Appendix E: Standard Drawings and General Notes

Details are currently available in pdf and AutoCAD format and may be downloaded from Rogue Valley Sewer Services website.

General Notes

General Notes for Vegetated BMPs: These notes must be included on the plans for any Vegetated BMPs in series 3 through 8.

General Notes for Pervious Surfacing: These notes must be included on the plans for any Pervious surfaces in BMPs 2.01 through 2.04.

List of Standard Drawings

BMP 1.01 Tree Protection
BMP 1.02 Tree Protection – Temporary Access Road
BMP 1.03 Tree Planting
BMP 1.04 Tree Planting on Slope
BMP 2.01 Pervious Concrete Pavement
BMP 2.02 Porous Asphalt Pavement
BMP 2.03 Permeable Pavers
BMP 2.04 Vehicular Permeable Paver Edges
BMP 3.01 Infiltration Rain Garden
BMP 3.02 Lined Filtration Rain Garden with Rock Trench
BMP 3.03 Lined Filtration Rain Garden
BMP 3.04 Rain Garden Planting Schematic
BMP 4.01 Infiltration Stormwater Planter with Area Drain
BMP 4.02 Infiltration Stormwater Planter with Amended or Imported Soil and Area Drain
BMP 4.03 Lined Filtration Stormwater Planter
BMP 4.04 Infiltration Stormwater Planter with Rock Trench
BMP 4.05 Stormwater Planter Planting Schematic
BMP 5.01 Infiltration LID Swale with Amended Planting Soil and Rock Trench
BMP 5.02 Infiltration LID Swale -- Lowest Elevation Cell with Area Drain
BMP 5.03 LID Swale Planting Schematic
BMP 6.01 Soakage Trench in Landscape Area
BMP 6.02 Soakage Trench under Impervious Pavement Surface
BMP 7.01 Vegetated Filter Strip with Amended Planting Soil
BMP 8.01 Water Quality Conveyance Swale with Amended Planting Soil
BMP 8.02 Water Quality Conveyance Swale: Fully or Partially Lined
BMP 8.03 Water Quality Conveyance Swale: Planting Schematic
BMP 9.01 Roadway Curb Opening
General Notes for Vegetated BMPs

1. Excluding construction of the facility itself, exposed treatment area subgrade shall be fenced to prohibit impacts from construction (including materials and equipment storage).
2. Build and vegetate swale as early as possible to establish plantings before directing stormwater runoff to it or divert stormwater around facility. Preferably, vegetation will be given a minimum of 3 months to become established, or per landscape architect/designer guidelines.
3. Call the reviewing agency 48 hours in advance of constructing this facility so construction observation may be performed to identify variations in the field that may affect design and verify proper construction.
4. Over-excavate within the swale to allow for placement of amended or imported soil up to final grade.
5. Placement of amended native or imported soil mix shall occur as follows:
   a. Place soil in 8 inch maximum lifts (i.e. depths).
   b. Do not place if soil is saturated.
   c. Lightly compact each lift, (e.g. a water filled landscape roller) to achieve 85% compaction. Do not compact with heavy machinery or vibratory compaction.
6. Install energy dissipation below all outfalls per approved plans.
7. If unprotected soil has been exposed to rainfall, scarify the surface to a depth of 4 inches to restore filtration capacity.
8. Install ODOT Type E erosion control matting. If specified in approved plans.
9. Landscaping plan must adhere to one of the scenarios in Tables 1 and 2 of section 4.5.2. Plant per Landscaping plan and standard detail 4.5.2C. Contact approving jurisdiction 48 hours in advance of planting so that jurisdiction can review plant placement prior to plant installation.
10. Install mulch, if specified in approved plans. Use either shredded wood chips or coarse compost. Mulch must be dye, pesticide and weed free. Spread in a minimum two inch layer over bare soil or in a ring around plants to increase water retention. Ensure that mulch does not touch plant stems.
11. Side slopes outside of flow area must be permanently stabilized with mulch and vegetation.

STORMWATER GROWING MEDIUM SPECIFICATIONS

1. Growing Medium Properties:
   A. Must infiltrate between 0.5 and 12 inches/hour.
   B. May be either native soil amended with compost or an imported soil mix.
   C. Imported soil shall be roughly 1/3 plant derived compost, 1/3 topsoil and 1/3 gravelly sand.
   D. Amended native soil mix shall be created by blending compost into the native soil at a rate of one part compost to two parts soil. Native soil must meet the Soil Properties.
   E. Must be uniformly mixed
   F. Free of material larger than 1 inch
   G. Have no visible free water

2. Gravelly Sand Properties:
   A. 100% must pass 1/4 inch sieve

3. Soil Properties required in the existing native or the gravelly sand and topsoil portion of the imported soil:
   A. pH between 5.5 and 8.0
   B. Conform to the following gradation:

<table>
<thead>
<tr>
<th>US Standard Sieve Size</th>
<th>Percent Passing</th>
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<tbody>
<tr>
<td>3/8&quot;</td>
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<tr>
<td>#200</td>
<td>2-5</td>
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</tbody>
</table>

   C. Soil sampling must follow AASHTO T2.
   D. Sieve analysis must meet requirements of AASHTO T27 and AASHTO T11

4. Compost Properties:
   A. Must be derived from plant material and fully composted.
   B. Must be certified weed seed free.
   C. Organic matter content between 40 and 50 percent.
   D. pH between 5.5 and 8.0. If the pH isn’t quite right, it may be lowered by adding iron sulfate and sulfur, or raised by adding lime. If lime is used, incorporate first into the compost, wet the compost down, and the fold mixture into the soil.
   E. Soluble salt content shall be less than 6.0mmhos/cm.
   F. 100% should pass a 1/2-inch screen.
   G. Stability Test Results shall be Stable or Very Stable.
   H. Maturity indicator for emergence and vigor shall be >= 80%.
   I. Trace Metals Test Results shall be Pass.
   J. Carbon nitrogen ratio between 30:1 and 35:1.

SUBMITTAL

Agency may request testing data for review and approval prior to placement:
1. Test Data for the soil must be provided by an accredited laboratory with current certification. The date of the analysis must be no more than 90 days prior to the submittal.
   The report must include the following:
   a. Name and address of the laboratory
   b. phone, contact and email address of the laboratory
   c. test data, including data and name of test procedure
   d. source of the topsoil
2. A compost technical data sheet from the vendor. This must conform to the sampling and reporting requirements of the US Composting Council Seal of Testing Assurance.
3. Testing on the compost must be performed no more than 90 days prior to the data of submittal.

Rogue Valley
Stormwater Design Manual

General Notes for Vegetated BMPs

1 of 1
Scale: NTS
GENERAL NOTES FOR PERVIOUS SURFACING

1. Excluding construction of the facility itself, exposed treatment area subgrade shall be fenced to prohibit impacts from construction (including materials and equipment storage).

2. If unprotected soil has been exposed to rainfall, scarify the surface to a depth of 4 inches to restore infiltration capacity.

3. Contractor shall contact the approving agency 48 hours prior to placing geotextile fabric. The approving agency may call the engineer of record in advance of construction of this facility so construction observation may be performed to identify variations in the field that may affect design and verify proper construction.

4. Base rock shall be delivered clean and must pass visual inspection by Agency's inspection prior to placement.
CROWN DRIP LINE

2" X 6' STEEL POSTS OR APPROVED EQUAL.

CONTRACTOR TO BORE UNDER THE CROWN DRIP LINE OF THE TREE.

TREE PROTECTION FENCE:
HIGH DENSITY POLYETHYLENE FENCING WITH 3.5" X 1.5" OPENINGS; COLOR-ORANGE. STEEL POSTS INSTALLED AT 8' O.C

11x17" SIGN LAMINATED IN PLASTIC SPACED EVERY 50' ALONG THE FENCE. (NOT TO SCALE)

OUTSIDE OF THE TREE'S CROWN DRIP LINE CONTRACTOR CAN OPEN TRENCH.

MAINTAIN EXISTING GRADE WITHIN THE TREE PROTECTION FENCE UNLESS OTHERWISE INDICATED ON THE PLANS.

SECTION VIEW

TREE PROTECTION NOTES:

1. EXISTING TREES SHOWN TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION. CHAINLINK FENCING (MIN. 4'-0" HEIGHT) SHALL BE INSTALLED AT THE DRIP LINE OF ALL TREES OR TREE GROUPS TO REMAIN. PARKING OF VEHICLES OR PERFORMING WORK WITHIN THESE AREAS OTHER THAN SHOWN ON THE PLAN, WILL NOT BE ALLOWED. THE TREE PROTECTION SHALL REMAIN DURING CONSTRUCTION. OTHER TREE PROTECTION MEASURES SHALL BE IN ACCORDANCE WITH THE CITY’S STANDARDS AND ORDINANCES.

2. DISPOSAL OF ANY WASTE MATERIAL SUCH AS, BUT NOT LIMITED TO, PAINT, ASPHALT, OIL SOLVENTS, CONCRETE, MORTAR, ETC. WITHIN THE CANOPY AREA OF THE EXISTING TREES SHALL NOT BE ALLOWED.

3. NO ATTACHMENTS OR WIRES OF ANY KIND OTHER THAN THOSE OF A PROTECTIVE NATURE, SHALL BE ATTACHED TO ANY TREE.

4. NO FILL OR EXCAVATION OF ANY NATURE SHALL OCCUR WITHIN THE DRIP LINE OF A TREE TO BE PRESERVED, UNLESS THERE IS A SPECIFIED WELL OR RETAINING WALL SHOWN ON THE GRADING PLAN.

5. NO MATERIALS SHALL BE STORED WITHIN THE DRIP LINE AREA OF A TREE TO BE PRESERVED.
CROWN DRIP LINE

11x17" SIGN LAMINATED IN PLASTIC SPACED EVERY 50' ALONG THE FENCE. (NOT TO SCALE)

2" X 6' STEEL POSTS OR APPROVED EQUAL.

1. EXISTING TREES SHOWN TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION. CHAINLINK FENCING (MIN. 4'-0" HEIGHT) SHALL BE INSTALLED AT THE DRIP LINE OF ALL TREES OR TREE GROUPS TO REMAIN. PARKING OF VEHICLES OR PERFORMING WORK WITHIN THESE AREAS OTHER THAN SHOWN ON THE PLAN, WILL NOT BE ALLOWED. THE TREE PROTECTION SHALL REMAIN DURING CONSTRUCTION. OTHER TREE PROTECTION MEASURES SHALL BE IN ACCORDANCE WITH THE CITY'S STANDARDS AND ORDINANCES.

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5. NO MATERIALS SHALL BE STORED WITHIN THE DRIP LINE AREA OF A TREE TO BE PRESERVED.
TRUNK CALIPER SHALL MEET ANSI Z60 CURRENT EDITION FOR ROOT BALL SIZE.

REMOVE ALL TAGS, WIRES, STRING, BURLAP, AND WIRE BASKETS FROM ROOT BALL.

ROUND-TOPPED SOIL BERM 4" HIGH X 8" WIDE ABOVE ROOT BALL SURFACE SHALL BE CONSTRUCTED AROUND THE ROOT BALL. BERM SHALL BEGIN AT ROOT BALL PERIPHERY.

EXISTING SOIL. SLOPE SIDES OF LOOSENED SOIL.

BOTTOM OF ROOT BALL RESTS ON EXISTING OR RECOMPACTED SOIL.

TRUNK FLARE AT OR JUST ABOVE FINISH GRADE.

PRIOR TO MULCHING, LIGHTLY TAP SOIL AROUND THE ROOT BALL IN DEPTHS OF SOIL OF 8" TO BRACE TREE. DO NOT OVER COMPACT. WHEN THE PLANTING HOLE HAS BEEN BACKFILLED, POUR WATER AROUND THE ROOT BALL TO SETTLE THE SOIL.

LOOSENED SOIL. DIG AND TURN THE SOIL TO REDUCE COMPACTION TO THE AREA AND DEPTH SHOWN.

4" LAYER OF MULCH. NO MORE THAN 1" OF MULCH ON THE TOP OF ROOT BALL. (SEE SPECIFICATIONS FOR MULCH).

FINISHED GRADE. 3X WIDEST DIMENSION OF ROOT BALL.

Notes:
1- TREES SHALL BE OF QUALITY PRESCRIBED IN CROWN OBSERVATIONS AND ROOT OBSERVATIONS DETAILS AND SPECIFICATIONS.

2- SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS RELATED TO THIS DETAIL.
EXISTING SOIL.

TRUNK CALIPER SHALL MEET ANSI Z60 CURRENT EDITION FOR ROOT BALL SIZE.

REMOVE ALL TAGS, WIRES, STRING, STRAPS, BURLAP, AND WIRE BASKETS FROM ROOT BALL.

ROUND-TOPPED SOIL BERM 4" HIGH X 8" WIDE ABOVE ROOT BALL SURFACE SHALL BE CENTERED ON THE DOWNHILL SIDE OF THE ROOT BALL FOR 240°. BERM SHALL BEGIN AT ROOT BALL PERIPHERY.

4" LAYER OF MULCH. NO MORE THAN 1" OF MULCH ON TOP OF THE ROOT BALL. (SEE SPECIFICATIONS FOR MULCH).

EXISTING SOIL.

ORIGINAL SLOPE SHOULD PASS THROUGH THE POINT WHERE THE TRUNK BASE MEETS SUBSTRATE/SOIL.

PRIOR TO MULCHING, LIGHTLY TAMP SOIL AROUND THE ROOT BALL IN DEPTHS OF SOIL OF 6" TO BRACE TREE. DO NOT OVER COMPACT. WHEN THE PLANTING HOLE HAS BEEN BACKFILLED, POUR WATER AROUND THE ROOT BALL TO SETTLE THE SOIL.

LOOSENED SOIL. DIG AND TURN THE SOIL TO REDUCE THE COMPACTION TO THE AREA AND DEPTH SHOWN,

SLOPE SIDES OF LOOSENED SOIL.

ORIGINAL GRADE.

BOTTOM OF ROOT BALL RESTS ON EXISTING OR RECOMPACTED SOIL.

3X WIDEST DIMENSION OF ROOT BALL

SECTION VIEW
1. DESIGN AND INSTALL PERVIOUS CONCRETE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE SPECIFICATION 522 AND THE NATIONAL READY MIXED CONCRETE ASSOCIATIONS (NRMCA) RECOMMENDATIONS.
2. UNLESS OTHERWISE APPROVED BY THE ENGINEER, BASE ROCK SHALL BE OPEN GRADED AASHTO NO. 3 WITH MINIMUM VOID SPACE OF 35%.

### U.S. STANDARD SIEVE SIZE

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<tr>
<th>U.S. STANDARD SIEVE SIZE</th>
<th>PERCENT PASSING</th>
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<tr>
<td>2 1/2&quot; (63 MM)</td>
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<tr>
<td>2&quot; (50 MM)</td>
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<td>1 1/4&quot; (37.5 MM)</td>
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IF THE ABOVE CANNOT BE MET, OPEN GRADED AASHTO NO. 5 IS ACCEPTABLE WITH THE APPROVAL OF THE ENGINEER AND MINIMUM VOID SPACE OF 40%.

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* GENERAL PERVIOUS SURFACING NOTES MUST ACCOMPANY THIS DETAIL.
NOTES

1. FOLLOW ODOT SPECIFICATION 00743 POROUS ASPHALT CONCRETE.
2. MUST USE ELASTOMERIC BINDER PG7022ER.
3. MUST PROVIDE THE JOB MIX FORMULA TO THE APPROVING AGENCY PRIOR TO CONSTRUCTION.
4. UNLESS OTHERWISE APPROVED BY THE ENGINEER, BASE ROCK SHALL OPEN GRADED AASHTO NO. 3 WITH MINIMUM VOID SPACE OF 35%.

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<td>3/8&quot; (9.5 MM)</td>
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CHOKER COURSE AGGREGATE SHALL BE AASHTO NO. 57.

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<td>3/8&quot; (9.5 MM)</td>
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* GENERAL PERVERVIOUS SURFACING NOTES MUST ACCOMPANY THIS DETAIL.
NOTES

1. DESIGN & INSTALL CONCRETE PAVERS IN ACCORDANCE WITH THE INTERLOCKING CONCRETE PAVEMENT INSTITUTE (ICPI) SPECIFICATIONS & THE MANUFACTURER’S RECOMMENDATIONS.
2. IF USING SALVAGED AND POURED CONCRETE PAVERS, CONFIRM THAT THE PAVER MATERIAL AND CONDITION IS SUITABLE FOR ITS INTENDED USE.
3. UNLESS OTHERWISE APPROVED BY THE ENGINEER, BASE ROCK SHALL BE OPEN GRADED AASHTO NO. 57 AND MINIMUM VOID SPACE OF 35%.

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<td>4 (4.75 MM)</td>
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<td>8 (2.36 MM)</td>
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<td>4 (4.75 MM)</td>
<td>10-30</td>
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<td>8 (2.36 MM)</td>
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</tr>
<tr>
<td>16 (1.18 MM)</td>
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**GENERAL PERVIOUS SURFACING NOTES MUST ACCOMPANY THIS DETAIL.**
1. DURING INSTALLATION OF CURB, PROTECT PERMEABLE PAVER AREA FROM COMPACTION.

* GENERAL PERVERSIVE SURFACING NOTES MUST ACCOMPANY THIS DETAIL.
**Infiltration Rain Garden**

**Vegetation Per Planting Plan**

**Flow Area**
- Max Side Slopes: 3H:1V - Vegetated
- 4H:1V - Grassy

**Ponding Depth**
- 6"-12" Typ

**Overflow Rim**
- Elev. Per Plans
- 6" Min. Freeboard or Per Jurisdiction

**Outfall Structure**
- Per Plan

**Mulch/Erosion Control Matting Per Plans**

**Undisturbed Native Soil**

**Amended Native Soil**
- 18" Min.
- Imported Soils 12" Min.

**Rogue Valley Stormwater Design Manual**

**BMP 3.01**
1 of 1
Scale: NTS
Lined Filtration Rain Garden with Rock Trench

**IMPERMEABLE LINER**

**12"**

**4"**

**GRASSES (12" MIN)**

**SHRUBS (24" MIN)**

**FINISH GRADE PER PLANS**

**FLOW AREA MAX SIDE SLOPES:**
- 3H:1V - VEGETATED
- 4H:1V - GRASSY

**POUNDING DEPTH**

**VEGETATION PER PLANTING PLAN**

**OVERFLOW RIM ELEV. PER PLANS**

**6" FREEBOARD OR PER JURISDICTION**

**VEGETATION PER PLANTING PLAN**

**6" FREEBOARD OR PER JURISDICTION**

**IMPORTED PLANTING SOIL OR AMENDED NATIVE SOIL**

**OUTFALL STRUCTURE PER PLAN**

**NON-PERFORATED OUTFLOW PIPE TO APPROVED DISCHARGE POINT PER PLANS.**

**SEPARATION ROCK AASHTO NO. 8**

**UNIFORMLY GRADED STORAGE ROCK AASHTO NO. 57**

**SEPARATION ROCK AASHTO NO. 8**

**UNDISTURBED NATIVE SUBGRADE**

**Rogue Valley Stormwater Design Manual**

**Lined Filtration Rain Garden with Rock Trench**

**BMP 3.02**

1 of 1

Scale: NTS
FINISH GRADE PER PLANS

IMPORTED PLANTING SOIL OR AMENDED NATIVE SOIL

MULCH/EROSION CONTROL MATTING PER PLANS

SEPARATION ROCK AASHTO NO. 8

FRENCH DRAIN ROCK AASHTO NO. 57

AMENDED PLANTING SOIL

SEPARATION ROCK, AASHTO NO. 8

FRENCH DRAIN ROCK, AASHTO NO. 57

RIGID PERFORATED PIPE

CROSS SECTION THROUGH FRENCH DRAIN. DO NOT EXTEND SEPARATION OR DRAIN ROCK ACROSS ENTIRE FACILITY BOTTOM.

UNDISTURBED NATIVE SUBGRADE

IMPERMEABLE LINER

NON-PERFORATED OUTFLOW PIPE TO APPROVED DISCHARGE POINT PER PLANS.

OUTFALL STRUCTURE PER PLAN

FRENCH DRAIN WITH RIGID PERFORATED PIPE, SIZE PER PLAN & SLOPE WITH BOTTOM OF FACILITY. FULLY LINED FACILITIES ONLY. PROVIDE CLEAN OUT AS REQUIRED

INSTALLIN LINER ABOVE RIM ELEV.

NATIVE BACKFILL

OVERFLOW RIM ELEV. PER PLANS

6" FREEBOARD OR PER JURISDICTION

VEGETATION PER PLANTING PLAN

FLOW AREA MAX SIDE SLOPES: 3H:1V - VEGETATED 4H:1V - GRASSY

6"-12" TYP PONDING DEPTH

GRASSES (12" MIN) SHRUBS (24" MIN)

OVERFLOW RIM ELEV. PER PLANS

VEGETATION PER PLANTING PLAN

12" 4"

12"

NATIVE BACKFILL

FINISH GRADE PER PLANS

IMPORTED PLANTING SOIL OR AMENDED NATIVE SOIL

MULCH/EROSION CONTROL MATTING PER PLANS

SEPARATION ROCK AASHTO NO. 8

FRENCH DRAIN ROCK AASHTO NO. 57

AMENDED PLANTING SOIL

SEPARATION ROCK, AASHTO NO. 8

FRENCH DRAIN ROCK, AASHTO NO. 57

RIGID PERFORATED PIPE

CROSS SECTION THROUGH FRENCH DRAIN. DO NOT EXTEND SEPARATION OR DRAIN ROCK ACROSS ENTIRE FACILITY BOTTOM.

UNDISTURBED NATIVE SUBGRADE

IMPERMEABLE LINER

NON-PERFORATED OUTFLOW PIPE TO APPROVED DISCHARGE POINT PER PLANS.

OUTFALL STRUCTURE PER PLAN

FRENCH DRAIN WITH RIGID PERFORATED PIPE, SIZE PER PLAN & SLOPE WITH BOTTOM OF FACILITY. FULLY LINED FACILITIES ONLY. PROVIDE CLEAN OUT AS REQUIRED

INSTALLIN LINER ABOVE RIM ELEV.

NATIVE BACKFILL

OVERFLOW RIM ELEV. PER PLANS

VEGETATION PER PLANTING PLAN

FLOW AREA MAX SIDE SLOPES: 3H:1V - VEGETATED 4H:1V - GRASSY

6"-12" TYP PONDING DEPTH

GRASSES (12" MIN) SHRUBS (24" MIN)

OVERFLOW RIM ELEV. PER PLANS

VEGETATION PER PLANTING PLAN

12" 4"

12"
LEGEND:
- — CONTOUR LINE
- • — MOISTURE ZONE

PLANT SPECIES APPROPRIATE FOR MOISTURE ZONE:
- ◦ DRIER
- △ MODERATE
- ○ MOIST

NOTES:
1. THIS DETAIL IS PROVIDED AS A SCHEMATIC EXAMPLE OF THE RANDOM PLANT PLACEMENT AND 95% COVERAGE AFTER ESTABLISHMENT PERIOD DESIRED TO REDUCE EROSION AND WEEDS.
2. INSTALL PLANTS PER PLANS, ACCORDING TO LANDSCAPE DESIGN PLANT TABLE, WHICH SHOULD INCLUDE PLANT SPECIES, SPACING, AND QUANTITIES IN EACH MOISTURE ZONE.
3. MOISTURE ZONES VARY FROM THOSE SHOWN DEPENDING ON GRADING PLAN, LOCATION OF INLET(S) AND OUTLET(S) AND FACILITY SHAPE.
Infiltration Stormwater Planter with Area Drain

VEGETATION PER PLANTING PLAN

OVERFLOW RIM
ELEV. PER PLANS

6" FREEBOARD OR PER JURISDICTION

CURB OR WALL

FINISH GRADE PER PLANS

2-3" MULCH

OUTFALL STRUCTURE, NON-PERFORATED OUTFLOW PIPE & SUMP PER PLANS.

6"-12" TYP PONDING DEPTH

UNDISTURBED NATIVE SUBGRADE

6" FREEBOARD OR PER JURISDICTION

BMP 4.01
1 of 1
Scale: NTS
Infiltration Stormwater Planter with Amended or Imported Soil and Area Drain

- OUTFALL STRUCTURE, NON-PERFORATED OUTFALL PIPE, & SUMP PER PLANS
- FINISH GRADE PER PLANS
- DEEP CURB OR WALL
- NATIVE PLANTS
- OVERFLOW RIM ELEV. PER PLANS
- 2-3" MULCH
- UNDISTURBED NATIVE SUBGRADE
- IMPORTED OR AMENDED NATIVE PLANTING SOIL
- GRASSES 12" MIN. SHRUBS 18" MIN.
- 6" FREEBOARD OR PER JURISDICTION
- 6"-12" TYP PONDING DEPTH
NOTES:
1. IF MONOLITHICALLY POURED CONCRETE PLANTER, NO ADDITIONAL LINER IS REQUIRED.
VEGETATION PER PLANTING PLAN

6"-12" TYP PONDING DEPTH

OVERFLOW RIM ELEV. PER PLANS

IMPORTED OR AMENDED NATIVE PLANTING SOIL

6" FREEBOARD OR PER JURISDICTION

VEGETATION PER PLANTING PLAN

FINISH GRADE PER PLANS

DEEP CURB OR WALL

GRASSES 12" MIN. SHRUBS 18" MIN.

2-3" MULCH

UNIFORM GRADED STORAGE ROCK AASHTO NO. 57

SEPARATION ROCK AASHTO NO. 8

OUTFALL STRUCTURE, NON-PERFORATED OUTFALL PIPE & SUMP PER PLANS

UNDISTURBED NATIVE SUBGRADE

PER PLAN

Scale: NTS
LEGEND:

- CONTOUR LINE

- - MOISTURE ZONE

PLANT SPECIES APPROPRIATE FOR MOISTURE ZONE:

MODERATE

MOIST

NOTES:

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3. MOISTURE ZONES VARY FROM THOSE SHOWN DEPENDING ON GRADING PLAN, LOCATION OF INLET(S) AND OUTLET(S) AND FACILITY SHAPE.
Infiltration LID Swale with Amended Planting Soil and Rock Trench

- VEGETATION PER PLANTING PLAN
- 6" FREEBOARD OR PER JURISDICTION
- MULCH/erosion control per plans
- 6" - 12" ponding depth created by check dams
- 3H:1V side slopes max, typ
- Width (5' min)
- Mulch/erosion control per plans
- Excavate at stable slope angle for native soil, may be vertical
- Imported or amended native planting soil
- Impermeable liner along rock trench sides only to prevent fines migration into storage rock
- Extent/area to match top of lid swale or larger per plans
- Rogue Valley Stormwater Design Manual

- BMP 5.01
- 1 of 1
- Scale: NTS
Infiltration LID Swale with Planting Soil -- Lowest Elevation Cell with Area Drain

- Imported or Amended Native Planting Soil
- Undisturbed Native Subgrade
- 3H:1V Side Slopes, TYP
- 6"-12" Ponding Depth
- Overflow Rim ELEV. PER PLANS
- 6" Freeboard or PER JURISDICTION
- Vegetation PER Planting Plan
- Mulch/Erosion Control Matting PER PLANS
- Excavate at Stable Slope Angle for Native Soil, May Be Vertical
- Outfall Structure PER PLANS
- Non-Perforated Outfall Pipe to Approved Discharge Point

BMP 5.02
1 of 1
Scale: NTS
NOTES:
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3. MOISTURE ZONES VARY FROM THOSE SHOWN DEPENDING ON GRADING PLAN, LOCATION OF INLET(S) AND OUTLET(S) AND FACILITY SHAPE.
NOTES
1. DEPTH TO PIPE MUST BE 12" MINIMUM FOR ADEQUATE SOIL DEPTH PER PLANT CHOICES:
   12" FOR LAWN
   18" FOR TALL GRASSES
   24" FOR SHRUBS
   36" FOR MOST TREES

Soakage Trench in Landscape Area

- APPROVED BACKFILL
- PLANTS PER LANDSCAPE PLAN
- 6" DIA PERFORATED DISTRIBUTION & OVERFLOW PIPE, S=0.0000
- GEOTEXTILE, WRAPPED OVER TOP OF PERFORATED PIPE AND ENTIRE TRENCH, OVERLAP 12" AT ALL EDGES
- UNIFORMLY GRADED STORAGE ROCK (AASHTO NO. 57 OR EQUIVALENT)
- NATIVE OR FILL SOIL
- MAXIMUM SLOPE ANY DIRECTION = 0.0050 (0.5%)
- PROTECT INFILTRATION AREA BELOW SOAKAGE TRENCH

Soakage Trench at Surface

- GEOTEXTILE ON TOP THAT CAN BE REMOVED AND REPLACE FOR MAINTENANCE
- ADJACENT DRAINAGE AREA OR OTHER FINISH GRADE PER PLANS
- GEOTEXTILE, ON SIDES AND BOTTOM, OVERLAP 12" AT ALL EDGES
- UNIFORMLY GRADED STORAGE ROCK (AASHTO NO. 57 OR EQUIVALENT)
- NATIVE OR FILL SOIL
- MAX. BOTTOM SLOPE ALONG LENGTH = 0.0050 (0.5%)
- MAX. BOTTOM SLOPE ALONG WIDTH = 0.0000 ((0%)
- PROTECT INFILTRATION AREA BELOW SOAKAGE TRENCH
Soakage Trench under Impervious Pavement Surface

NOTES

1. PROVIDE DEPTH TO PIPE NEEDED FOR ADEQUATE COVER BASED ON VEHICULAR LOADING, WHICH VARIES WITH PIPE MANUFACTURER.

2. PAVEMENT SECTION (DEPTH AND TYPE OF IMPERVIOUS PAVEMENT SURFACE, OPEN GRADED BASE ROCK) TO BE DESIGNED BY A GEOTECHNICAL ENGINEER TO SUPPORT PREDICTED TRAFFIC LOADING BASED ON UNDERLYING NATIVE SOILS IN A WET, UNCOMPACTED CONDITION. DO NOT COMPACT

3. IF PERFORATED DISTRIBUTION PIPE WILL BE LOCATED ON THE BOTTOM OF THE TRENCH TO ACHIEVE ADEQUATE COVER, INCORPORATE A CATCH BASIN CONTROL STRUCTURE (SEE BMP 8.01) OR EQUIVALENT DEVICE TO ENSURE WATER BACKS UP INTO STORAGE ROCK DEPTH.
Vegetated Filter Strip with Amended Planting Soil

18" RIGID PERFORATED PIPE, SIZE PER PLAN & SLOPE WITH SWALE CENTERLINE

FRENCH DRAIN ROCK, AASHTO NO. 57

NATIVE UNCOMPACTED SUBGRADE

IMPERVIOUS OR PERVERSIOUS

LEVEL SPREADER RUNNING THE LENGTH OF THE VEGETATED FILTER STRIP

18" IMPORTED OR AMENDED NATIVE PLANTING SOILS

WIDTH PER PLAN

SLOPE < 15%

NATIVE PLANTS

IMPERMEABLE LINER
Water Quality Conveyance Swale
with Amended Planting Soil

Vegetation Per Planting Plan

Undisturbed Native Soil

Flow Area
Max Side Slopes:
3H:1V - Vegetated
4H:1V - Grassy

10-Year Storm Flow Depth

Water Quality Storm Flow Depth, 4" Max.

6" Freeboard or Per Jurisdiction

Finish Grade Per Plans

Imported Planting Soil or Amended Native Soil

Amended Native Soil 18" Min.
Imported Soils 12" Min.

Mulch/Erosion Control Matting Per Plans

BMP 8.01
1 of 1
Scale: NTS
VEGETATION PER PLANTING PLAN

10-YEAR STORM FLOW DEPTH

WATER QUALITY STORM FLOW DEPTH, 4" MAX

6" FREEBOARD OR PER JURISDICTION

IMPERMEABLE LINER PER PLANS

UNDISTURBED NATIVE SOIL

IMPORTED PLANTING SOIL OR AMENDED NATIVE SOIL

GRASSES (12" MIN)

SHRUBS (24" MN)

1' MIN

18"

FRENCH DRAIN ROCK, AASHTO NO. 57

SEPARATION ROCK, AASHTO NO. 8

RIGID PERFORATED PIPE, SIZE PER PLAN & SLOPE WITH SWALE CENTERLINE. FULLY LINED FACILITIES ONLY. PROVIDE CLEAN OUT AT UPSTREAM END.

MULCH/EROSION CONTROL MATTING PER PLANS

PARTIALLY LINED FACILITY
SEE ABOVE FOR ADDITIONAL INFORMATION

STRUCTURE OR OTHER OBJECTS VULNERABLE TO SATURATED SOILS

MINIMUM EXTENT TO WHICH IMPERMEABLE LINER MUST BE INSTALLED

TOP OF SWALE

10'

BOTTOM OF SWALE

FLOW AREA
MAX SIDE SLOPES:
3H:1V - VEGETATED
4H:1V - GRASSY

FLOW DEPTH, 4" MAX

12" MIN

4"
NOTES:
1. DEPTH OF SOIL VARIES WITH PROPOSED VEGETATION TYPE:
   - GRASSES 12"
   - SHRUBS 24"

   GENERAL WATER QUALITY CONVEYANCE SWALE NOTES MUST ACCOMPANY THIS DETAIL

MATERIAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>OPEN GRADED AASHTO NO. 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. STANDARD SIEVE SIZE</td>
</tr>
<tr>
<td>¼&quot; (12.5 MM)</td>
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<tr>
<td>⅛&quot; (9.5 MM)</td>
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<tr>
<td>4 (4.75 MM)</td>
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<tr>
<td>8 (2.36 MM)</td>
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<tr>
<td>16 (1.18 MM)</td>
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<table>
<thead>
<tr>
<th>DRAINAGE ROCK AASHTO NO. 57</th>
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<tbody>
<tr>
<td>U.S. STANDARD SIEVE SIZE</td>
</tr>
<tr>
<td>1 ⅛&quot; (37.5 MM)</td>
</tr>
<tr>
<td>1&quot; (9.5 MM)</td>
</tr>
<tr>
<td>½&quot; (12.5 MM)</td>
</tr>
<tr>
<td>4 (4.75 MM)</td>
</tr>
<tr>
<td>8 (2.36 MM)</td>
</tr>
</tbody>
</table>

IMPERMEABLE LINER SPECIFICATIONS

1. MATERIAL SPECIFICATIONS. IMPERMEABLE LINERS MAY BE A 30 MIL (MINIMUM) LOW DENSITY POLYETHYLENE (LDPE), 30 MIL (MINIMUM) ETHYLENE PROPYLENE DIENE MONOMER (EPDM) OR BENTONITE CLAY MAT PER MANUFACTURER GUIDANCE.

2. PLACEMENT. INSTALL THE LINER SECURELY AT A HEIGHT EQUAL TO THE DEPTH OF WATER THAT MAY BE PONDED OR FLOWING DURING 25 YEAR STORM.
LEGEND:

- - - INDICATES GRADE BREAK
- - - MOISTURE ZONE
PLANT SPECIES APPROPRIATE FOR MOISTURE ZONE:

- DRIER
- MODERATE
- MOIST

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**ROADWAY CURB OPENING**

**SECTION B-B**
- Curved Opening Gutter Flowline
- Normal Gutter Flowline
- Transition: 1:12 Typ, 30" Max
- Transition: 1:12 Typ
- Std. Curb HT. (Typ.)

**LOCAL DEPRESSION**
- (Per Plan) 1" Min, 2" Max

**Optional Capped Curb Opening**
- Per Plan
- See ODOT Detail No. DET1750

**SECTION A-A**
- Curved Opening Gutter Flowline
- Normal Gutter Flowline
- Transition: 1:12 Typ

**Standard Apron**
- 4" Min. Length
- 12" Min.

**SWALE/WQF FL**
- 4" Min.
- 8" Min.

**ISOMETRIC**
- Std. Curb + Gutter
- SWF FL

**PLAN**
- Curb Opening Gutter Flowline
- Normal Gutter Flowline
- Transition: 1:12 Typ

**SWALE/WQF FL**
- 4" Min.
- 8" Min.

**SCALE:**
- NTS

**STD. DWG 9.01**
- 1 of 1

**Rogue Valley Stormwater Design Manual**