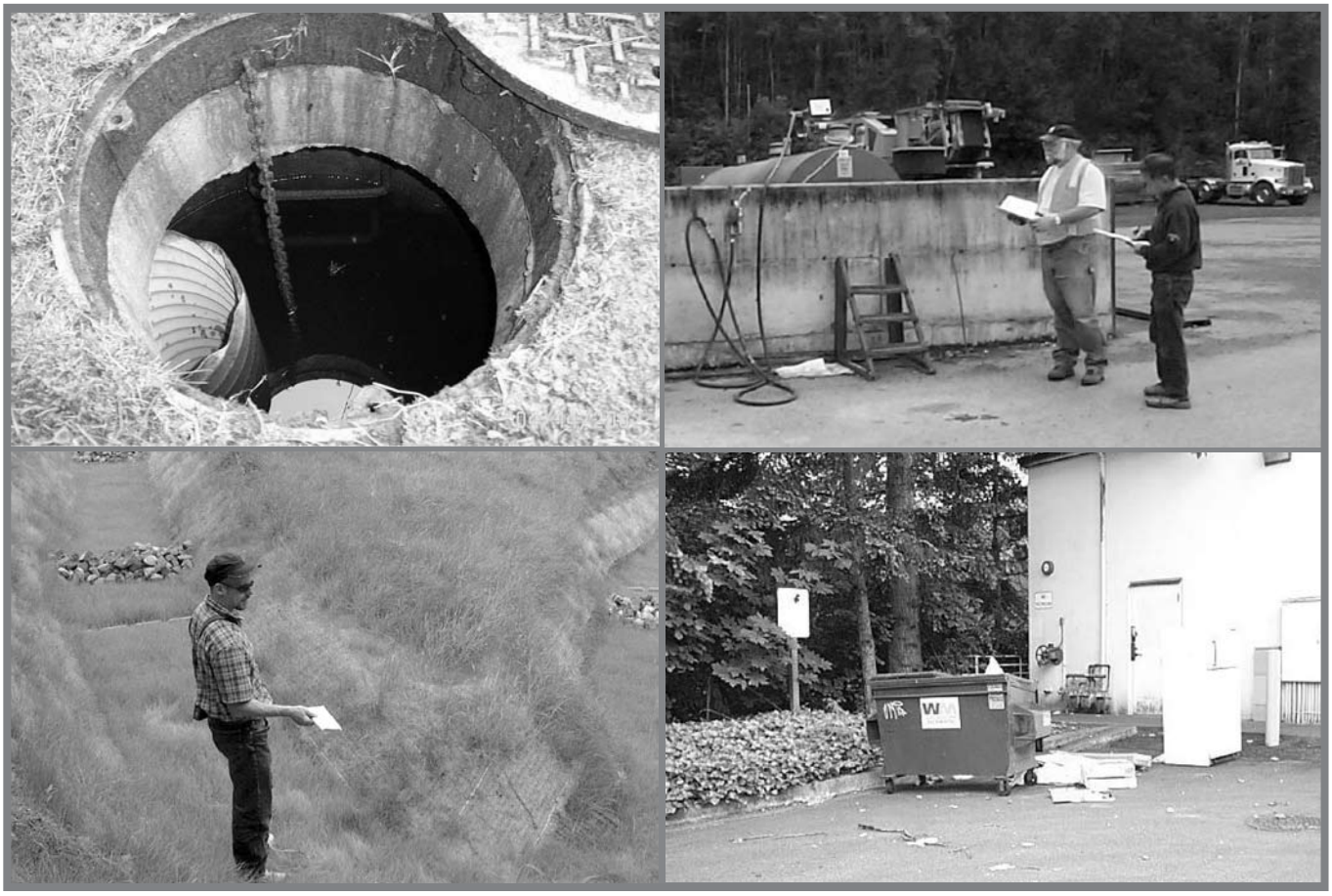
KING COUNTY DRAINAGE MAINTENANCE STANDARDS

FOR COMMERCIAL AND MULTIFAMILY DRAINAGE FACILITIES



Definitions, Defects & Maintenance Necessary to Bring to Standard

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Department of Natural Resources and Parks
Water and Land Resources Division

Contents

A. Type I Catch Basin *(See Figure B-1 in Appendix)*

Definition: An underground concrete water receiving inlet, rectangular in shape (approximately 3' X 2' X 4' deep) with a slotted iron grate on top to inlet water or a solid rectangular cover. Water may also enter/exit through culverts visible in the side walls of basin. Invert refers to the lowest point of a pipe where it enters or exits a catch basin.

Defect Number & Defect:

A-1 General—Trash & Debris (Including Sediment) Blocking Water From Entering Basin: Trash or debris covering any portion of the catch basin grate or blocking inlet grate to basin.

Maintenance Necessary to Bring to Standard: Remove all trash, debris and sediment from in front of the catch basin inlet. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

A-2 General—Trash & Debris (Including Sediment): Trash, debris and sediment (in the basin) that exceeds one-third the depth from the bottom of the basin to invert of the lowest pipe into or out of the basin. This is the most common maintenance requirement.

Maintenance Necessary to Bring to Standard: Remove all trash, debris and sediment from the catch basin. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

A-3 General—Trash & Debris (Including Sediment): Trash, debris and sediment in any inlet or outlet pipe blocking more than one-third of its height.

Maintenance Necessary to Bring to Standard: Remove all trash, debris and sediment from inlet and outlet pipes. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

A-4 Structural—Structural Damage to Frame and/or Top Slab: Top concrete slab has holes larger than 2 square inches or cracks wider than 1/4 inch (intent is to make sure all material is running into the basin through the grate).

Maintenance Necessary to Bring to Standard: Repair top slab so that it is free of holes and cracks.

A-5 Structural—Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab.

Maintenance Necessary to Bring to Standard: Repair so that frame is sitting flush on top slab.

A-6 Structural—Cracks in Basin Walls/Bottom: Cracks wider than 1/2 inch, any evidence of soil particles or water entering catch basin through cracks, or maintenance person judges that structure is unsound.

Maintenance Necessary to Bring to Standard: Replace or repair basin to design standards.

A-7 Structural—Cracks in Basin Around Inletting Culverts: Cracks wider than 1/2 inch at the joint of any inlet/outlet pipe or any evidence of soil particles or water entering catch basin through cracks.

Maintenance Necessary to Bring to Standard: Replace or repair basin to design standards.

A-8 Structural—Settlement/Misalignment: Basin has settled more than 1 inch or has rotated more than 2 inches out of alignment.

Maintenance Necessary to Bring to Standard: Replace or repair basin to design standards.

A-9 General—Pollution: Presence of any pollutants (including paint, auto fluids, grease and food waste) or flammable materials.

Maintenance Necessary to Bring to Standard: Remove contaminants so that none are present. Contact the Waste Characterization Program at 206-296-4633 to determine how to dispose of pollutants and flammable material. Also, contact Water and Land Resources at 206-296-1900 for a water quality site consultation to eliminate the source of the pollution.

A-10 Catch Basin Cover—Not in Place: Cover is missing or only partially in place. Any open catch basin requires maintenance.

Maintenance Necessary to Bring to Standard: Replace missing cover or repair catch basin cover so that it is closed.

A-11 Metal Grates—Safety Hazard: Grate with opening wider than 7/8 inch.

Maintenance Necessary to Bring to Standard: Repair grate openings so that they meet design standards.

A-12 Metal Grates—Trash & Debris: Trash and debris that is blocking grate surface.

Maintenance Necessary to Bring to Standard: Remove all trash and debris from grate. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

A-13 Metal Grates—Damaged or Missing: Grate is missing or has broken members.

Maintenance Necessary to Bring to Standard: Repair or replace grate so that it is in place and meets design standards.

B. Type II Catch Basin *(See Figure B-2 in Appendix)*

Definition: A round concrete underground basin (4'-8' in diameter; 6' deep or deeper); may contain a Flow Restrictor Oil Pollution (FROP) control device or a T-section with a specifically sized orifice(s) to control release rates or a spill control device. These basins are also required when larger diameter culverts are used.

Defect Number & Defect:

B-1 General—Trash & Debris (Including Sediment): Trash, debris and sediment covering the catch basin grate or is blocking any portion of inlet to basin.

Maintenance Necessary to Bring to Standard: Remove trash, debris and sediment so that none is located immediately in front of catch basin inlet. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

B-2 General—Trash & Debris (Including Sediment): Trash, debris and sediment (in the basin) that exceeds one-third the depth from the bottom of the basin to invert of the lowest pipe into or out of the basin. This is the most common maintenance requirement.

Maintenance Necessary to Bring to Standard: Remove all trash, debris and sediment from the catch basin. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

B-3 General—Trash & Debris (Including Sediment): Trash, debris and sediment in any inlet or outlet pipe blocking more than one-third of its height.

Maintenance Necessary to Bring to Standard: Remove all trash, debris and sediment from inlet and outlet pipes. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

B-4 Structural—Structural Damage to Frame and/or Top Slab: Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch (intent is to make sure all material is running into the basin).

Maintenance Necessary to Bring to Standard: Repair top slab so that it is free of holes and cracks.

B-5 Structural—Frame Not Sitting Flush on Top Slab, i.e., separation of more than 3/4 inch of the frame from the top slab.

Maintenance Necessary to Bring to Standard: Repair so that frame is sitting flush on top slab.

B-6 Structural—Cracks in Basin Walls/Bottom: Cracks wider than 1/2 inch and longer than 3 feet, any evidence of soil particles or water entering catch basin through cracks, or maintenance person judges that structure is unsound.

Maintenance Necessary to Bring to Standard: Replace or repair basin to design standards.

B-7 Structural—Cracks in Pipe Joints: Cracks wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles or water entering catch basin through cracks.

Maintenance Necessary to Bring to Standard: Replace or repair basin to design standards.

B-8 Structural—Settlement/Misalignment: Basin has settled more than 1 inch or has rotated more than 2 inches out of alignment.

Maintenance Necessary to Bring to Standard: Replace or repair basin to design standards.

B-9 General—Pollution: Presence of any chemical pollutants or flammable materials.

Maintenance Necessary to Bring to Standard: Remove contaminants so that none are present. Contact the Waste Characterization program at 206-296-4633 to determine how to dispose of pollutants and flammable material. Also, contact Water and Land Resources at 206-296-1900 for a water quality site consultation to eliminate the source of the pollution.

B-10 Catch Basin Cover—Not in Place: Cover is missing or only partially in place. Any open catch basin requires maintenance.

Maintenance Necessary to Bring to Standard: Repair or replace catch basin cover so that it is closed.

B-11 Metal Grates—Safety Hazard: Grate with opening wider than 7/8 inch.

Maintenance Necessary to Bring to Standard: Repair grate openings so that they meet design standards.

B-12 Metal Grates—Trash & Debris: Trash and debris that is blocking grate surface.

Maintenance Necessary to Bring to Standard: Remove all trash and debris from grate. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

B-13 Metal Grates—Damaged or Missing: Grate is missing or has broken members.

Maintenance Necessary to Bring to Standard: Repair or replace grate so that it is in place and meets design standards.

B-14 Ladder—Rungs Unsafe: Maintenance person judges that ladder is unsafe due to missing rungs, misalignment, rust, or cracks.

Maintenance Necessary to Bring to Standard: Repair ladder so that it meets design standards and allows maintenance person safe access.

C. Flow Restrictor *(See Figure B-3 in Appendix)*

Definition: A facility such as a Flow Restrictor Oil Pollution (FROP) control device with a specifically sized orifice(s) to control release rates or a spill control device. Usually located in a Type II Catch Basin/Control Manhole; designated as "CS," "CS/CB," or "CS/MH" on your site plan. There may be a vertical culvert at the outlet ("T") with additional elbow orifice inlets (secondary orifice).

Defect Number & Defect:

C-1 General—Trash & Debris (Includes Sediment): Distance between debris buildup and bottom of orifice plate is less that 1-1/2 feet (18 inches). Similar to **B-2**.

Maintenance Necessary to Bring to Standard: Remove all trash and debris. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

C-2 General—Structural Damage: Structure is not securely attached to manhole wall (outlet pipe structure should support at least 1,000 pounds of up or down pressure); and/or structure is not in upright position (allow up to 10% from plumb). (Structure is usually secured with banding material.)

Maintenance Necessary to Bring to Standard: Repair structure to be securely attached to wall so that outlet pipe supports at least 1,000 pounds of up or down pressure; and ensure outlet pipe is in correct position.

C-3 General—Structural Damage: Connections to outlet pipe are not watertight and show signs of rust or deteriorated grout.

Maintenance Necessary to Bring to Standard: Repair connections to outlet pipe so that they are watertight; repair or replace structure so that it works as designed.

C-4 General—Structural Damage: Any holes—other than designed holes—in the structure.

Maintenance Necessary to Bring to Standard: Repair holes so that structure has no holes other than designed holes.

C-5 Cleanout Gate—Damaged or Missing: Cleanout gate is not watertight or is missing.

Maintenance Necessary to Bring to Standard: Repair or replace gate so that it is watertight and works as designed.

C-6 Cleanout Gate—Will Not Open or Opens with Difficulty: Gate cannot be moved up and down by one person.

Maintenance Necessary to Bring to Standard: Repair gate so that it moves up and down easily and is watertight.

C-7 Cleanout Gate—Damaged or Missing Chain or Rod: Chain or rod leading to gate is missing or damaged (must be accessible from street level).

Maintenance Necessary to Bring to Standard: Repair or replace chain or rod so that it is in place and works as designed.

C-8 Cleanout Gate—Rusted: Gate is rusted over 50% of its surface area.

Maintenance Necessary to Bring to Standard: Repair or replace gate to meet design standards.

C-9 Orifice Plate (Including Secondary Orifices)—Damaged or Missing: Control device is not working properly due to missing, out of place, or bent orifice plate; or secondary orifice elbows have become loosened from structure.

Maintenance Necessary to Bring to Standard: Repair or replace orifice plate so that it is in place and works as designed.

C-10 Orifice Plate (Including Secondary Orifices)—Trash and Debris: Any trash, debris, sediment, or vegetation blocking the plate

Maintenance Necessary to Bring to Standard: Remove all obstructions so that orificate plate works as designed. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

C-10 Secondary Orifices (Elbow Restrictors)—Integrity: Secondary orifice is securely attached and properly functioning

Maintenance Necessary to Bring to Standard: Repair secondary orifice to be properly functioning.

C-11 Overflow Pipe—Obstructions: Any trash or debris blocking (or having the potential of blocking) the overflow pipe. (Overflow pipe is at the top of FROP, "T-section" device or spill control device.)

Maintenance Necessary to Bring to Standard: Remove trash and debris so that the overflow pipe is free of all obstructions and works as designed. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

D. Debris Barrier

Definition: Metal trash rack usually located over the entrance to a pipe or culvert. A debris barrier may also be a conical structure constructed of metal bars and/or rods place over a Type II Catch Basin.

Defect Number & Defect:

D-1 General—Trash & Debris: Trash or debris that is plugging of the openings in the barrier.

Maintenance Necessary to Bring to Standard: Remove trash or debris so that barrier is clear to receive capacity flow. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

D-2 General—Damaged/Bars: Bars are bent out of shape more than 3 inches.

Maintenance Necessary to Bring to Standard: Repair or replace bars so that they are in place with no bends more than 3/4 inch.

D-3 General—Missing Bars: Bars are missing, or entire barrier is missing.

Maintenance Necessary to Bring to Standard: Repair or replace bars according to design standards.

D-4 General—Bars are loose and rust is causing 50% deterioration to any part of barrier.

Maintenance Necessary to Bring to Standard: Repair or replace barrier according to design standards.

E. Energy Dissipater/Dispersion Trench

Definition: A rock pad constructed at inlets/outlets to prevent erosion (Energy Dissipater), or a catch basin used to slow fast flowing runoff (Energy Dissipater), or a constructed percolation trench to disperse outletting flows over a large area (Dispersion Trench). Catch basins may be a part of the dispersion trench; see Type I or Type II Catch Basins (Items A and B) for maintenance requirements.

Defect Number & Defect:

E-1 Rock Pad—Missing or Moved Rock: One layer or less of rock exists above native soil in area five square feet or larger, or any exposure of native soil.

Maintenance Necessary to Bring to Standard: Replace rocks to design standard.

E-2 Energy Dissipater—Needs Replacement: Visible signs of pad erosion, or plugged dispersion trenches.

Maintenance Necessary to Bring to Standard: Replace energy dissipater.

E-3 Dispersion Trench—Pipe Plugged with Sediment: Accumulated sediment that exceeds 20% of the design depth.

Maintenance Necessary to Bring to Standard: Clean/flush pipe so that it matches design. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

E-4 Dispersion Trench—Not Discharging Water Properly: Visual evidence of water discharging at concentrated points along trench (normal condition is a "sheet flow" of water along trench). Intent is to prevent erosion damage.

Maintenance Necessary to Bring to Standard: Rebuild trench to design standards.

E-5 Dispersion Trench—Perforations Plugged: Over 1/2 of perforations in pipe are plugged with debris and sediment.

Maintenance Necessary to Bring to Standard: Clean or replace perforated pipe. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

E-6 Dispersion Trench—Water Flows Out Top of "Distributor" Catch Basin: Water has been observed flowing out during any storm less than the design storm, or it is causing or appears likely to cause damage.

Maintenance Necessary to Bring to Standard: Rebuild facility to design standards.

E-7 Dispersion Trench—Receiving Area Oversaturated: Water in receiving area is causing or has potential of causing landslide problems.

Maintenance Necessary to Bring to Standard: Ensure that engineer's evaluation of outlet function and soil stability is satisfactory.

E-8 Dispersion Trench—Vegetation: Any vegetation growing on dispersion trench.

Maintenance Necessary to Bring to Standard: Remove vegetation including root system.

F. Pipe/Culvert

Definition: A conveyance culvert of varying diameter. May be constructed of concrete pipe (CP), corrugated metal pipe (CMP), or smooth wall high density polyethylene pipe (HDPP).

Defect Number & Defect:

F-1 General—Sediment & Debris: Accumulated sediment and/or debris that exceeds 20% of the diameter of the pipe.

Maintenance Necessary to Bring to Standard: Clean pipe of all sediment and debris. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

F-2 Vegetation—Overgrowth: Vegetation that reduces free movement of water through pipes.

Maintenance Necessary to Bring to Standard: Remove all vegetation so water flows freely through pipes.

F-3 Structural—Protective Coating is Damaged: Rust is causing more than 50% deterioration to any part of the pipe.

Maintenance Necessary to Bring to Standard: Repair or replace pipe.

F-4 Structural—Joints: Joints are visibly misaligned, or culvert alignment is disrupted.

Maintenance Necessary to Bring to Standard: Realign/reconnect affected culvert.

F-5 Structural—Damaged Pipe: Any dent that decreases the cross section area of pipe by more than 20%.

Maintenance Necessary to Bring to Standard: Repair or replace pipe.

G. Ditch

Definition: Conveyance system. May be U-shaped or trapezoidal with flat bottom. May be rock lined. A ditch is **not** the same as a bioswale (See Section M. Other—Specific to Bioswale).

Defect Number & Defect:

G-1 General—Trash & Debris: Trash and debris exceeds 1 cubic foot per 1,000 square feet of ditch and slopes.

Maintenance Necessary to Bring to Standard: Clear trash and debris from ditch. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

G-2 General—Sediment: Accumulated sediment that exceeds 20% of the design depth.

Maintenance Necessary to Bring to Standard: Clean/flush ditch of all sediment and debris so that it matches design. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

G-3 Vegetation—Overgrowth: Vegetation that reduces free movement of water through ditch (vegetation taller than 8 inches or trees such as alders).

Maintenance Necessary to Bring to Standard: Remove vegetation so that water flows freely through ditch or bioswale.

G-4 Side Slopes—Erosion Damage to Slopes: Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion.

Maintenance Necessary to Bring to Standard: Stabilize slopes by using appropriate erosion control measure(s): for example, rock reinforcement, planting of grass, erosion control blankets, bonded fiber matrices or compaction.

G-5 Check Dams—Sedimentation: Silt deposition causes standing water behind check dam

Maintenance Necessary to Bring to Standard: Replace check dam; remove silt. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

G-6 Rock Lined Ditch—Failure of Rock-Lined Ditch: Erosion or failure of rock slopes of ditch line.

Maintenance Necessary to Bring to Standard: Replace/repair rock lining to reestablish ditch cross-section.

H. Fencing

Definition: Six-foot-high fence, required by County if pond slopes are steeper than 3:1 to prohibit entry due to safety considerations in steep side slopes. Gates are a part of fencing.

Defect Number & Defect:

H-1 General—Missing or Broken Parts: Any defect in the fence that permits easy entry to a facility.

Maintenance Necessary to Bring to Standard: Repair or replace parts to provide adequate security.

H-2 General—Missing or Broken Parts: Parts broken or missing that can be seen by the public that are below the appearance standards of the neighborhood.

Maintenance Necessary to Bring to Standard: Repair or replace broken or missing parts to conform to the standards of the neighborhood.

H-3 General—Erosion: Erosion more than 4 inches deep and 12-18 inches wide permitting an opening under a fence.

Maintenance Necessary to Bring to Standard: Fill in openings so that there are no openings under the fence that exceed 4 inches in height.

H-4 General—Damaged Parts: Posts out of plumb more than 6 inches.

Maintenance Necessary to Bring to Standard: Correct position so that posts are plumb to within 1-1/2 inches.

H-5 General—Damaged Parts: Any part of fence (including posts, top rails, and fabric) more than 1 foot out of design alignment.

Maintenance Necessary to Bring to Standard: Align fence so that it meets design standards.

H-6 Chain Link Fences—Damaged Parts: Top rails bent more than 6 inches.

Maintenance Necessary to Bring to Standard: Repair or replace top rails so that they are free of bends greater than 1 inch.

H-7 Chain Link Fences—Damaged Parts: Missing or loose tension wire.

Maintenance Necessary to Bring to Standard: Repair or replace tension wire so that it is in place and holding fabric.

H-8 Chain Link Fences—Damaged Parts: Missing or loose barbed wire that is sagging more than 2-1/2 inches between posts.

Maintenance Necessary to Bring to Standard: Repair or replace barbed wire so that it is in place with less than 3/4 inch sag between posts.

H-9 Chain Link Fences—Damaged Parts: Extension arm missing, broken, or bent out of shape more than 1-1/2 inches.

Maintenance Necessary to Bring to Standard: Repair or replace extension arm so that it is in place with no bends larger than 3/4 inch.

H-10 Chain Link Fences—Deteriorated Paint or Protective Coating: Part or parts have a rusting or scaling condition that has affected structural adequacy.

Maintenance Necessary to Bring to Standard: Repair posts or parts so that they are structurally adequate with a uniform protective coating.

H-11 Chain Link Fences or Gates—Openings in Fabric: Openings in fabric are such that an 8 inch diameter ball could fit through (intent is to prevent a small child from entering).

Maintenance Necessary to Bring to Standard: Repair fabric so that there are no openings in fence.

H-12 Gates—Damaged or Missing Members: Missing gate or locking devices.

Maintenance Necessary to Bring to Standard: Repair or replace gates and locking devices so that all are in place.

H-13 Gates—Damaged or Missing Members: Broken or missing hinges such that gate cannot be easily opened and closed by a maintenance person.

Maintenance Necessary to Bring to Standard: Repair or replace hinges so that they are intact and lubed, and gate is working freely.

H-14 Gates—Damaged or Missing Members: Gate is out of plumb more than 6 inches and more than 1 foot out of design alignment.

Maintenance Necessary to Bring to Standard: Align gate so that it is vertical.

H-15 Gates (Chain Link)—Damaged or Missing Members: Missing stretcher bar, stretcher bands, and ties.

Maintenance Necessary to Bring to Standard: Repair or replace stretcher bar, bands, and ties so that all are in place.

I. Access Road

Definition: Used to access control structure and other facility components. Minimum of 12 feet wide, may be constructed of asphalt, concrete, rock or other approved material.

Defect Number & Defect:

I-1 **General—Support:** Access road is capable of supporting trucks and maintenance equipment.

Maintenance Necessary to Bring to Standard: Repair road to design standards.

I-2 **General—Trash & Debris:** Trash and debris exceeds 1 cubic foot per 1,000 square feet; i.e., trash and debris would fill up one standard-sized garbage can.

Maintenance Necessary to Bring to Standard: Clear trash and debris from site. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

I-3 **General— Pollution:** Presence of any chemical pollutants or flammable materials.

Maintenance Necessary to Bring to Standard: Remove contaminants so that none are present. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

I-4 **Access—Blocked Roadway/Safety Hazard:** Debris that could damage vehicle tires (glass or metal).

Maintenance Necessary to Bring to Standard: Remove debris so that roadway is free of debris that could damage tires. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

I-5 **Access—Blocked Roadway/Safety Hazard:** Any obstructions or vegetation that reduces clearance above road surface to less than 14 feet.

Maintenance Necessary to Bring to Standard: Remove obstructions or vegetation so that roadway overhead is clear to 14 feet high.

I-6 **Access—Blocked Roadway/Safety Hazard:** Any obstructions or vegetation restricting the access to a 10- to 12-foot width for a distance of more than 12 feet or at any point restricting access to less than a 10-foot width.

Maintenance Necessary to Bring to Standard: Remove obstructions to allow at least a 12-foot access.

I-7 **Road Surface—Settlement, Potholes, Soft Spots, or Ruts:** Any surface defect that exceeds 6 inches in depth and 6 square feet in area. In general, any surface defect that hinders or prevents maintenance access.

Maintenance Necessary to Bring to Standard: Repair road surface so that it is uniformly smooth with no evidence of settlement, potholes, soft spots, or ruts.

I-8 **Road Surface—Vegetation:** Trees growing or vegetation in excess of 6 inches.

Maintenance Necessary to Bring to Standard: Remove trees, mow access road surface and/or remove trees.

I-9 **Road Surface (if applicable)—Modular Grid Pavement Contamination:** Build up of sediment mildly contaminated with petroleum hydrocarbons.

Maintenance Necessary to Bring to Standard: Repair road surface so that it is uniformly smooth with no evidence of settlement, potholes, soft spots, or ruts. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

I-10 Shoulders & Ditches—Erosion Damage: Erosion within 1 foot of the roadway more than 8 inches wide and 6 inches deep.

Maintenance Necessary to Bring to Standard: Repair shoulder so that it is free of erosion and matching the surrounding road.

I-11 Shoulders & Ditches—Weeds & Brush: Weeds and brush exceed 18 inches in height or hinder maintenance access.

Maintenance Necessary to Bring to Standard: Cut weeds and brush to 2 inches in height, or clear in such a way as to allow maintenance access.

J. Other—Specific to Ponds (Including Infiltration Ponds) *(See Figures B-4 and B-5 in Appendix)*

Definition: A pond is a facility designed to temporarily store excess stormwater and slowly release it downstream to prevent flooding and erosion. An infiltration pond releases the stored stormwater to groundwater instead of downstream. A dike is a feature of a pond where earth has been built up to provide some portion of the side slope of the pond.

Defect Number & Defect:

J-1 General—Trash & Debris: Trash and debris exceed 1 cubic foot per 1000 square feet, or there is visual evidence of dumping, or any trash and debris that could block the pond outlet.

Maintenance Necessary to Bring to Standard: Remove trash and debris from site. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

J-2 General—Contamination: Oil, gasoline, or other contaminants in any amount found that could: 1) cause damage to plant, animal, or marine life; 2) constitute a fire hazard; or 3) be flushed downstream during rain storms.

Maintenance Necessary to Bring to Standard: Remove all contaminants so that none are present. Contact the Waste Characterization program at 206-296-4633 to determine how to dispose of pollutants and flammable material. Also, contact Water and Land Resources at 206-296-1900 for a water quality site consultation to eliminate the source of the pollution.

J-3 Vegetation—Unmowed Grass/Ground Cover (Not Including Infiltration—See J-15): If facility is located in private residential area, mowing is needed when grass exceeds 18 inches in height. In other areas, the general policy is to make the pond site match adjacent ground cover and terrain as long as there is no interference with the function of the facility.

Maintenance Necessary to Bring to Standard: Mow grass/ground cover to 2 inches in height.

J-4 Dike—Rodent Holes: Any evidence of rodent holes, or any evidence of water piping through dike via rodent holes.

Maintenance Necessary to Bring to Standard: Ensure that rodents are destroyed and holes are repaired.

J-5 Side Slopes and Dikes—Erosion: Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion.

Maintenance Necessary to Bring to Standard: Stabilize slopes by using appropriate erosion control measure(s): for example, rock reinforcement, planting of grass or hydroseeding, erosion control blankets, bonded fiber matrices or compaction.

J-6 Storage Area—Sediment (Except Infiltration—See J-12 and J-13): Accumulated sediment exceeds 10% of the designed pond depth. Periodic sediment removal is critical to proper pond function.

Maintenance Necessary to Bring to Standard: Clean out sediment to designed pond shape and depth; reseed pond if necessary to control erosion. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

J-7 Storage Area—Liner Damage (If Applicable): Liner is visible and has more than three 1/4-inch holes in it.

Maintenance Necessary to Bring to Standard: Repair or replace liner

J-8 Pond Dikes—Settlements: Any part of dike has settled 4 inches lower than the design elevation, or water is visibly piping (leaking) through dikes.

Maintenance Necessary to Bring to Standard: Build dike back to the design elevation or repair piping.

J-9 Emergency Overflow/Spillway—Rock Missing, Erosion, or Obstruction: One layer or less of rock exists above native soil in area 5 square feet or larger; any exposure of native soil; or blockage by debris or vegetation.

Maintenance Necessary to Bring to Standard: Replace rocks to design standards. Remove debris. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

J-10 Emergency Overflow/Spillway and Dikes Over 4 Feet in Height—Tree Growth: Tree growth on emergency spillways create blockage problems and may cause failure of the dike due to uncontrolled overtopping. Tree growth on dikes over 4 feet in height may lead to piping through the dike which could lead to failure of the dike.

Maintenance Necessary to Bring to Standard: Remove tree. If root system is small (base less than 4 inches) the root system may be left in place. Otherwise the roots should be removed and the dike restored. A licensed civil engineer should be consulted for proper dike/spillway restoration.

J-11 Emergency Overflow/Spillway—Does Not Control Storm Flow: Emergency overflow or spillway is not large enough to handle heavy rain storms.

Maintenance Necessary to Bring to Standard: Increase capacity (size) of emergency overflow so that there is no danger of flood damage to County roads or private property.

J-12 Storage Area—Sediment (Infiltration Only): A percolation test of facility indicates facility is only working at 90% of its designed capabilities, or water remains in pond for more than 24 hours after rain has stopped. Frequent sediment removal in infiltration facilities is important to insure proper function.

Maintenance Necessary to Bring to Standard: Remove sediment and/or clean facility so that infiltration system works according to design. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

Note: Sediment accumulation of more than 0.25 inches per year may indicate excessive erosion is occurring upstream of the facility or that conveyance systems are not being properly maintained. The contributing drainage area should be checked for erosion problems or inadequate maintenance of conveyance systems if excessive sedimentation is noted in an infiltration facility.

J-13 Rock Filters—Sediment & Debris: By visual inspection, little or no water flows through filter during heavy rain storms.

Maintenance Necessary to Bring to Standard: Replace gravel in rock filter. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

J-14 Infiltration Facility Sump—Sump Filled with Sediment and Debris: Any sediment and debris filling vault to 10% of depth from sump bottom to bottom of outlet pipe or obstructing flow into the connector pipe.

Maintenance Necessary to Bring to Standard: Clean out sump to design depth. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

J-15 Infiltration Facility Filter Bags (If Applicable)—Filled with Sediment and Debris: Sediment and debris fill bag more than 1/2 full.

Maintenance Necessary to Bring to Standard: Replace filter bag or redesign system. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

J-16 Infiltration Facility Pre-settling Ponds and Vaults—Sediment: Sediment 6 inches or more.

Maintenance Necessary to Bring to Standard: Sediment cleaned out to designed pond shape and depth or sediment is removed from vault. Ponds are reseeded if necessary to control erosion. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

J-17 Settling Ponds—Sediment (Infiltration Only): Pond contains 6 inches or more of sediment.

Maintenance Necessary to Bring to Standard: Remove sediment completely. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

J-18 Vegetation (Infiltration Only)—Overgrowth: Vegetation such as trees, brush, grass and weeds impedes infiltration function, or when height exceeds 18 inches.

Maintenance Necessary to Bring to Standard: Mow vegetation to 2 inches in height and remove clippings. Remove trees and bushes where they impact the infiltrating area of the pond.

J-19 Inlet/Outlet Pipe (Infiltration Only)—Plugged: Inlet/outlet pipe plugged with sediment and/or debris.

Maintenance Necessary to Bring to Standard: Remove sediment and debris so that there is no clogging or blockage in the inlet and outlet piping. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

J-20 Dike—Settlement of Pond Dike (Infiltration Only): Any part of these components has settled 4 inches or lower than the design elevation, or inspector determines dike is unsound.

Maintenance Necessary to Bring to Standard: Repair dike to specifications.

J-21 Rock Window (Infiltration Only)—Plugged: Rock Window of filter dike is plugged with sediment.

Maintenance Necessary to Bring to Standard: Remove sediment from rock window. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

J-22 Access Ramp—In Useable Condition: Access ramp is capable of supporting trucks and equipment.

Maintenance Necessary to Bring to Standard: Repair ramp deficiencies.

K. Other—Specific to Tanks/Vaults (Including infiltration tanks/vaults)

(See Figures B-6, B-7, and B-11 in Appendix)

Definition: A tank or vault is an underground facility designed to store excess stormwater and slowly release it downstream to prevent flooding and erosion. An infiltration tank or vault releases the stored stormwater to groundwater instead of downstream.

Defect Number & Defect:

K-1 Storage Area—Plugged Air Vents: Any amount of blockage. (Vents are at upstream end of storage tank.)

Maintenance Necessary to Bring to Standard: Remove debris and sediment from vents.

K-2 Storage Area (FC Tanks/Vaults Only)—Debris & Sediment: Accumulated sediment depth exceeds 10% of the diameter of the storage area for one-half the length of the storage tank, or any point depth exceeds 15% of diameter. Example: A 72-inch storage tank would require cleaning when sediment reaches a depth of 7 inches for more than one-half the length of the tank.

Maintenance Necessary to Bring to Standard: Remove all sediment and debris from storage area. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

K-3 Storage Area—Joints Between Tank/Pipe Section: Any crack allowing material to be transported into facility.

Maintenance Necessary to Bring to Standard: Seal all joints between tank/pipe sections.

K-4 Storage Area—Tank/Pipe Bent Out of Shape: Any part of tank/pipe is bent out of shape more than 10% of its design shape.

Maintenance Necessary to Bring to Standard: Repair or replace tank/pipe to design.

K-5 Vault Structure—Damage to Wall, Frame, Bottom, and/or Top Slab: Cracks wider than ½-inch and any evidence of soil particles entering the structure through the cracks, or maintenance inspection personnel determines that the vault is not structurally sound.

Maintenance Necessary to Bring to Standard: Vault replaced or repaired to design specifications.

K-6 Vault Structure—Damaged Pipe Joints: Cracks wider than ½-inch at the joint of any inlet/outlet pipe or any evidence of soil particles entering the vault through the walls.

Maintenance Necessary to Bring to Standard: Repair so no cracks more than 1/4 inch wide at any pipe joint.

K-7 Large Access Doors/Plates (If Applicable)—Gaps in Door or Plate: Large access doors not flat and/or access hole not completely covered. Note, however, that grated doors are acceptable.

Maintenance Necessary to Bring to Standard: Repair so door/plate closes flat and covers access hole completely.

K-8 Large Access Doors/Plats (If Applicable)—Lifting Rings Missing, Rusted: Lifting rings not capable of lifting weight of door or lid.

Maintenance Necessary to Bring to Standard: Repair so lifting ring is sufficient to remove lid.

K-9 Plugged Air Vents (Infiltration Tanks Only): One-half of the end area of a vent is blocked at any point with debris and sediment. (Vents are at upstream end of storage tank.)

Maintenance Necessary to Bring to Standard: Remove all debris and sediment from vents. If using a vendor, ensure that the vendor properly disposes of waste. If not using a vendor, call the King County Health Department Business Waste Line at (206) 296-3976 for information on how to dispose of waste.

K-10 Storage Area—Sediment (Infiltration Tanks and Vaults Only): Sediment depth exceeds 6 inches in depth.

Maintenance Necessary to Bring to Standard: Remove all sediment from tank or vault bottom. If using a vendor, ensure that the vendor properly disposes of waste. If not using a vendor, call the King County Health Department Business Waste Line at (206) 296-3976 for information on how to dispose of waste.

K-11 Joints Between Tank/Pipe Section (Infiltration Tanks Only): Any crack allowing material to be transported into facility.

Maintenance Necessary to Bring to Standard: Seal all joints between tank/pipe sections.

K-12 Tank/Pipe Bent out of Shape (Infiltration Tanks Only): Any part of tank/pipe is bent out of shape more than 10 percent of its design shape.

Maintenance Necessary to Bring to Standard: Repair or replace tank/pipe to design.

Notes: *1. Sediment accumulation of more than .25 inches per year may indicate excessive erosion is occurring upstream of the facility or that conveyance systems are not being properly maintained. The contributing drainage area should be checked for erosion problems or inadequate maintenance of conveyance systems if excessive sedimentation is noted in an infiltration facility.*

2. In order to assess the effectiveness of infiltration function, inspection is recommended of downspouts, drains and catch basins during a storm. Also, evaluate adjacent properties for damages caused by system failure. Slow water dissipation or system backups and flooding may indicate that an infiltration system is not adequately performing.

L. Other—Specific to Wet Vaults *(See Figure B-8 in Appendix)*

Definition: A wet vault is an underground facility with a permanent pool of water that dissipates energy and improves the settling of particulate pollutants from incoming stormwater to improve water quality.

Defect Number & Defect:

L-1 Vault Area—Trash/debris Accumulated in Vault, Pipe, or Inlet/outlet: Includes floatables and non-floatables.

Maintenance Necessary to Bring to Standard: Remove trash and debris from vault. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

L-2 Vault Area—Sediment Accumulation: Vault bottom contains sediment that exceeds the depth of the sediment zone plus 6 inches.

Maintenance Necessary to Bring to Standard: Remove sediment from vault. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

L-3 Vault Area—Oil Accumulation: Oil floating on surface of water in vault.

Maintenance Necessary to Bring to Standard: Remove oil from vault. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

L-4 Vault Structure—Damage to Walls, Frame, Bottom, and/or Top Stab: Cracks wider than ½-inch and any evidence of soil particles entering the structure through the cracks, vault does not hold water, or maintenance inspection personnel determines that the vault is not structurally sound.

Maintenance Necessary to Bring to Standard: Vault replaced or repaired to design specifications.

L-5 Vault Structure—Damaged Pipe Joints: Cracks wider than ½-inch at the joint of any inlet/outlet pipe or any evidence of soil particles entering the vault through the walls.

Maintenance Necessary to Bring to Standard: Repair so no cracks more than 1/4 inch wide at any pipe joint.

L-6 Baffles—Damaged/Defective: Baffles corroding, cracking, warping and/or showing signs of failure.

Maintenance Necessary to Bring to Standard: Repair or replace baffles to specifications.

L-7 Inlet/outlet Pipes—Damaged Pipes: Piping damaged or broken and in need of repair. Pipe or T-section does not retain floatables.

Maintenance Necessary to Bring to Standard: Repair and/or replace pipe.

L-8 Inlet/outlet Pipes—Trash/Debris, Floating Oil Accumulations: Trash, debris or floating oils have accumulated in inlet/outlet pipe (includes floatables and non-floatables).

Maintenance Necessary to Bring to Standard: Remove trash and debris. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

L-9 Access Cover—Damaged/Not Working: Access cover cannot be opened or removed, especially by one person.

Maintenance Necessary to Bring to Standard: Loosen cover or remove objects hindering removal.

L-10 Access Cover—Ventilation Impaired: Ventilation grates blocked or not providing adequate ventilation.

Maintenance Necessary to Bring to Standard: Restore full ventilation capacity.

L-11 Access Ladder—Damaged: Access ladder is corroded or deteriorated, not functioning properly, missing rungs, has cracks, and/or is misaligned.

Maintenance Necessary to Bring to Standard: Repair or replace ladder to specifications so that it is safe to use.

L-12 Gravity Drain (If Applicable)—Proper Operation: Gravity Drain Valve operates and pipes are clear and capable of flow.

Maintenance Necessary to Bring to Standard: Repair inoperable parts.

M. Other—Specific to Bioswales (Including wet bioswales) *(See Figure B-9 in Appendix)*

Definition: A bioswale is a grass lined swale whose purpose is to improve water quality by filtering surface water flow through the grass. A wet bioswale replaces grass with selected wetland vegetation. A flow spreader is a feature which helps to keep the flow spread evenly across the width of the bioswale.

Defect Number & Defect:

M-1 Swale Section—Sediment Accumulation on Grass: Sediment depth exceeds 2 inches.

Maintenance Necessary to Bring to Standard: Remove sediment deposits on grass treatment area of the bioswale. When finished, swale should be level from side to side and drain freely toward outlet. There should be no areas of standing water once inflow has ceased. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

M-2 Swale Section—Standing Water: Water stands in the swale between storms and does not drain freely.

Maintenance Necessary to Bring to Standard: Any of the following may apply: remove sediment or trash blockages, improve grade from head to foot of swale, remove clogged check dams, add underdrains or convert to a wet bioswale. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

M-3 Swale Section—Constant Baseflow: Small quantities of water continually flow through the swale, even when it has been dry for weeks, and an eroded, muddy channel has formed in the swale bottom.

Maintenance Necessary to Bring to Standard: Repair swale bottom and divert baseflow around swale (or provide low flow drain if baselow < 0.01 cfs) or convert to wet bioswale (with high flow bypass).

M-4 Swale Section—Poor Vegetation Cover: Grass is sparse or bare or eroded patches occur in more than 10% of the swale bottom.

Maintenance Necessary to Bring to Standard: Determine why grass growth is poor and correct that condition. Replant with plugs of grass from the upper slope: plant in the swale bottom at 8-inch intervals, or re-seed into loosened, fertile soil. Do not use sod to re-establish grass.

M-5 Swale Section—Grass Length/Weeds: Grass becomes excessively tall (greater than 10 inches); nuisance weeds and other vegetation (e.g. cattails) start to take over; or grass has died.

Maintenance Necessary to Bring to Standard: Mow vegetation or eradicate nuisance vegetation such that flow is not impeded. Mow grass to a height of between 4 and 9 inches. If grass has died, replant/reestablish grass. Do not use sod to reestablish grass.

M-6 Swale Section—Excessive Shading: Grass growth is poor because sunlight does not reach swale.

Maintenance Necessary to Bring to Standard: If possible, trim back over-hanging limbs, remove brushy vegetation on adjacent slopes. If grass still cannot survive due to lack of sunlight, replace with another type of water quality facility.

M-7 Swale Section—Trash and Debris Accumulation: Trash and debris accumulated in the bioswale.

Maintenance Necessary to Bring to Standard: Remove trash and debris from bioswale. Reseed if necessary. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

M-8 Swale Section—Erosion/Scouring: The bioswale has eroded or scoured the bottom due to flow channelization, or higher flows.

Maintenance Necessary to Bring to Standard: Regrade and reseed bioswale to specification to eliminate channeled flow. Overseed when bare spots are evident. Install flow spreaders if condition is persistent.

M-9 Inlet/Outlet Pipe—Sediment and Debris: Inlet/outlet pipe clogged with sediment and/or debris.

Maintenance Necessary to Bring to Standard: Remove sediment and/or debris so that there is no clogging or blockage in the inlet and outlet piping. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

M-10 Flow Spreader—Concentrated Flow: Flow spreader uneven or clogged so that flows are not uniformly distributed through entire swale width.

Maintenance Necessary to Bring to Standard: Level the spreader and clean so that flows are spread evenly over entire swale width.

M-11 Swale Section (Wet Bioswale)—Sediment Accumulation: Sediment depth exceeds 2 inches in 10% of the swale treatment area.

Maintenance Necessary to Bring to Standard: Remove sediment deposits in treatment area. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

M-12 Swale Section (Wet Bioswale)—Wetland Vegetation Health: Vegetation becomes sparse and does not provide adequate filtration, OR vegetation is crowded out by very dense clumps of cattail or other vegetation which do not allow water to flow through the clumps.

Maintenance Necessary to Bring to Standard: Determine cause of lack of vigor of vegetation and correct. Replant as needed. For excessive cattail growth,remove with roots and compost offsite.

M-13 Swale Section (Wet Bioswale)—Trash and Debris Accumulation: Trash and debris accumulated in the wet swale.

Maintenance Necessary to Bring to Standard: Remove trash and debris from wet swale. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

M-14 Swale Section (Wet Bioswale)—Erosion and Scouring: Swale has eroded or scoured due to flow channelization, or higher flows.

Maintenance Necessary to Bring to Standard: Check bypass flow controls are operating correctly and swale design is adequate for design flows. Correct deficiencies. Replant eroded areas with fibrous-rooted plants (see the King County Surface Water Design Manual for a list of suitable plants).

M-15 Inlet/Outlet Pipe (Wet Bioswale)—Sediment and Debris: Inlet/outlet pipe clogged with sediment and/or debris.

Maintenance Necessary to Bring to Standard: Remove sediment and/or debris so that there is no clogging or blockage in the inlet and outlet piping. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

N. Other—Specific to Wet Ponds *(See Figure B-10 in Appendix)*

Definition: A wet pond is a stormwater pond that retains a permanent pool of water to dissipate energy and improves the settling of particulate pollutants from incoming stormwater to improve water quality.

Defect Number & Defect:

N-1 Pond Area—Water Level: First cell empty, doesn't hold water.

Maintenance Necessary to Bring to Standard: Line the first cell with an impermeable liner to maintain at least 4 feet of water. Although the second cell may drain, the first cell must remain full to control turbulence of the incoming flow and reduce sediment resuspension. If the second cell doesn't hold water, line with low permeable liner or treatment liner If infiltration rate is greater than 9 inches/hour (2.4 inches/hour in a critical aquifer recharge area).

N-2 Pond Area—Defective Vegetation: Vegetation such as grass and weeds needs to be mowed when height exceeds 18 inches. Mowed vegetation should be removed from areas where it could enter the pond, either when the pond level rises, or by rainfall runoff. Trees, brush, and shrubs are impeding maintenance or flow.

Maintenance Necessary to Bring to Standard: Mow vegetation to 4-5 inches in height. Remove trees, bushes and shrubs where they are interfering with pond maintenance activities; that is, at the inlet, outlet and near engineered structures. Some wetland species may require harvesting or special maintenance rather than mowing.

N-3 Pond Area—Algae Mats: When algae mats develop over more than 10% of the water surface, they should be removed. Also remove mats in the late summer before fall rains, especially in Sensitive Lake Protection Areas. Excessive algae mats interfere with dissolved oxygen content in the water and pose a threat to downstream lakes if excess nutrients are released.

Maintenance Necessary to Bring to Standard: Algae mats that cover more than 10% of the surface of any cell should be removed. A rake or mechanical device should be used to remove the algae. Removed algae can be left to dry on the pond slope above the 100-year water surface.

N-4 Pond Area—Trash and Debris: Accumulation that exceeds 1 cubic foot per 1000 square foot of pond area.

Maintenance Necessary to Bring to Standard: Trash and debris removed from pond. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

N-5 Pond Area—Sediment Accumulation: Sediment accumulations in pond bottom that exceeds the depth of sediment zone (typically 1') plus 6 inches, usually in the first cell.

Maintenance Necessary to Bring to Standard: Removal of sediment from pond bottom. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

N-6 Pond Area—Oil Sheen on Water: Prevalent and visible oil sheen.

Maintenance Necessary to Bring to Standard: Remove oil from water by use of oil-absorbent pads or vactor truck. Locate source and correct. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

N-7 Pond Area—Erosion: Erosion of the pond's side slopes and/or scouring of the pond bottom, that exceeds 6 inches, or where continued erosion is prevalent.

Maintenance Necessary to Bring to Standard: Slopes should be stabilized by using appropriate erosion control measures, and repair methods.

N-8 Pond Dike—Settlement: Any part of these components that has settled 4 inches or more lower than the design elevation, or inspector determines dike is unsound.

Maintenance Necessary to Bring to Standard: Dike is repaired to specifications.

N-9 Internal Dike—Concentrated Flow: Dike dividing cells should be level.

Maintenance Necessary to Bring to Standard: Build up low areas of dike or lower high areas so that the dike surface is level and water flows evenly over the entire length of the dike from the first cell to the second. Repair eroded areas and establish erosion control on areas that erode.

N-9 Inlet/Outlet Pipe—Trash and Debris: Inlet/outlet pipe clogged with sediment and/or debris material.

Maintenance Necessary to Bring to Standard: Remove sediment and/or debris so that there is no clogging or blockage in the inlet and outlet piping. Ensure outlet pipe (or T-section if applicable) retains floatables. Refer to the disposal guidelines in Appendix A for instructions on disposal of trash, debris and sediment.

N-10 Inlet/Outlet Pipe—Floatables are Captured: Floatable material is retained by outlet pipe or T-section.

Maintenance Necessary to Bring to Standard: Ensure outlet pipe (or T-section if applicable) retains floatables.

N-11 Overflow Spillway—Rock Missing: Rock is missing and soil is exposed at top of spillway or outside slope.

Maintenance Necessary to Bring to Standard: Replace rocks to specifications.

N-12 Access Ramp—In Useable Condition: Access ramp is capable of supporting trucks and maintenance equipment.

Maintenance Necessary to Bring to Standard: Repair ramp so it can support trucks and maintenance equipment.

Appendix A: Disposal of Trash Debris and Sediment

Appendix A

Disposal of Trash Debris and Sediment

Trash and Debris

Small amounts of trash and debris can be put into your solid waste container. Large amounts may require hiring a vendor to dispose of the material. If using a vendor, ensure that the vendor properly disposes of waste.

Sediment

1. Clean sediment may be used as landscape material or sent to yard waste recyclers.

2. Sediment that does not appear to be heavily contaminated with oil or grease can be double bagged and put into your solid waste container. Material that appears to be heavily contaminated must be disposed of by a qualified vendor.

If you have any questions, contact the Waste Characterization Program at 206-296-4633.

Additional information can be found at www.govlink.org/hazwaste/business/.

Appendix B: Facility Sketches

Figure B-1

Typical I Catch Basin

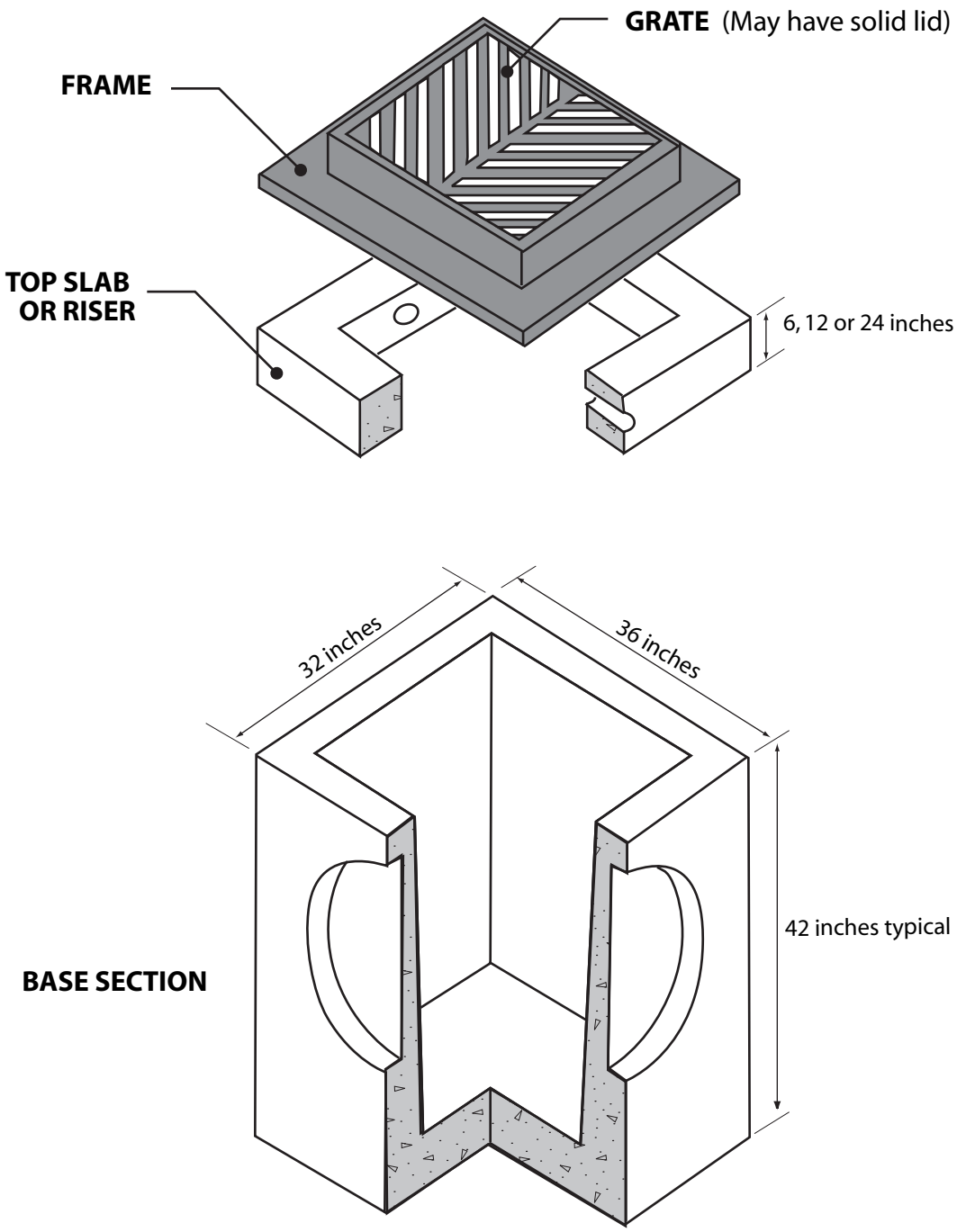
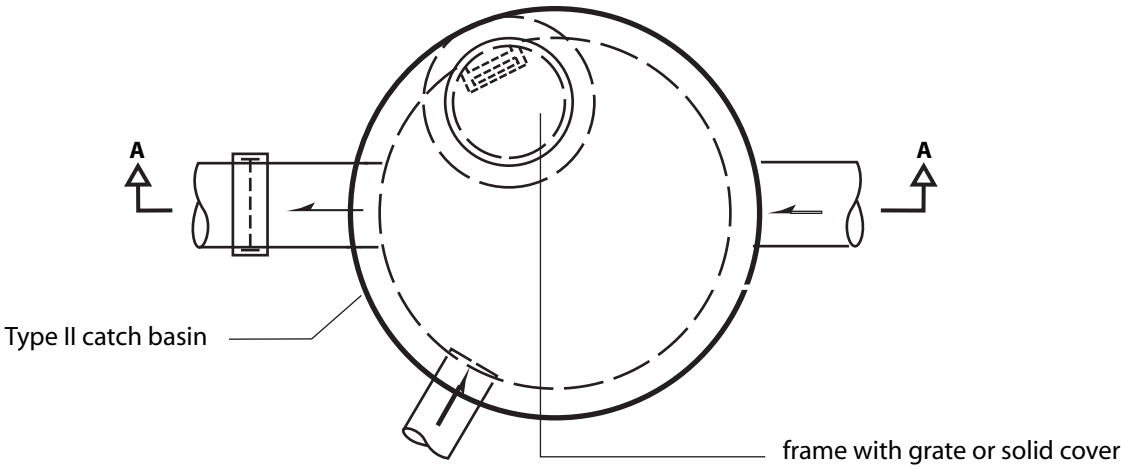


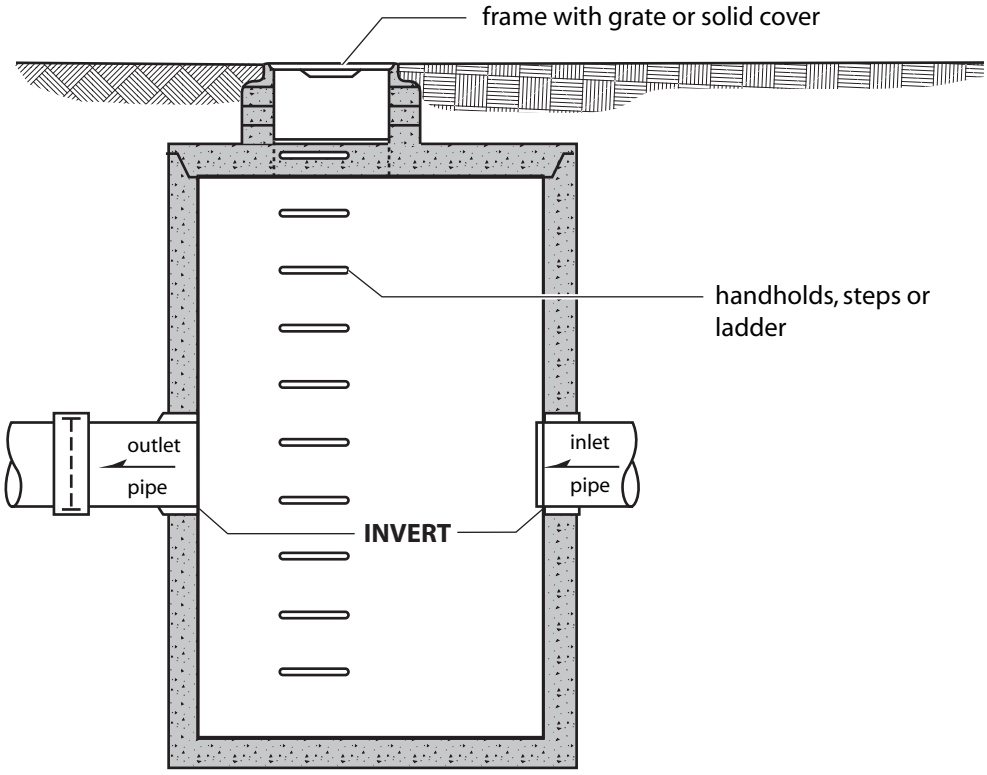
Figure B-2

Typical Type II Catch Basin

(Round Concrete Structure)



PLAN VIEW
shown with soil removed - not to scale

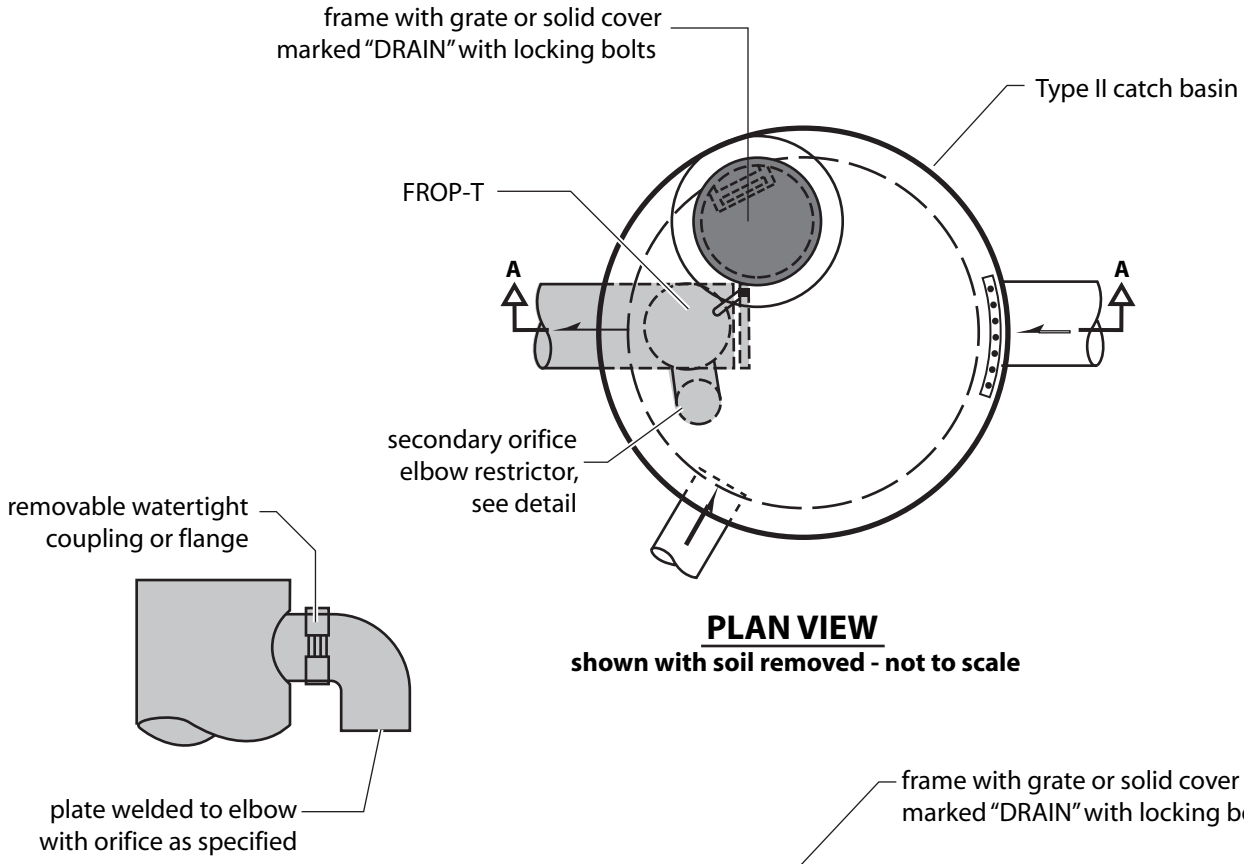


SECTION A-A
not to scale

Figure B-3

Typical Flow Restrictor (T-section)

(Found in Type 2 Catch Basins)



PLAN VIEW
shown with soil removed - not to scale

SECONDARY ORIFICE ELBOW RESTRICTOR DETAIL
not to scale

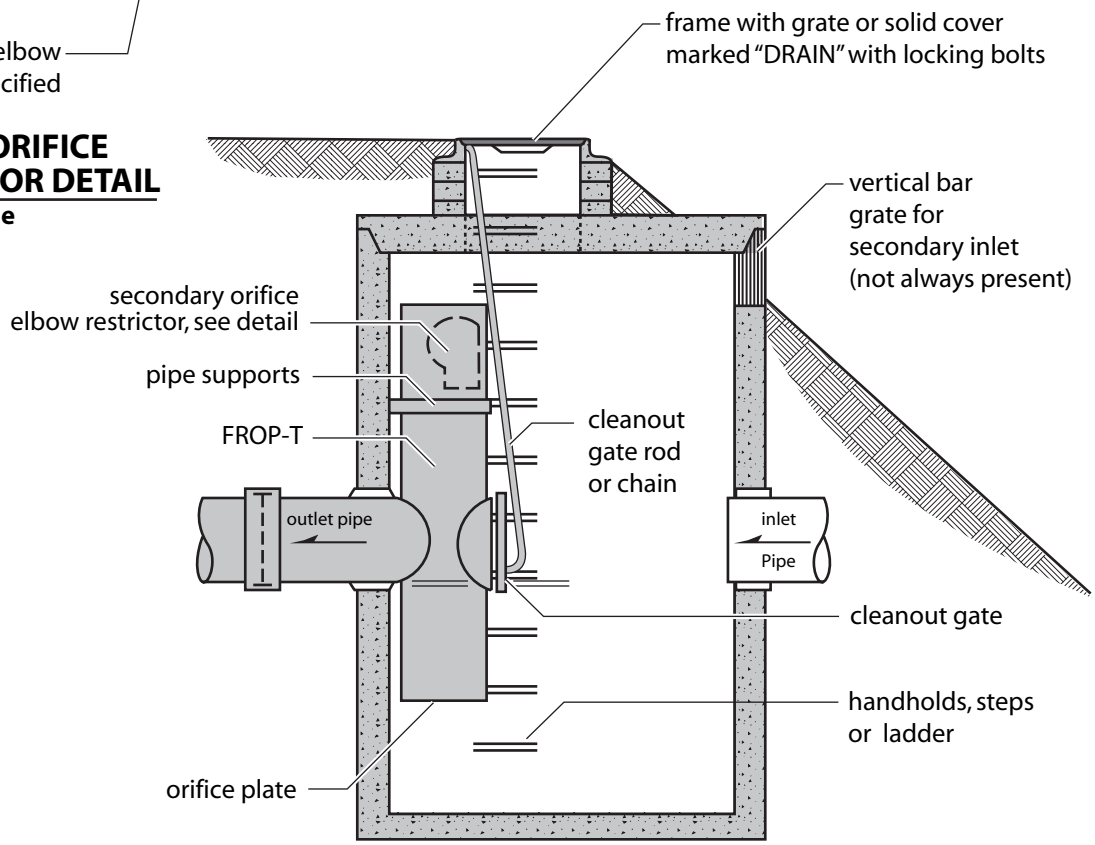


Figure B-4

Typical Detention Pond

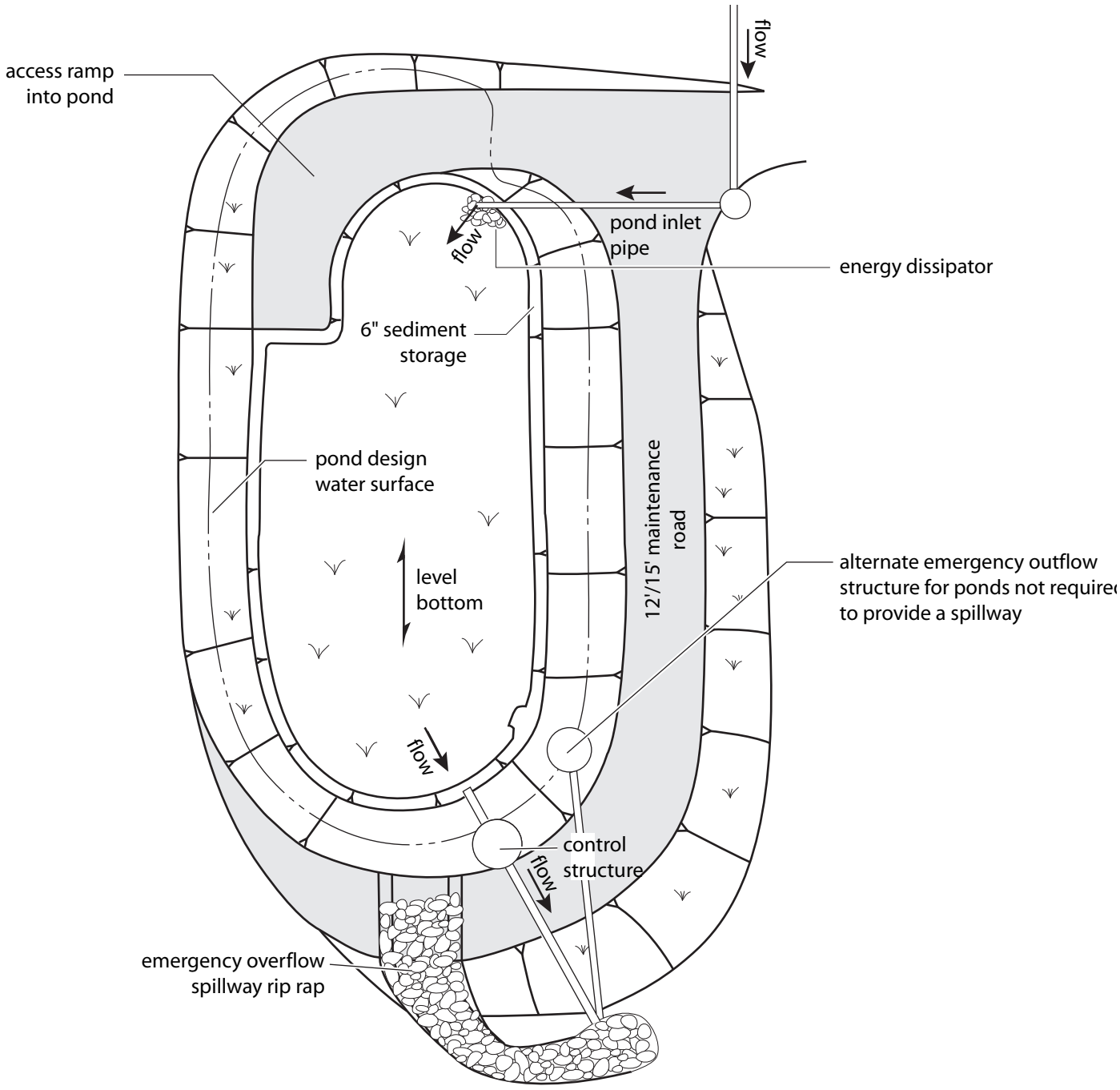
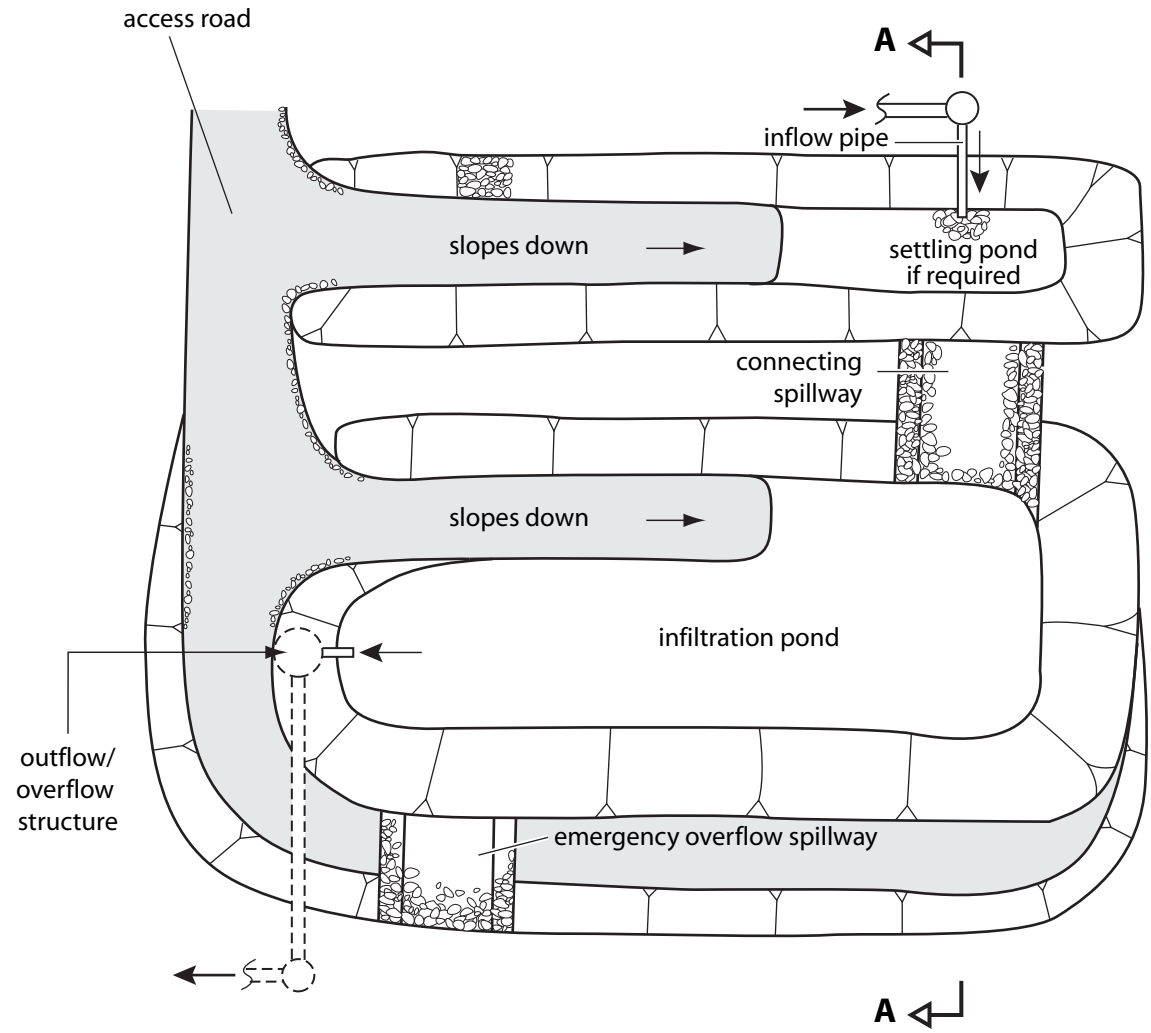
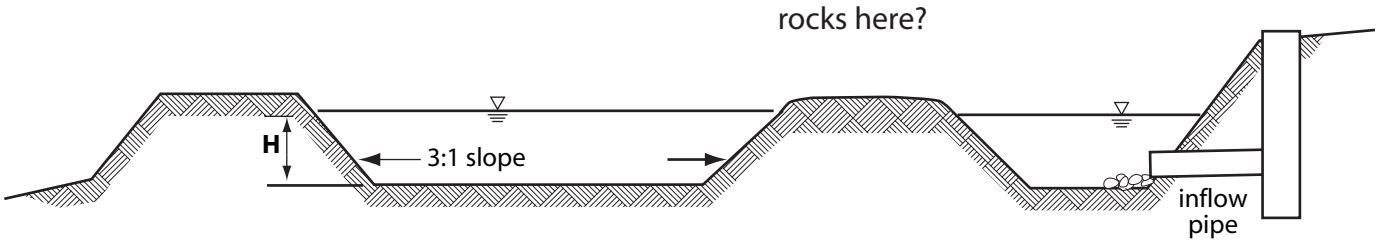


Figure B-5

Typical Infiltration Pond



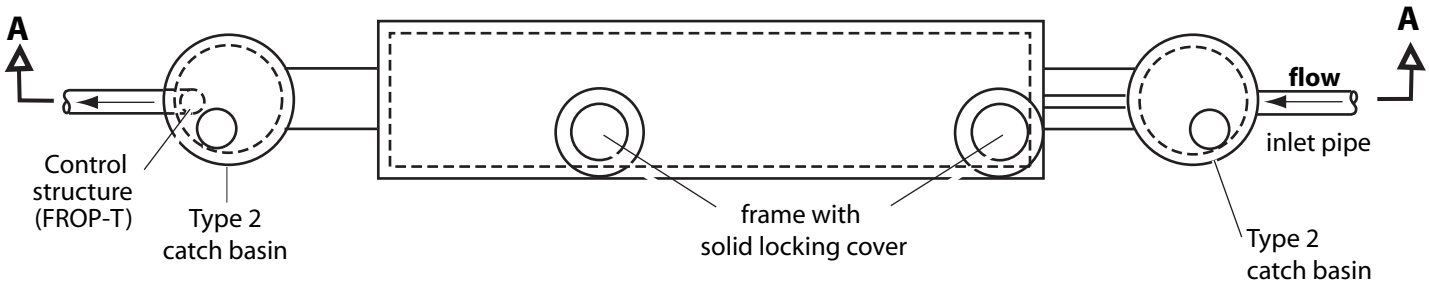
PLAN VIEW
not to scale



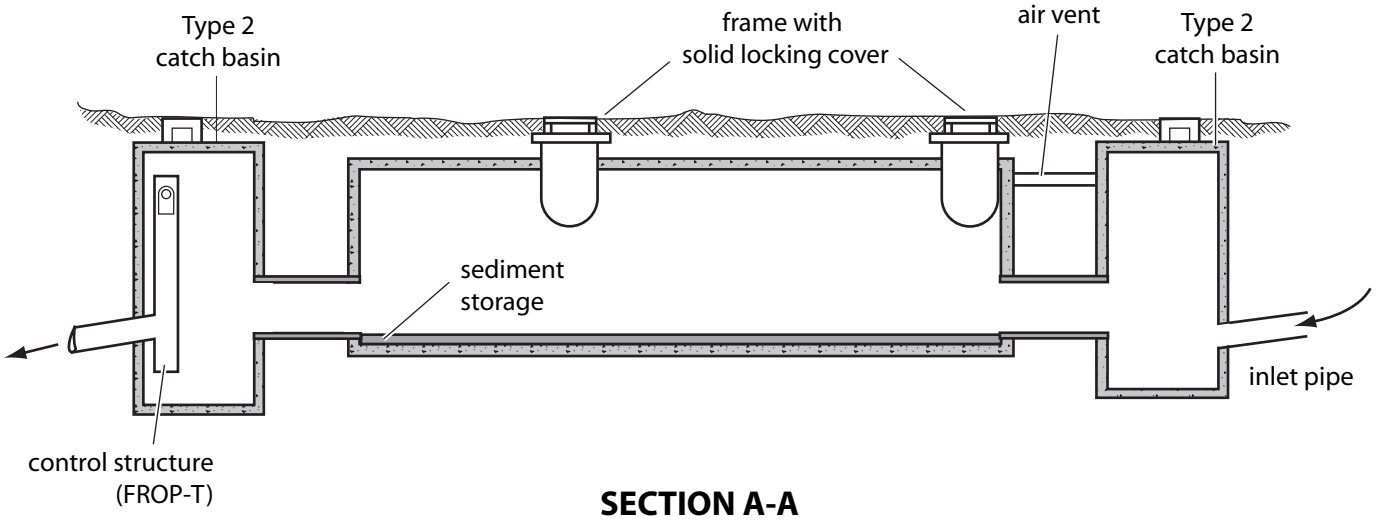
SECTION A-A
not to scale

Figure B-6

Typical Detention Tank



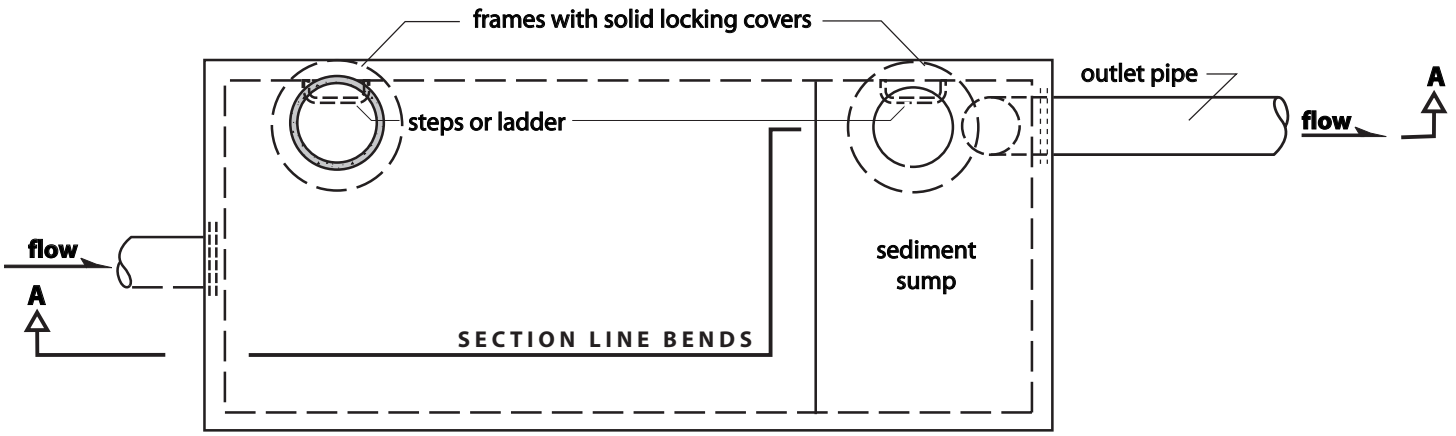
PLAN VIEW
Shown with soil removed - not to scale



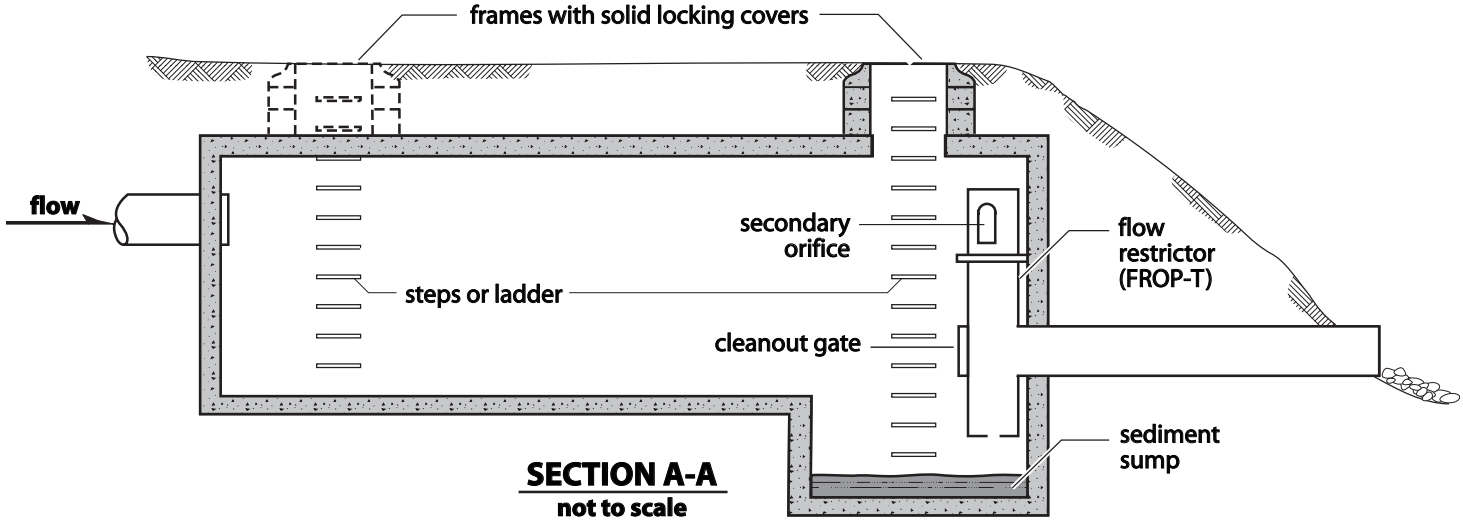
SECTION A-A
not to scale

Figure B-7

Typical Detention Vault



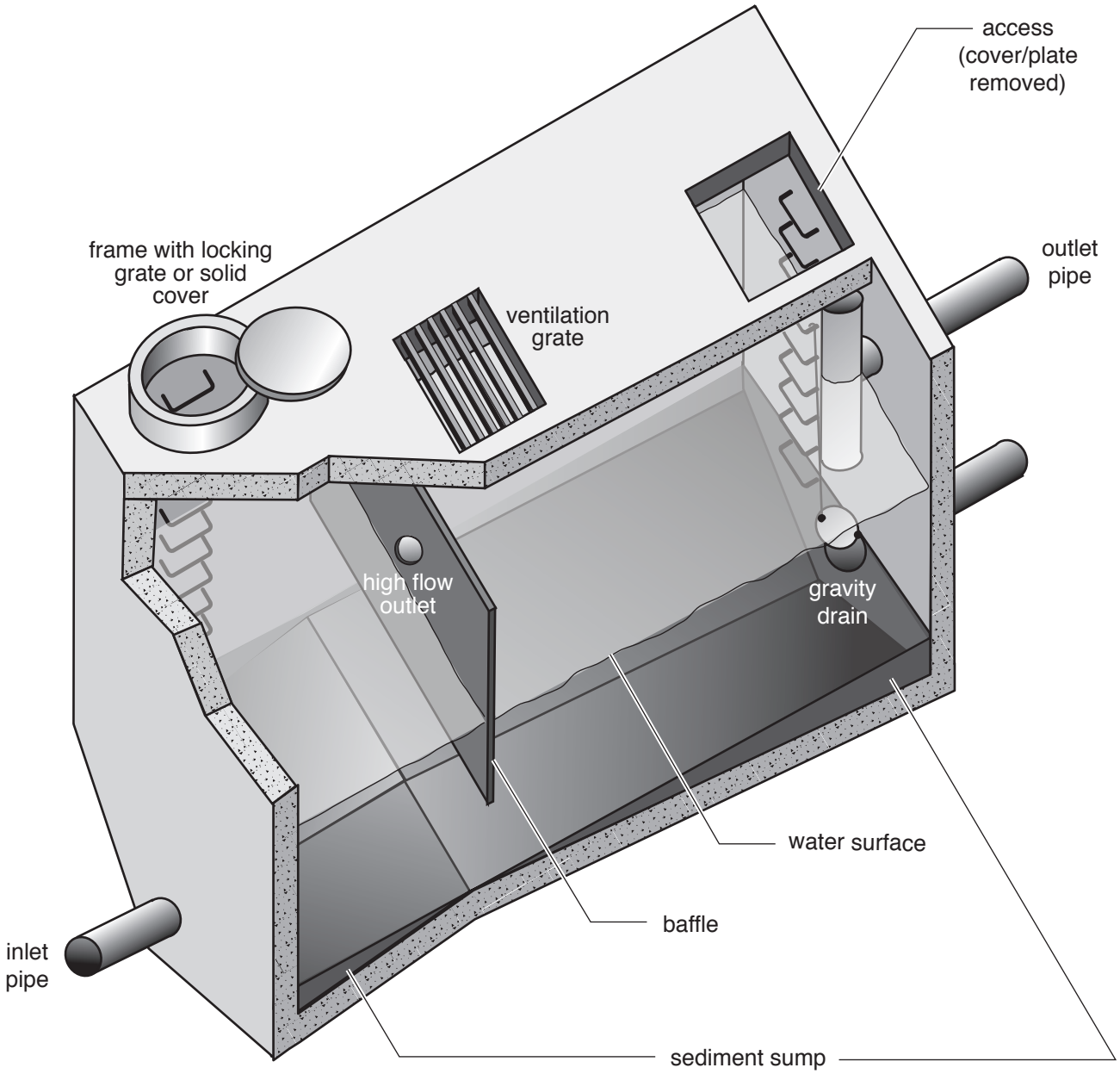
PLAN VIEW
Shown with soil removed - not to scale



SECTION A-A
not to scale

Figure B-8

Typical Wet Vault

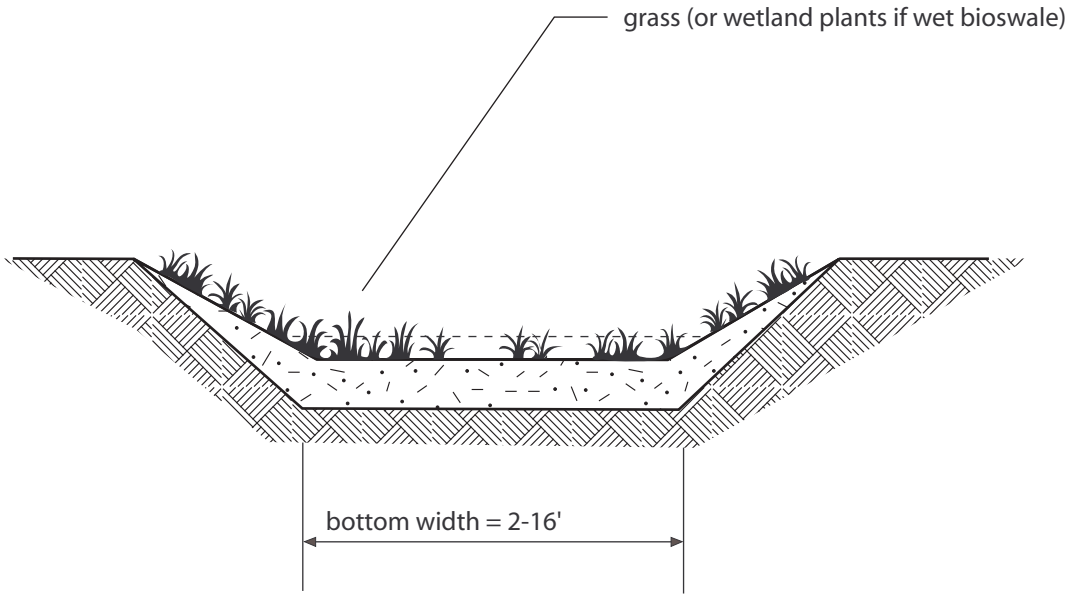


CUTAWAY ISOMETRIC VIEW
(with parts of top and sides removed)

not to scale

Figure B-9

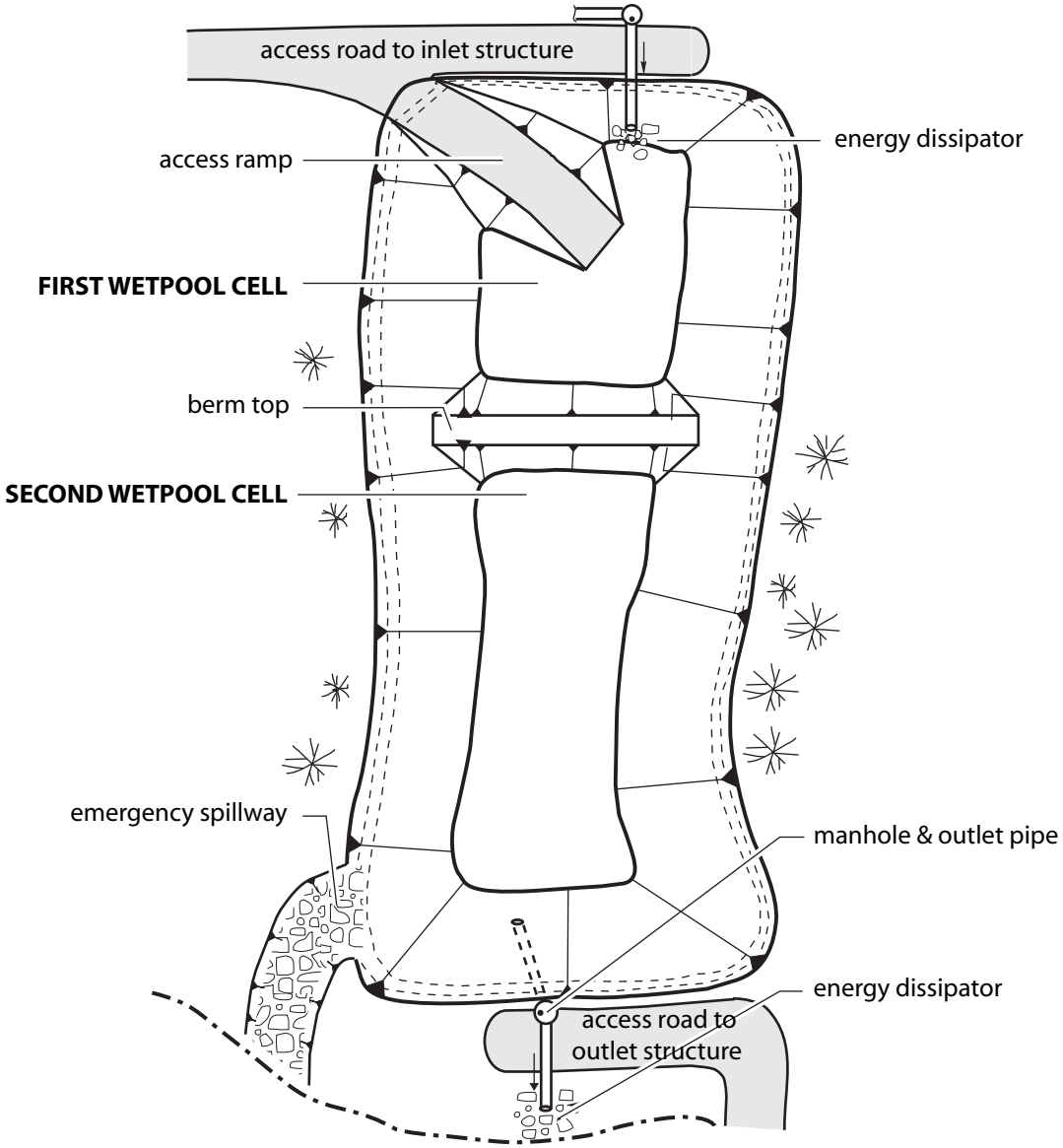
Typical Bioswale



BIOSWALE SECTION
not to scale

Figure B-10

Typical Wetpond

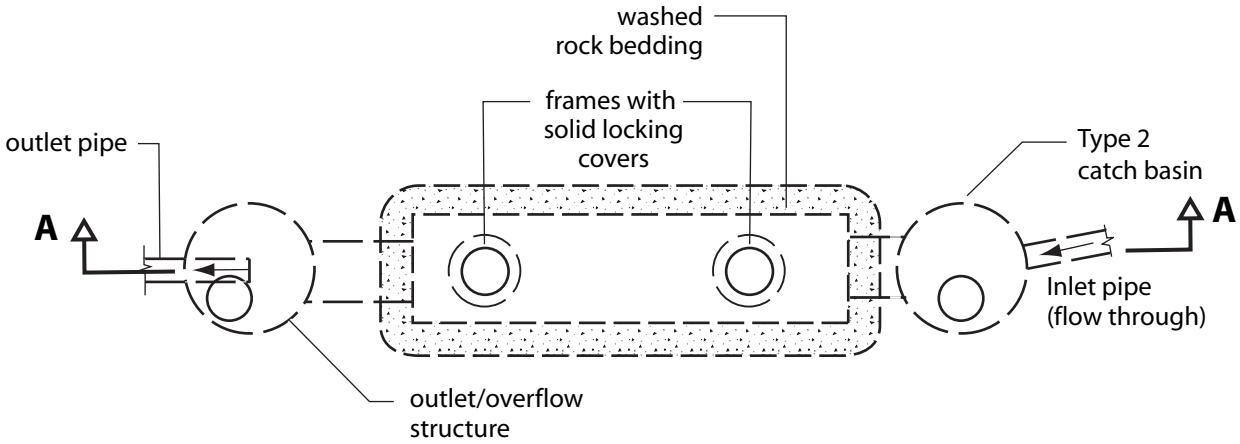


PLAN VIEW

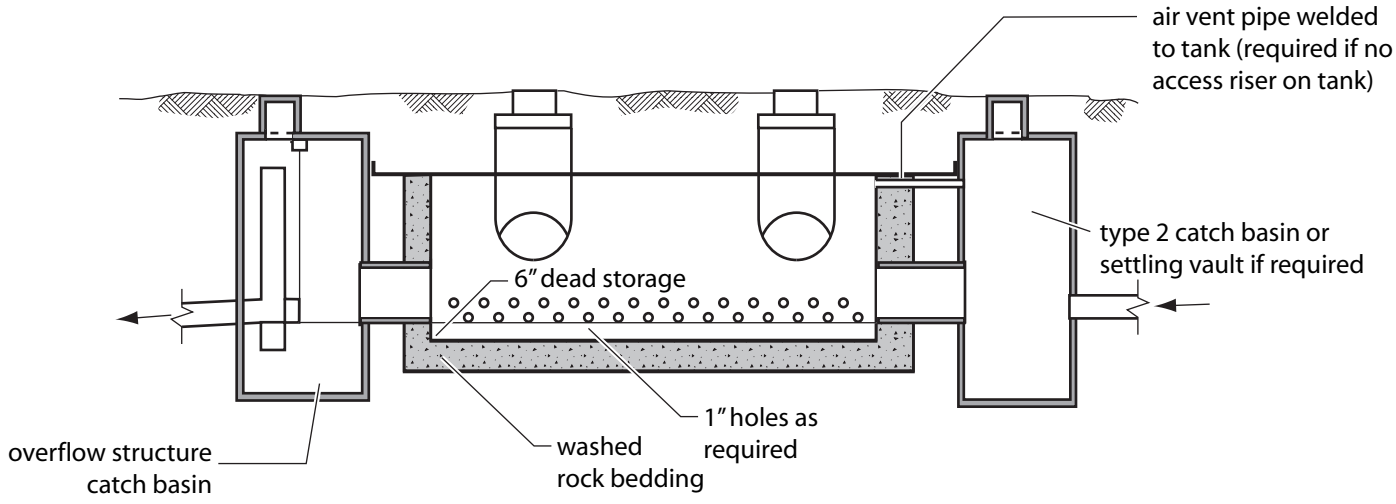
not to scale

Figure B-11

Typical Infiltration Tank



PLAN VIEW
not to scale



SECTION A-A

King County
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