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WAC 197-11-960: SEPA Environmental Checklist

Purpose of checklist:
Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

A. Background

1. Name of proposed project, if applicable:

356th Drive SE Emergency Slide Repair Project #1136548

2. Name of applicant/lead agency:

King County Department of Local Services (DLS), Road Services Division (Roads)

3. Address and phone number of applicant and contact person:

Contact Person:
Broch Bender, Communications Program Manager
206-263-1189, bbender@kingcounty.gov
King Street Center (Mail Stop: KSC-LS-0315)
201 South Jackson Street
Seattle, WA 98104-3856

Project website address: https://www.kingcounty.gov/depts/local-services/roads/356th-drive-se.aspx

4. Date checklist prepared: This checklist was prepared July 2020. The project is presently in the final design phase.

5. Agency requesting checklist: King County DLS, Roads

6. Proposed timing or schedule (including phasing, if applicable):

The project's construction schedule is dependent on acquisition of permits, approvals, and property needs. It is anticipated that construction of the project would be completed in approximately 55 working days starting in September 2020. Timing for work within critical areas will be limited to what is allowed per the project's permit and approval conditions. Mitigation planting for unavoidable impacts to site vegetation will generally occur in the fall or winter following construction. Construction work will be performed by a contractor.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

There are no future plans for additions, expansion or further activity related to or connected with this proposal.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

The following environmental information has been prepared for this project:
- *Arborist Report* (King County, July 2020)
- *Critical Areas Report, 356th Drive SE Slide Repair Project* (King County, May 2020)

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- *356th Drive SE Slide Repair – Preliminary Roadway Restoration Technical Memorandum* (Perteet, May 2020)
- *356th Drive SE Slide Repair Preliminary Storm Drainage Design Memorandum* (Perteet, May 2020)
- *Final Geotechnical Report, 356th Drive SE Emergency Slope Repair, Fall City, WA Prepared for King County Department of Local Services – Road Services Division* (Hart Crowser, May 2020)
- *Design and Construction Recommendations – 356th Place SW Slide Repair* (King County, December 2015)
- *Lake Marie Road Failure (356th Drive Southeast), Materials Engineer Report* (King County, November 1990)

Additional environmental information anticipated to be prepared for this project includes:

- Technical Information Report
- Geotechnical Addendum Memorandum
- Endangered Species Act documentation

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

King County is unaware of any applications pending government approval of other proposals directly affecting the property covered by this proposal.

10. List any government approvals or permits that will be needed for your proposal, if known.

The following permits, approvals, reviews, and file documentation are anticipated for the project:

Federal:

- United States Army Corps of Engineers: Section 404 of the Clean Water Act (CWA) Nationwide Permit
- Endangered Species Act: National Marine Fisheries Service and United States Fish and Wildlife documentation
- Tribal: Coordinate design review and comments

Federal/State:

- National Historic Preservation Act Section 106 Concurrence by the Washington State Department of Historic Preservation
- Tribal review

State:

- State Environmental Policy Act
  - Determination of Nonsignificance
  - Notice of Action Taken
- Washington State Department of Fish and Wildlife Hydraulic Project Approval
- Washington State Department of Ecology CWA Section 401 Programmatic Water Quality Certification

Local:

- King County Department of Local Services, Permitting Division
  - Clearing and Grading Permit
  - Forest Practices Act Permit
  - Construction Hours Variance

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

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A historic slide at 356th Drive SE was reactivated following a series of major storms in early 2020. The slide affected an approximately 330-foot-long section of paved roadway, requiring the temporary closure of the downslope lane. As a result, this roadway segment is now posted with a vehicular weight load limit, which is decreased to five tons during 48-hour periods of rain and to 15 tons when roadway conditions are dry. The roadway is a sole-access route for a rural community of approximately 90 parcels, making it a high priority for repair to ensure adequate and safe access for residents, emergency personnel, and other services. Vehicular access will be maintained through the construction zone to the extent possible. Construction is anticipated to begin in September 2020 and be completed in 55 working days.

The proposed repairs include construction of a soldier pile wall with tiebacks and a stormwater/surficial groundwater interceptor trench with associated drainage features. The project will occur within the King County road right-of-way, as well as on portions of three adjacent private parcels: 1124079029, 2480700200, and 2480700230. The total project area, including stockpiling and staging areas, is anticipated to be approximately 31,592 square feet (0.73 acre).

King County will acquire a temporary easement for an emergency detour route, if needed. The route occurs on an existing 0.15-mile-long dirt road on a private parcel that connects SE 25th Street to an existing gravel timber haul road belonging to Campbell Global, LLC. The route follows the haul road for approximately 3.5 miles before connecting to Tokul Road SE.

King County is funding the project. The total project cost is estimated at approximately $3,200,000 with $2,545,000 estimated for construction.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The proposal is located on 356th Drive SE, approximately 0.9 mile north of its intersection with State Route 202 in the community of Spring Glen in unincorporated northeastern King County. The site is located at latitude 47.572675 N, longitude 121.865761 W, in the southeast quarter of Section 11 and the southwest quarter of Section 12 in Township 24N, and Range 7E, Willamette Meridian. The location can be found in the Thomas Brothers Guide on page 599, grid cell B3. See the Project Location Map enclosed with Plan Sheet 1.

B. Environmental Elements

1. Earth

a. General description of the site (circle one): flat, rolling, hilly, steep slopes, mountainous, other _____

The site is located on the southern flank of a steep ravine, within a historic landslide area.

b. What is the steepest slope on the site (approximate percent slope)?

Steep slopes on the project site are above and below the roadway. The steepest slope on the site has a slope of approximately 80 percent.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

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In general, the soil conditions consist of loose to very loose granular soil over a very stiff to hard clay and silt layer. The granular soil is likely a combination of road cut/fill and landslide deposits. The stiff to hard nature of the underlying clay and silt suggests it is glaciolacustrine and has been glacially overridden. In the headscarp, high above the road, exposed soils appear to be consistent with an advance outwash gravel.

Geotechnical investigations indicate that soils at the site consist of the following:

- Granular Fill and Landslide Deposits. The overlying soil in the area of the road prism is generally a silty sand with varying amounts of gravel. In general, the unit is loose to very loose with occasional medium dense zones.
- Clay and Silt. Directly underlying the granular deposits, the borings all encountered a very stiff to hard clay to clayey silt that extended to the bottom of the explorations. The unit is generally a fat clay that sometimes has a massive structure but has occasional seams and partings of silt and fine sand.
- Advance Outwash Sandy Gravel. Advance outwash sandy gravel was observed in the exposure of the headscarp above the road. The unit is generally interbedded gravel and sandy subrounded gravel with frequent cobbles and occasional zones of higher silt content. The surface is generally weathered to a loose condition.

No agricultural soils were mapped or observed on-site. Agricultural soil will not be affected by the proposed construction.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

The project area occurs within a mapped historical landslide hazard area and its 50-foot-wide buffer. This landslide area is listed in the King County GIS database as a deep-seated landslide. The slide was reactivated after heavy rains in late January and early February 2020, resulting in the current roadway damage. Curved and leaning trunks of mature conifer trees through the site suggest a long history of slides at this location. The project area is also mapped as an erosion hazard area.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

- The total project area, including stockpiling and staging areas, is anticipated to be approximately 31,592 square feet (0.73 acre).
- Of the total project area, 22,332 square feet (0.51 acre) will be graded, which is 71 percent of the total site area.
- The approximate volume of fill proposed for the total project is 6,400 cubic yards. King County's Materials Lab will confirm fill is from approved sources.
- The approximate total volume of material that will be excavated from the site is 5,500 cubic yards. Excavated material that is not suitable for reuse on-site will be hauled off-site to an appropriate disposal site.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion could occur as a result of vegetation removal, ground-disturbing activities during construction, and rerouting of water during construction. Seasonal weather conditions could impact the severity of erosion. Temporary erosion and sedimentation control (TESC) Best Management Practices (BMPs), as well as permanent site restoration measures will be implemented to minimize potential erosion. Please see Section B.1.h of this checklist for specific proposed measures to reduce and control construction-related erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The area of existing impervious surface within the project limits is approximately 7,963 square feet (0.18 acre). The project will not create any new impervious surface. A total of 6,928 square feet (0.16 acre) of existing impervious surface will be replaced. At project completion, the total area of impervious surface within the project limits is estimated to remain at 7,963 square feet (0.18 acre), which is a 0 percent increase over the existing amount.

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h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Construction: During construction, the area of ground disturbance will be minimized to the extent practicable to reduce the potential for erosion. TESC BMPs include, but are not limited to, the use of silt fence, straw waddles, coir logs, dust control, and seeding areas that are temporarily disturbed by construction. The Type N stream, surficial groundwater, and stormwater will be bypassed around the construction zone. The stream bypass will possibly consist of a cofferdam, a pump, temporary pipe, and an energy dissipation area for outfall protection. Sediment-laden water from groundwater and/or stormwater will be isolated and pumped to vegetated areas for dispersion or pumped into a Baker tank to settle sediments prior to releasing water to a stable dispersion area, or hauled off-site.

Operation: Following construction, disturbed grounds that are not restored to impervious conditions will be covered with topsoil and seeded/planted.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Greenhouse Gas Emissions: Construction, operations, and maintenance of the roadway will result in the release of greenhouse gas (GHG) emissions that contribute to global warming and related climate-change concerns. Life cycle GHG emissions for the project include embodied, operational, and construction emissions that are defined as follows:

- Embodied emissions are the emissions released during the extraction, processing, and transportation of the materials used in construction.
- Construction emissions are released during project construction and primarily come from fuel burned in the equipment used to build the project elements, such as bulldozers, pavers, and rollers.
- Operational and maintenance emissions are released by vehicles at the site and during vehicular roadway travel following completion of the repairs.

Fugitive Dust Emissions: Demolition of asphalt concrete pavement, excavation, or placement of imported aggregates may result in sources of fugitive dust that can reduce roadway visibility, cause respiratory health problems in humans/animals, and negatively impact aquatic life, vegetation, and water quality. Using the attached GHG Emissions Calculator, Lifespan Emissions are estimated at 398 metric tons of carbon dioxide equivalent (MTCO2e).

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No off-site sources of emissions or odors have been identified that may affect this proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

During construction, the contractor will implement a Fugitive Dust Control Plan. During construction and maintenance of the roadway, mitigation measures for project impacts to air quality and GHG emissions may include, but are not limited to, the following:

- Spraying water, when necessary, during construction operations to reduce emissions of fugitive dust.
- Covering dirt, gravel, and debris piles as needed to reduce fugitive dust and wind-blown debris.
- Covering open-bodied trucks in accordance with RCW 46.61.655, wetting materials in trucks or providing adequate space from the top of the material to the top of the truck to reduce fugitive dust emissions.
- Wetting and sweeping public roadways, when necessary, to remove mud and dirt deposits.
- Using biodiesel or ultra-low-sulfur diesel fuels for vehicles and equipment to reduce diesel exhaust emissions.
- Conservation and reuse of construction materials on-site, to reduce exhaust emissions and traffic delays.
- Enforcing King County's no-idling policy for county vehicles.

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3. Water

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Basin: The project is located within Water Resource Inventory Area (WRIA) 07 – Snohomish and within the Snoqualmie River sub-basin.

Streams: Two streams were delineated within the immediate vicinity of the project site including an unnamed Type N intermittent stream with a 65-foot buffer and a Type F perennial stream (Tributary 07.0429) with a 165-foot buffer. The Type N stream originates as discharge from a roadway impounded wetland, upslope of 356th Drive SE, which is then conveyed under the road in a culvert where it coalesces into a small stream at the outlet. The Type N stream flows perpendicular to 356th Drive SE through the northern portion of the project site for approximately 85 feet before flowing into Tributary 07.0429. Tributary 07.0429 flows parallel with 356th Drive SE approximately 120 feet downslope of the roadway. Work is not proposed within this stream, but it is adjacent to areas that will be cleared for drainage pipe outfalls from the proposed interceptor trench. Tributary 07.0429 is a right bank tributary to the Snoqualmie River that eventually drains to Puget Sound.

Wetlands: Seven Category III wetlands with buffers ranging from 75 to 150 feet were mapped within the immediate vicinity of the project site. Additional wetlands may occur within 200 feet of the project site, the buffers of which overlap with the buffers of the seven wetlands mapped in the immediate vicinity. Wetlands within the vicinity of the project area drain to Tributary 07.0429.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

The project requires work in, or within 200 feet, of the adjacent project waters described in Section 3.a.1. of this checklist. See attached plans for details.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Tributary 07.0429: No fill or dredge proposed.

Type N Stream:

- Permanent fill proposed: 1,514 cubic yards
- Temporary fill proposed: 43 cubic yards for a sandbag cofferdam
- Dredge/excavation proposed: 12 cubic yards

Wetlands:

- Permanent fill proposed: 7,407 cubic yards
- Dredge/excavation proposed: 153 cubic yards

The source of fill material will be from King County inspected/approved pit sites.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

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The project's ground-disturbing work areas will be isolated, and water will be bypassed around these areas using pumps.

The interceptor trench will permanently receive and convey surface, as well as surficial groundwater, to the Type F stream; hence, these existing water inputs to the Type F stream will be maintained.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The project is not within a mapped FEMA 100-year floodplain or floodway.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No waste materials will be discharged to surface waters. BMPs will be implemented following the King County and Washington State Department of Ecology stormwater manual guidance.

b. Groundwater:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

The project's ground-disturbing work areas will be isolated, and water will be bypassed around the work areas. Well points with a pump may be installed to redirect surficial groundwater from the construction site. Any turbid water in the excavation areas will be pumped to infiltration/filtration vegetated areas around the site and/or pumped into portable settling basins. Any discharge of clean ground water to the channel will be via an energy dissipation BMP to avoid bed or bank scour. Groundwater will not be withdrawn from a well for drinking water for this project. Water will not be discharged to groundwater for this project.

The interceptor trench will permanently receive and convey surficial groundwater, as well as surface water, to the Type F stream, which already received those water inputs.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste material will be discharged into the ground from septic tanks or other sources.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including stormwater) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The source of runoff is groundwater seepage that discharges at various locations above the roadway and is impounded at the edge of the roadway prism, as well as precipitation that sheet flows from the impervious surfaces within the project limits. Presently, groundwater seeps above the roadway drain to five catch basins located in the road shoulder on the upslope (east) side of 356th Drive SE. From the catch basins, the water is directed under the roadway through two culverts and is discharged onto the hillslope below where it flows to the perennial Type F stream at the bottom of the ravine.

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The project will install an interceptor trench along the upslope (east) side of the roadway to more efficiently capture surface water and surficial groundwater runoff and safely direct it across the slide away from the road. Similar to existing conditions, water captured by the interceptor trench will be directed under the roadway via culverts and discharged, in a non-erosive fashion, onto the slope below where it will ultimately continue to flow into the perennial Type F stream below (west of) the roadway.

2) Could waste materials enter ground or surface waters? If so, generally describe.

It is unlikely, but possible, that fuel, hydraulic fluid or paving material spills could occur from construction machinery. King County and Washington Department of Ecology spill prevention BMPs will be followed to avoid such spills. King County and the Contractor and are required to implement a Spill Prevention Control and Countermeasures Plan (SPCC) for the project prior to beginning construction. Equipment will be inspected daily for leaks. Heavy equipment refueling and staging will occur on the existing roadway or away from the site. Secondary containment will be provided for pumps. Spill kits will be available to respond to unanticipated small spills.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

In addition to constructing a soldier pile wall with tiebacks, the project will modify drainage patterns in the vicinity of the slide to reduce soil saturation and associated soil instability within the vicinity of the roadway. The proposed interceptor trench located along the upslope (east) side of the roadway will increase the capture of surface water runoff along with surficial groundwater from the slope above, which will reduce the potential for infiltration in the vicinity of the roadway. Similar to existing conditions, the intercepted stormwater, as well as the newly intercepted surficial groundwater, will be routed under the road via culverts and discharged to an energy dissipater on the slope below (west of) the road where it will drain to the perennial Type F Tributary (07.0429).

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Depending on the weather, some work areas will be dewatered during construction to minimize impacts to ground, surface, and stormwater. Flow from the Type N stream will be intercepted and bypassed around the work area. Sediment-laden water that does not meet water-quality standards will be discharged to vegetated upland infiltration areas, depending on the volume of water. If needed, sediment-laden water will be pumped to a Baker tank, settled, and released on-site or hauled off-site.

4. Plants

a. Check the types of vegetation found on the site:
Check the types of vegetation found on the site:

- ☒ deciduous tree: alder, maple, aspen, other:
- ☒ evergreen tree: fir, cedar, pine, other: hemlock
- ☒ shrubs: vine maple, Indian plum, salmonberry, devil's club
- ☐ Grass
- ☐ Pasture
- ☐ crop or grain
- ☐ orchards, vineyards, or other permanent crops
- ☒ wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other: lady fern
- ☐ water plants: waterlily, eelgrass, milfoil, other:
- ☒ other types of vegetation: English ivy, Himalayan blackberry, reed canarygrass

b. What kind and amount of vegetation will be removed or altered?

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The vegetation that will be removed/altered consists of trees and shrubs. The project will temporarily impact 8,078 square feet (0.19 acre) of vegetation and permanently impact 8,184 square feet (0.19 acre) of vegetation. Of this, 40 trees greater than four-inch-diameter at breast height will be felled. These trees may be left on-site and/or within the stream buffer following the approval of the underlying land owner. Additional trees adjacent to the clearing area periphery might be impacted and this is presently under review.

c. List threatened and endangered species known to be on or near the site.

According to a review of online data from the Washington State Department of Natural Resources Natural Heritage Program and the Consortium of Pacific Northwest Herbaria conducted on May 27, 2020, there are no special-status plant species known or anticipated to occur in the vicinity of the project area.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Clearing limits will be marked on-site prior to construction to ensure only required vegetation removal occurs. After construction, impacted areas will be seeded with a native species mix and planted with appropriate native trees and shrubs. Off-site mitigation opportunities are also being explored.

e. List all noxious weeds and invasive species known to be on or near the site.

The following noxious weeds and invasive species have been observed on or near the site:

Common Name	Scientific Name	King County Noxious Weed Class
Himalayan blackberry	*Rubus armeniacus*	Non-regulated, Class C Noxious Weed
Reed canarygrass	*Phalaris arundinacea*	Non-regulated, Class C Noxious Weed
English ivy	*Hedera helix*	Non-regulated, Class C Noxious Weed

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include:

birds: hawk, heron, eagle, songbirds, other: crows
mammals: deer, bear, elk, beaver, other: coyote, raccoons, squirrels, rabbits
fish: bass, salmon, trout, herring, shellfish, other: sculpin, amphibians

The birds and other animals underlined above are known or anticipated to be on or near the project site.

b. List any threatened and endangered species known to be on or near the site.

There are no threatened and endangered species known to be on, or near the site.

c. Is the site part of a migration route? If so, explain.

King County maintenance records indicate that the Type F stream supports resident cutthroat trout (*Oncorhynchus clarkii clarkii*) and sculpin (*Cottus* sp.) populations. The WDFW Fish Passage Inventory indicates the presence of a

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private man-made dam (ID 997243) approximately 0.4 mile downstream of the project area that is a complete barrier to fish passage, precluding the presence of anadromous fish within the vicinity of the project area.

The project site is located within the Pacific Flyway, which is a major north-south route of travel for migratory birds extending from Alaska to Patagonia. Every year, migratory birds travel some or all this distance both in spring and in fall, following food sources, heading to breeding grounds, or traveling to overwintering sites.

With the exception of the Pacific Flyway, the project area is otherwise not a known or mapped wildlife species corridor.

d. Proposed measures to preserve or enhance wildlife, if any:

Proposed measures to preserve or enhance wildlife include, but are not limited to:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
  - The project was designed to have the minimal footprint possible. Clearing limits will be marked on-site to preserve existing vegetation outside of the project limits.
  - The project will be constructed in compliance with regulations and permit provisions within authorized work windows.

- Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts. The project minimizes impacts by implementing the following:
  - Appropriate BMPs for TESC required by the King County Surface Water Design Manual (SWDM).
  - Groundwater BMPs: If groundwater is within work areas during construction it will be discharged to a vegetated upland area to infiltrate, or hauled off-site. This will prevent turbid water from discharging outside of the project limits.
  - A Fugitive Dust Control Plan.
  - An SPCC Plan.
  - Staging and stockpiling on existing paved areas.

- Rectifying
  - Restoring disturbed vegetation areas and providing cover measures to minimize erosion.
  - Using round rock for all in-water work and providing streambed material that provides habitat.

e. List any invasive animal species known to be on or near the site.

No invasive animal species are anticipated to be on or near the site.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

The completed project will have no energy use.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The project will not affect the potential use of solar energy by adjacent properties.

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c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Because the completed project will not use energy, no conservation features are included. Measures to reduce energy use during construction will be encouraged (e.g., efficient scheduling, material transport, and staging; implementing the no-idling policy).

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.

The accidental leakage of petroleum products (e.g., gasoline, diesel fuel, hydraulic fluid, anti-freeze, grease, etc.) from construction equipment could occur, but is not likely. These substances can be toxic to nearby aquatic systems and to humans upon prolonged exposure and can pose a fire hazard. King County inspectors will monitor the site during construction. All King County vehicles are equipped with spill kits. Spill control and cleanup kits will also be provided by the contractor and will be available on-site. Heavy equipment will be inspected daily for leaks and necessary repairs will be completed prior to commencing work activities near aquatic areas. Project operations will cease under high-flow conditions that may result in inundation of the construction zone, except for efforts to minimize resource damage.

During construction, community health could be affected by dust and vehicle exhaust. Construction activities will intermittently generate particulate matter and odors, and construction equipment will generate diesel engine exhaust. Any air-quality impacts associated with construction activities are most noticeable at sensitive land uses, such as schools or parks; however, there are no sensitive land uses near the construction site, so these impacts are unlikely. In addition, air-quality impacts will be short-term, occurring only while construction is in progress.

BMPs will be employed to reduce fugitive dust, odors, and exhaust emissions; see Section 2.c. of this checklist for more information.

1) Describe any known or possible contamination at the site from present or past uses.

Based on a review of the Washington State Department of Ecology's website, there are no historical or active cleanup sites within a half-mile radius from the project area. The project area falls outside the predicted arsenic contamination zone, which is based on the modeled Asarco Tacoma plume.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

There are no known existing hazardous chemicals/conditions at the project site that might affect project development and design.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

During construction, petroleum products will be used on-site to power construction equipment and as a component of asphalt pavement. At completion of the project, toxic or hazardous chemicals will not be stored, used, or produced at the project site.

4) Describe special emergency services that might be required.

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The need for special emergency services is not anticipated.

5) Proposed measures to reduce or control environmental health hazards, if any:

The contractor will likely sample areas for contaminants prior to construction where excavation will occur to have required documentation for disposal. Worker health and safety will be addressed as required by Washington State and federal regulations. Waste material generated from construction will be properly managed and disposed of at permitted facilities.

During construction, the project will implement an SPCC plan that provides BMPs used during construction to minimize the potential for hazardous spills from fuels and materials. Spill control and cleanup kits will be available on-site to be used in the rare event of a spill.

The Contractor will be required to submit a Fugitive Dust Control Plan to King County for approval. The plan will provide BMPs that will be used to minimize the amount of particulate matter (i.e., dust) generated during construction.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Existing noise in the area emanates from roadway traffic and surrounding residential parcels along the roadway. The existing noise levels in the area will not affect the proposed project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Construction will create noise on a short-term basis. This noise will be generated from the various types of construction equipment and activities; for example, truck traffic hauling materials to and from the site, excavation and material-moving equipment such as backhoes and bulldozers, soil compaction, hand-held equipment such as chain saws, and asphalt-paving operations.

Construction will occur in accordance with King County Code 12.86, which allows typical construction equipment operation between 7:00 a.m. and 7:00 p.m. weekdays and 9:00 a.m. and 7:00 p.m. on weekends. If work outside these hours is needed, a variance will be requested from the King County Permitting Division.

Following construction, noise is expected to return to existing conditions. The project will not generate ongoing noise.

3) Proposed measures to reduce or control noise impacts, if any:

Standard mufflers will be used on all construction equipment. The construction crew will work during hours in accordance with the requirements of King County Code and permit conditions. If work outside normal construction hours is needed, a variance will be requested from the King County Permitting Division.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

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The current use of the site is as King County roadway infrastructure and utility corridor. Adjacent properties are undeveloped and residential parcels with an RA-10 zoning: rural area with one dwelling unit per every 10 acres. The proposal will not alter existing land uses.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The project will not result in the conversion of agricultural or forest lands to other uses. The project site is primarily composed of the King County road right-of-way, which is not working farmland or working forest lands. A portion of the project site occurs on undeveloped private properties that, while they are not zoned for forestry (F), could produce merchantable timber. The proposed project will not affect existing or potential future use of the adjacent properties as forest lands.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?

No farm or forestry operations are present on properties within the project vicinity. The slide repair area along 356th Drive SE is presently load restricted to 15 tons, which is reduced to 5 tons during wet weather and for the 48 hours after rain stops. This load restriction may affect normal business operations of adjacent forest lands, if the adjacent forest lands, outside of the project area, are active.

During construction, the project proposes to maintain an open lane for traffic. If there is an emergency, a temporary evacuation/detour route will be opened. Following completion of the project, the load restriction will be lifted.

c. Describe any structures on the site.

Current structures within the project limits include:

- Roadway fill prism for 356th Drive SE
- Retaining wall
- Utility poles for overhead utility wires
- Temporary barricades, traffic signals, and generators
- Stormwater drainage system including catch basins and culverts

d. Will any structures be demolished? If so, what?

The existing paved road will be demolished and replaced as part of the proposed project. An existing retaining wall will be demolished and removed. The existing stormwater drainage system, including catch basins and culverts, will be removed and replaced with the interceptor trench and associated infrastructure.

e. What is the current zoning classification of the site?

King County's public road rights-of-way are not subject to zoning. The project area is located outside the urban growth boundary. The surrounding properties are zoned as RA-10, allowing one dwelling unit per 10 acres in rural areas.

f. What is the current comprehensive plan designation of the site?

According to the *King County Comprehensive Plan* (2020 Update to the 2016 *Comprehensive Plan*), the project is within a rural area.

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g. If applicable, what is the current shoreline master program designation of the site?

The site is not within a Shoreline Management Act boundary.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

The following King County-designated critical areas are mapped within or adjacent to the project site:

- Seven Category III wetlands (150- and 75-foot-wide buffers)
- One Type N stream (65-foot-wide buffer)
- One Type F stream (165-foot-wide buffer)
- Potential Landslide Hazard Areas (50-foot-wide buffer)
- Steep Slope Hazard Areas
- Erosion Hazard Areas
- Critical Aquifer Recharge Areas, Categories I and II – Areas susceptible to groundwater contamination and areas within wellhead protection zones

i. Approximately how many people would reside or work in the completed project?

No people will reside or work in the completed project.

j. Approximately how many people would the completed project displace?

No people will be permanently displaced by the project.

k. Proposed measures to avoid or reduce displacement impacts, if any:

No measures will be implemented to avoid or reduce displaced people because no one will be displaced.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

This project complies with the *King County Comprehensive Plan* (2020 Update to the 2016 *Comprehensive Plan*). The proposed project is consistent with existing and projected land uses in the areas that are potentially affected by the project. The project requires land use permits from the King County DLS Permitting Division to further ensure the project is compatible with existing and projected land uses and plans.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

The proposed project will result in the removal of the current load restriction on 356th Drive SE, which may benefit adjacent forest land activities in the vicinity of the project, if active. No long-term adverse impacts to forest land uses in the vicinity are anticipated.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing units are being provided by the project.

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b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing units are being eliminated by the project.

c. Proposed measures to reduce or control housing impacts, if any:

The project will not result in adverse impacts to housing units; therefore, no measures are proposed to reduce or control impacts.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The tallest height of the proposed structure is reconstruction of the road prism to the same elevation as the existing roadway. The principal exposed material will be asphalt and concrete.

b. What views in the immediate vicinity would be altered or obstructed?

Other than the construction effects visible from the roadway in the immediate vicinity of the project, no views will be altered by the slide repair project.

c. Proposed measures to reduce or control aesthetic impacts, if any:

The project area will be restored, to the degree possible, to conditions similar to existing aesthetics at the completion of project construction.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The existing temporary mobile traffic signal will control traffic through the construction site during periods of inactivity. Construction lighting may be deployed if it becomes necessary to conduct nighttime operations. The completed project will not produce light or glare; there is no lighting proposed for the project.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

The finished project will not produce any additional light or glare that will be a safety hazard or interfere with views.

c. What existing off-site sources of light or glare may affect your proposal?

No off-site sources of light or glare have been identified that will affect the proposed project.

d. Proposed measures to reduce or control light and glare impacts, if any:

Temporary lighting may be necessary to safely control traffic and/or conduct nighttime operations. This equipment is fitted with directional devices to focus light and minimize glare. No permanent light and glare impacts are proposed, so no measures are needed to prevent or minimize permanent light and glare impacts.

12. Recreation

DocuSign Envelope ID: 92D8AE8C-4891-475C-86C8-2C986337024C

a. What designated and informal recreational opportunities are in the immediate vicinity?

There are no formal recreational areas on the existing roadway or the adjacent privately-owned parcels. Within the immediate vicinity of the project, informal activities include walking and biking.

b. Would the proposed project displace any existing recreational uses? If so, describe.

Pedestrian and vehicular access through the active construction site will be limited and controlled for public safety. No existing recreational uses will be displaced long-term by the proposed project.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

During construction, walking/biking through the project area will likely be prohibited for safety reasons. The completed project will return recreational opportunities to previously existing conditions.

13. Historic and Cultural Preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

The cultural resources screening, utilizing the King County Cultural Resource Protection Project (CRPP) and Department of Archaeology and Historic Preservation (DAHP) Washington Information System for Architectural and Archaeological Records Data (WISAARD) databases identified no recorded, reported or suspected cultural resources at the project location.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

As noted in Section B.13.a. of this checklist, no recorded, reported, or suspected cultural resources were identified at the project location during the cultural resources screening.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archaeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

The project began with an initial project screening using the CRPP and DAHP WISAARD databases. These GIS referenced databases utilize historic maps, ethno-historic accounts, and professional site records.

The general setting of the project on a steep slope within an area of continuous slides greatly reduces the likelihood for unknown buried intact prehistoric archaeological deposits. The presence of a road prism, existing drainage and previous maintenance activities further reduces that likelihood.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Due to the continuous slide activity and steep slope in the project area, a recommendation for No Potential to Effect from United States Army Corps of Engineers (USACE) for Section 106 will be made. This recommendation will require concurrence with the USACE prior to issuance of the permit.

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If resources are identified during construction, work in the vicinity of the identified resources will immediately cease and the ROADS Archaeologist, USACE, DAHP, the King County Historic Preservation Program, and other appropriate agencies will be notified. Work will not resume in the vicinity of the identified resources until appropriate archaeological investigations are complete.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on-site plans, if any.

The site is located on 356th Drive SE, a rural local access road that connects to State Route 202 (SE Fall City – Snoqualmie Road). This roadway is a sole access route for approximately 90 parcels located north of the project site. The roadway is presently limited to one lane of traffic with traffic controls and is load limited.

The proposed project is anticipated to require approximately 55 working days to construct while maintaining one lane two-way through traffic. An emergency access/detour route will be implemented if the roadway at the slide repair must close. The emergency access/detour route will be on an approximately 3.5-mile-long gravel road connecting SE 25th Street to Tokul Road SE.

The completed project will restore both lanes of traffic and lift the load restrictions on 356th Drive SE.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

The project location is not directly served by public transit. The nearest routes run on SR-202, approximately one mile south of the project location.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

The completed project will neither create nor eliminate any parking spaces.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The proposal requires rebuilding 356th Drive SE after installing the soldier pile wall with tiebacks, interceptor trench, and associated drainage infrastructure. The road will be rebuilt to match the existing conditions, which meet current King County *Road Design and Construction Standards*.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The project will not use water, rail, or air transportation.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

There will be no increase in typical vehicular trips per day as a result of the completed project.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

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The project will not interfere with, affect, or be affected by the movement of agricultural products on roads in the area. The project area is in a rural area that is adjacent to a forest production district that may provide for movement of forest products. The proposed project may result in temporary disruptions to the movement of forest products, but will result in a long-term benefit by reopening both lanes of traffic and removing the load restriction.

h. Proposed measures to reduce or control transportation impacts, if any:

The project proposes to maintain one lane of travel during construction. Prior to construction, additional signs and notifications will be provided to the public.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No increased needs for public services are anticipated as a result of the proposed project.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Because there will be no direct impacts on public services, no proposed measures will be needed.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other: cable

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The above-listed utilities pass through the project site, but do not provide services to the roadway. No new utilities are proposed for the project. Existing utilities that conflict with the construction project will be temporarily relocated outside of the construction zone and then restored upon site restoration.

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C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: DocuSigned by: John Kosai-Eng 0EB2763B582D47B... On behalf of Tony Ledbetter **Date:** 7/18/2020

Name of Signee: Tony Ledbetter

Position/title: Operations Manager
Road Services Division, Maintenance Section

Attached:

- Project Plan Sheets
- GHG Emissions Worksheet

King County Local Services PERMITS

Section I: Buildings

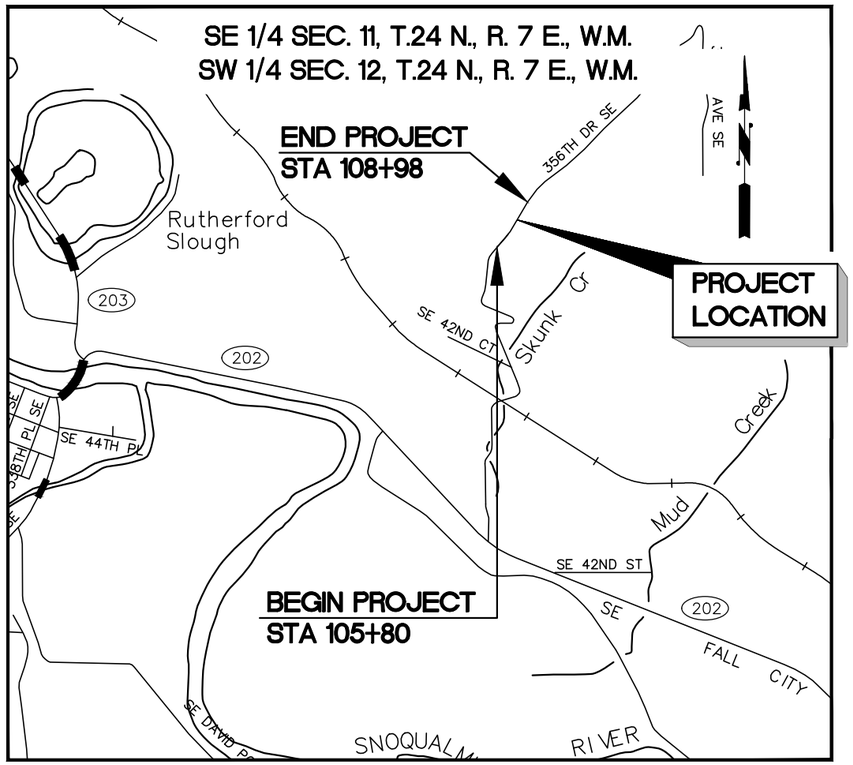
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e) Embodied	Energy	Transportation	**Lifespan Emissions (MTCO2e)**
Single-Family Home.....	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home.....	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		0.0	39	1,938	582	**0**
Health Care Outpatient		0.0	39	737	571	**0**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall).....		0.0	39	577	247	**0**
Office		0.0	39	723	588	**0**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement.....

Pavement.....		7.96				**398**

Total Project Emissions: **398**

Data entry fields

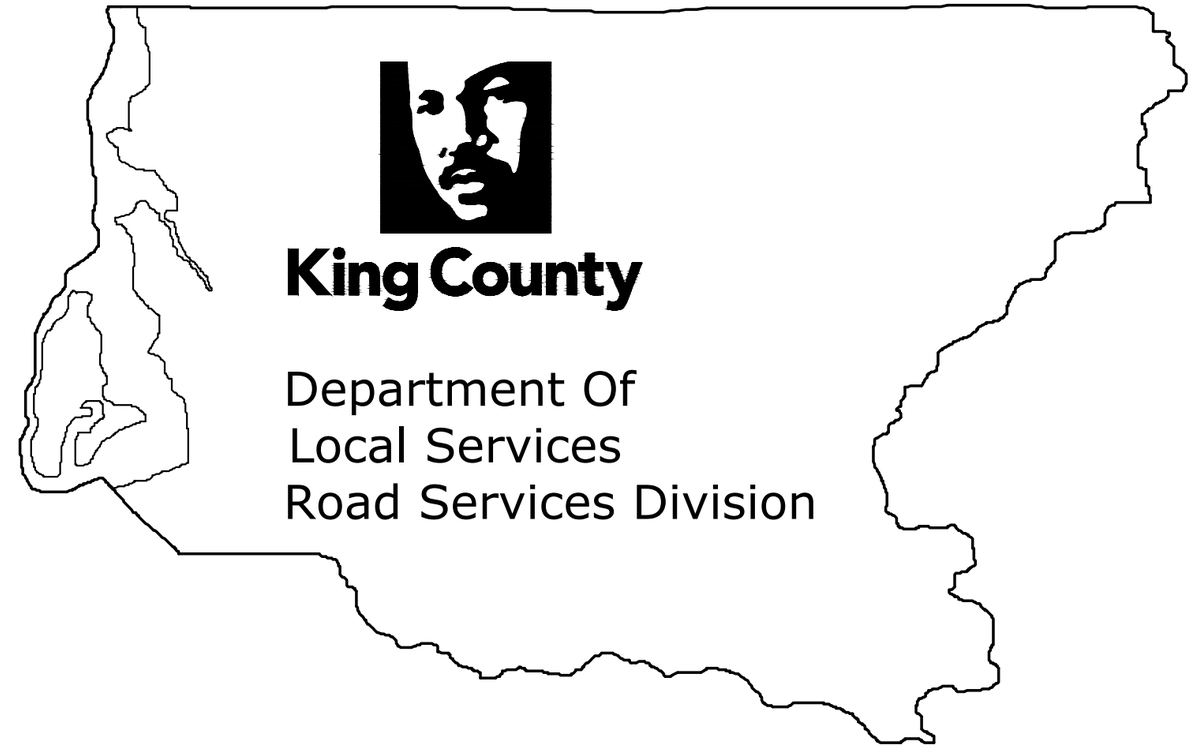


VICINITY MAP

NTS

DRAWING INDEX

SHEET	DESCRIPTION
1	COVER SHEET
2	LEGEND AND ABBREVATIONS
3	SUMMARY OF QUANTITIES (NOT INCLUDED IN THIS SUBMITTAL)
4	SURVEY CONTROL AND ALIGNMENT PLAN
5	ROADWAY SECTIONS
6	SITE PREPARATION AND TESC PLAN
7	TESC NOTES AND DETAILS (DETAILS NOT INCLUDED IN THIS SUBMITTAL)
8	TEMPORARY CONSTRUCTION ACCESS ROAD PLAN
9–10	ROADWAY PLAN AND PROFILE (PROFILE NOT INCLUDED IN THIS SUBMITTAL)
11	DRAINAGE PLAN
12	DRAINAGE DETAILS (NOT INCLUDED IN THIS SUBMITTAL)
13	WALL PLAN AND ELEVATIONS (NOT INCLUDED IN THIS SUBMITTAL)
14	WALL DETAILS (NOT INCLUDED IN THIS SUBMITTAL)
15	RIGHT–OF–WAY PLAN



King County

Department Of
Local Services
Road Services Division

356TH DRIVE SE
EMERGENCY SLIDE REPAIR

30% PRELIMINARY DISTRIBUTION SET

ROAD SERVICES	--	M/D/Y
From	Distributing Engineers	Return On/Before
To	Approving Reviewer	Initial & Date

811
Know what's below.
Call before you dig.

SURVEY JOB NO:	20017	2/16/20
CHECKED:	T. CRAY	2/27/20
CAD ENTERED:	J. RED	7/10/20
DESIGNED:	G. DE SIMONE	7/10/20
CHECKED:	P. DE BOLDT	7/10/20
SUPERVISOR:		

NUM.	REVISION	BY	DATE

PERTEET
505 FIFTH AVENUE S, SUITE 300
SEATTLE, WA 98104
206.726.9292 | 800.950.6000

JANESSA MARIE DONATO
STATE OF WASHINGTON
48151
REGISTERED PROFESSIONAL ENGINEER

FED. AID No. N/A

PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

JOANN H. KOSAI, ENG
STATE OF WASHINGTON
34413
REGISTERED PROFESSIONAL ENGINEER

THIS PLAN SET IS APPROVED FOR CONSTRUCTION

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR
COVER SHEET

King County

SHEET 1 OF 15 SHEETS

320-94 (1)

Jul 10, 2020 – 6:39pm Jerri.red X:\King County\Projects\20200064 – 356th Drive Slide Repair\CADD\02 – Plan Sheets\1136548_COV.dwg Layout Name: COVER

LEGEND

LINETYPES

EXIST.	DESCRIPTION
SURFACE FEATURES:	
	BUILDING LINE (EXIST.)
	CANAL[SCALEABLE](EXIST.)
	CREEK/DITCH CENTERLINE (EXIST.)
	CURB/PAVEMENT/SIDEWALK (EXIST.)
— X — X — X — X —	FENCE (EXIST.)
	GUARDRAIL (EXIST.)
	LAKE/POND
	MARSH/SWAMP PERIMETER
INTERIOR EXTERIOR	WETLAND PERIMETER (DELINEATED BY BIOLOGIST)
WB	WETLAND BUFFER (DELINEATED BY BIOLOGIST)
	RETAINING WALL (EXIST.)
	RIVERBANK/SHORELINE
	SHOULDER (EXIST.)
	ROCK FACING (EXIST.)
OHW OHW	ORDINARY HIGH WATER
SURVEY:	
	CENTERLINE (EXIST.)
	CONTOUR (DEPRESSION)
	CONTOUR (INTERVAL) (EXIST.)
* * *	CONTOUR (INDEX) (EXIST.)
	EASEMENT (TEMPORARY)
	MATCH LINE
	MEANDER LINE
	PROPERTY LINE (EXIST.)
	RANGE/TOWNSHIP LINE
	RESERVATION/PARK/FOREST (EXIST.)
	RIGHT-OF-WAY (EXIST.)
	CITY-LIMITS
	SECTION LINE
	QUARTER SECTION LINE
	SIXTEENTH SECTION LINE
	STATE/COUNTY/CORPORATE LIMIT
UTILITIES (EXIST.):	
OTV	CABLE TELEVISION (AERIAL)
UTV	CABLE TELEVISION (BURIED)
FO	FIBER OPTIC
FM	FORCE MAIN
G	GAS
6" G	6" GAS LINE
OIL	OIL
OP	POWER (AERIAL)
UP	POWER (BURIED)
SS	SANITARY SEWER
STE	STEAM
SD	STORM DRAIN
12"CMP	(12" CMP) STORM DRAIN
OT	TELEPHONE (AERIAL)
UT	TELEPHONE (BURIED)
	UTILITY SERVICE LINE (GENERAL)
W	WATER
12" W	12" WATER

CONSTRUCT	DESCRIPTION
	BUILDING LINE
	CREEK/DITCH
	CREEK/DITCH CENTERLINE
	CURB(PROP)
	CURB/PAVEMENT/SIDEWALK
SF	SILT FENCE
V	HIGH VISIBILITY FENCE
SW	STRAW WATTLE
TC	TURBIDITY CURTAIN
FS	FLAGS & STAKES
	GUARDRAIL
	LAKE/POND
	MARSH/SWAMP PERIMETER
INTERIOR EXTERIOR	WETLAND PERIMETER
WB	WETLAND BUFFER
	RETAINING WALL (CONC. BLOCK)
	RETAINING WALL (GABION)
	RETAINING WALL (MODULAR BLOCK)
	RETAINING WALL (MSE)
	ROCK FACING
	CENTERLINE
	CONTOUR (INTERVAL)
* * *	CONTOUR (INDEX)
	EASEMENT (PERMANENT)
	PROPERTY LINE
	RIGHT-OF-WAY (EXIST. DURING DESIGN REVIEW ONLY)
	RIGHT-OF-WAY
	RIGHT-OF-WAY (LIMITED ACCESS) COINCIDENTAL
C	CUT LINE
F	FILL LINE
	CLEARING LIMITS

DRAINAGE

SYMBOL EXIST.	SYMBOL CONSTRUCT	DESCRIPTION
		STORM DRAIN CATCH BASIN (GRATE LID)
		STORM DRAIN CATCH BASIN (SOLID LID)
		STORM DRAIN INLET (NO CATCH)
		STORM DRAIN CULVERT
		STORM DRAIN CATCH BASIN TYPE 2
		STORM DRAIN MANHOLE
25 L.F. 12"		STORM PIPE (PROPOSED) DOUBLE LINE TO SIZE OF PIPE DIAMETER

WATER

SYMBOL EXIST.	SYMBOL CONSTRUCT	DESCRIPTION
		GUARD POST
FIRE HYDRANTS:		
		FH
		WATER VALVE

GAS/POWER/TELEPHONE

SYMBOL EXIST.	SYMBOL CONSTRUCT	DESCRIPTION
	G	GAS METER
		GAS VALVE
		PAD MOUNTED TRANSFORMER
P	P	POWER VAULT
		TRANSMISSION TOWER (SCALEABLE)
		UTILITY POLE
		POWER POLE
		UTILITY POLE ANCHOR
		TELEPHONE RISER
T	T	TELEPHONE VAULT

SURVEY

SYMBOL	DESCRIPTION
	ANGLE POINT
	BENCH MARK
	BLOCK CORNER
	IRON PIPE
	MONUMENT (IN CASE)
	MONUMENT (SURFACE)
	OWNERSHIP TIE
16	SECTION CENTER
8 9 17 16	SECTION CORNER
	QUARTER CORNER
	SIXTEENTH CORNER
	CLOSING CORNER
MC	MEANDER CORNER
WC	WITNESS CORNER
	SOIL BORING
×	SPOT ELEVATION
	TAX LOT / PARCEL NUMBER
5	INTERSTATE
X-XXXX-XXX-XX	ASSESSOR'S CODE

ROAD PLAN

SYMBOL	DESCRIPTION
15 10	CUT SLOPE CATCH POINTS(OPTIONAL) (SCALEABLE)
SHOULDER	FILL SLOPE CATCH POINTS(OPTIONAL) (SCALEABLE)

SYMBOLS

SYMBOL	DESCRIPTION
CD	CHECK DAM
CE	TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
CL	CLEARING LIMIT
CO	COMPOST
DC	DUST CONTROL MEASURES
DI	TEMPORARY DITCH
HCL	HAND CLEARING LIMIT
FS	FLAGS & STAKES
GL	GRADING LIMITS
IP	CATCH BASIN AND CULVERT/ INLET PROTECTION
M	MATTING (EROSION CONTROL BLANKET)
PC	PLASTIC COVERING
PS	PERMANENT SEEDING
	TEMPORARY SEDIMENT TRAP CONTRIBUTION AREA (APPROX. 1 ACRE)
RR	QUARRY SPALL PROTECTION
SB	SAND BAG
SE	SEEDING
SF	SILT FENCE
SM	"STRAW MULCH" FOR TEMPORARY COVER
SR	SURFACE ROUGHING
ST	TEMPORARY SEDIMENT TRAP
STB	STRAW BALE BARRIER
TC	TURBIDITY CURTAIN
TS	TEMPORARY SEEDING
V	HIGH VISIBILITY FENCE
VEG	VEGETATION PRESERVATION
VS	VEGETATED FILTER STRIP
VSS	VEGETATED STREAM BANK STABILIZATION
WQ	WATER QUALITY SAMPLING LOCATION

ABBREVIATIONS

ABAND	ABANDONED
AC	ASPHALT CONCRETE
ACP	ASPHALT CONCRETE PAVEMENT
ADJ	ADJUST
AH	AHEAD
AP	ANGLE POINT
APPROX.	APPROXIMATELY
ARD	AGREEMENT TO RECONSTRUCT DWY
AVE	AVENUE
AVG	AVERAGE
BK	BACK
℄	BASELINE
BLDG	BUILDING
BLVD	BOULEVARD
BM	BENCH MARK
BMP	BEST MANAGEMENT PRACTICE
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
BVCE	BEGINNING OF VERTICAL CURVE ELEVATION
BVCS	BEGINNING OF VERTICAL CURVE STATION
C	CONDUCTOR
CATV	CABLE TV
CB	CATCH BASIN
CL	CLASS
℄	CENTERLINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
COMPT	COMPACTED
CONC	CONCRETE
CONN	CONNECT
CONST	CONSTRUCTION
CSTC	CRUSHED SURFACING TOP COURSE
CU	CUBIC
CY	CUBIC YARD
CULV	CULVERT
D	DRAIN PIPE
DEG OR °	DEGREE, ANGULAR
DIAM	DIAMETER
DIST	DISTANCE
DWG	DRAWING
DWY	DRIVEWAY
E	EAST, ELECTRICAL
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
EMB	EMBANKMENT
EP	EDGE OF PAVEMENT
EQ	EQUATION
EST	ESTIMATE
EVCE	END OF VERTICAL CURVE ELEVATION
EVCS	END OF VERTICAL CURVE STATION
EXCL	EXCLUDE
EXIST	EXISTING
FH	FIRE HYDRANT
FT OR '	FEET/FOOT
G	GAS LINE, GREEN
GALV	GALVANIZED
GB	GRADE BREAK
GE	GRATE ELEVATION
GR	GUARDRAIL
GRD	GROUND
GV	GAS VALVE
HORIZ	HORIZONTAL
HPS	HIGH PRESSURE SODIUM
HT	HEIGHT
HUND	HUNDRED
HWY	HIGHWAY
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INV	INVERT
JB.	JUNCTION BOX
JTS, JT	JOINTS, JOINT
JUD	JOINT USE DRIVEWAY
L	LENGTH OF ARC
LF	LINEAL FOOT/FEET
LT	LEFT
LUMIN	LUMINAIRE
M	METER
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MON	MONUMENT
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DIVICES
N	NORTH
NO	NUMBER
NST	NOT STEEPER THAN
NTS	NOT TO SCALE
O-XING	OVERHEAD CROSSING
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OHW	ORDINARY HIGH WATER
OP	OVERHEAD POWER
OT	OVERHEAD TELEPHONE
P	POLE, POWER
PAR	PARK ACCESS ROAD
PAV'T	PAVEMENT
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
P-E	PRE-EMPT
PED	PEDESTRIAN
PI	POINT OF INTERSECTION
℄	PROPERTY LINE
PP	POWER POLE
PR	PAIR
PRC	POINT OF REVERSE CURVE
PSI	POUND PER SQ IN
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
PVCC	POINT OF VERTICAL COMPOUND CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVRC	POINT OF VERTICAL REVERSE CURVE
QTY	QUANTITY
R	RADIUS
RD	ROAD
REINF	REINFORCED
REQ'D	REQUIRED
ROW	RIGHT-OF-WAY
RT	RIGHT
R/W	RIGHT-OF-WAY
S	SOUTH/SLOPE
SAN	SANITARY
SCHED	SCHEDULE
SD	STORM DRAIN
SECT	SECTION
SERV	SERVICE
SF	SQUARE FEET/FOOT
SHLD	SHOULDER
SHT	SHEET
SP	1 SHIELDED PAIR IN SHINGLE CABLE
SPEC	SPECIAL
SPECS	SPECIFICATIONS
SQ	SQUARE
SR	STATE ROUTE
SS	SANITARY SEWER
ST	STREET
STA	STATION
S/W	SIDEWALK
T	TELEPHONE, TANGENT, TON
TAN	TANGENT
TBM	TEMPORARY BENCHMARK
TCE	TEMPORARY CONSTRUCTION EASEMENT
TEMP	TEMPORARY
TP	TELEPHONE POLE
TYP	TYPICAL
UD	UNDERDRAIN PIPE
UG	UNDERGROUND
VAR	VARIES
VC	VERTICAL CURVE
VERT.	VERTICAL
W	WEST, WATER
W/	WITH
WM	WATER METER
WM	WATERMAIN
W/O	WITHOUT
WV	WATER VALVE
Y	YELLOW
Y	YELLOW (FLASH)
YDS	YARDS
&	AND

811
Know what's below.
Call before you dig.

SURVEY JOB NO:	20017	2/16/20
CHECKED:	T. CRAY	2/27/20
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DESIGNED:	G. DE SIMONE	7/10/20
CHECKED:	P. DE BOLDT	7/10/20
SUPERVISOR:		

NUM.	REVISION	BY	DATE

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206.436.6188 | 800.416.6600

JANESSA MARIE DONATO
STATE OF WASHINGTON
48151
REGISTERED
PROFESSIONAL ENGINEER

FED. AID No. N/A

PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR
LEGEND AND ABBREVIATIONS

King County

SHEET 2 OF 14 SHEETS

XXX-XX (2)

Jul 10, 2020 – 6:04pm jerri.red X:\King County\Projects\20200064 – 356th Drive Slide Repair\CADD\02 – Plan Sheets\1136548_COV.dwg Layout Name: LEGAB

SUMMARY OF QUANTITIES (TO BE INCLUDED IN 60% SUBMITTAL)

PROJECT LIMITS: LENGTH: x

x

ITEM NO.	TOTAL QUANTITY	UNIT	STD. ITEM NO.	ITEM	PROJECT NUMBERS X					AS-BUILT
				X						
x	x	x	x	x	x					

ITEM NO.	TOTAL QUANTITY	UNIT	STD. ITEM NO.	ITEM	PROJECT NUMBERS					AS-BUILT

NOTES: 1. FOR SPECIAL FEATURES, SEE SPECIAL PROVISIONS.
2. PROJECT IS SUBJECT TO WSDOT STANDARD SPECIFICATION 1-07.2(1)

SURVEY JOB NO:	20017	2/16/20
CHECKED:	T. CRAY	2/27/20
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505 FIFTH AVENUE S, SUITE 200
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206.436.6188 | 800.88.8000

JANESSA MARIE DONATO
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PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR

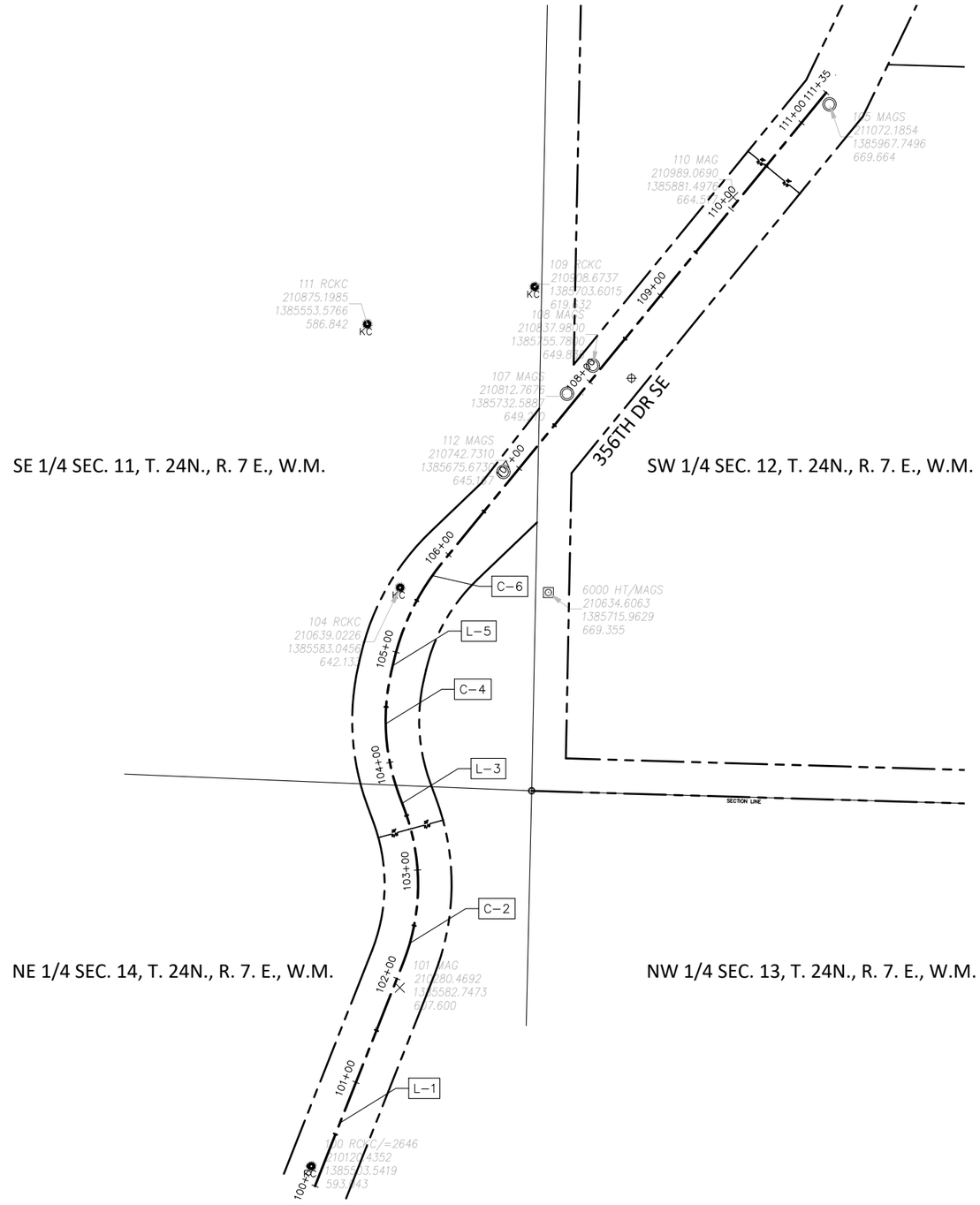
SUMMARY OF QUANTITIES

King County

SHEET 3 OF 15 SHEETS

320-94 (3)

Jul 10, 2020 - 6:04pm jerri.red X:\King County\Projects\20200064 - 356th Drive Slide Repair\CADD\02 - Plan Sheets\1136548_SUM.dwg Layout Name: SHT xx UHR SUM OF QTY



356TH DR SE CONSTRUCTION CENTERLINE ALIGNMENT CONTROL

SEGMENT	START STA	END STA	BEARING	BEGIN NORTHING	BEGIN EASTING	END NORTHING	END EASTING	DELTA	RADIUS	TANGENT	LENGTH
L-1	100+00.00	102+15.15	N21° 33' 22"E	210102.59	1385506.72	210302.69	1385585.77				215.150'
C-2	102+15.15	103+54.26	–	210302.69	1385585.77	210438.74	1385587.40	41°44'00"	190.99'	72.805'	139.114'
L-3	103+54.26	103+70.54	N20° 10' 38"W	210438.74	1385587.40	210454.02	1385581.79				16.280'
C-4	103+70.54	104+80.83	–	210454.02	1385581.79	210562.55	1385574.89	33°06'25"	190.857'	56.728'	110.282'
L-5	104+80.83	104+90.84	N12° 54' 22"E	210562.55	1385574.89	210572.31	1385577.13				10.010'
C-6	104+90.84	105+90.97	–	210572.31	1385577.13	210661.47	1385620.75	26°19'56"	217.880'	50.967'	100.134'
L-7	105+90.97	111+34.84	N39° 14' 19"E	210661.47	1385620.75	211082.70	1385964.78				543.868'

SURVEY NOTES:

1. HORIZONTAL DATM: NAD 83/91 WASHINGTON STATE NORTH ZONE
2. VERTICAL DATUM: NAVD 88
3. MONUMENT INFORMATION:

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
100	100+15.43	9.51' LT	210120.4352	1385503.5419	593.043
101	101+93.38	5.36' RT	210280.4692	1385582.7473	607.600
104	105+52.79	18.63' LT	210639.0226	1385583.0456	642.133
105	111+28.57	8.96' RT	211072.1854	1385967.7496	669.664
107	107+78.90	9.09' LT	210812.7676	1385732.5887	649.210
108	108+13.10	7.07' LT	210837.9800	1385755.7800	649.836
109	108+34.84	92.20' LT	210908.6737	1385703.6015	619.632
110	110+09.64	5.27' LT	210989.0690	1385881.4976	664.517
111	107+14.02	187.22' LT	210875.1985	1385553.5766	586.842
112	106+88.65	8.87' LT	210742.7310	1385675.6730	654.167

4. DATES OF SURVEY: MARCH 4, 2020; MAY 4, 2020; MAY 15, 2020

N

60 30 0 60 120
SCALE IN FEET

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CHECKED:	T. CRAY	2/27/20
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CHECKED:	P. DE BOLDT	7/10/20
SUPERVISOR:		

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JANESSA MARIE DONATO
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FED. AID No. N/A

PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR

SURVEY CONTROL AND ALIGNMENT PLAN

King County

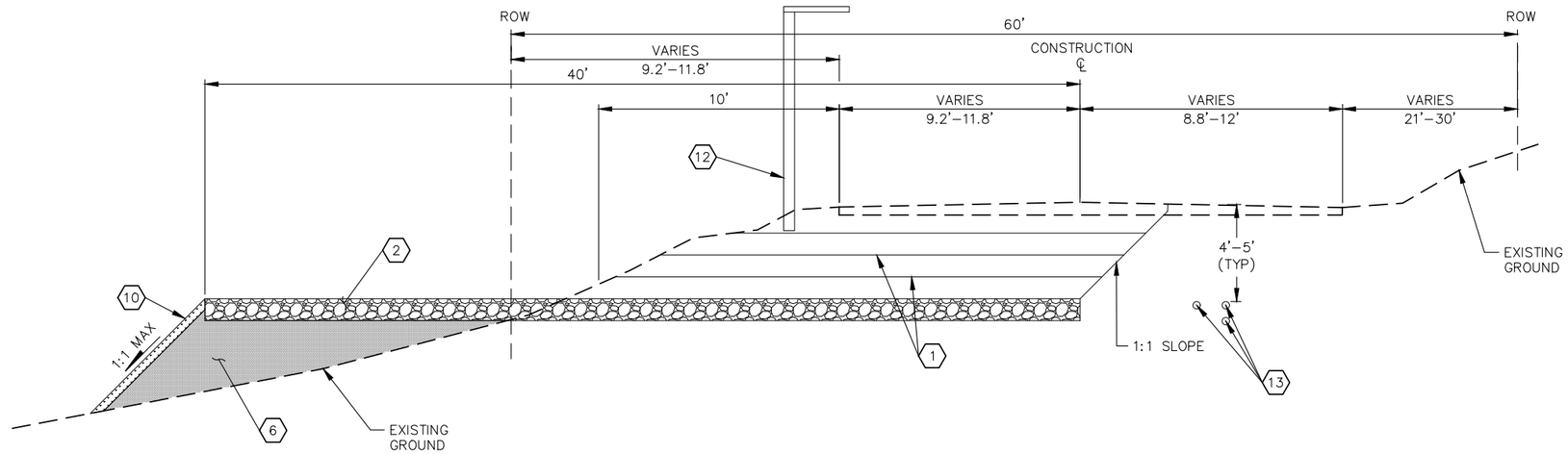
SHEET 4 OF 15 SHEETS

320-94 (4)

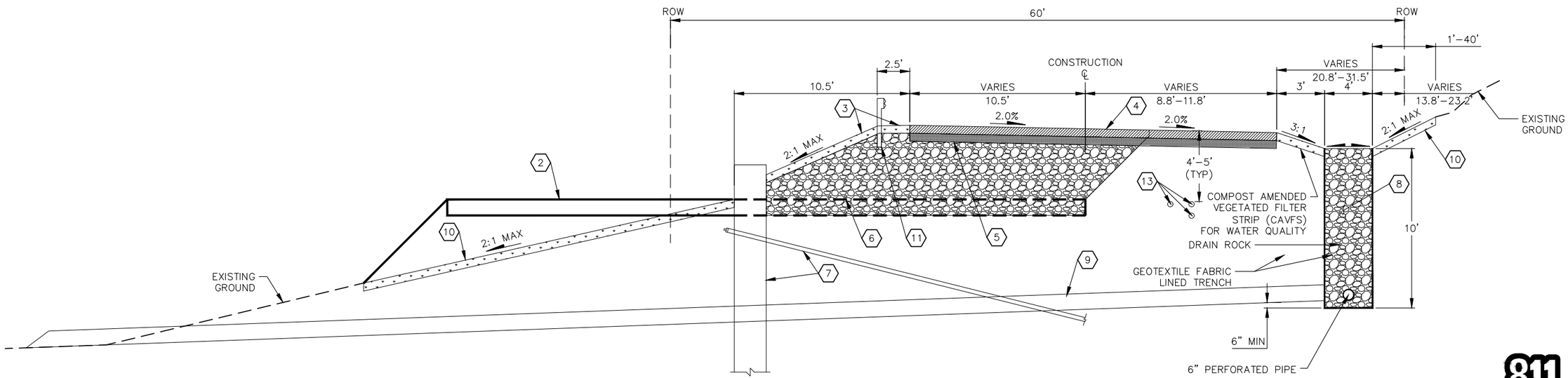
Jul 10, 2020 – 6:06pm jerri.red X:\King County\Projects\20200064 – 356th Drive Slide Repair\CADD\02 – Plan Sheets\1136548_ALIN.dwg Layout Name: SC1

ROADWAY SECTION NOTES

1. MECHANICALLY STABILIZED EARTH WALL AND GEOGRID TO BE REMOVED.
2. TEMPORARY GRAVEL CONSTRUCTION ACCESS ROAD. SEE SHEET 8.
3. LANDSCAPING RESTORATION.
4. 6" HMA CL. 1/2" PG 64-22 PAVEMENT.
5. 6" CRUSHED SURFACING BASE COURSE.
6. GRAVEL BORROW
7. SOLDIER PILE WALL AND TIEBACKS SYSTEM. SEE WALL PLAN AND ELEVATIONS SHEET 13, (TO BE INCLUDED IN 60% SUBMITTAL).
8. INTERCEPTOR TRENCH. SEE DETAIL, SHEET 12 (TO BE INCLUDED IN 60% SUBMITTAL).
9. 18" STORM DRAIN PIPE AND OUTFALL TO EXISTING STREAM. SEE ROADWAY PROFILE AND DRAINAGE PLAN SHEETS 10-11.
10. EROSION CONTROL MIX.
11. BEAM GUARDRAIL PER WSDOT STD PLAN C-1a AND C-1b.
12. EXISTING UTILITY POLE TO BE RELOCATED OR REMOVED BY OTHERS.
13. UTILITY UNDERGROUNDING (DIRECTIONAL BORING) BY OTHERS.



TEMPORARY CONSTRUCTION ACCESS ROAD (A/8)
SCALE: NONE



PROPOSED ROADWAY SECTION (B/9)
SCALE: NONE

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DESIGNED: G. DE SIMONE	7/10/20			
CHECKED: P. DE BOLDT	7/10/20			
SUPERVISOR:				
		NUM. REVISION	BY	DATE

PERTEET
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SEATTLE, WA 98104
206.436.6300 | 800.416.8800

JANESSA MARIE DONATO
STATE OF WASHINGTON
48151
REGISTERED PROFESSIONAL ENGINEER

FED. AID No. N/A

PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR

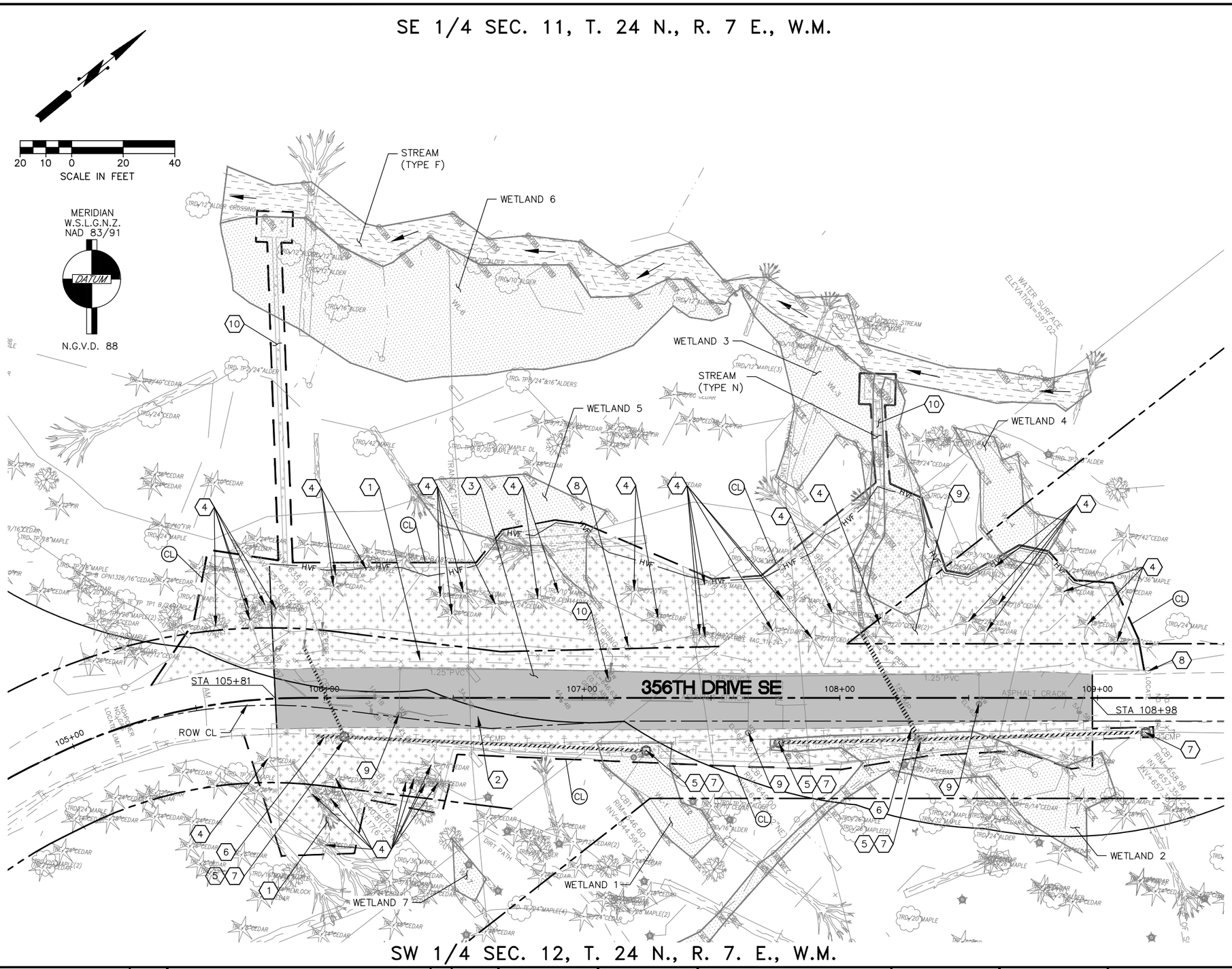
ROADWAY SECTIONS

King County

SHEET 5 OF 15 SHEETS

320-94 (5)

Jul 10, 2020 - 6:06pm jerri.red X:\King County\Projects\20200064 - 356th Drive Slide Repair\CADD\02 - Plan Sheets\1136548_RDSEC.dwg Layout Name: RDSEC (5)



GENERAL NOTES

1. PROTECT ALL STREAMS, WETLAND AREAS, AND BUFFER AREAS SHOWN. WETLAND BUFFERS ARE: TYPE F STREAM BUFFER IS 165 FEET; TYPE N STREAM BUFFER IS 65 FEET; CATEGORY III WETLAND BUFFERS ARE APPROXIMATELY 75–150 FEET; STEEP SLOPE HAZARD AREA BUFFER IS 50 FEET.
2. UTILITY INFORMATION SHOWN IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION.
3. PROTECT ALL UTILITIES TO REMAIN IN PLACE.
4. APPROXIMATE CLEARING AND GRUBBING LIMITS ARE SHOWN ON THE PLANS. ACTUAL CLEARNING AND GRUBBING LIMITS WILL BE STAKED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. TREES WITHIN CLEARING AND GRUBBING LIMITS SHALL BE REMOVED UNLESS SHOWN ON THE PLANS TO BE PROTECTED.
5. ALL ASPHALT SURFACES TO BE REMOVED SHALL BE SAWCUT.
6. STORM DRAIN INLET PROTECTION INSERTS SHALL BE INSTALLED IN ALL NEW CATCH BASINS AT THE TIME OF INSTALLATION AND IN ALL EXISTING CATCH BASINS BEFORE COMMENCING WORK.
7. TREAT AND DISPOSE OF WATER FROM TEMPORARY DEWATERING IN ACCORDANCE WITH DOE REQUIREMENTS.

CONSTRUCTION NOTES

1. FLAG CLEARING LIMITS PRIOR TO CONSTRUCTION AND DELINEATE WITH STAKES. INSTALL TESC MEASURES.
2. REMOVE EXISTING ASPHALT PAVEMENT.
3. REMOVE EXISTING MECHANICALLY STABILIZED EARTH WALL AND GEOGRID AND HAUL OFFSITE. SEE SECTION, SHEET 5.
4. REMOVE TREE.
5. REMOVE EXISTING CATCH BASIN.
6. REMOVE EXISTING STORM DRAIN.
7. INSTALL INLET PROTECTION PER WSDOT STD PLAN I–40.20.
8. POLE TO BE REMOVED OR RELOCATED BY OTHERS.
9. REMOVE MONITORING WELL.
10. CLEAR MINIMUM AREA FOR LAYING OF PIPE. SEE SHEET 11.
11. SEE SHEET 9 FOR RESTORATION OF CLEARED AREA AND FOR LOCATION OF STAGING AREA.

LEGEND

- REMOVE ASPHALT, MSE WALL AND GEOGRID
- REMOVE ASPHALT
- CLEARING AND GRUBBING AREA
- REMOVE PIPE
- WETLAND
- STREAM
- INLET PROTECTION (PER WSDOT STD PLAN I–40.20)
- REMOVE TREE
- HVF — HIGH VISIBILITY FENCE (PER WSDOT STD PLAN I–30.16–01)
- CLEARING AND GRUBBING LIMITS

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CHECKED:	P. DE BOLDT	7/10/20
SUPERVISOR:		

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JANESSA MARIE DONATO
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PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR

SITE PREPARATION AND TESC PLAN

King County

SHEET 6 OF 15 SHEETS

320-94 (5)

Jul 10, 2020 – 6:42pm jerri.red X:\King County\Projects\20200064 – 356th Drive Slide Repair\CADD\02 – Plan Sheets\1136548_SITEP.dwg Layout Name: SP1

WETLAND AND BUFFER IMPACTS TABLE

WETLAND	CATEGORY	WETLAND AREA (SF)	BUFFER WIDTH (LF)	WETLAND AREA WITH BUFFER (SF)	DIRECT WETLAND IMPACT AREA (SF)	DIRECT WETLAND IMPACT AREA (ACRES)	BUFFER IMPACT AREA (SF)	BUFFER IMPACT AREA (ACRES)
WETLAND 1	3	863	150	114,289	202	0.00	29,938	0.69
WETLAND 2	3	2,900	150	201,871	738	0.02	25,645	0.59
WETLAND 3	3	2,839	150	214,802	1,004	0.02	23,522	0.54
WETLAND 4	3	955	150	136,961	83	0.00	16,524	0.38
WETLAND 5	3	1,625	75	50,695	468	0.01	15,929	0.37
WETLAND 6	3	6,719	150	156,494	261	0.01	22,614	0.52
WETLAND 7	3	163	75	33,847	–	–	11,245	0.26

* THE TOTAL COMBINED WETLAND BUFFER IMPACT AREA=31,465 SF (0.72 AC). SEE APPROXIMATE TOTAL COMBINED WETLAND BUFFER LOCATION, SHEET 6.

STREAM IMPACTS TABLE

STREAM	STREAM AREA (SF)	BUFFER WIDTH (LF)	STREAM AREA WITH BUFFER (SF)	DIRECT STREAM IMPACT AREA (SF)	DIRECT STREAM IMPACT AREA (ACRES)	BUFFER IMPACT AREA (SF)	BUFFER IMPACT AREA (ACRES)
STREAM F	4,215	165	251,812	–	0.00	25,985	0.60
STREAM N	416	65	28,742	340	0.01	10,577	0.24

* THE TOTAL COMBINED STREAM BUFFER IMPACT AREA=25,985 SF (0.60 AC). SEE APPROXIMATE TOTAL COMBINED WETLAND BUFFER LOCATION, SHEET 6.

TREE SCHEDULE

TYPE	SIZE (INCH)	QUANTITY	NOTE
CEDAR	6	1	REMOVE
CEDAR	8	2	REMOVE
CEDAR	10	2	REMOVE
CEDAR	12	3	REMOVE
CEDAR	16	1	REMOVE
CEDAR	18	4	REMOVE
CEDAR	20	1	REMOVE
CEDAR	24	5	REMOVE
CEDAR	26	2	REMOVE
CEDAR	36	2	REMOVE
CEDAR	40	1	REMOVE
CEDAR	42	1	REMOVE
CEDAR	48	1	REMOVE
CEDAR	56	1	REMOVE
MAPLE	10	1	REMOVE
MAPLE	24	2	REMOVE
MAPLE	26	2	REMOVE
MAPLE	28	2	REMOVE
ALDER	24	2	REMOVE
ALDER	26	1	REMOVE
FIR	20	1	REMOVE
FIR	42	1	REMOVE
N/A	N/A	1	REMOVE
TOTAL # OF IMPACTED TREES		40	

PROJECT IMPACTS NOTES

1. PER KING COUNTY PERMITTING DIVISION REVIEW: THE TOTAL PROJECT AREA, INCLUDING STAGING AREAS, IS 31,465 SF (0.72 AC). OF THIS AREA, 23,777 SF (0.55 AC) WILL BE GRADED, WHICH IS 76% OF THE TOTAL SITE AREA. THE PROJECT WILL TEMPORARILY IMPACT 15,102 SF (0.35 AC) OF VEGETATION CONSISTING OF TREES AND SHRUBS. THE PROJECT WILL PERMANENTLY IMPACT 21,205 SF (0.49 AC) OF VEGETATION CONSISTING OF TREES AND SHRUBS. 40 TREES WILL BE IMPACTED BY THE PROJECT. OF THOSE, 40 TREES ARE GREATER THAN 4 INCHES DIAMETER AT BREAST HEIGHT. THE AMOUNT OF EXISTING IMPERVIOUS SURFACE WITHIN THE PROJECT LIMITS IS: 7,963 SF (0.18 AC) A TOTAL OF 6,928 SF (0.16 AC) OF IMPERVIOUS SURFACE WILL BE REPLACED.

TESC NOTES

1. INSTALL AND MAINTAIN TESC MEASURES. UPGRADE BMPs AS WEATHER AND SITE CONDITIONS WARRANT, OR UNTIL THE ENGINEER APPROVES THEIR REMOVAL.
2. COVER DISTURBED AREAS AND STOCKPILES AS DIRECTED BY THE ENGINEER.
3. SWEEP AND CLEAN ROADWAY IN ACCORDANCE WITH THESE PLANS AND/OR AS DIRECTED BY THE ENGINEER.
4. STAGING AREA SHALL BE SECURED TO CONTAIN ALL CONSTRUCTION MATERIALS, FUEL, ETC. FROM LEAVING THAT AREA, IN ACCORDANCE WITH APPROVED SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN.
5. UTILITY AND GEOTECHNICAL WORK TO BE PERFORMED IN THE SUMMER MONTHS THAT CREATES DISTURBED GROUND WILL BE STABILIZED WITH STRAW (2"MINIMUM) AND/OR EROSION–CONTROL FABRIC UNTIL THE EMERGENCY SLIDE REPAIR PROJECT IS COMPLETED IN THE FALL/WINTER. AT PROJECT COMPLETION IN THE LATE FALL/WINTER, DISTURBED AREAS WILL BE PLANTED WITH NATIVE VEGETATION AND ASSESSED FOR ADDITIONAL PERMANENT STABILIZATION MEASURES.

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CHECKED:	P. DE BOLDT	7/10/20
SUPERVISOR:		

NUM.	REVISION	BY	DATE

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48151
REGISTERED PROFESSIONAL ENGINEER

FED. AID No. N/A

PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR

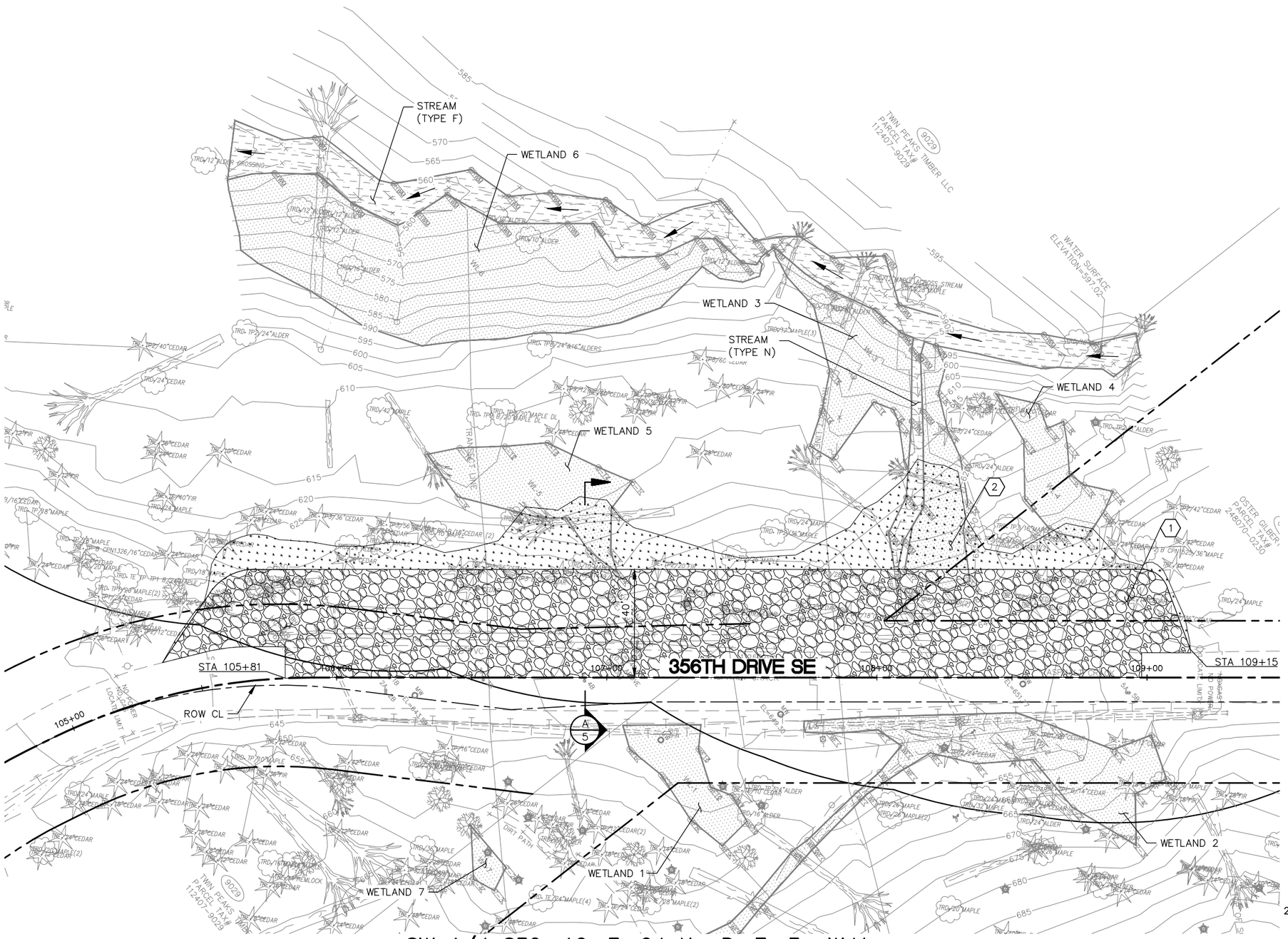
TESC NOTES AND DETAILS

King County

SHEET 7 OF 15 SHEETS

320-94 (7)

SE 1/4 SEC. 11, T. 24 N., R. 7 E., W.M.



SW 1/4 SEC. 12, T. 24 N., R. 7. E., W.M.

GENERAL NOTES

1. PROTECT ALL STREAMS, WETLAND AREAS, AND BUFFER AREAS AS SHOWN. WETLAND BUFFERS ARE:
   TYPE F STREAM BUFFER IS 165 FEET;
   TYPE N STREAM BUFFER IS 65 FEET;
   CATEGORY III WETLAND BUFFERS ARE APPROXIMATELY 75–150 FEET;
   STEEP SLOPE HAZARD AREA BUFFER IS 50 FEET.
2. UTILITY INFORMATION SHOWN IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION.
3. PROTECT ALL UTILITIES TO REMAIN IN PLACE.

CONSTRUCTION NOTES

(1) CONSTRUCT TEMPORARY GRAVEL CONSTRUCTION ACCESS ROAD.

(2) INSTALL EROSION CONTROL MIX PER TEMPORARY CONSTRUCTION ACCESS ROAD SECTION, SHEET 5.

LEGEND

- TEMPORARY CRUSHED GRAVEL WITH GEOTEXTILE
- TEMPORARY EROSION CONTROL MIX
- WETLAND
- STREAM

20 10 0 20 40
SCALE IN FEET

MERIDIAN
W.S.L.G.N.Z.
NAD 83/91
DATUM
N.G.V.D. 88

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JANESSA MARIE DONATO
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FED. AID No. N/A

PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR

TEMPORARY GRAVEL CONSTRUCTION ACCESS ROAD PLAN

King County

SHEET 8 OF 15 SHEETS

320-94 (8)

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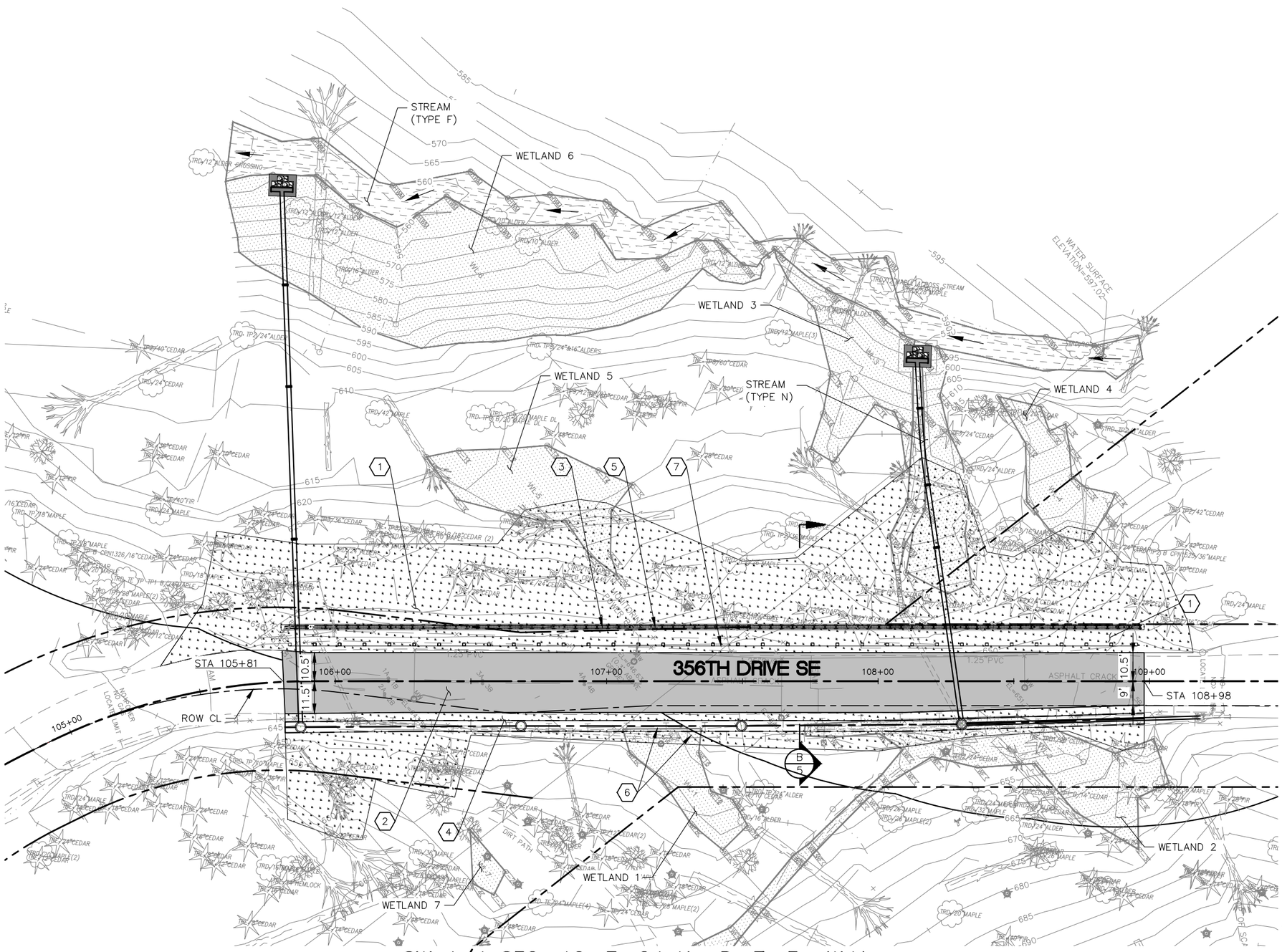
SE 1/4 SEC. 11, T. 24 N., R. 7 E., W.M.



SW 1/4 SEC. 12, T. 24 N., R. 7. E., W.M.

GENERAL NOTES

1. PROTECT ALL STREAMS, WETLAND AREAS, AND BUFFER AREAS AS SHOWN. WETLAND BUFFERS ARE: TYPE F STREAM BUFFER IS 165 FEET; TYPE N STREAM BUFFER IS 65 FEET; CATEGORY III WETLAND BUFFERS ARE APPROXIMATELY 75–150 FEET; STEEP SLOPE HAZARD AREA BUFFER IS 50 FEET.
2. UTILITY INFORMATION SHOWN IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION.
3. PROTECT ALL UTILITIES TO REMAIN IN PLACE.
4. FOR DRAINAGE IMPROVEMENTS, SEE DRAINAGE PLAN AND PROFILE, SHEETS 10–11.

CONSTRUCTION NOTES

1. REMOVE TEMPORARY GRAVEL CONSTRUCTION ACCESS ROAD, PER PROPOSED ROADWAY SECTION, SHEET 5.
2. INSTALL 6" HMA CL. 1/2" PG 64–22 PAVEMENT OVER 6" CSBC.
3. INSTALL SOLDIER PILE WALL AND TIEBACKS SYSTEM. SEE WALL PLAN AND ELEVATIONS, SHEETS 13–14 (NOT INCLUDED IN THIS SUBMITTAL).
4. CONSTRUCT INTERCEPTOR TRENCH AND INSTALL 18" STORM DRAIN PIPE AND OUTFALL TO EXISTING STREAM. SEE DRAINAGE PLAN, PROFILES, AND DETAILS, SHEETS 10–11 PROFILE (NOT INCLUDED IN THIS SUBMITTAL).
5. EXISTING UTILITY POLE TO BE REMOVED BY OTHERS.
6. EXISTING UNDERGROUND UTILITY TO BE REMOVED BY OTHERS.
7. INSTALL GUARDRAIL PER WSDOT STD PLAN C–1a AND C–1b.

LEGEND

- 6" HMA CL 1/2" PG 64–22 OVER 6" CSBC
- EROSION CONTROL MIX
- WETLAND
- STREAM

20 10 0 20 40
SCALE IN FEET

MERIDIAN
W.S.L.G.N.Z.
NAD 83/91
DATUM
N.G.V.D. 88

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JANESSA MARIE DONATO
STATE OF WASHINGTON
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KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR

ROADWAY PLAN

King County

SHEET 9 OF 15 SHEETS

320-94 (9)

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ROADWAY PROFILE

King County

SHEET 10 OF 15 SHEETS

320-94 (10)

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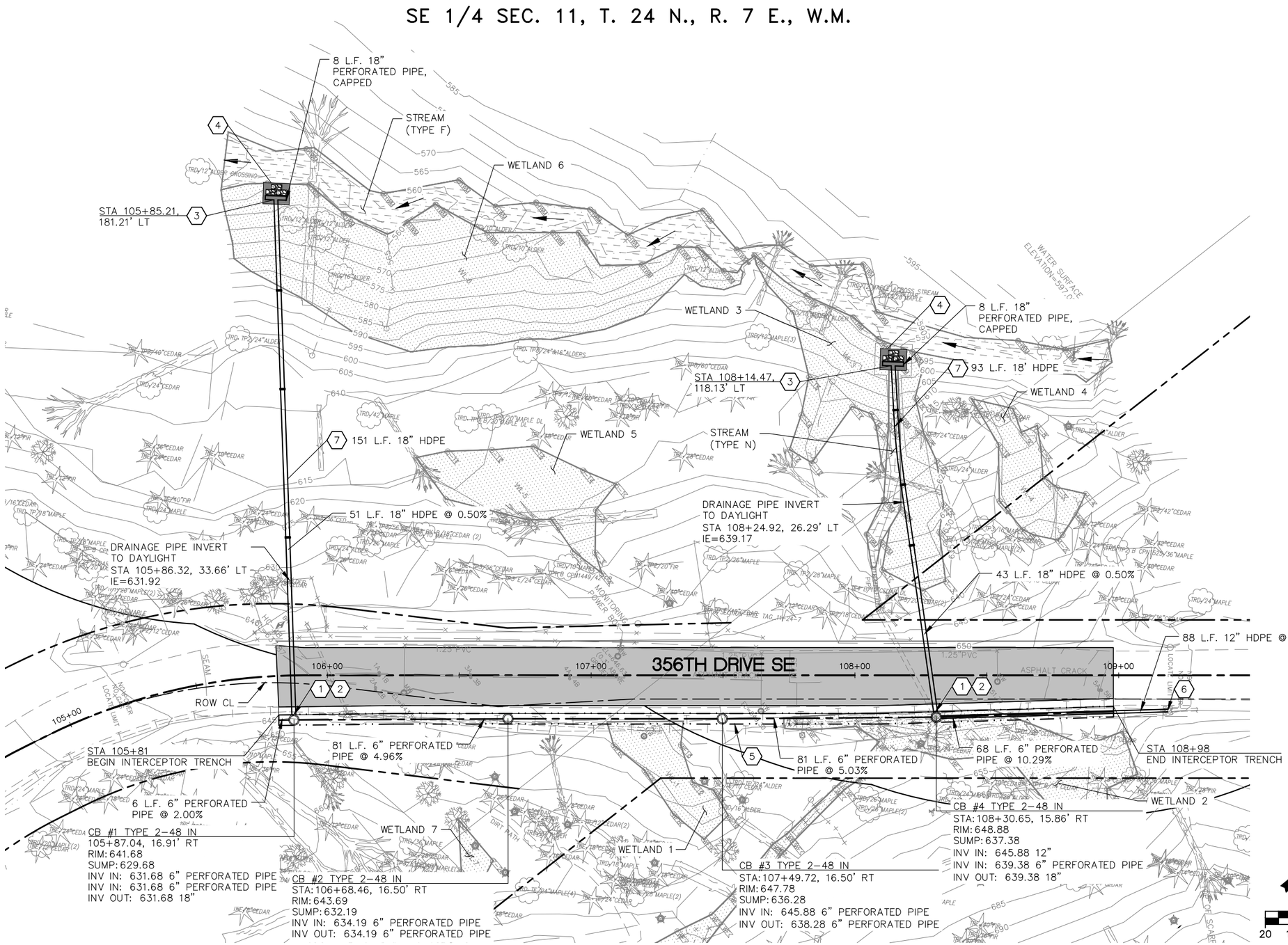

GENERAL NOTES

1. BEFORE ANY CONSTRUCTION OR DEVELOPMENT ACTIVITY, A PRECONSTRUCTION MEETING MUST BE HELD BETWEEN THE THE DPER'S DEVELOPMENT INSPECTOR, THE APPLICANT, AND THE APPLICANT'S CONSTRUCTION REPRESENTATIVE.
2. ALL UNDERGROUND DRAINAGE PIPE AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPAREED FOUNDATION IN ACCORDANCE WITH WSDOT SPECIFICATIONS. THIS SHALL INCLUDE LEVELING AND COMPACTING THE TRENCH BOTTOM, THE TOP OF THE FOUNDATION MATERIAL, AND ANY REQUIRED PIPE BEDDING, TO A UNIFORM GRADE SO THAT THE ENTIRE PIPE IS SUPPORTED BY A UNIFORMLY DENSE UNYIELDING BASE.
3. ALL CATCH BASIN GRATES SHALL CONFORM TO KCRDCS, WHICH INCLUDES THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS" AND "PROPERTY OF KING COUNTY".
4. ALL DISTURBED PERVIOUS AREAS OF THE DEVELOPMENT SITE MUST DEMONSTRATE THE FOLLOWING, IN ACCORDANCE WITH KC AND THE LOW IMPACT DEVELOPMENT (LID) COMPONENTS OF THE APPROVED SITE PLAN: THE AMENDED SOIL SHALL BE ADDED TO MAINTAIN THE MOISTURE CAPACITY.
5. PIPE ZONE BEDDING AND BACKFILL SHALL MATCH THE MATERIAL WITHIN THE LIMITS OF THE INTERCEPTOR TRENCH. PIPE ZONES OUTSIDE OF THE INTERCEPTOR TRENCH LIMITS SHALL BE INSTALLED PER WSDOT STD PLAN B-55.20-02.

CONSTRUCTION NOTES

1. INSTALL CATCH BASIN TYPE 2-48 IN PER KING COUNTY STD FIGURE NO. 7-005.
2. INSTALL VANED GRATE PER KING COUNTY STD FIGURE NO. 7-018.
3. INSTALL MANUFACTURED TEE
4. INSTALL FLOW SPREADER AND ENERGY DISSIPATOR, SEE DETAIL, SHEET 12.
5. INSTALL INTERCEPTOR TRENCH. SEE DETAIL, SHEET 12.
6. CONNECT TO EXISTING DRAINAGE STRUCTURE.
7. 18-IN DRISCO PIPE TO BE ANCHORED TO THE EXISTING GROUND SURFACE.

LEGEND

WETLAND

STREAM

SCALE IN FEET: 20 10 0 20 40

MERIDIAN W.S.L.G.N.Z. NAD 83/91

DATUM

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NICHOLE R. PELLETT — STATE OF WASHINGTON — 49514 — REGISTERED PROFESSIONAL ENGINEER

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PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
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DRAINAGE PLAN

King County

SHEET 11 OF 15 SHEETS

320-94 (11)

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JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
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DRAINAGE PROFILE

King County

SHEET **12** OF **15** SHEETS

320-94 (12)

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JOHN TAYLOR, DIRECTOR

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WALL PLAN AND ELEVATIONS

King County

SHEET 13 OF 15 SHEETS

320-94 (13)

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JOHN TAYLOR, DIRECTOR

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WALL DETAILS

King County

SHEET 14 OF 15 SHEETS

320-94 (14)

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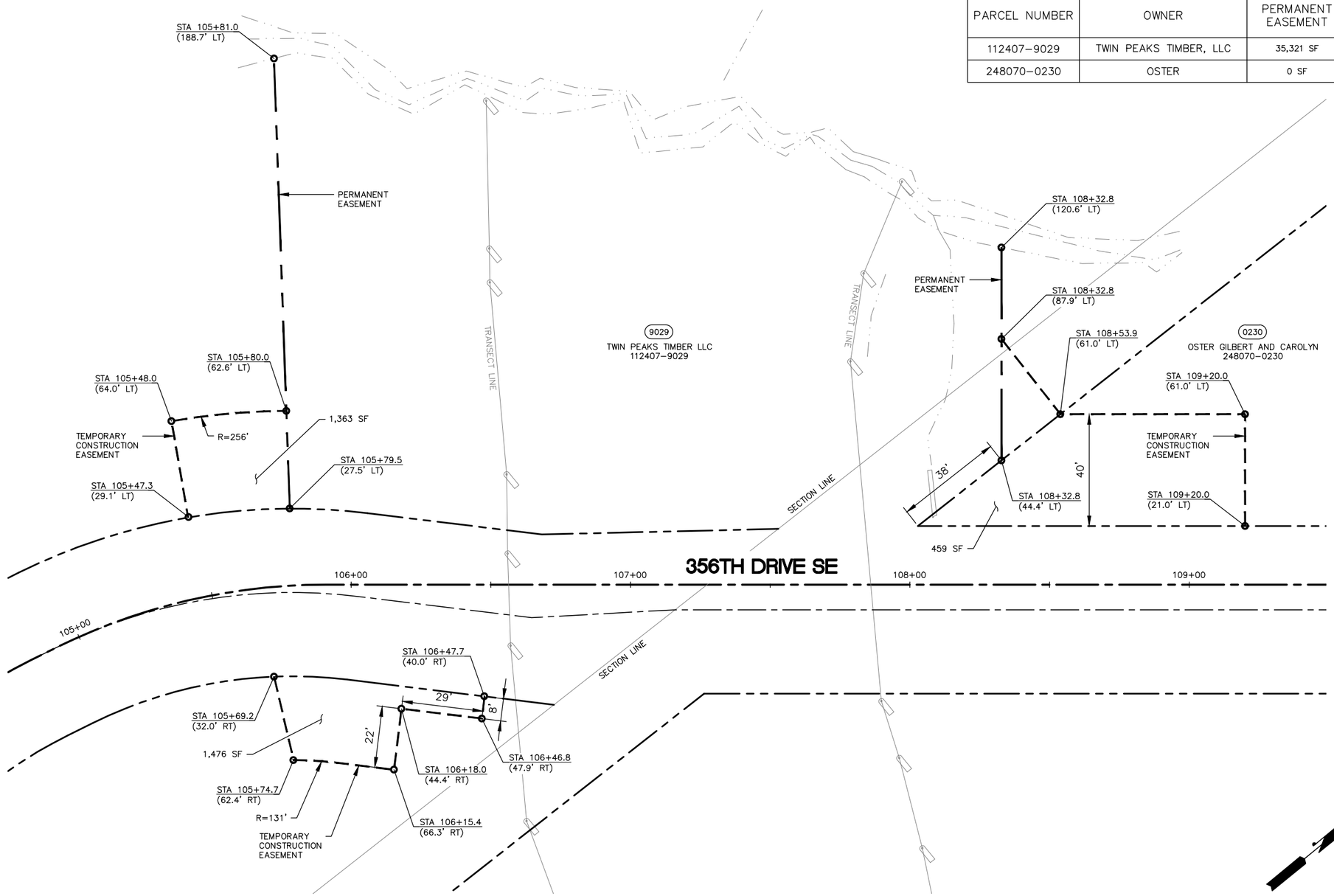
RIGHT OF WAY ACQUISITION TABLE

PARCEL NUMBER	OWNER	PERMANENT EASEMENT	TEMPORARY CONSTRUCTION EASEMENT
112407-9029	TWIN PEAKS TIMBER, LLC	35,321 SF	2,145 SF
248070-0230	OSTER	0 SF	3,664 SF



SW 1/4 SEC. 12, T. 24 N., R. 7. E., W.M.

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JANESSA MARIE DONATO
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PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR

RIGHT OF WAY PLAN

King County

SHEET 15 OF 15 SHEETS

320-94 (15)

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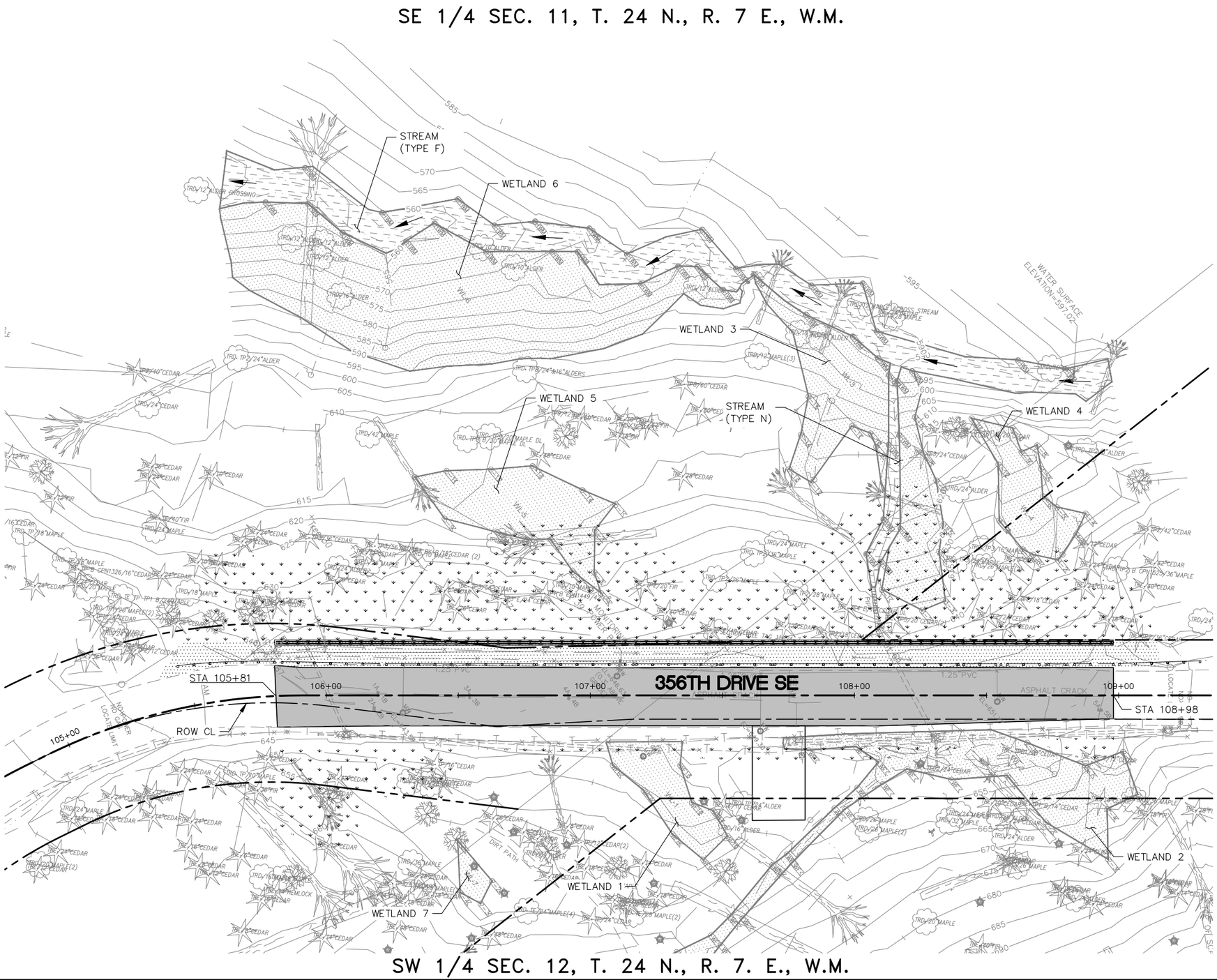

MITIGATION PLANTING AND MONITORING NOTES

1. THE CONTRACTOR SHALL ARRANGE AN ON-SITE MEETING WITH THE COUNTY ENGINEER AND LANDSCAPE ARCHITECT OR ENVIRONMENTAL STAFF PRIOR TO ALL SOIL STABILIZATION AND SEEDING/PLANTING OPERATIONS.
2. ALL INVASIVES INCLUDING, BUT NOT LIMITED TO, HIMALAYAN BLACKBERRY, CUTLEAF BLACKBERRY, ENGLISH IVY, REED CANARYGRASS, THISTLES, KNOTWEED, ETC. SHALL BE REMOVED FROM THE PLANTING AREAS BEFORE PLANTING BEGINS.
3. THE ENGINEER WILL APPROVE FINAL GRADES, INCLUDING ALL PLANTING AREA GRADES, PRIOR TO PLANT INSTALLATION. DISCREPANCIES BETWEEN THE PLANS AND SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING.
4. AFTER PLANTING AREA GRADES HAVE BEEN APPROVED BY THE ENGINEER, COIR LOG BAFFLES SHALL BE INSTALLED PERPENDICULAR TO THE SLOPE AND STAKED AS DETAILED. EACH ROW OF TWELVE-INCH DIAMETER BAFFLES SHALL BE A DOUBLE-ROW FOR ADDED STRENGTH IN HOLDING THE COMPOST. SUPPORT BAFFLES WITH ADDITIONAL STAKES AS DIRECTED BY THE ENGINEER.
5. MEDIUM COMPOST SHALL BE CAREFULLY PLACED BETWEEN THE BAFFLES AND LIGHTLY COMPACTED BY HAND TO A NINE-INCH MINIMUM DEPTH. THE COMPOST SHALL HAVE A UNIFORM SURFACE APPEARANCE.
6. HIGH TENSILE STRENGTH BIODEGRADABLE EROSION CONTROL BLANKET (BECB) SHALL BE INSTALLED OVER THE COMPOST. THE BECB SHALL BE TUCKED DOWN UNDER THE TOP AND BOTTOM BAFFLES AND STAKED AS DETAILED.
7. THE SPECIFIED EROSION CONTROL SEED MIX SHALL BE SEEDED OVER THE COMPOST PRIOR TO PLACING THE BECB.
8. ALL PLANTING ON THIS COMPOST AND BECB COVERED SLOPE SHALL OCCUR DIRECTLY THROUGH THE BECB.
9. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES AND NOT SHOWN ON THESE PLANS TO BE RE-VEGETATED OR COVERED IN GRAVEL SHALL RECEIVE A MINIMUM OF THREE INCHES OF MEDIUM COMPOST INCORPORATED AND SEEDED AS SPECIFIED.
10. INITIAL PLANTING SHALL OCCUR AFTER THE ONSET OF WINTER RAINS, APPROXIMATELY NOVEMBER 1 TO JANUARY 30. THE INITIAL PLANTING DATE SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR ENVIRONMENTAL STAFF.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PLANTS FOR 365 DAYS FOLLOWING INITIAL PLANTING. DEAD OR UNHEALTHY PLANTS, AS DETERMINED BY THE LANDSCAPE ARCHITECT OR ENVIRONMENTAL STAFF, SHALL BE REPLACED QUARTERLY BY THE CONTRACTOR. IF INSTALLED OUTSIDE OF THE RAINY SEASON, THE CONTRACTOR SHALL IRRIGATE ALL REPLACEMENT PLANTS BY HAND ON A WEEKLY BASIS UNTIL THE BEGINNING OF THE FOLLOWING RAINY SEASON.
12. THE PLANT SCHEDULE SHALL BE AMENDED BY THE LANDSCAPE ARCHITECT OR ENVIRONMENTAL STAFF UPON THE COMPLETION OF CONSTRUCTION. PLANT QUANTITIES MAY BE ADJUSTED TO REFLECT THE FINAL AREA OF SITE DISTURBANCE, AND APPROPRIATE NATIVE PLANT SPECIES MAY BE SUBSTITUTED TO BETTER MATCH ENVIRONMENTAL CONDITIONS PRESENT AT THE END OF CONSTRUCTION.
13. ALL MITIGATION PLANTINGS SHALL BE MONITORED BY THE COUNTY PER THE PERMIT CONDITIONS AS REQUIRED BY PROJECT APPROVALS. IF PLANTINGS FAIL TO MEET FINAL PERFORMANCE CRITERIA, THE COUNTY SHALL DEVELOP AND IMPLEMENT A CONTINGENCY PLAN AND THE MONITORING PERIOD SHALL BE EXTENDED UNTIL THE PERFORMANCE STANDARDS ARE MET.
14. THE CONTINGENCY PLAN SHALL IDENTIFY POTENTIAL CAUSES OF THE POOR PERFORMANCE AND RECOMMENDS SOLUTIONS INCLUDING, BUT NOT LIMITED TO, SOIL REMEDIATION, ADDITIONAL PLANT INSTALLATION, EROSION CONTROL, MODIFICATIONS TO HYDROLOGY, AND PLANT SUBSTITUTIONS OF TYPE, SIZE, QUANTITY, AND LOCATION.
15. INVASIVE SPECIES SHALL COMPRISE NO MORE THAN 10% COVER WITHIN THE MITIGATION PLANTING AREAS DURING THE MITIGATION MONITORING PERIOD.

20 10 0 20 40
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JANESSA MARIE DONATO
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PROJECT No. 1136548

MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR

356TH DRIVE SE
EMERGENCY SLIDE REPAIR

MITIGATION PLAN

King County

SHEET **X-1** OF **XX** SHEETS

320-94 (9)

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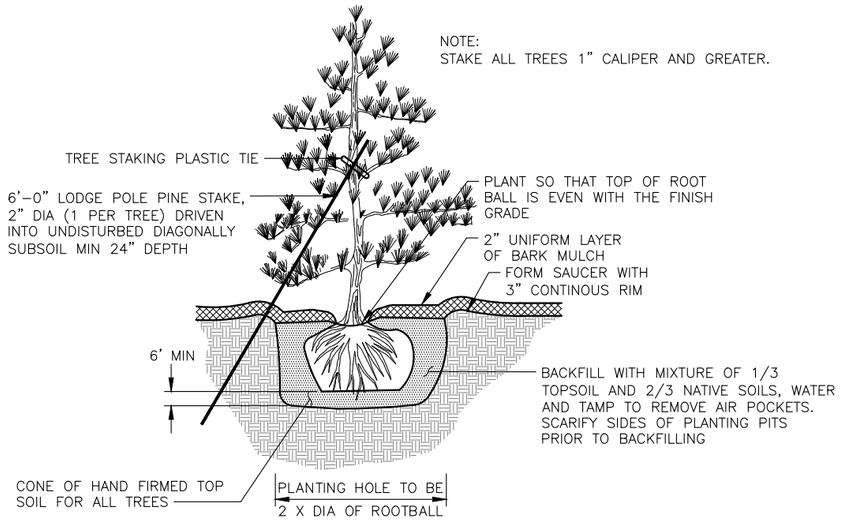

CONIFEROUS TREE PLANTING DETAIL (1 / –)
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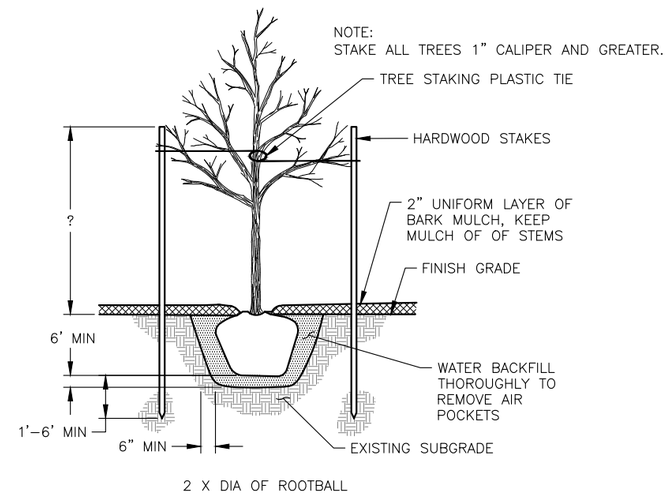

DECIDUOUS TREE PLANTING DETAIL (2 / –)
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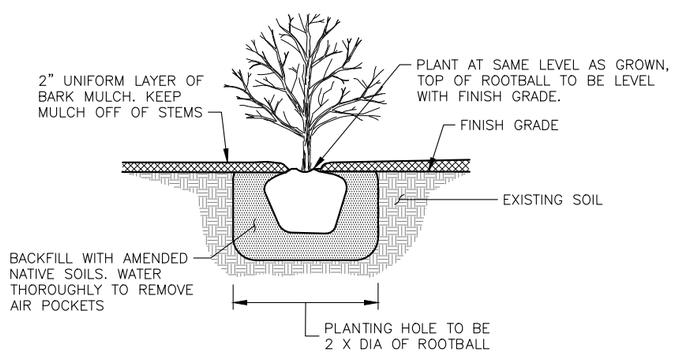

SHRUB AND SMALL TREE PLANTING DETAIL (3 / –)
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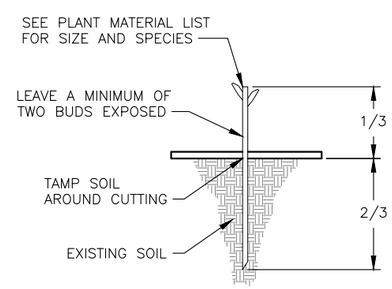

LIVE STAKE INSTALLATION DETAIL (4 / –)
SCALE: NONE

PLANT SCHEDULE

COMMON NAME	BOTANICAL NAME	SIZE	ON CENTER SPACING	QUANTITY
TREES				
BIG LEAF MAPLE	ACER MACROPHYLLUM	2 GAL	9 FT	50
RED ALDER	ALNUS RUBRA	2 GAL	9 FT	25
WESTERN RED CEDAR	THUJA PLICATA	2 GAL	9 FT	75
WESTERN HEMLOCK	TSUGA HETEROPHYLLA	2 GAL	9 FT	25
SHRUBS				
VINE MAPLE	ACER CIRCINATUM	2 GAL	6 FT	100
BEAKED HAZELNUT	CORYLUS CORNUTA	2 GAL	6 FT	25
INDIAN PLUM	OEMLERIA CERASIFORMIS	1 GAL	6 FT	75
THIMBLEBERRY	RUBUS PARVIFLORUS	1 GAL	6 FT	50
SALMONBERRY	RUBUS SPECTABILIS	1 GAL	6 FT	100
RED ELDERBERRY	SAMBUCUS RACEMOSA	1 GAL	6 FT	25
EVERGREEN HUCKLEBERRY	VACCINIUM OVATUM	1 GAL	6 FT	25
FERNS AND VINES				
SWORD FERN	POLYSTICHUM MUNITUM	1 GAL	3 FT	500
TRAILING BLACKBERRY	RUBUS URSINUS	1 GAL	3 FT	1,000

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MAINTENANCE DIVISION No. 2

KING COUNTY DEPT. OF LOCAL SERVICES
JOHN TAYLOR, DIRECTOR
356TH DRIVE SE
EMERGENCY SLIDE REPAIR
ROADWAY PLAN

King County
SHEET X-2 OF XX SHEETS
320-94 (9)