

August 4, 2023

### Project # W02563 (Bull Run Pipelines)

### RE: Response to Exhibit E.21 concerning Stormwater Runoff to Beaver Creek

In response to the comment provided in Exhibit E.21 concerning the impacts to Beaver Creek from the activities of the pipeline and finished water intertie (FWI) construction, and long-term impacts from the facilities, we provide the following evidence of reduced impacts to the environment from the activities of the project.

According to Oregon Department of Environmental Quality (DEQ), the Sandy River's sub-basin of Beaver Creek has Total Maximum Daily Limits (TMDLs) for bacteria, pesticides, and temperature. The stormwater and erosion control features proposed with the Finished Water Intertie (FWI) Site will reduce the TMDLs leaving the area of impact by treating at least 80% of the total suspended solids (TSS) associated with stormwater discharge from the project. The design of the project has both construction and project completion best management practices (BMPs) associated with stormwater control, treatment, and mitigation. As compared to the current lack of controls for release of stormwater to the existing conveyance system which discharge to Beaver Creek, the proposed improvements should enhance the runoff water quality delivered to Beaver Creek.

As a part of construction, there will not be use of any pesticides. Only pesticides applied by others could be transported by runoff through the construction and completed site. During construction, the design of stormwater controls will include a sediment trap, silt fences and straw wattles at the perimeter of the construction area, as shown on the Erosion and Sediment Control Plan Sheet FWI-CE-1002. During construction, the newly created stormwater basin will be used as the sediment trap located in the top northern corner of the FWI site. These are all effective BMPs at removing pesticide laden sediment from runoff. Any runoff entering the construction zones will also be filtered through these BMPs. Hence, the overall impact to Beaver Creek from construction will enhance the water quality because of the proposed systems provided during construction.

At completion of the construction, pesticide-laden runoff from neighboring properties upgradient to the FWI site will enter a gravel cutoff trench installed at the upslope side of the FWI site, as shown in FWI-CE-1004 and Stormwater Detail Sheet FWI-C-4000 (attached to this response for reference). The gravel cutoff trench is shown as the hatched area at the southern portion of the FWI site. Gravel filtration is also an effective measure at removing TSS, which pesticides adhere to. After gravel filtration, the offsite runoff is routed to the existing catch basin in the roadside ditch along SE Lusted Road, which eventually discharges to Beaver Creek on the north side of SE Lusted Road. Sediment generated from the onsite FWI stormwater will be controlled through onsite biofiltration as shown in FWI-CE-1004 and Stormwater Detail Sheet FWI-C-4000. The treated onsite stormwater then discharges to an existing catch basin in the roadside ditch along SE Lusted Road. In the final stabilization, the FWI site will not use any pesticides for the onsite landscaping.

If you have any questions, please feel free to contact our office at 503-746-8812.

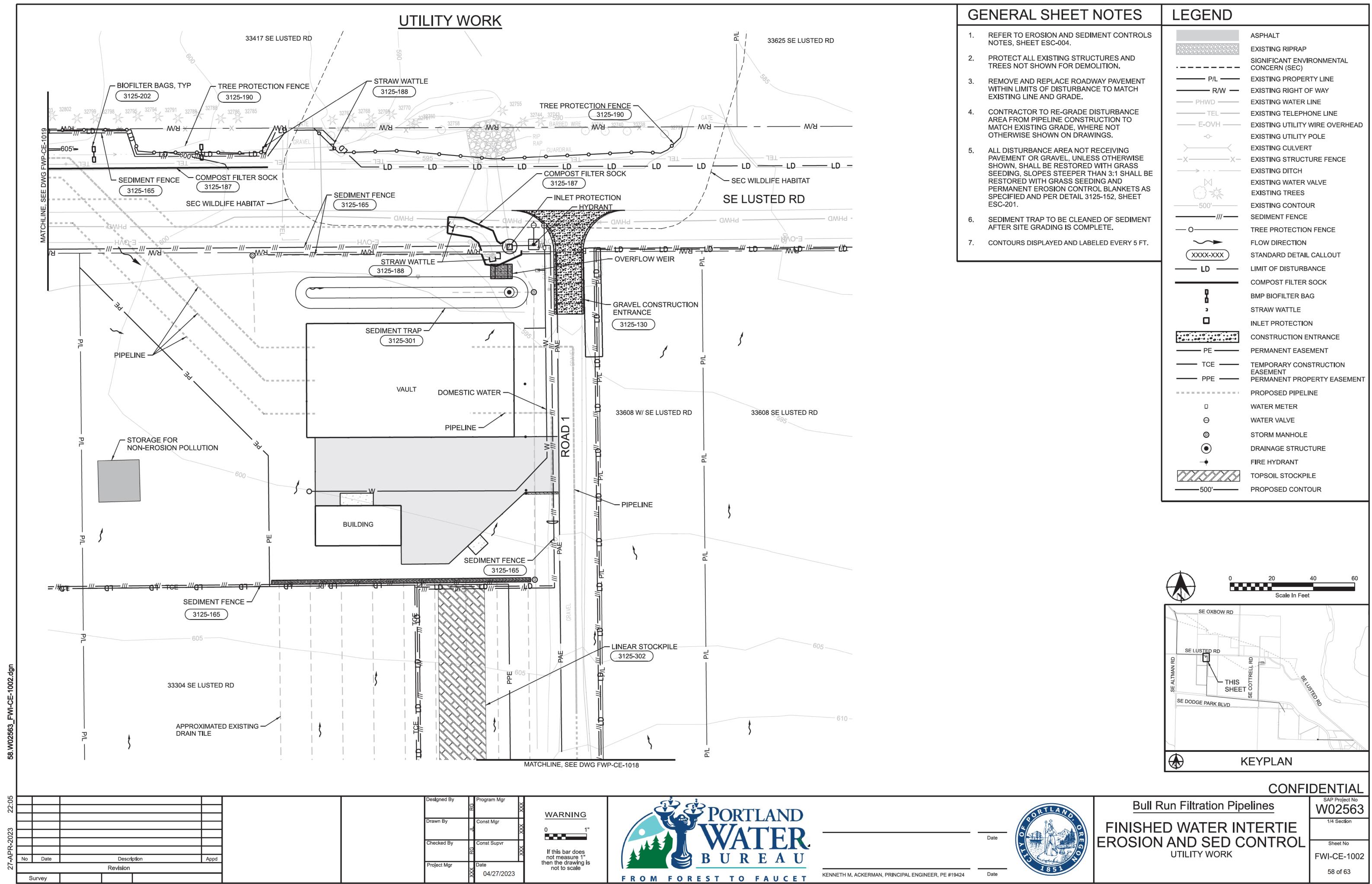
Respectfully,

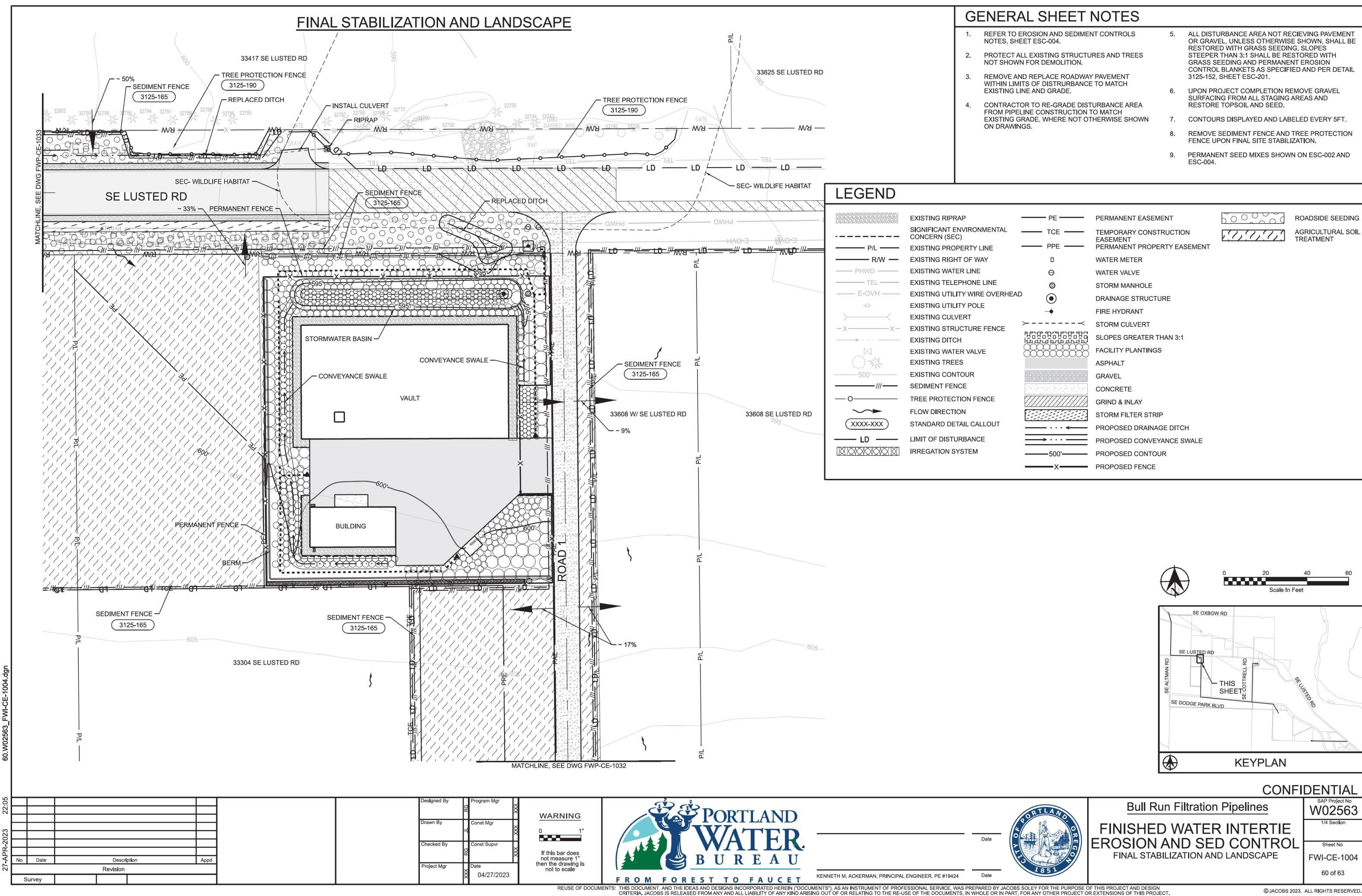
Emerio Design LLC

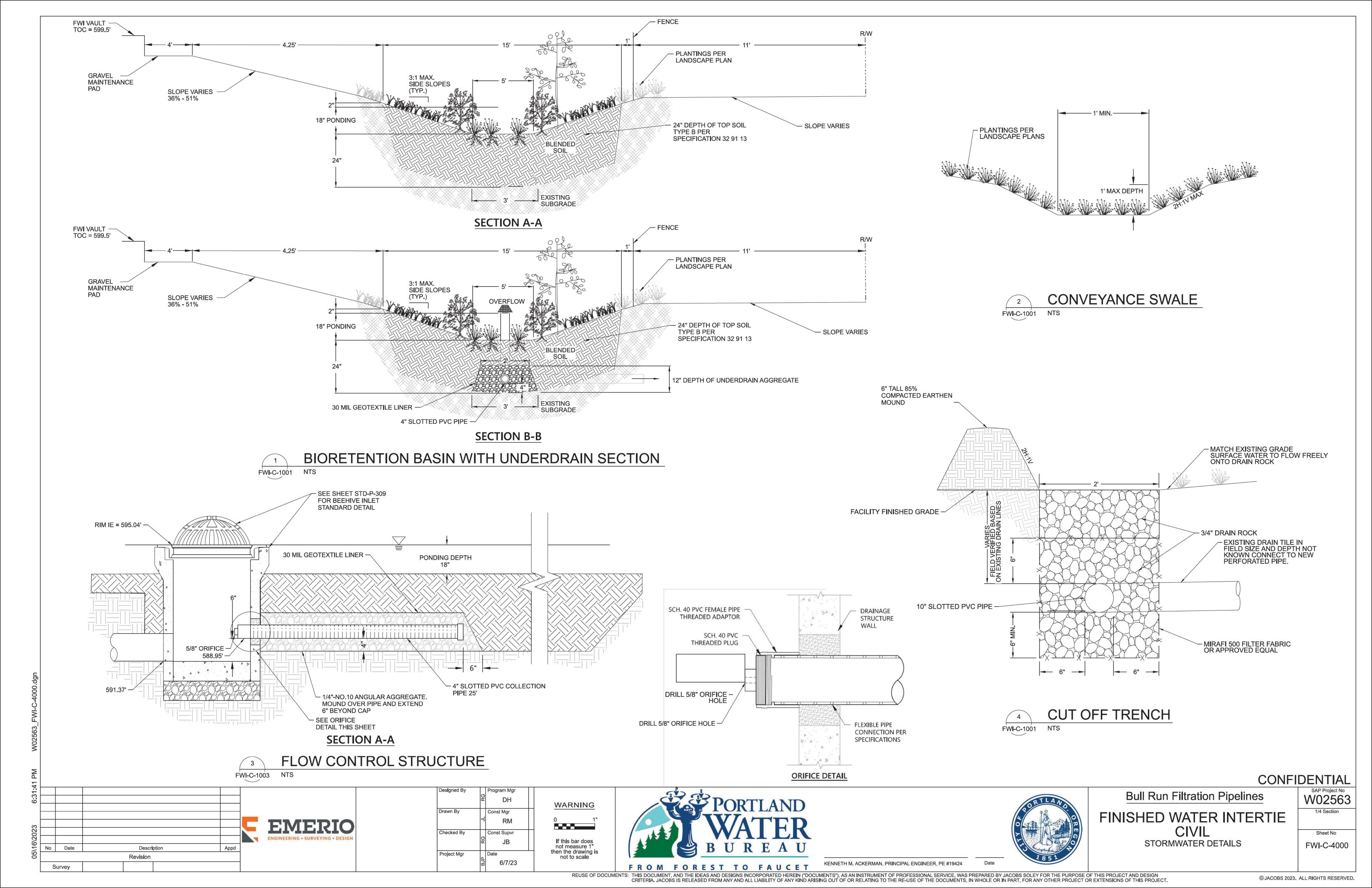
Roy Hankins, PE

Senior Project Engineer

Attachments: Erosion Control Plan Sheets (FWI-CE-1002 and FWI-CE-1004) and Stormwater Detail Sheet (FWI-C-4000)







## **EROSION AND SEDIMENT CONTROL NOTES**

- THE CONTRACTOR WILL MAINTAIN A LIST OF ALL PERSONNEL (BY NAME AND POSITION) THAT ARE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF STORMWATER CONTROL MEASURES), AS WELL AS THEIR INDIVIDUAL RESPONSIBILITIES.
- 2. VISUAL MONITORING INSPECTION REPORTS WILL BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS TO INSPECT ON THE INITIAL DATE THAT LAND DISTURBING ACTIVITIES COMMENCE. WITHIN 24 HOURS OF ANY STORM EVENT, AND AT LEAST ONCE EVERY 14 DAYS REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING
- INSPECTION LOGS WILL BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS USING DEQ FORM 1 AND 2 CONSTRUCTION SITE BUMP INSPECTION REPORT & CHECKLIST FOR COMPLIANCE WITH OREGON NPDES 1200-C GENERAL PERMIT. INSPECTION FORMS WILL DOCUMENT OBSERVATIONS, THE IMPLEMENTATION AND PRESENCE OF EROSION AND SEDIMENT CONTROLS, APPARENT DISCHARGES, AND CONSTRUCTION ACTIVITIES PERTINENT TO EROSION AND SEDIMENT CONTROL INCLUDING BUT NOT LIMITED TO INGRESS, EGRESS, AND STOCKPILING.
- A COPY OF THE ESCP AND ALL REVISIONS WILL BE RETAINED ON SITE AND AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY.
- CLEARING AND GRADING WILL BE SEQUENCED TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION TO THE MAXIMUM EXTENT POSSIBLE BY PROVIDING TEMPORARY STABILIZATION AS DESCRIBED BELOW AND PER EROSION AND SEDIMENT CONTROL CONSTRUCTION DETAILS ON SHEETS ESC-
- CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING PROTECTED TREES, AND VEGETATION AREAS TO BE PRESERVED ARE IDENTIFIED, MARKED, AND PROTECTED (BY CONSTRUCTION FENCING) AS SHOWN ON SHEETS MUL-CE-1001 THROUGH FWI-CE-1004 PER DETAIL ON ESC-202. VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS, AND OTHER AREAS TO BE PRESERVED ARE SHOWN ON SHEETS MUL-CE-1001, RWP-CE-1001, RWP-CE-1002, FWP-CE-1002, FWP-CE-1006, FWP-CE-1010, FWI-CE-1001.
- PRESERVE EXISTING VEGETATION OUTSIDE OF PROJECT LIMITS AS DELINEATED BY TREE PROTECTION FENCING AND SEDIMENT FENCING AND RE-VEGETATE ALL UNPAVED AREAS WITHIN THE PROJECT LIMITS. TEMPORARY RE-VEGETATION IS REQUIRED DURING CONSTRUCTION AS INDICATED BELOW AND PERMANENT RE-VEGETATION IS REQUIRED FOLLOWING COMPLETION OF CONSTRUCTION. PROPOSED VEGETATIVE SEED MIX IS IDENTIFIED ON SHEET ESC-002.
- 100 FOOT BUFFERS FROM STREAMS AND WATER BODIES SHOWN ON RWP-CE-1001 AND FWP-CE-1010. DISTURBANCE WITHIN THE 100 FOOT BUFFER OF BEAVER CREEK AND WATER BODIES IS MITIGATED WITH BMPS TO ENSURE MINIMUM WATER QUALITY STANDARDS ARE MET.
- INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AND SEDIMENT BARRIERS PER THE DETAILS ON SHEETS ESC-201 AND ESC-202 PRIOR TO LAND DISTURBANCE.
- 10. CONTROL OF STORMWATER RUNOFF DURING CONSTRUCTION WILL BE BY DISPERSION THROUGH WATTLES AND SEDIMENT BARRIERS ADJACENT TO CONSTRUCTION ACTIVITIES. EROSION AT OUTLETS AND CHANNELS WILL BE MINIMIZED THROUGH FILTER SOCKS OR WATTLES. REFER TO DETAILS ON SHEETS ESC-201 AND ESC-202 AND TO THE STORMWATER REPORTS INCLUDED SEPARATELY IN THIS APPLICATION.
- 11. SEDIMENT ALONG THE PERIMETER OF THE PROJECT LIMITS AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS WILL BE CONTROLLED AT ALL TIMES DURING CONSTRUCTION WITH A SEDIMENT BARRIER INSTALLED ALONG THE COMPLETE UNPAVED PERIMETER OF THE PROJECT LIMITS.
- 12. ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK AS SHOWN ON SHEETS RWP-CE-1003 AND FWI-CE-1002.
- 13. APPLY TEMPORARY AND PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES, PER DETAILS ON ESC-201 AND ESC-202.
- 14. MATERIAL AND WASTE STORAGE AREAS OUTSIDE OF RIGHTS-OF-WAY WILL BE ESTABLISHED BY THE CONTRACTOR AND EROSION CONTROL MEASURES TO PROTECT MATERIAL AND WASTE STORAGE AREAS WILL COMPLY WITH THE EROSION CONTROL CONSTRUCTION DETAILS ON ESC-201 AND ESC-202 MATERIAL WILL NOT BE STOCKPILED WITHIN THE RIGHT-OF-WAY.
- 15. WASTE CONTAINER LIDS WILL BE KEPT CLOSED OR COVERED TO PREVENT EXPOSURE TO PRECIPITATION WHEN NOT IN USE.CONTRACTOR WILL TRANSPORT WASTE MATERIALS OFFSITE TO STAGING YARDS FOR COLLECTION PRIOR TO DISPOSAL. WASTE MATERIALS WILL NOT BE STORED WITHIN THE RIGHT-OF-WAY.
- 16. CONSTRUCTION ENTRANCES WITH TIRE WASHES ON SE LUSTED ROAD AT THE MULTNOMAH CONNECTION (SEE SHEET MUL-CE-1001) AND ON SE LUSTED ROAD AT THE FINISHED WATER INTERTIE (SEE SHEET FWI-CE-1001) WILL BE PROVIDED TO PREVENT TRACKING OF SEDIMENT ONTO PUBLIC ROADS. PUBLIC ROADS WILL BE SWEPT DAILY. PRIVATE FARM ROADS UTILIZED DURING CONSTRUCTION WILL BE IMPROVED WITH GRAVEL PRIOR TO LAND DISTURBING ACTIVITIES. THESE BMPS MUST BE IN PLACE PRIOR TO LAND-DISTURBING **ACTIVITIES.**
- CONCRETE WASH-OUTS WILL BE PROVIDED AT THE CONSTRUCTION ENTRANCE ON SE LUSTED ROAD AT THE MULTNOMAH CONNECTION (SEE SHEET MUL-CE-1001) AND AT THE CONSTRUCTION ENTRANCE ON SE LUSTED ROAD AT THE FINISHED WATER INTERTIE (SEE SHEET FWI-CE-1001) TO PREVENT CONCRETE DISCHARGES FROM LEAVING THE CONSTRUCTION SITE.
- 18. STEEP SLOPE AREAS WHERE CONSTRUCTION ACTIVITIES ARE NOT OCCURRING WILL BE DELINEATED BY A SEDIMENT FENCE TO PREVENT DISTURBANCE.
- 19. PERMANENT RESTORATION OF UNPAVED AREAS WITHIN RIGHTS-OF-WAY WILL INCLUDE SOIL AMENDMENT FOR FILTER STRIPS FOR STORMWATER DISPERSION. AND PERMANENT RESTORATION OF AGRICULTURAL SOILS ON PRIVATE PROPERTY WILL BE REQUIRED TO MEET SPECIFIC COMPACTION REQUIREMENTS. POST-CONSTRUCTION TESTING AND INSPECTION WILL BE PERFORMED TO IDENTIFY RESTORATION AREAS WHICH HAVE BEEN DISTURBED, AND A CORRECTION NOTICE WILL BE ISSUED TO THE CONTRACTOR.
- 20. CONTRACTOR BEST MANAGEMENT PRACTICES INCLUDING SECONDARY CONTAINMENT WILL BE USED TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL. HYDRAULIC FLUID. AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZÉR, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS. A WRITTEN SPILL PREVENTION PLAN WILL BE PREPARED AND SUBMITTED BY THE CONTRACTOR ADDRESING RESPONSE PROCEDURES. EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES.
- 21. ENGINEERED SOILS USING SOIL AMENDMENTS SUCH AS FLY-ASH OR PORTLAND CEMENT WILL NOT BE USED.
- 22. A DEWATERING PLAN WILL BE PREPARED AND SUBMITTED BY THE CONTRACTOR FOR ACCUMULATED WATER FROM PRECIPITATION AND UNCONTAMINATED GROUNDWATER SEEPAGE IN EXCAVATIONS. DEWATERING SYSTEMS WILL BE REQUIRED TO FILTER THE DISCHARGE THROUGH AT LEAST TWO SEDIMENT BARRIERS INCLUDING A FILTER BAG AND SEDIMENT FENCE. DEWATERING SYSTEMS WILL BE REQUIRED TO LIMIT DISCHARGE QUANTITY AS SPECIFIED FOR EACH STORMWATER BASIN.
- NORTH FORK BEAVER CREEK DISCHARGE LIMIT: 200 GALLONS PER MINUTE MIDDLE FORK BEAVER CREEK DISCHARGE LIMIT: 200 GALLONS PER MINUTE
- 23. DUST CONTROL WILL BE ADDRESSED BY WATER SPRAYING AND COVERING OF SOIL PILES TO MITIGATE WIND-
- 24. THE APPLICATION RATE OF ORGANIC FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW PROJECT SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. ABIDE BY ANY SETBACKS ON PRODUCT LABELS AND USE IN SUCH A WAY THAT THE PRODUCT DOES NOT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF APPLICABLE WATER QUALITY STANDARDS.

- 25. TEMPORARILY STABILIZE SOILS WITH BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF
- 26. AS NEEDED BASED ON WEATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES WILL BE STABILIZED OR COVERED, OR OTHER BMPS WILL BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS.
- 27. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. REMOVE SEDIMENT TO APPROVED DISPOSAL SITE. SEDIMENT FENCES ARE SHOWN ON SHEETS MUL-CE-1001 THROUGH FWI-CE-1004, DETAILS ON SHEET ESC-201
- OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL. REMOVE SEDIMENT TO APPROVED DISPOSAL SITE. OTHER SEDIMENT BARRIERS ARE SHOWN ON DETAILS ON SHEET ESC-201 AND ESC-202
- 29. CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS 3. AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. REMOVE SEDIMENT TO APPROVED DISPOSAL SITE. CATCH BASINS, SEDIMENT BASINS AND SEDIMENT TRAPS ARE SHOWN ON DETAILS ON SHEET ESC-201 AND ESC-202.
- 30. WITHIN 24 HOURS. SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN-UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DEPARTMENT OF STATE LANDS REQUIRED TIMEFRAME.
- NO INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS IS PROPOSED. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP WILL BE USED TO CLEANUP RELEASED SEDIMENTS.
- 32. IDENTIFY ON EROSION CONTROL INSPECTION FORMS ANY PORTION(S) OF THE SITE WHERE LAND DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED OR WILL BE TEMPORARILY INACTIVE FOR 14 OR MORE CALENDAR
- 33. PROVIDE TEMPORARY STABILIZATION FOR ANY PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR LONGER WITH A COVERING OF BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. APPLY TEMPORARY SEEDING OF STERILE WHEAT GRASS- REGREEN, QUICKGUARD, OR APPROVED EQUAL AT A RATE OF 50 POUNDS PER ACRE, OR HORDEUM VULGARE VAR. POCO -POCO BARLEY AT A RATE OF 60 POUNDS PER ACRE.
- 34. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS WILL BE REMOVED AND DISPOSED OF PROPERLY. UNLESS NEEDED FOR LONG TERM USE FOLLOWING TERMINATION OF PERMIT COVERAGE.

EROSION AND SEDIMENT MUST NOT ENTER PUBLIC RIGHT-OF-WAY OR BE DEPOSITED INTO ANY WATER BODY.

- WHEN WORKING IN THE PUBLIC RIGHT-OF-WAY, NO VISIBLE OR MEASURABLE EROSION OR SEDIMENT CAN ENTER THE ROADWAY OR BE DEPOSITED IN WATER BODIES.
- 36. PERMANENT PLANTINGS AND ANY REQUIRED EROSION CONTROL AND DRAINAGE MEASURE SHALL BE INSTALLED AS SOON AS PRACTICAL IN COMPLIANCE WITH NOTE 38 HEREIN.
- 37. PROVIDE GRAVEL RIPRAP AREAS TO DISSIPATE ENERGY AT STORM DISCHARGE POINTS.

SITE CONDITION

**ACTIVE PERIOD** 

INACTIVE PERIODS

**GREATER THAN 14** CONSECUTIVE

CALENDAR DAYS

PERIODS DURING

PERIODS DURING

CONSTRUCTION

**ACTIVITIES ARE** 

RUNOFF IS

CONDITIONS

RUNOFF IS

**CONDITIONS** 

FROZEN

FROZEN

WHICH

SUSPENDED AND

**UNLIKELY DUE TO** 

PERIODS DURING

CONSTRUCTION

ACTIVITIES ARE

CONDUCTED AND

**UNLIKELY DURING** 

TO INCLEMENT

WEATHER

WHICH THE SITE IS

38. INITIATE THE INSTALLATION OF TEMPORARY STABILIZATION MEASURES (SEE NOTE 25), FINAL VEGETATION COVER, OR PERMANENT STABILIZATION MEASURES IMMEDIATELY WHENEVER ANY LAND DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED OR WILL BE TEMPORARILY INACTIVE ON ANY PORTION OF THE SITE FOR 14 OR MORE CALENDER DAYS. DOCUMENT THE DAY THE ACTIVITIES CEASE AND THE LOCATION ON SITE IN THE VISUAL MONITORING REPORT. COMPLETE THE INSTALLATION OF STABILIZATION MEASURES AS SOON AS PRACTICABLE, BUT NO LATER THAN SEVEN CALENDAR DAYS AFTER STABILIZATION HAS BEEN INITIATED.

MINIMUM INSPECTION FREQUENCY

DISTURBANCE ACTIVITIES COMMENCE.

WITHIN 24 HOURS OF ANY STORM

**EVENT. INCLUDING RUNOFF FROM** 

SNOW MELT. THAT RESULTS IN

AT LEAST ONCE EVERY 14 DAYS,

THE INSPECTOR MAY REDUCE THE

STABILIZATION STEPS IN SECTION

2.2.20 HAVE BEEN COMPLETED TO

TWICE PER MONTH FOR THE FIRST

**MONTH, NO LESS THAN 14 CALENDAR** 

DAYS APART, THAN ONCE PER MONTH

IF SAFE, ACCESSIBLE AND PRACTICAL

INSPECTIONS MUST OCCUR DAILY AT A

**DOWNSTREAM LOCATION OF THE** 

VISUAL MONITORING INSPECTIONS

MAY BE TEMPORARILY SUSPENDED.

IMMEDIATELY RESUME MONITORING

**UPON THAWING. OR WHEN WEATHER** 

CONDITIONS MAKE DISCHARGES

**VISUAL MONITORING INSPECTIONS** MAY BE REDUCED TO ONCE A MONTH.

IMMEDIATELY RESUME MOITORING

CONDITIONS MAKE DISCHARGES

UPON THAWING, OR WHEN WEATHER

RECEIVING WATERBODY.

INACCESSIBLE DUE | RELEVANT DISCHARGE POINT, OR

LIKELY.

LIKELY.

AREA OF THE SITE WHERE THE

STORMWATER RUNOFF IS OCCURRING.

FREQUENCY OF INSPECTIONS IN ANY

DISCHARGE FROM THE SITE.

**REGARDLESS OF WHETHER** 

ON INITIAL DATE THAT LAND

### SITE INFORMATION

- TYPE OF DEVELOPMENT: CAPITAL IMPROVEMENT
- CONSTRUCTION ACTIVITY WILL CONSIST OF: **PHASE 1: CLEARING AND GRUBBING** 
  - PHASE 1: MASS GRADING AND **EXCAVATION 2024-2027**
  - PHASE 2: UTILITY CONSTRUCTION 2024-2028
    - 2024-2025 -FWI SITE ONLY PHASE 4: FINAL STABILIZATION

PHASE 3: VERTICAL CONSTRUCTION

**MARCH 2024** 

PROJECT TIMELINE: **BEGINNING DATE:** 

2025-2028

- **MARCH 2028** COMPLETION DATE:
- PROJECT SITE WITHIN R/W AREAS: -TOTAL AREA: 21.0 AC -DISTURBED AREA: 20.3 AC -PERCENT OF SITE DISTURBED: 96.7%
- 5. OUTSIDE OF R/W IMPROVEMENT AREAS: -TOTAL AREA: 15.7 AC -DISTURBED AREA: 9.5 AC -PERCENT OF AREA DISTURBED: 60.5%
- ONSITE SOIL TYPES:
  - CAZADERO SILTY CLAY LOAM MERSHON SILT LOAM **WOLLENT SILT LOAM CORNELIUS SILT LOAM**
- **CUT AND FILL DATA: SEE TABLE ON ESC-005**

POWELL SILT LOAM

| LAWN SEEDING           |   |  |
|------------------------|---|--|
| BOTANICAL<br>NAME      | COMMON<br>NAME                            |  |
| FESTUCA<br>ARUNDINACEA | 'TURFWAY' -<br>TURFWAY TALL<br>FESCUE     |  |
| FESTUCA<br>ARUNDINACEA | 'HOUNDOG 8' -<br>HOUNDOG 8 TALL<br>FESCUE |  |
| FESTUCA<br>ARUNDINACEA | FOXHOUND TALL<br>FESCUE                   |  |

WEIGH<sup>-</sup>

55.00%

18.00%

8.00%

5.00%

4.00%

2.00%

3.00%

2.50%

1.50%

1.00%

100,00%

| BN  | /IP MATRIX | FOR CO          | NSTRUCTION              | PHASE                 |                        |
|---|------------|-----------------|-------------------------|-----------------------|------------------------|
| 1200-C PHASES                                   | PHA        | SE 1            | PHASE 2                 | PHASE 3               | PHASE 4                |
| ВМР   | CLEARING   | MASS<br>GRADING | UTILITY<br>CONSTRUCTION | VERTICAL CONSTRUCTION | FINAL<br>STABILIZATION |
| EROSION PREVENTION                              |            |                 |                         |                       |                        |
| GROUND COVER                                    | Χ          | Х               | X                       |                       |                        |
| PLASTIC SHEETING                                | Χ          | X               | X                       |                       |                        |
| DUST CONTROL                                    | Χ          | X               | X                       | X                     |                        |
| TEMPORARY STABILIZATION (STRAW MULCH/HYDROSEED) |            | X               | X                       | X                     |                        |
| PERMANENT STABILIZATION                         |            |                 |                         |                       | X                      |
| BUFFER ZONE (FROM RAVINE)                       | Χ          | Х               | X                       | X                     |                        |
| SEDIMENT CONTROL                                |            |                 |                         |                       |                        |
| SEDIMENT FENCE (PERIMETER)                      | Χ          | Х               | X                       | X                     |                        |
| SEDIMENT FENCE (INTERIOR)                       | Χ          | Х               | X                       | X                     |                        |
| STRAW WATTLES                                   | Χ          | X               | X                       | X                     |                        |
| INLET PROTECTION                                | Χ          | Х               | X                       | X                     |                        |
| DEWATERING                                      |            | X               | X                       |                       |                        |
| RUN OFF CONTROL                                 |            |                 |                         |                       |                        |
| CONSTRUCTION ENTRANCE                           | Χ          | Х               | Х                       | Х                     |                        |
| EXISTING OUTLET PROTECTION                      | Х          | Х               | Х                       | Х                     |                        |
| NEW OUTLET PROTECTION                           |            | Х               | Х                       | Х                     |                        |
| EXISTING CURB INLET CHECK DAMS                  | Х          | Х               | X                       | Х                     |                        |
| POLLUTION PREVENTION                            |            |                 |                         |                       |                        |
| HAZARD WASTE MANAGEMENT                         |            |                 |                         | Х                     |                        |
| SPILL KIT ONSITE                                | Х          | Х               | Х                       | Х                     |                        |
| CONCRETE WASHOUT AREA                           | Х          | Х               | Х                       | Х                     |                        |
| VNER/DEVELOPER                                  | SURVE      | YOR             | S                       | SITE CONTRAC          | TOR                    |

OWNER/DEVELOPER SUKVETUK

INSTALLER/MAINTAINER:

CESCL

GEOTECHNICAL **ENGINEER** 

DESIGN ENGINEER

**ESCP PREPARER:** 

RAIN GUAGE:

| SEC SEEDING          |                    |                   |
|----------------------|--------------------|-------------------|
| BOTANICAL<br>NAME    | COMMON<br>NAME     | % BY<br>WEIGHT    |
| BROMUS CARINATUS     | CALIFORNIA BROME   | 0.4 LBS / 5000 SF |
| CAREX DEWEYANA       | DEWEY'S SEDGE      | 0.1 LBS / 5000 SF |
| DESCHAMPSIA ELONGATA | SLENDER HAIRGRASS  | 0.3 LBS / 5000 SF |
| ELYMUS GLAUCUS       | BLUE WLLDRYE       | 0.4 LBS / 5000 SF |
| GEUM MACROPHYLLUM    | LARGE-LEAVED AVENS | 0.2 LBS / 5000 SF |
| GLYCERIA ELATA       | TALL MANNAGRASS    | 0.2 LBS / 5000 SF |
| LUPINUS LATIFOLIUM   | LARGELEAF LUPINE   | 0.2 LBS / 5000 SF |
| PRUNELLA LANCEOLATA  | SELFHEAL           | 0.1 LBS / 5000 SF |
| TELLIMA GRANDIFLORA  | FRINGE CUPS        | 0.2 LBS / 5000 SF |

| SEC SEEDING          |                    |                   |
|----------------------|--------------------|-------------------|
| BOTANICAL<br>NAME    | COMMON<br>NAME     | % BY<br>WEIGHT    |
| BROMUS CARINATUS     | CALIFORNIA BROME   | 0.4 LBS / 5000 SF |
| CAREX DEWEYANA       | DEWEY'S SEDGE      | 0.1 LBS / 5000 SF |
| DESCHAMPSIA ELONGATA | SLENDER HAIRGRASS  | 0.3 LBS / 5000 SF |
| ELYMUS GLAUCUS       | BLUE WLLDRYE       | 0.4 LBS / 5000 SF |
| GEUM MACROPHYLLUM    | LARGE-LEAVED AVENS | 0.2 LBS / 5000 SF |
| GLYCERIA ELATA       | TALL MANNAGRASS    | 0.2 LBS / 5000 SF |
| LUPINUS LATIFOLIUM   | LARGELEAF LUPINE   | 0.2 LBS / 5000 SF |
| PRUNELLA LANCEOLATA  | SELFHEAL           | 0.1 LBS / 5000 SF |
| TELLIMA GRANDIFLORA  | FRINGE CUPS        | 0.2 LBS / 5000 SF |

| NATIVE UNDERSTORY SEEDING |                         |  |
|---------------------------|-------------------------|--|
| BOTANICAL NAME            | COMMON NAME             |  |
| ELYMUS GLAUCUS            | BLUE WILDRYE            |  |
| BROMUS CARINATUS          | CALIFORNIA BROME        |  |
| DESHAMPSIA ELONGATE       | SLENDER HAIRGRASS       |  |
| FESTUCA ROEMERI           | ROEMER'S FESCUE         |  |
| ACHILLEA MILLEFOLIUM      | YARROW                  |  |
| CLARKIA AMONEA            | FAREWELL TO SPRING      |  |
| GILIA CAPITATA            | GLOBE GILIA             |  |
| LUPINUS POLYPHYLLUS       | BIG LEAFED LUPINE       |  |
| PRUNELLA VULGARIS         | HEAL ALL                |  |
| ERIOPHYLLUM LANATUM       | OREGON SUNSHINE         |  |
| ARTEMISIA DOUGLASIANA     | DOUGLAS' SAGEWORT       |  |
| MADIA GRACILIS            | COMMON TARWEED          |  |
| SIDALCEA CAMPESTRIS       | MEADOW CHECKERBLOOM     |  |
| COLLOMIA GRANDIFLORA      | LARGE FLOWERED COLLOMIA |  |

# PASTURE SEEDING

ROADSIDE SEEDING

SEALINK

**FESCUE** 

CLOVER

DOUGLAS

**AZAY BLUE** 

CREEPING RED

SHEEP FESCUE

**BABY BLUE EYES** 

**MEADOWFOAM** 

THRIFT SEAPINK

MICROCLOVER

SWEET ALYSSUM

TOTAL:

CARPET OF

SNOW

COMMON

YARROW

LAWNDAISY

STRAWBERRY

BOTANICAL

FESTUCA RUBRA

FESTUCA OVINA

VAR. AZAY BLUE

TRIFOLIUM

FRAGIFERUM

NEMOPHILA

LIMNANTHES

ARMERIA MARITIMA

TRIFOLIUM REPENS

VAR MICROCLOVER

MENZIESII

DOUGLASI

**LOBULARIA** 

MARITIMA

**ACHILLEA** 

MILLEFOLIUM

BELLIS PERENNIS

VAR. SEALINK

NAME

| BOTANICAL NAME                              | COMMON NAME                                | % BY WEIGHT |
|---|--|-------------|
| FESTUCA ARUNDINCIA VAR ATLAS                | ATLAS FORAGE TALL FESCUE                   | 25.00%      |
| FESTULOIUM SPP                              | SWEET TART FESTULOIUM                      | 20.00%      |
| LOLIUM PERENNE VAR AMAZON                   | TETRAPLOID AMAZON TETRAPLOID PERENNIAL RYE | 20.00%      |
| LOLIUM MULTIFLORIUM VAR BIG SHOT TETRAPLOID | BIG SHOT TETRAPLOID ANNUAL RYE             | 15.00%      |
| DACTYALIS GLOMERITA                         | POTOMAC ORCHARDGRASS                       | 10.00%      |
| TRIFOLIUM REPENS VAR JUMBO LADINO           | JUMBO LADINO WHITE                         | 10.00%      |
|   | TOTAL:                                     | 100%        |

Date Description Revision Survey

Const Supvr roject Mgr 04/27/2023



not to scale





**GENERAL NOTES** 

Bull Run Filtration Pipelines **EROSION CONTROL** 

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