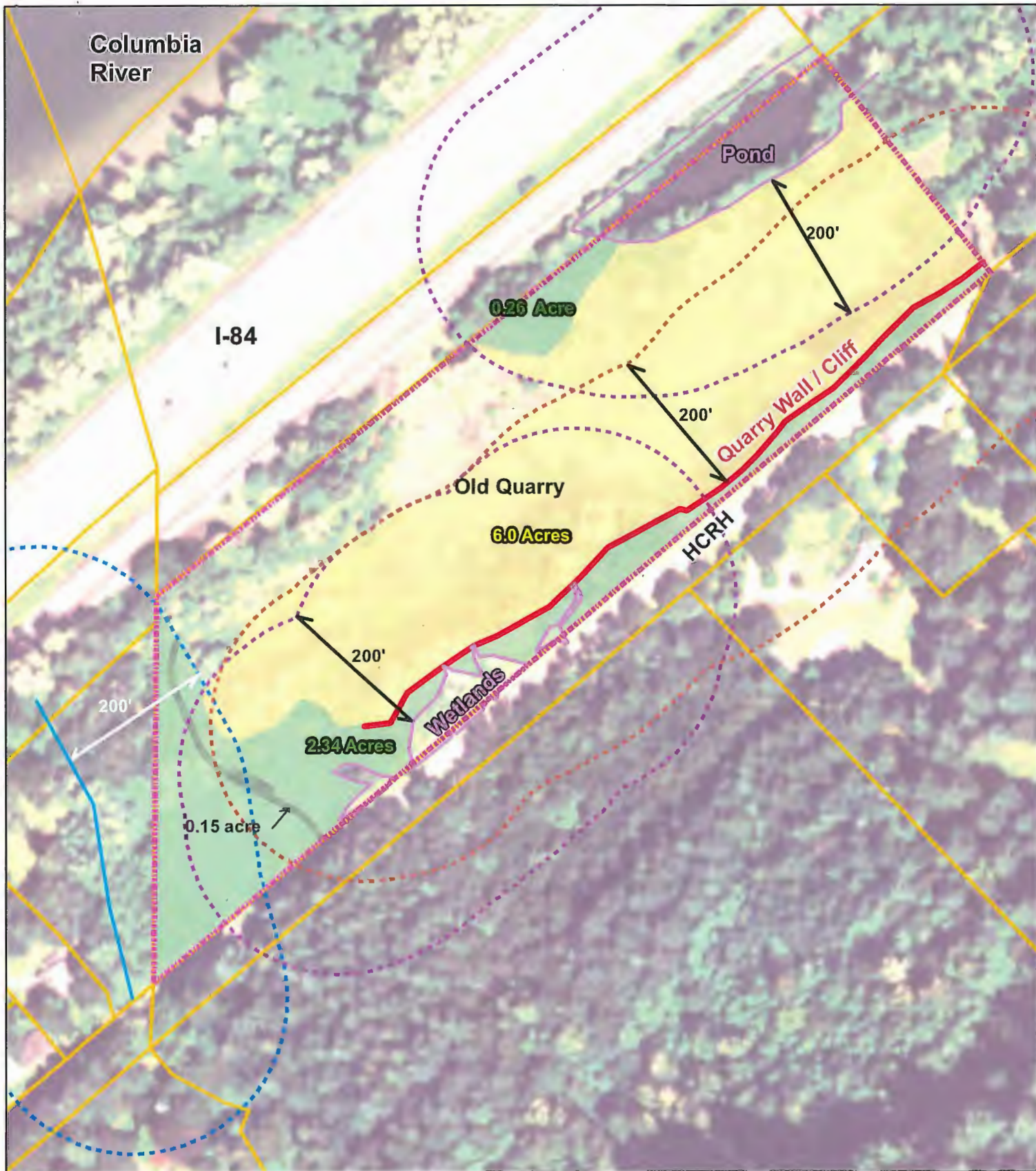
2. Priority Habitats

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. The old quarry provides few if any buffer functions. 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 85 170 340
 Feet

Legend

- | | | |
|-------------------|--------------------------|-------------------------------|
| Wetland/Pond | Wetland/Pond Buffer | Preserved High Quality Buffer |
| Stream | Stream Buffer | Low Quality Buffer Impact |
| Quarry Wall/Cliff | Quarry Wall/Cliff Buffer | High Quality Buffer Impact |
| Site Boundary | | |

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.

ODOT's largest impacts to buffers are within the old quarry area, which will be filled for restoration. In this area, 6.0 acres will be impacted. This area is poor quality buffer having little soils and this within a mostly rock matrix. The vegetation is sparse, stunted and often non-native.

Additional roadway 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 roadway 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 6.0 acres of disturbed/low quality NSA buffer, 1,000 linear feet of man-made quarry wall/cliff and 0.15 acre of good quality NSA buffer.

As mitigation for these impacts ODOT will

- Restore Coopey Quarry creating 6.0 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.

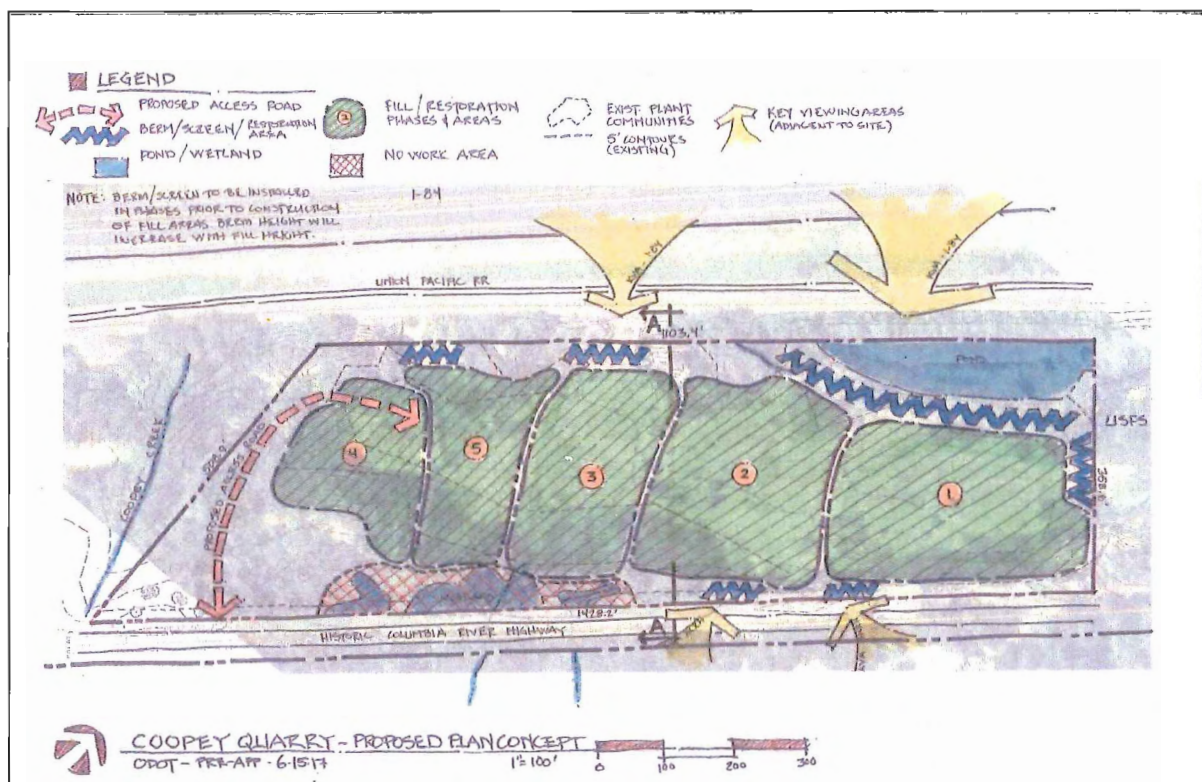


Figure 4. Coopey Quarry restoration concept.



Photo 3. Pond edge. 3/30/2017

ODOT will create some shallow depressions on top the restoration site. These depressions will have hard compacted subspoil 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, osoberry, 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.

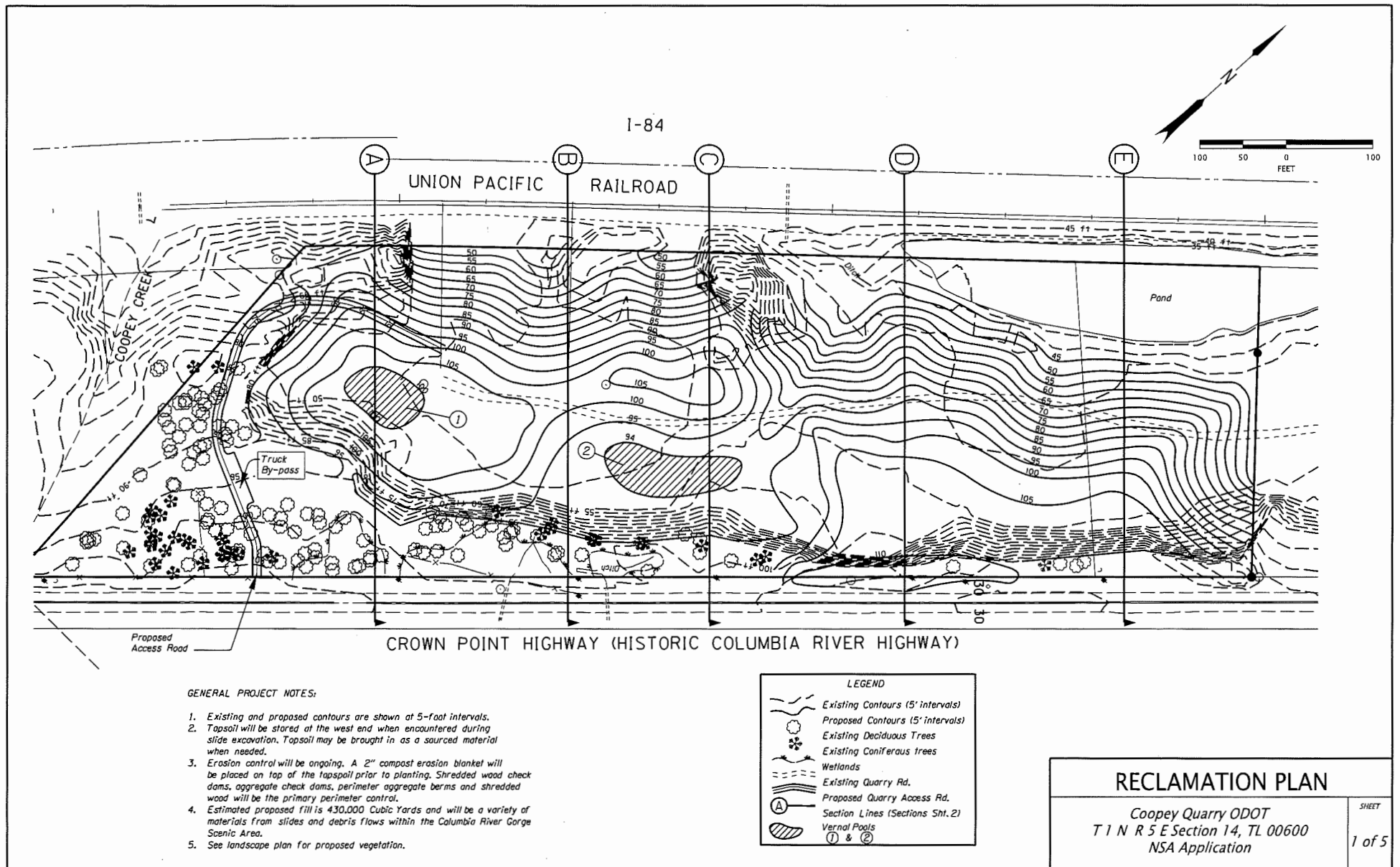
6. Performance Standards and Monitoring

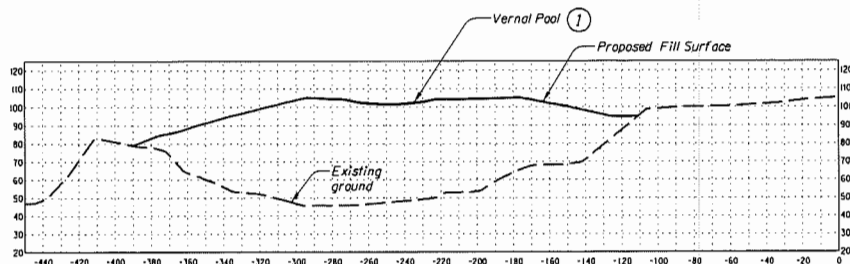
The performance standards described below provide benchmarks for measuring achievement of the goals and objectives of the mitigation site on year five.

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.

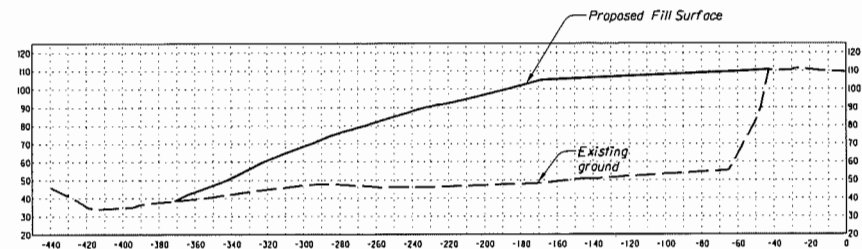
ODOT will quantitatively monitor the restoration site on years 1, 3 and 5 after completion of the disposal site. If all the performance standards are achieved in less, ODOT may terminate monitoring with approval of the review agencies after year 3. Qualitative assessments of the will occur on years 2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

Appendix A:
Coopey Quarry Reclamation Plan

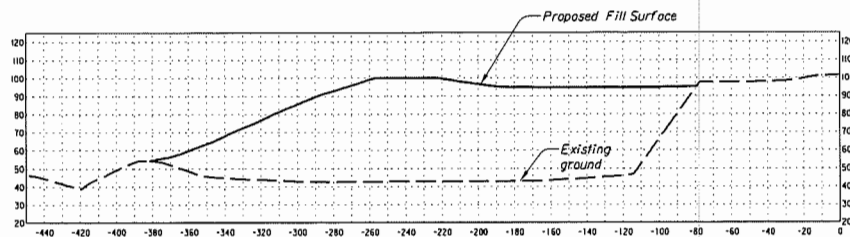




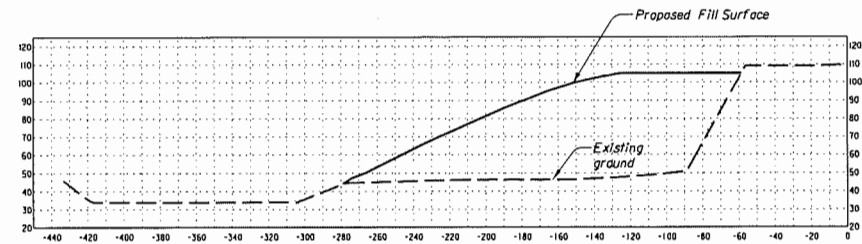
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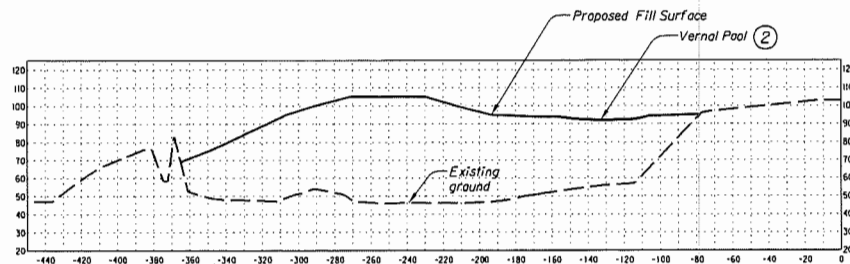
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Cross Section B



Cross Section E



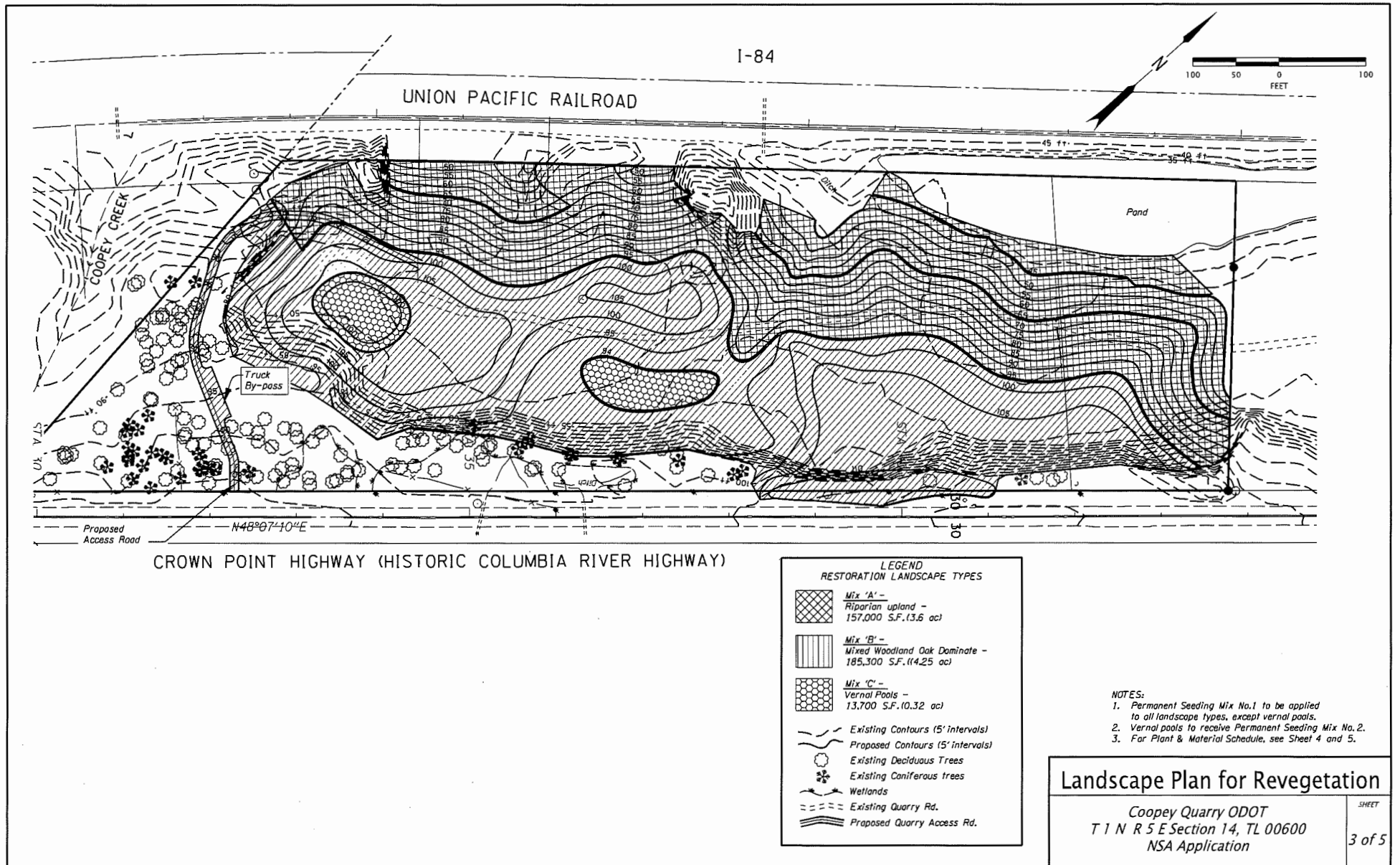
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CROSS SECTIONS

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

SHEET

2 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'	<i>Acer circinatum</i>	vine maple	D60L	12' O.C.	D60L Container	5%	Multi-branched		As Staked/Approved	Contract grown		70
	<i>Acer macrophyllum</i>	big leaf maple	D60L	12' O.C.	D60L Container	15%	Single trunk		As Staked/Approved	Contract grown		210
	<i>Alnus rubra</i>	red alder	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown		70
	<i>Amelanchier alnifolia</i>	serviceberry	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown		70
	<i>Fraxinus latifolia</i>	Oregon Ash	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown		70
	<i>Populus trichocarpa</i>	black cottonwood	D60L	12' O.C.	D60L Container	20%	Single trunk		As Staked/Approved	Contract grown		270
	<i>Quercus parryana</i>	Oregon white oak	D60L	12' O.C.	D60L Container	25%	Single trunk		As Staked/Approved	Contract grown		350
	<i>Pseudotsuga menziesii</i>	Douglas fir	D60L	12' O.C.	D60L Container	15%	Single trunk		As Staked/Approved	Contract grown		210
	<i>Thuja plicata</i>	western red cedar	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown		70
	Total Trees In Mix A											1,390
	<i>Cornus sericea</i>	red-osier dogwood	D40L	6' O.C.	D40L Container	5%			Groups 5-9	Contract grown		280
	<i>Corylus cornuta</i>	hazelnut	D40L	6' O.C.	D40L Container	10%			Groups 3-5	Contract grown		560
	<i>Halodiscus discolor</i>	ocean spray	D40L	6' O.C.	D40L Container	15%			Groups 3-5	Contract grown		840
	<i>Mahonia aquifolium</i>	Oregon Grape	D40L	5' O.C.	D40L Container	15%			Groups 4-7	Contract grown		840
	<i>Polystichum munitum</i>	sword fern	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown		280
	<i>Oemleria cerasiformis</i>	osaberry	D40L	6' O.C.	D40L Container	10%			Groups 4-3	Contract grown		560
	<i>Ribes sanguineum</i>	red flowering current	D40L	6' O.C.	D40L Container	10%			Groups 4-3	Contract grown		560
	<i>Rosa gymnocarpa</i>	baldfire rose	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown		280
	<i>Rubus parviflorus</i>	thimbleberry	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown		280
	<i>Sambucus cerulea</i>	blue elderberry	D40L	6' O.C.	D40L Container	10%			Groups 5-7	Contract grown		560
	<i>Symphoricarpos albus</i>	snowberry	D40L	5' O.C.	D40L Container	10%			Groups 5-7	Contract grown		560
	Total Shrubs In Mix A											5,600
Mix 'B'	<i>Acer macrophyllum</i>	big leaf maple	D60L	12' O.C.	D60L Container	10%	Single trunk		As Staked/Approved			160
	<i>Amelanchier alnifolia</i>	serviceberry	D60L	12' O.C.	D60L Container	10%	Single trunk		As Staked/Approved			160
	<i>Cornus nuttallii</i>	dogwood	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved			80
	<i>Pseudotsuga menziesii</i>	Douglas fir	D60L	12' O.C.	D60L Container	20%	Single trunk		As Staked/Approved			320
	<i>Quercus parryana</i>	Oregon white oak	D60L	12' O.C.	D60L Container	50%	Single trunk		As Staked/Approved			800
	<i>Thuja plicata</i>	western red cedar	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved			80
	Total Trees In Mix B											1,630
	<i>Halodiscus discolor</i>	ocean spray	D40L	6' O.C.	D40L Container	20%			Groups 3-9	Contract grown		1,320
	<i>Polystichum munitum</i>	sword fern	D40L	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown		320
	<i>Physocarpus opulifolius</i>	ninebark	D40L	6' O.C.	D40L Container	20%			Groups 5-9	Contract grown		1,320
	<i>Oemleria cerasiformis</i>	osaberry	D40L	6' O.C.	D40L Container	5%			Groups 4-3	Contract grown		320
	<i>Ribes sanguineum</i>	red flowering current	D40L	6' O.C.	D40L Container	20%			Groups 4-3	Contract grown		1,320
	<i>Rosa nutkana</i>	nootka rose	D40L	5' O.C.	D40L Container	15%			Groups 5-9	Contract grown		990
	<i>Sambucus cerulea</i>	blue elderberry	D40L	6' O.C.	D40L Container	5%			Groups 3-5	Contract grown		320
	<i>Symphoricarpos albus</i>	snowberry	D40L	5' O.C.	D40L Container	10%			Groups 5-9	Contract grown		660
	Total Shrubs In Mix B											6,600
Mix 'C'	<i>Cornus sericea</i>	red-osier dogwood	D40L	6' O.C.	D40L Container	30%			Groups 5-9			120
	<i>Rubus spectabilis</i>	salmonberry	D40L	6' O.C.	D40L Container	30%			Groups 5-9			120
	<i>Salix spp.</i>	salix spp.	D40L	6' O.C.	D40L Container	40%			Groups 7-12			120
	Total In Shrubs Mix C											360

PLANT AND MATERIALS

Coopey Quarry ODOT
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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	<i>Achillea millefolium</i>	common yarrow	Seed				PLS/Acre	0.14			N/A		7.9
	<i>Anaphalis margaritacea</i>	pearly everlasting	Seed				PLS/Acre	0.08			N/A		
	<i>Asclepias speciosa</i>	showy milkweed	Seed				PLS/Acre	7.36			N/A		
	<i>Aster subspicatus</i>	aster sp.	Seed				PLS/Acre	0.91			N/A		
	<i>Bromus carinatus</i>	mountain brome	Seed				PLS/Acre	16.58			N/A		
	<i>Callinsia grandiflora</i>	giant blue-eyed Mary	Seed				PLS/Acre	1.33			N/A		
	<i>Deschampsia elanata</i>	slender hairgrass	Seed				PLS/Acre	0.87			N/A		
	<i>Elymus glaucus</i>	blue wildrye	Seed				PLS/Acre	4.37			N/A		
	<i>Festuca rubra</i>	red fescue	Seed				PLS/Acre	0.79			N/A		
	<i>Heuchera glabra</i>	piquayback plant	Seed				PLS/Acre	0.31			N/A		
	<i>Lupinus rivularis</i>	riverbank lupine	Seed				PLS/Acre	41.44			N/A		
	<i>Poa secunda</i> var. <i>secunda</i>	Sandberg's bluegrass	Seed				PLS/Acre	0.16			N/A		
	<i>Prunella vulgaris</i>	self-heal	Seed				PLS/Acre	1.30			N/A		
	<i>Rosa gymnocarpa</i>	boldhip rose	Seed				PLS/Acre	2.68			N/A		
	<i>Salidago canadensis</i>	goldenrod	Seed				PLS/Acre	0.10			N/A		
	<i>Symphoricarpos mollis</i>	creeping fescue	Seed				PLS/Acre	1.58			N/A	Acre	7.9
Permanent Seeding Mix No.2	<i>Allium cervinum</i>	nodding onion	Seed				PLS/Acre	4.79			N/A		0.32
	<i>Agrostis exarata</i>	spike bentgrass	Seed				PLS/Acre	0.28			N/A		
	<i>Aster subspicatus</i>	Douglas aster	Seed				PLS/Acre	0.43			N/A		
	<i>Camassia leichlinii</i>	great Camas	Seed				PLS/Acre	9.90			N/A		
	<i>Carex stipata</i> var. <i>stipata</i>	sawbeaked sedge	Seed				PLS/Acre	1.22			N/A		
	<i>Callinsia grandiflora</i>	giant blue-eyed Mary	Seed				PLS/Acre	1.00			N/A		
	<i>Delphinium nuttallii</i>	Nuttall's larkspur	Seed				PLS/Acre	0.29			N/A		
	<i>Deschampsia elanata</i>	slender hairgrass	Seed				PLS/Acre	0.41			N/A		
	<i>Downingia elegans</i>	elegant calico flower	Seed				PLS/Acre	0.14			N/A		
	<i>Lupinus rivularis</i>	riverbank lupine	Seed				PLS/Acre	19.50			N/A		
	<i>Elymus glaucus</i>	blue wildrye	Seed				PLS/Acre	6.58			N/A		
	<i>Platanobryus ligulatus</i>	fragrant popcorn flower	Seed				PLS/Acre	0.51			N/A		
	<i>Plectritis congesta</i>	sea bluch	Seed				PLS/Acre	0.99			N/A		
	<i>Poa secunda</i> var. <i>secunda</i>	Sandberg's bluegrass	Seed				PLS/Acre	0.49			N/A		
	<i>Saxifraga oregana</i>	Oregon saxifrage	Seed				PLS/Acre	2.76			N/A		
	Total In Mix											Acre	0.32

PLANT AND MATERIALS

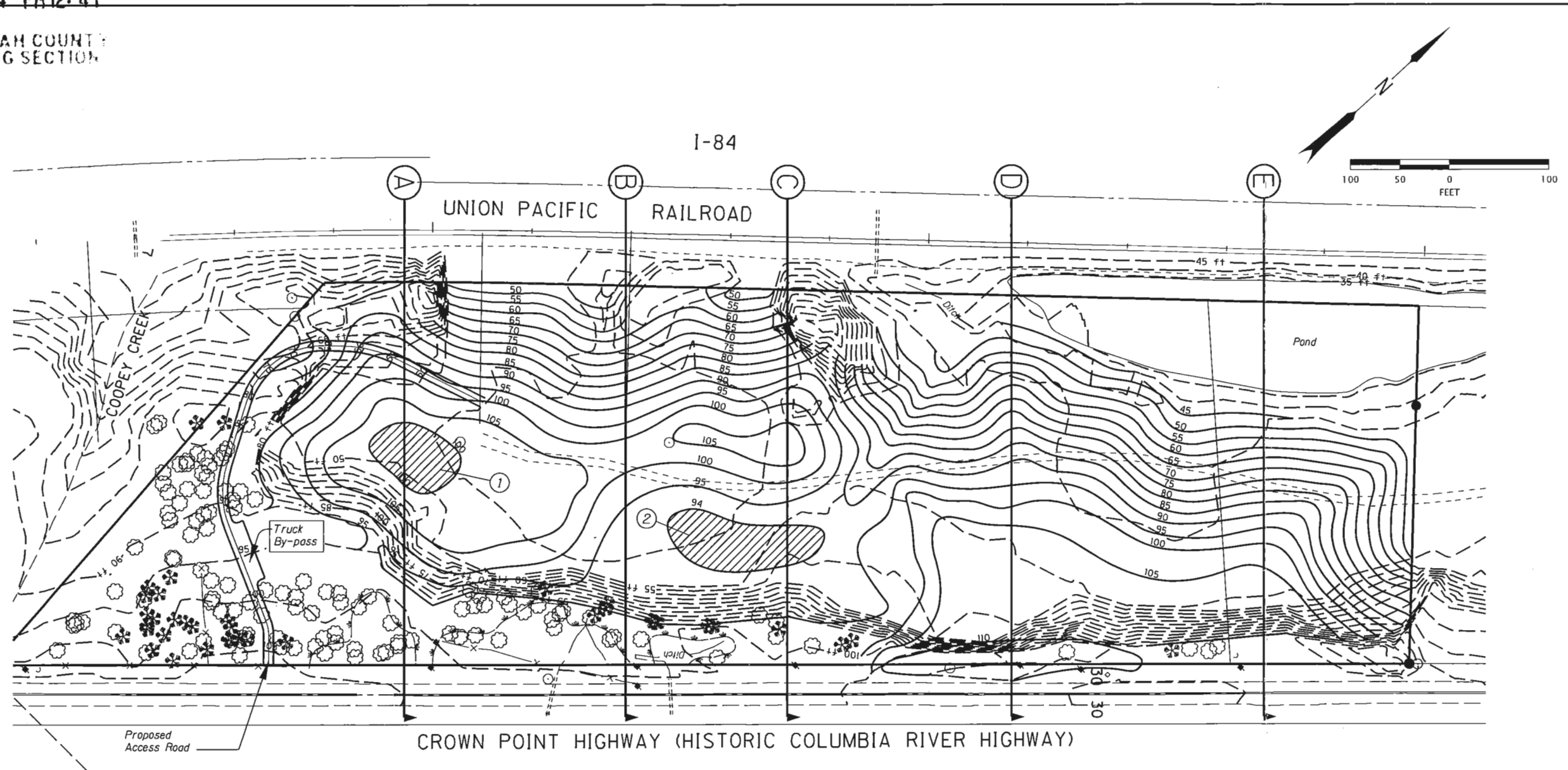
Coopey Quarry ODOT
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MULTNOMAH COUNTY
PLANNING SECTION



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 topsoil 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)
	Vernal Pools
	① & ②

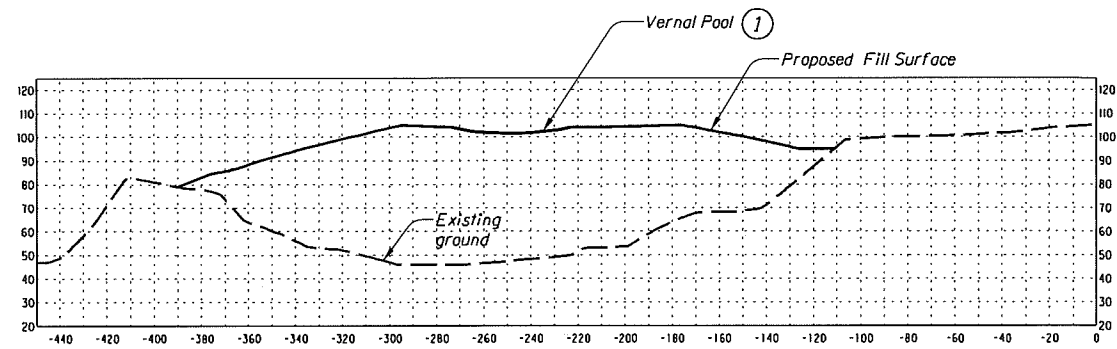
RECLAMATION PLAN

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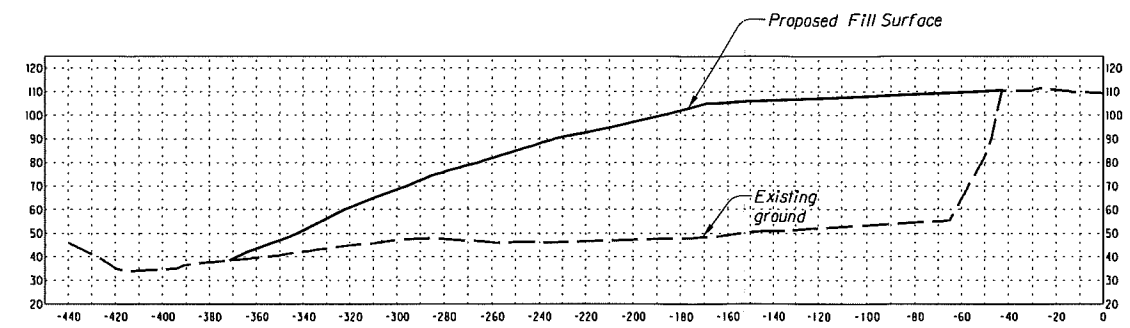
SHEET
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EXHIBIT

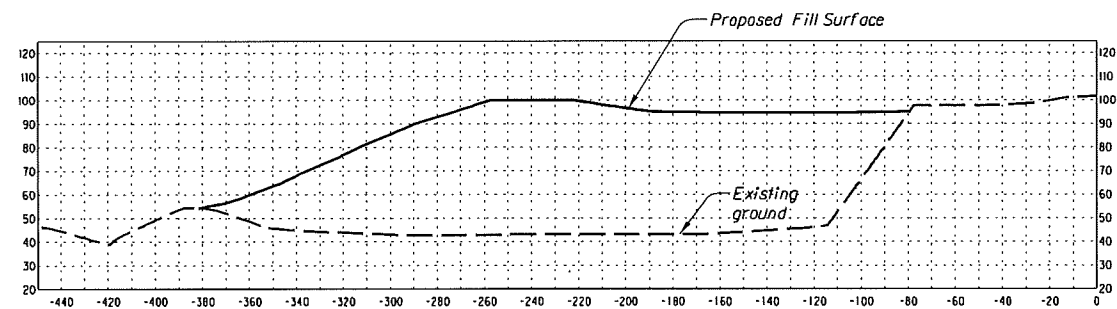
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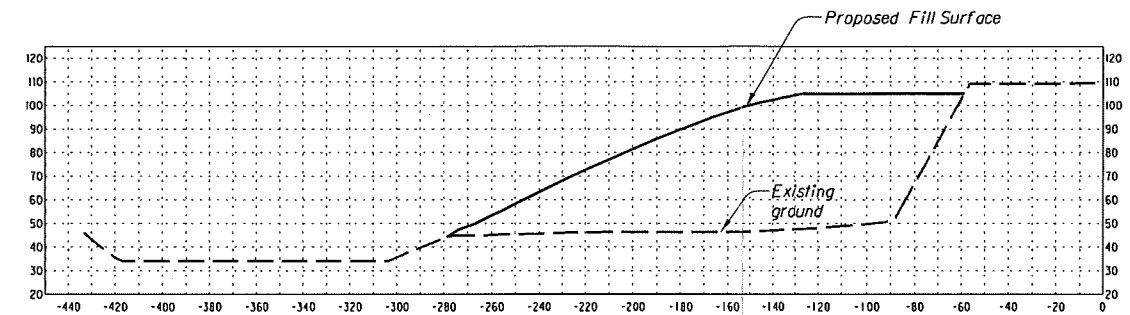
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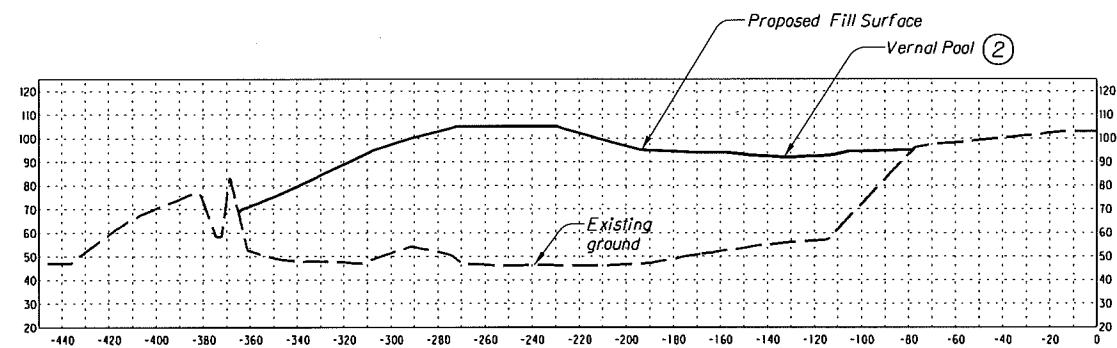
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Cross Section B



Cross Section E



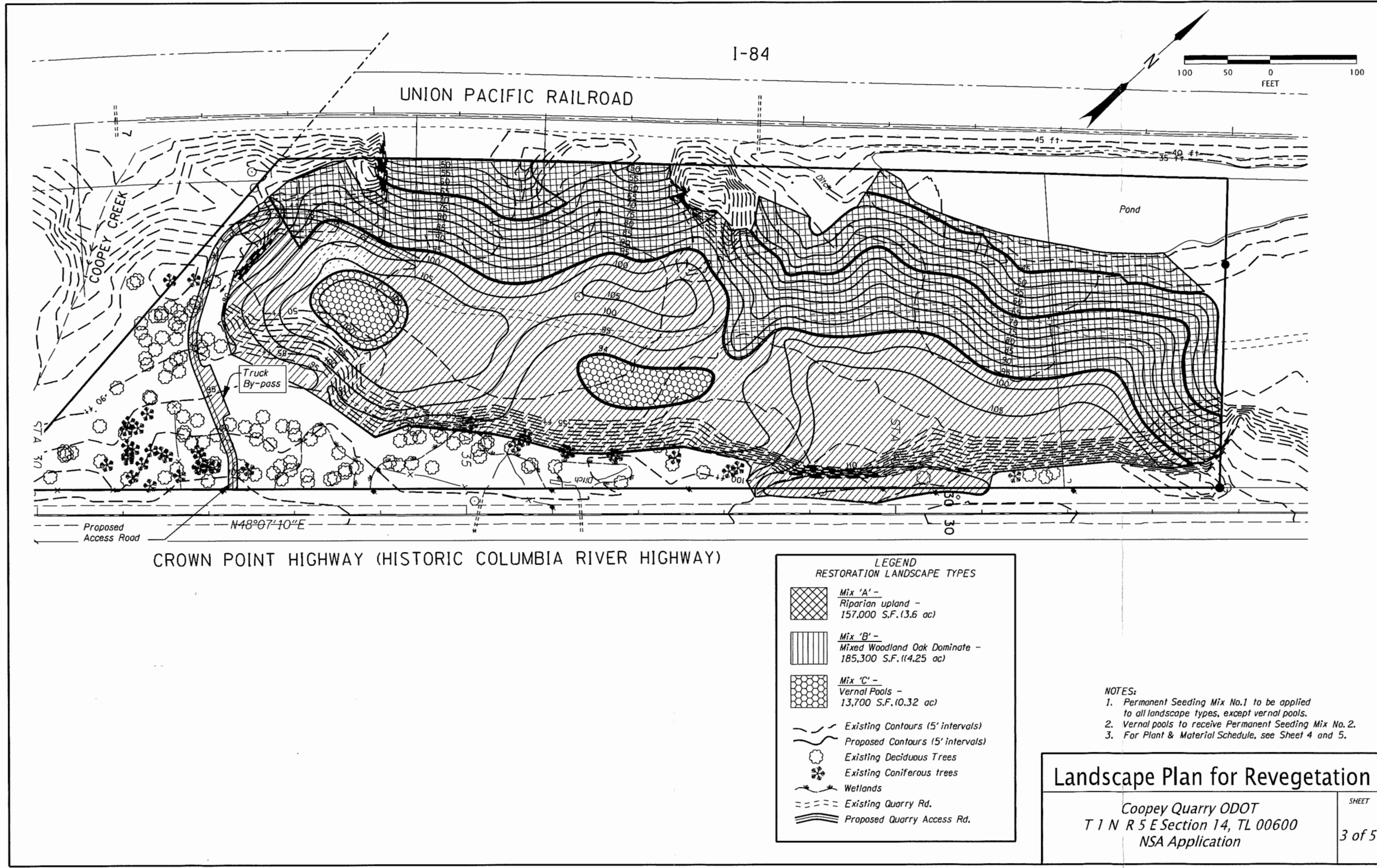
Cross Section C

CROSS SECTIONS

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

PLANT AND MATERIALS

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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
Permanent Seeding Mix No.1	<i>Achillea millefolium</i>	common yarrow	Seed				PLS/Acre	0.14			N/A	
	<i>Anaphalis margaritacea</i>	pearly everlasting	Seed				PLS/Acre	0.08			N/A	
	<i>Asclepias speciosa</i>	showy milkweed	Seed				PLS/Acre	7.36			N/A	
	<i>Aster subspicatus</i>	aster spp.	Seed				PLS/Acre	0.91			N/A	
	<i>Bromus carinatus</i>	mountain brome	Seed				PLS/Acre	16.58			N/A	
	<i>Collinsia grandiflora</i>	giant blue-eyed Mary	Seed				PLS/Acre	1.33			N/A	
	<i>Deschampsia elongata</i>	slender hairgrass	Seed				PLS/Acre	0.87			N/A	
	<i>Elymus glaucus</i>	blue wildrye	Seed				PLS/Acre	4.37			N/A	
	<i>Festuca rubra</i>	red fescue	Seed				PLS/Acre	0.79			N/A	
	<i>Heuchera alabra</i>	piggyback plant	Seed				PLS/Acre	0.31			N/A	
	<i>Lupinus rivularis</i>	riverbank lupine	Seed				PLS/Acre	41.44			N/A	
	<i>Poa secunda var. secunda</i>	Sandberg's bluegrass	Seed				PLS/Acre	0.16			N/A	
	<i>Prunella vulgaris</i>	self-heal	Seed				PLS/Acre	1.30			N/A	
	<i>Rosa gymnocarpa</i>	baldhip rose	Seed				PLS/Acre	2.68			N/A	
	<i>Salidago canadensis</i>	goldenrod	Seed				PLS/Acre	0.10			N/A	
											Acre	7.9
Permanent Seeding Mix No.2	<i>Allium cernuum</i>	nodding onion	Seed				PLS/Acre	4.79			N/A	
	<i>Agrastis exarata</i>	spike bentgrass	Seed				PLS/Acre	0.28			N/A	
	<i>Aster subspicatus</i>	Douglas aster	Seed				PLS/Acre	0.43			N/A	
	<i>Camassia leichtlinii</i>	great Camas	Seed				PLS/Acre	9.90			N/A	
	<i>Carex stipata var. stipata</i>	sawbeaked sedge	Seed				PLS/Acre	1.22			N/A	
	<i>Collinsia grandiflora</i>	giant blue-eyed Mary	Seed				PLS/Acre	1.00			N/A	
	<i>Delphinium nuttallii</i>	Nuttall's larkspur	Seed				PLS/Acre	0.29			N/A	
	<i>Deschampsia elongata</i>	slender hairgrass	Seed				PLS/Acre	0.41			N/A	
	<i>Downingia elegans</i>	elegant calicoflower	Seed				PLS/Acre	0.14			N/A	
	<i>Lupinus rivularis</i>	riverbank lupine	Seed				PLS/Acre	19.50			N/A	
	<i>Elymus glaucus</i>	blue wildrye	Seed				PLS/Acre	6.58			N/A	
	<i>Plagiobothrys figuratus</i>	fragrant popcorn flower	Seed				PLS/Acre	0.51			N/A	
	<i>Plectritis congesta</i>	sea bluish	Seed				PLS/Acre	0.99			N/A	
	<i>Poa secunda var. secunda</i>	Sandberg's bluegrass	Seed				PLS/Acre	0.49			N/A	
	<i>Saxifraga oregona</i>	Oregon saxifrage	Seed				PLS/Acre	2.76			N/A	
Total In Mix											Acre	0.32

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