



TABLE OF CONTENTS:

SHEET NO.	SHEET DESCRIPTION
<b>REFERENCE SHEETS</b>	
A	TITLE SHEET
B	GENERAL NOTES
C	RAINWISE SITE REQUIREMENTS - RAIN GARDENS
D	RAINWISE SITE REQUIREMENTS - CISTERNS
<b>DETAIL SHEETS</b>	
1	RAIN GARDEN PLAN
2	RAIN GARDEN SECTIONS
3	DOWNSPOUT TO RAIN GARDEN CONNECTIONS (1 OF 2)
4	DOWNSPOUT TO RAIN GARDEN CONNECTIONS (2 OF 2)
5	RAIN GARDEN OVERFLOW TYPE 1 - SURFACE OVERFLOWS (1 OF 2)
6	RAIN GARDEN OVERFLOW TYPE 1 - SURFACE OVERFLOWS (2 OF 2)
7	RAIN GARDEN OVERFLOW TYPE 2 - SUBSURFACE OVERFLOWS
8	TERRACED RAIN GARDENS
9	CISTERN SECTION
10	CISTERN FOUNDATION (1 OF 2)
11	CISTERN FOUNDATION (2 OF 2)
12	CISTERN OUTLETS
13	CISTERNS IN SERIES
14	CISTERN CONNECTIONS
15	CISTERN FITTINGS EXAMPLE

ABBREVIATIONS:

COS CITY OF SEATTLE  
 CSO COMBINED SEWER OVERFLOW  
 GPM GALLONS PER MINUTE  
 PVC POLYVINYL CHLORIDE  
 SF SQUARE FEET  
 TYP TYPICAL  
 UPC UNIFORM PLUMBING CODE

REFERENCE MATERIALS:

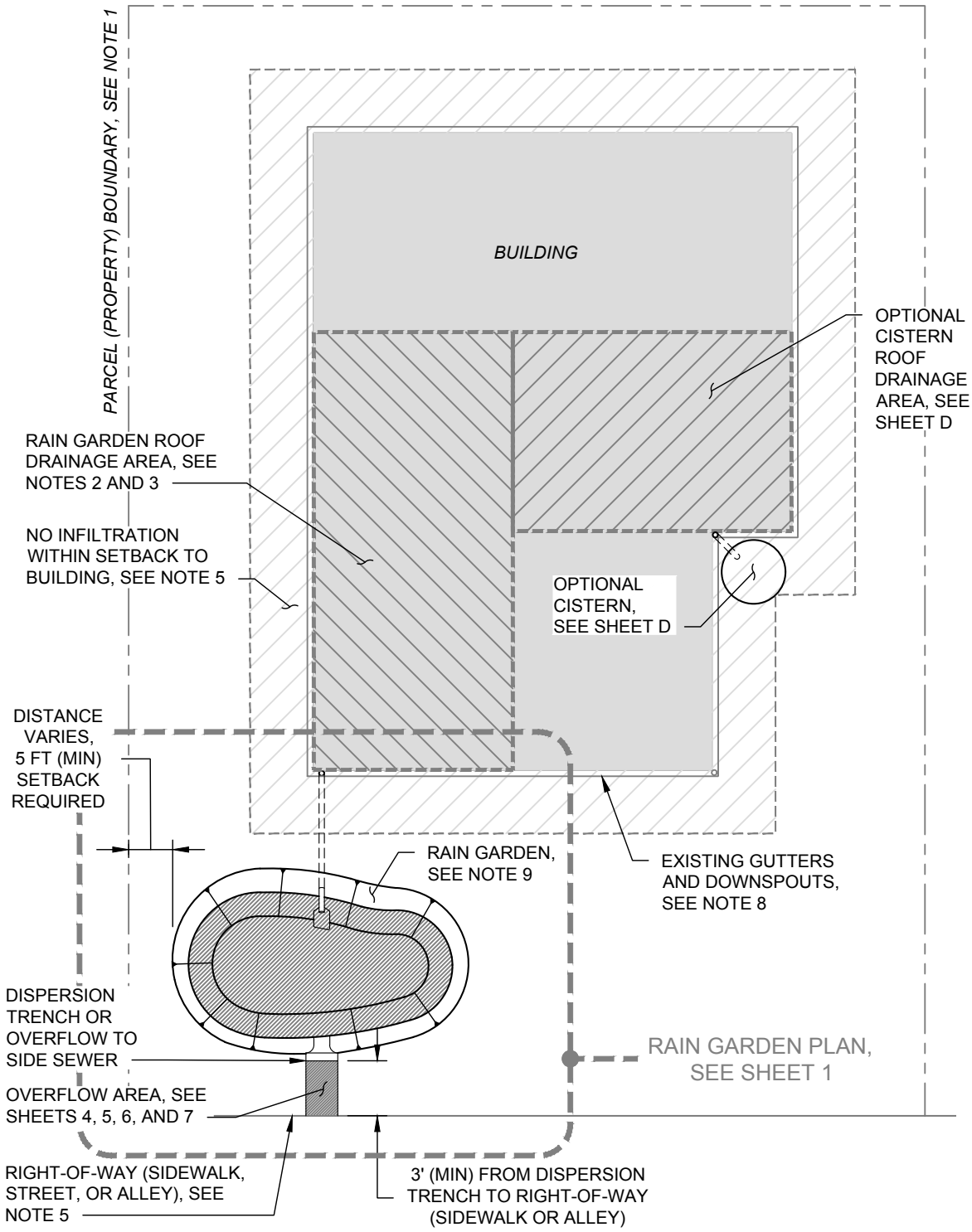
- RAINWISE SIZING AND REBATE TABLES AND CISTERN REBATE CALCULATOR  
<https://700milliongallons.org/rainwise/contractor-resources/>
- SEATTLE STORMWATER MANUAL  
[http://www.seattle.gov/sdci/codes/codes-we-enforce-\(a-z\)/stormwater-code](http://www.seattle.gov/sdci/codes/codes-we-enforce-(a-z)/stormwater-code)
- RAIN GARDEN HANDBOOK FOR WESTERN WASHINGTON  
<https://fortress.wa.gov/ecy/publications/publications/1310027.pdf>
- SEATTLE GREEN FACTOR PLANT LIST  
<https://www.seattle.gov/documents/Departments/SDCI/Codes/GreenFactorPlantList2010.pdf>
- SEATTLE RIGHT-OF-WAY IMPROVEMENTS MANUAL  
<https://streetsillustrated.seattle.gov>
- SEATTLE STANDARD SPECIFICATIONS AND STANDARD PLANS  
<http://www.seattle.gov/utilities/construction-resources/design-standards/standard-specs-and-plans>
- SEATTLE SIDE SEWER PERMIT REQUIREMENTS  
<http://www.seattle.gov/dpd/permits/permittypes/sidesewer/>
- SEATTLE DIRECTOR'S RULES  
<http://web6.seattle.gov/dpd/dirrulesviewer/>
- SEATTLE LAND USE CODE  
[http://seattle.gov/sdci/codes/codes-we-enforce-\(a-z\)/land-use-code](http://seattle.gov/sdci/codes/codes-we-enforce-(a-z)/land-use-code)
- UNIFORM PLUMBING CODE AS AMENDED BY THE CITY OF SEATTLE  
[https://www.seattle.gov/sdci/codes/codes-we-enforce-\(a-z\)/plumbing-code](https://www.seattle.gov/sdci/codes/codes-we-enforce-(a-z)/plumbing-code)



## RAINWISE GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE CURRENT CITY OF SEATTLE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION; THE CITY OF SEATTLE STANDARD PLANS FOR MUNICIPAL CONSTRUCTION, CURRENT EDITION; CITY OF SEATTLE DIRECTORS RULES: 5-2009, 5-2004, 31-2017, 4-2019, 11-2020, 10-2021; AND CODES ADOPTED BY REFERENCE INCLUDING THE SEATTLE BUILDING CODE AND SEATTLE FIRE CODE.
2. A RAINWISE PROJECT MUST MITIGATE RUNOFF FROM AT LEAST 400 SQUARE FEET OF TOTAL ROOF AREA TO QUALIFY FOR A RAINWISE REBATE. A CISTERN MUST COLLECT RUNOFF FROM A MINIMUM OF 300 SQUARE FEET OF ROOF AREA; THERE IS NO MINIMUM ROOF AREA FOR A RAINGARDEN.
3. ROOF DRAINAGE AREAS GREATER THAN 2,000 SQUARE FEET **REQUIRES CONSULTATION WITH RAINWISE INSPECTOR**. ROOF DRAINAGE AREAS GREATER THAN 2,000 SQUARE FEET ARE NOT ELIGIBLE FOR A PRE-INSPECTION WAIVER.
4. ALL DISCHARGE FROM RAIN GARDENS AND/OR CISTERNS MUST BE SAFELY CONVEYED OFF SITE BELOW GROUND IN A SIDE SEWER OR ABOVE GROUND TO THE RIGHT-OF-WAY. DISCHARGE MUST HAVE A SAFE FLOW PATHWAY WITHIN THE RIGHT-OF-WAY TO THE PUBLIC DRAINAGE SYSTEM (MANMADE OR NATURAL) THAT DOES NOT HARM PRIVATE OR PUBLIC PROPERTY OR STRUCTURES.
5. IN ACCORDANCE WITH VOLUME 3, SECTION 4.3 OF COS DIRECTOR'S RULE 10-2021 (SEATTLE STORMWATER MANUAL), OVERFLOW CONVEYANCE MUST SAFELY CONVEY THE 25-YEAR STORM.
6. ALL CONVEYANCE PIPE DOWNSTREAM OF THE EXISTING DOWNSPOUT MUST MEET RAINWISE REQUIREMENTS.
7. CONNECTIONS TO A SIDE SEWER MAY REQUIRE A SEPARATE SIDE SEWER PERMIT AND INSPECTION. A SIDE SEWER PERMIT AND INSPECTION IS NEEDED IF:
  - THE SIDE SEWER CONNECTION IS NEW, OR
  - THE SIDE SEWER CONNECTION IS MADE BELOW GRADE, OR
  - THE PROJECT RESULTS IN MORE ROOF AREA CONNECTED TO THE SIDE SEWER.
8. DOWNSPOUT TO RAIN GARDEN PIPES SHALL BE A MINIMUM OF 3-INCHES IN DIAMETER. SEE SHEET 3 FOR COMPLETE SIZING REQUIREMENTS.
9. RAIN GARDEN OVERFLOW PIPES SHALL BE A MINIMUM OF 4-INCHES IN DIAMETER. SEE SHEET 7 FOR COMPLETE SIZING REQUIREMENTS.
10. CISTERN OVERFLOW PIPES SHALL BE A MINIMUM OF 3-INCHES IN DIAMETER. SEE SHEET 12 FOR COMPLETE SIZING REQUIREMENTS.
11. PIPE MATERIAL SHALL BE
  - SDR 35 PVC AND SHALL MEET ASTM D 3034,
  - SCHEDULE 40 OR SCHEDULE 80 PVC AND SHALL MEET ASTM D 1785, F 1732, OR D 2729 WITH FITTINGS PER ASTM D 2466 AND D 2467,
  - OR APPROVED EQUAL.
12. FLEXIBLE TUBING OR HOSE MAY ONLY BE USED FOR A PORTION OF CISTERN FLOW CONTROL OUTLET PIPING, SEE SHEET 15. TUBING OR HOSE SHALL BE NON-CLEAR AND UV RESISTANT.
13. DRAIN, WASTE, AND VENT (DWV) PIPING SHALL NOT BE USED. PIPE DUAL MARKED FOR DWV AND PRESSURE APPLICATIONS IS ALLOWED.
14. PER UPC 2.3.3, PIPES SHALL NOT BE EXPOSED TO DIRECT SUNLIGHT. PIPES MAY BE PAINTED BY HOMEOWNER IF THE HOMEOWNER AGREES TO PERFORM SUCH WORK. PAINT SHALL BE APPROPRIATE FOR PIPE MATERIAL TYPE.
15. PIPES NOT FULLY BURIED SHALL BE ANCHORED TO THE GROUND OR AGAINST A WALL TO RESIST MOVEMENT.
16. PER UPC 2.5.2, PIPES SHALL BE SUPPORTED EVERY 4 FEET HORIZONTALLY, AT EVERY CHANGE IN DIRECTION, AT EVERY JOINT, AND EVERY 8 FEET VERTICALLY. PIPE SUPPORTS SHALL BE SECURED TO A FIRM SUBSTRATE. PIPE SUPPORTS SHALL BE DOUBLE-ANCHORED PIPE HANGER STRAPPING, HANGERS, OR APPROVED EQUAL.
17. ALL PIPE AND FITTING JOINTS SHALL BE WATERTIGHT AND GLUED, BONDED, OR MECHANICALLY SECURED AS APPROPRIATE PER PIPE MATERIAL.
18. ANY FLOW CONTROL OUTLET MUST REMAIN OPEN DURING THE WET SEASON (SEPTEMBER TO MAY).
19. CISTERNS WITH HEIGHT GREATER THAN THE NARROWEST DIMENSION (LENGTH, WIDTH, DIAMETER) SHALL BE RESTRAINED, AT INSPECTOR'S DISCRETION, TO PREVENT OVERTURNING.

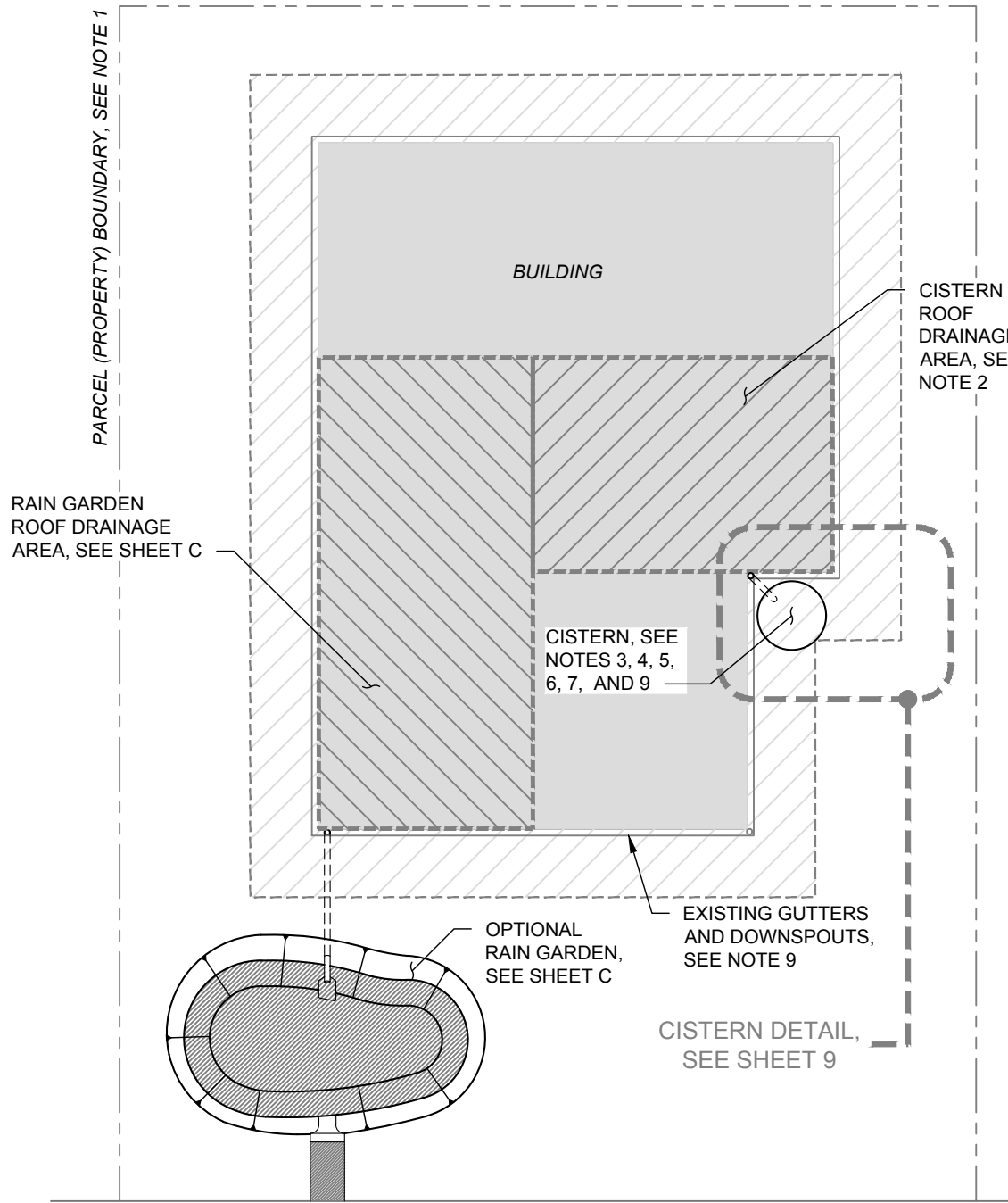
# RAINWISE SITE REQUIREMENTS - RAIN GARDENS



## RAINWISE RAIN GARDEN SITE REQUIREMENTS:

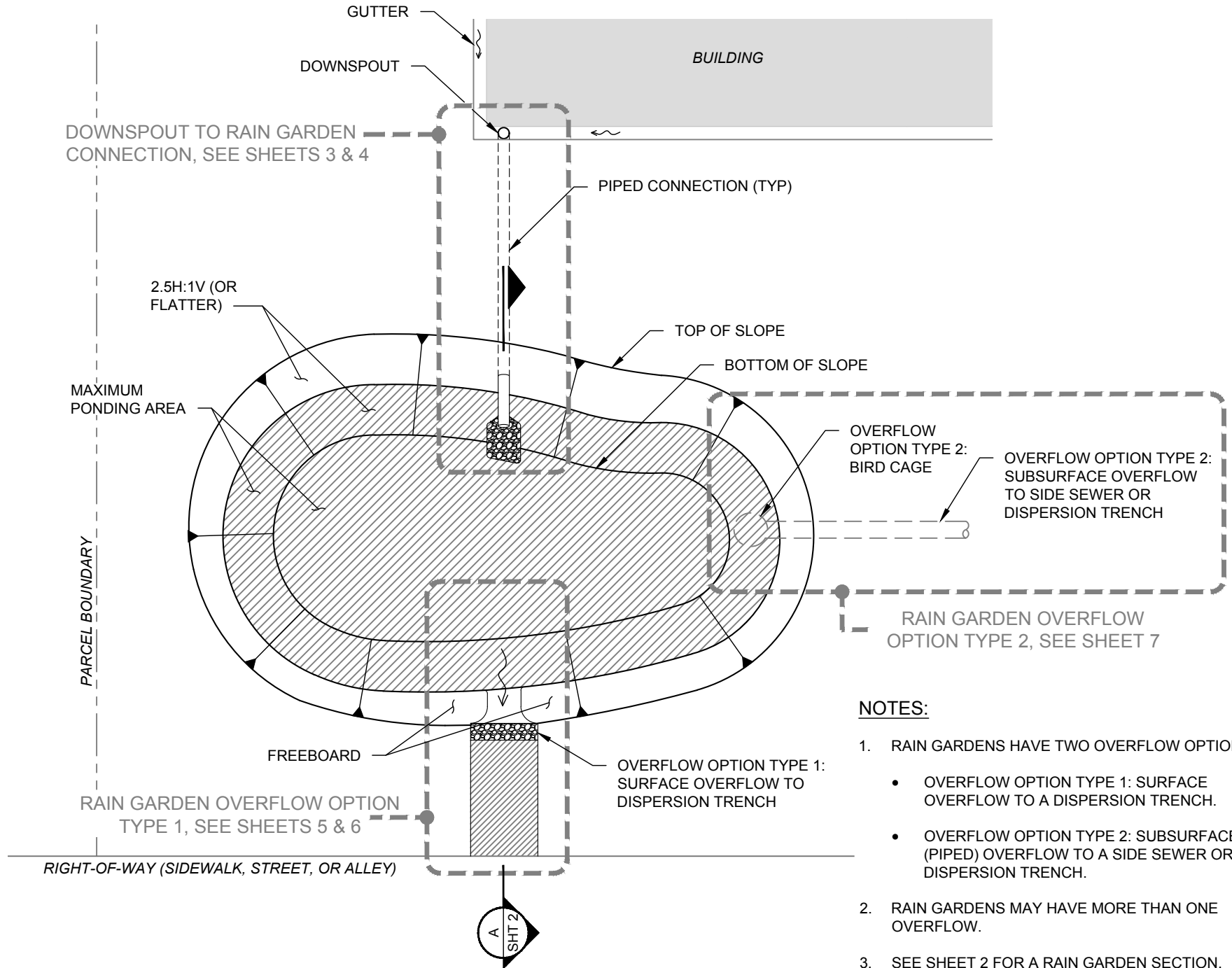
1. SUBJECT PARCEL MUST BE IN A QUALIFYING CSO BASIN.
2. A RAINWISE PROJECT MUST MITIGATE RUNOFF FROM AT LEAST 400 SQUARE FEET OF ROOF AREA (TOTAL) TO QUALIFY FOR A RAINWISE REBATE. THERE IS NO MINIMUM ROOF AREA THAT MUST BE CONVEYED TO A RAIN GARDEN.
3. PROJECTS INFILTRATING MORE THAN 2,000 SQUARE FEET OF IMPERVIOUS SURFACE MUST ADHERE TO THE SEATTLE STORMWATER MANUAL.
4. NO MORE THAN 1,000 SQUARE FEET OF CONTRIBUTING IMPERVIOUS SURFACE MAY OVERFLOW TO CITY SIDEWALK AT A SINGLE LOCATION. SYSTEMS IN EXCESS OF 1,000 SQUARE FEET SHALL HAVE TWO OR MORE OVERFLOWS (AS NECESSARY), EACH SEPARATED BY A DISTANCE OF 10 FEET OR MORE.
5. FOR BUILDINGS WITHOUT A BASEMENT, INFILTRATION IS PROHIBITED WITHIN 5 FOOT SETBACK. FOR BUILDINGS WITH A BASEMENT, INFILTRATION IS PROHIBITED WITHIN SETBACK DISTANCE 2 TIMES BASEMENT DEPTH, MINIMUM 10 FOOT SETBACK. THIS INCLUDES NEIGHBORING BUILDINGS. CONVEYANCE WITHIN EITHER SETBACK MUST BE IMPERVIOUS (I.E., LINED OR PIPED).
6. INFILTRATION IS PROHIBITED WITHIN A DISTANCE OF 2 TIMES THE WALL HEIGHT OF A RETAINING WALL OR ROCKERY AS MEASURED FROM THE BOTTOM OF THE EXPOSED FACE OF THE WALL TO THE WALL TOP, SEE SHEET 6.
7. RAIN GARDEN OVERFLOWS TO THE RIGHT-OF-WAY MUST ENTER THE STORMWATER OR COMBINED SEWER SYSTEM. OVERFLOWS SHALL NOT ENTER PRIVATE PROPERTY OR CAUSE PONDING.
8. REMOVE DOWNSPOUT PIPING AND PLUG AND SEAL GUTTER INLETS AT ALL ABANDONED DOWNSPOUT LOCATIONS.
9. FOR RAIN GARDEN SIZING, REFER TO RAINWISE REBATE CALCULATOR.

# RAINWISE SITE REQUIREMENTS - CISTERNS



## RAINWISE CISTERN SITE REQUIREMENTS:

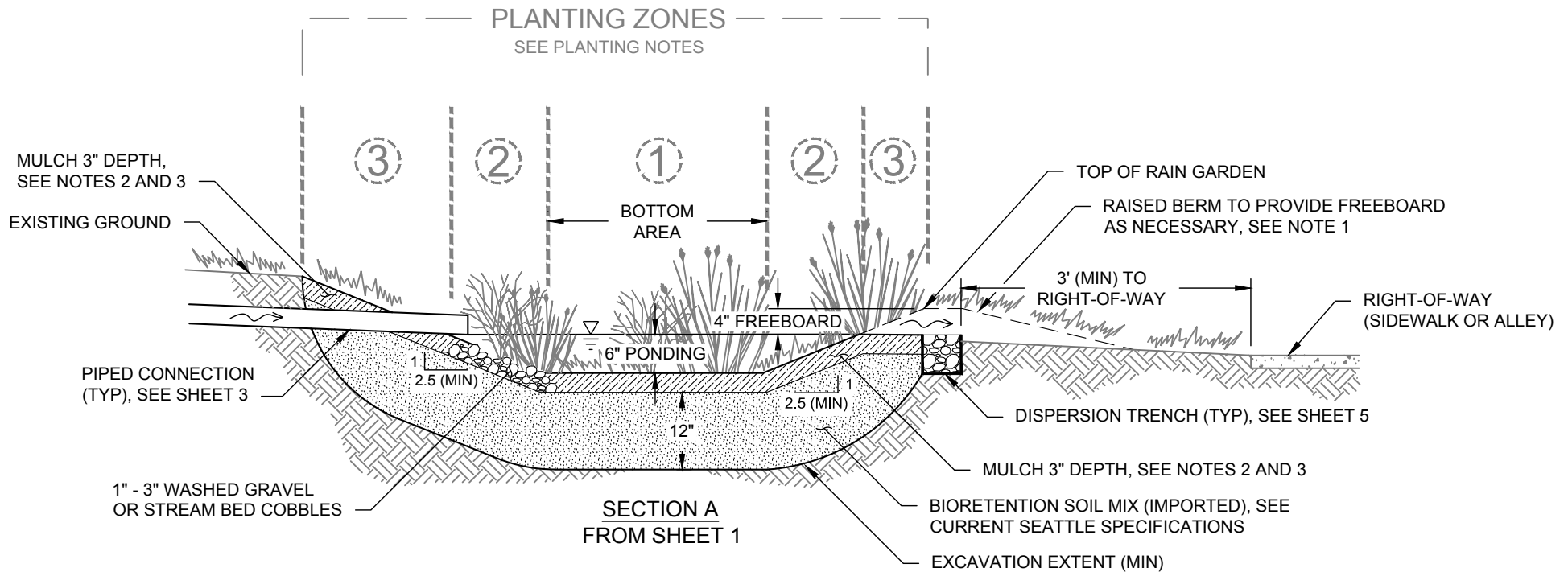
1. SUBJECT PARCEL MUST BE IN A QUALIFYING CSO BASIN.
2. A RAINWISE PROJECT MUST MITIGATE RUNOFF FROM AT LEAST 400 SQUARE FEET OF ROOF AREA (TOTAL) TO QUALIFY FOR A RAINWISE REBATE. A MINIMUM OF 300 SQUARE FEET OF ROOF AREA MUST BE COLLECTED AND CONVEYED TO A CISTERN.
3. NO MORE THAN 1,000 SQUARE FEET OF CONTRIBUTING IMPERVIOUS SURFACE MAY OVERFLOW TO CITY SIDEWALK AT A SINGLE LOCATION. SYSTEMS IN EXCESS OF 1,000 SQUARE FEET SHALL HAVE TWO OR MORE OVERFLOWS (AS NECESSARY), EACH SEPARATED BY A DISTANCE OF 10 FEET OR MORE.
4. QUALIFYING CISTERNS MUST HAVE A MINIMUM MANUFACTURER-SPECIFIED STORAGE VOLUME OF 200 GALLONS AND A MINIMUM HEAD OF 2.0 FEET. CISTERN LOW FLOW ORIFICE SIZE IS PROJECT SPECIFIC AND MUST MATCH REQUIRED SIZE REPORTED IN THE RAINWISE REBATE CALCULATOR.
5. ROUTE CISTERN OVERFLOWS TO RAIN GARDEN, RIGHT-OF-WAY, OR SANITARY SEWER. CISTERN OVERFLOWS TO A RAIN GARDEN SHALL MEET ALL RAIN GARDEN REQUIREMENTS. CISTERN OVERFLOWS TO THE RIGHT-OF-WAY MUST ENTER THE STORMWATER OR COMBINED SEWER SYSTEM. OVERFLOWS SHALL NOT ENTER PRIVATE PROPERTY OR CAUSE PONDING.
6. IN ADDITION TO OTHER APPLICABLE MUNICIPAL CODES (SEE SHEET B), CISTERN SITING MUST COMPLY WITH SETBACK AND YARD REQUIREMENTS ESTABLISHED IN SEATTLE LAND USE CODE. SPECIFICALLY, CISTERNS MORE THAN 4.5 FEET TALL, 4 FEET WIDE, AND 600 GALLONS IN VOLUME SHALL NOT:
  - BE LOCATED CLOSER THAN 3 FEET FROM A SIDE LOT LINE,
  - BE CLOSER THAN 20 FEET FROM A REAR LOT LINE OR THE CENTERLINE OF AN ALLEY ABUTTING THE REAR LOT LINE, OR
  - BE CLOSER THAN 15 FEET FROM THE FRONT LOT LINE.
 CISTERNS SMALLER THAN THOSE GOVERNED BY CODE ARE NOT SUBJECT TO THE SAME SITING RESTRICTIONS AND MAY BE LOCATED WITHIN THESE SETBACKS.
7. CISTERN VOLUME SHALL NOT BE GREATER THAN 5,000 GALLONS.
8. CISTERNS SITING MUST ALLOW FOR MAINTENANCE ACCESS.
9. REMOVE DOWNSPOUT PIPING AND PLUG AND SEAL GUTTER INLETS AT ALL ABANDONED DOWNSPOUT LOCATIONS.
10. FOR CISTERN SIZING, REFER TO RAINWISE REBATE CALCULATOR.



**NOTES:**

1. RAIN GARDENS HAVE TWO OVERFLOW OPTIONS:
  - OVERFLOW OPTION TYPE 1: SURFACE OVERFLOW TO A DISPERSION TRENCH.
  - OVERFLOW OPTION TYPE 2: SUBSURFACE (PIPED) OVERFLOW TO A SIDE SEWER OR DISPERSION TRENCH.
2. RAIN GARDENS MAY HAVE MORE THAN ONE OVERFLOW.
3. SEE SHEET 2 FOR A RAIN GARDEN SECTION.

PATH: C:\p\proj\2012\12-03376-000\CAD\Drawings\RainWise\_22-1017.dwg



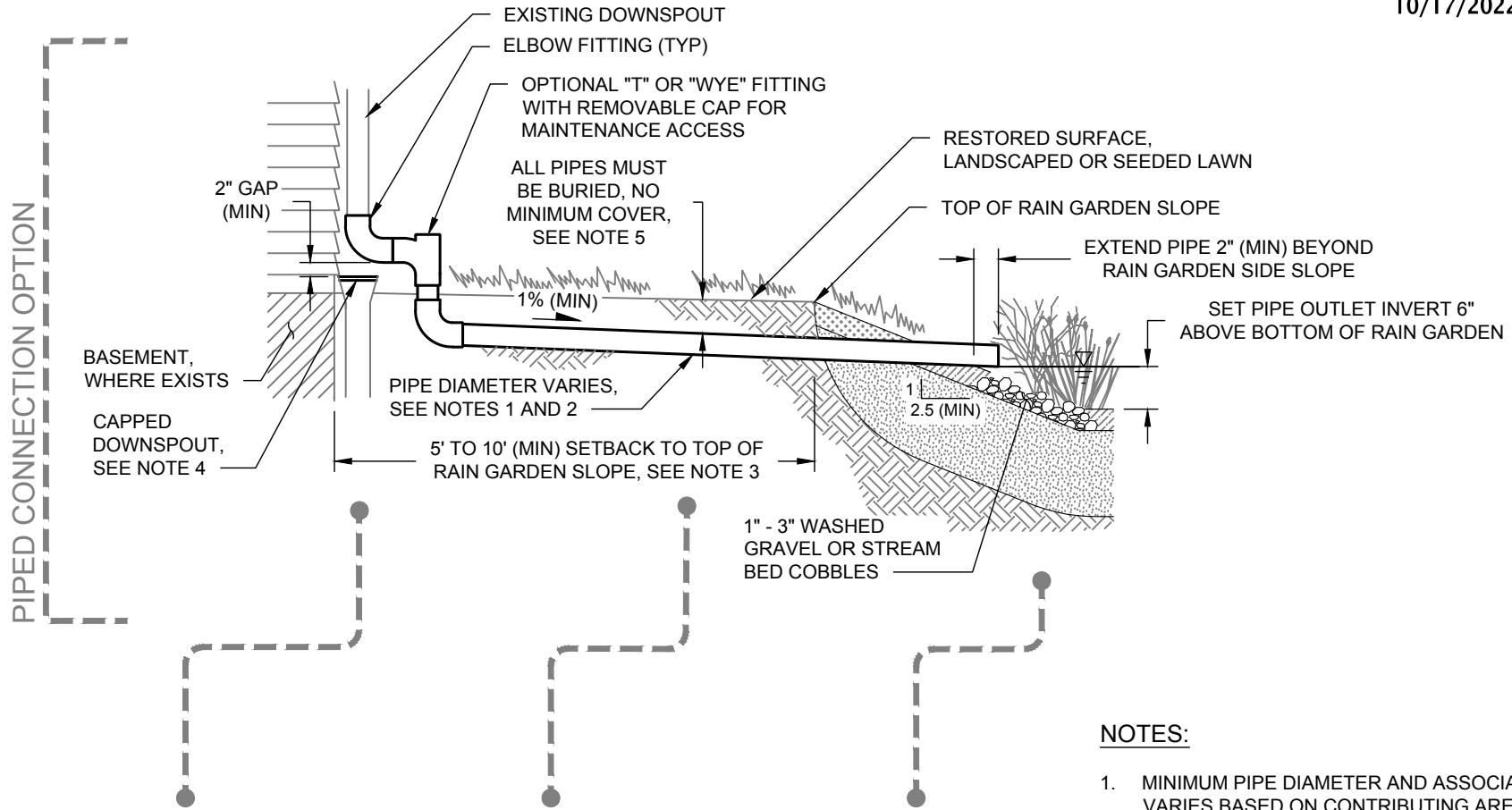
## PLANTING NOTES:

1. REFER TO THE RAIN GARDEN HANDBOOK FOR WESTERN WASHINGTON AND THE SEATTLE GREEN FACTOR PLANT LIST FOR GUIDANCE ON PLANT SELECTION SITING AND SPACING BY ZONE. ZONE 1: WET CONDITION PLANTS, ZONE 2: PLANTS THAT TOLERATE OCCASIONAL STANDING WATER, ZONE 3: DRIER CONDITION PLANTS.
2. PLANT MATERIAL MUST BE PERENNIAL AND ADAPTED TO THE CONDITIONS ENCOUNTERED IN ITS LOCATION IN THE RAIN GARDEN.
3. EVERGREEN AND DECIDUOUS VEGETATION MAY BE USED BUT THE MAJORITY OF MATERIAL MUST PROVIDE A SIGNIFICANT ABOVE GROUND PRESENCE YEAR ROUND.
4. PLANT MATERIAL MUST BE OF A SUFFICIENT DENSITY TO ACHIEVE A MINIMUM OF 80% CANOPY COVER AFTER THE 3 YEAR ESTABLISHMENT PERIOD.
5. RAIN GARDEN PLANTING DESIGN SHOULD MINIMIZE COMPACTION OF BIORETENTION SOIL THROUGH PLANNED ACCESS. ANNUAL PLANTS REQUIRING SOIL DISTURBANCE FOR HARVESTING (E.G., CARROTS) OR YEARLY REPLANTING ARE NOT PERMITTED.

## NOTES:

1. RAISED BERM SHALL BE FIRM, UNDISTURBED, NON-YIELDING NATIVE SOIL OR DISTURBED SITE SOILS COMPACTED WITH 12 POUND HAND TAMPER IN 3 INCH LIFTS. IF SITE SOILS ARE SANDY, CONSIDER IMPORTING DENSER, NON-PERMISSIVE SOILS FOR RAISED BERM.
2. USE WOOD-BASED MULCH, PREFERABLY ARBORIST CHIPS. ROCK MULCH, BARK CHIP MULCH, OR DRY STREAMS ARE NOT PERMITTED WITHIN THE RAIN GARDEN.
3. MULCH SHALL COMPLY WITH REQUIREMENTS FOR "COARSE MULCH" SET FORTH IN SEATTLE STANDARD SPECIFICATION 9-14.4 (8) FOR WET SEASON CONSTRUCTION.





**NOTES:**

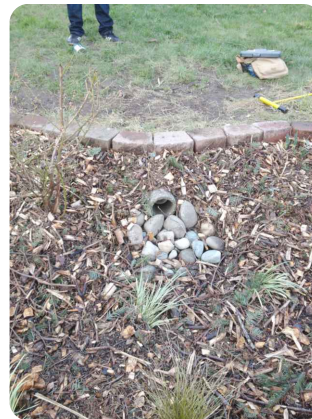
1. MINIMUM PIPE DIAMETER AND ASSOCIATED FITTING SIZE VARIES BASED ON CONTRIBUTING AREA AS FOLLOWS:
  - UP TO 2,000 SQUARE FEET: 3 INCH DIAMETER
  - 2,000 TO 5,000 SQUARE FEET: 4 INCH DIAMETER
2. ALL PIPES MUST MEET THE GENERAL PIPING REQUIREMENT ON REFERENCE SHEET B. PIPE MATERIAL MUST BE APPROPRIATE FOR THE LOCATION AND ALL PIPE CONNECTIONS MUST BE SECURED.
3. RAINGARDEN LOCATION MUST MEET THE REQUIREMENTS ON REFERENCE SHEET C.
4. DOWNSPOUT CAP SHALL BE REMOVABLE.
5. DOWNSPOUT PIPED CONNECTION SHALL BE INSPECTED BEFORE PIPE IS BURIED.



ELBOW FITTINGS AND CAPPED DOWNSPOUT AT EXISTING DOWNSPOUT

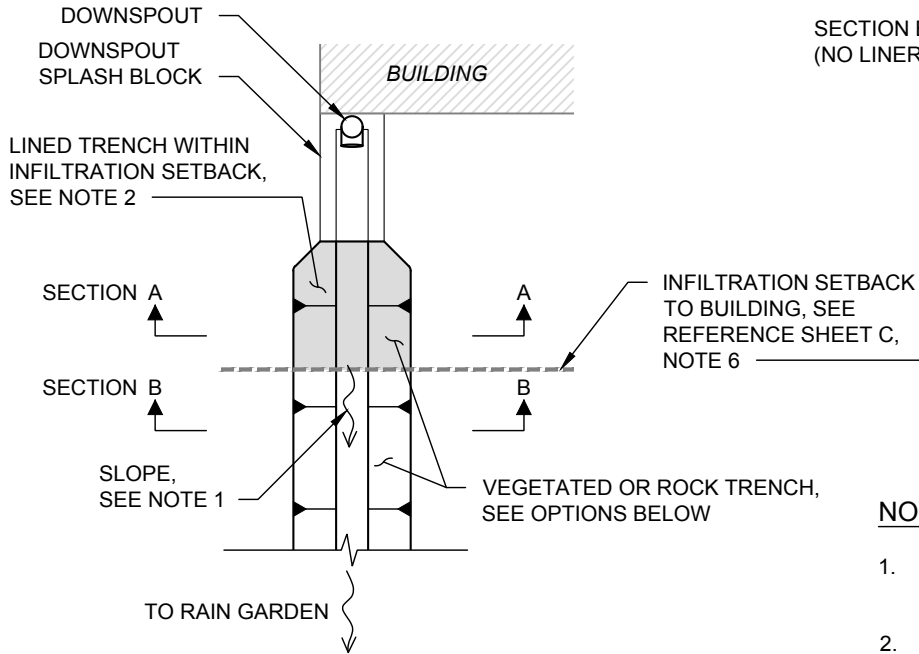


DOWNSPOUT TO RAIN GARDEN PIPED CONNECTION UNDER CONSTRUCTION



WASHED GRAVEL OR STREAM BED COBBLES AT PIPE OUTLET

# DOWNPOUT TO RAIN GARDEN CONNECTIONS (2 OF 2)



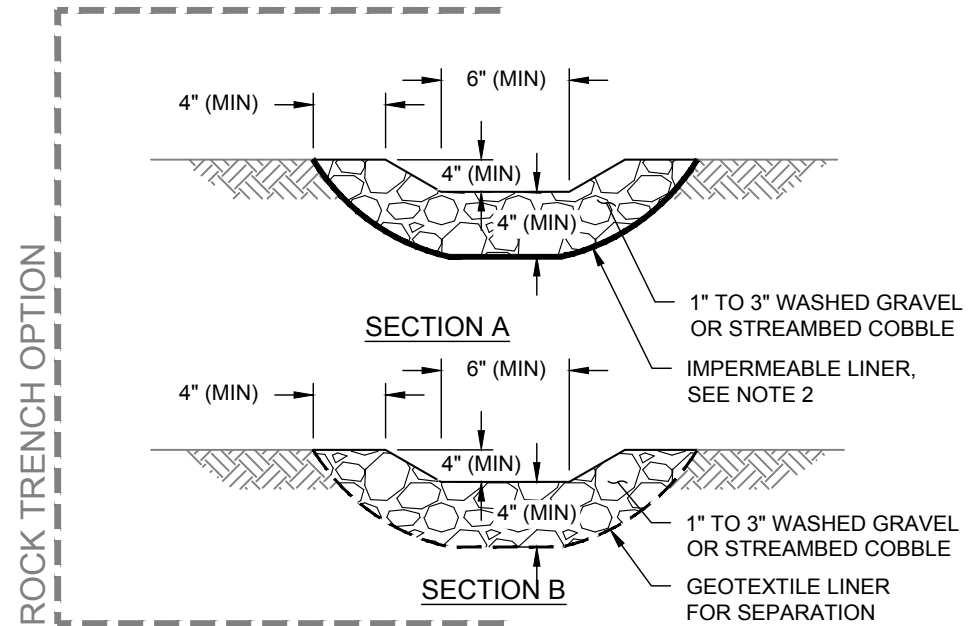
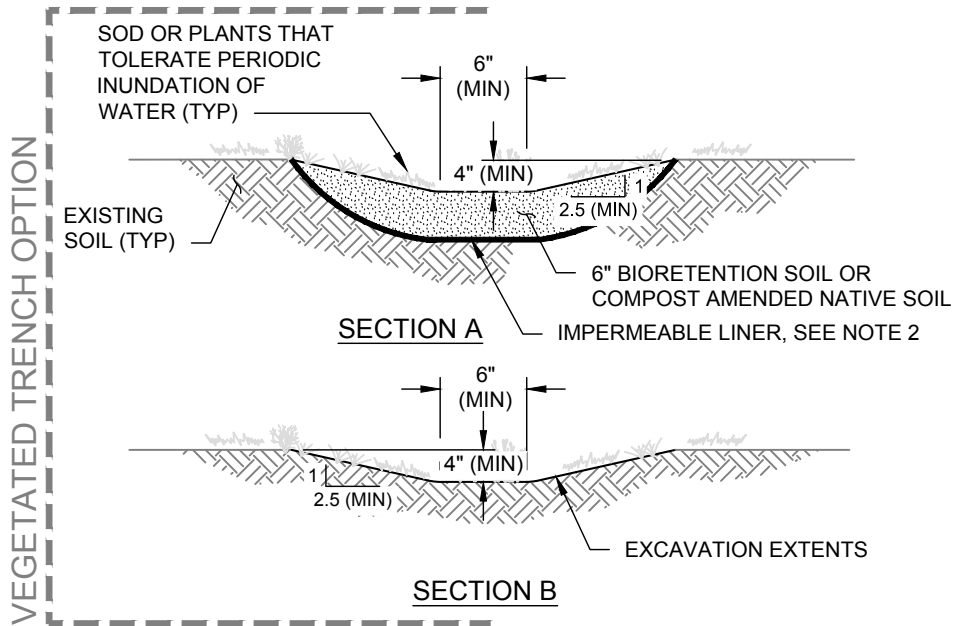
SECTION B (NO LINER) ← → SECTION A (LINER)



EXAMPLE DOWNSPOUT TO RAIN GARDEN ROCK TRENCH CONNECTION

**NOTES:**

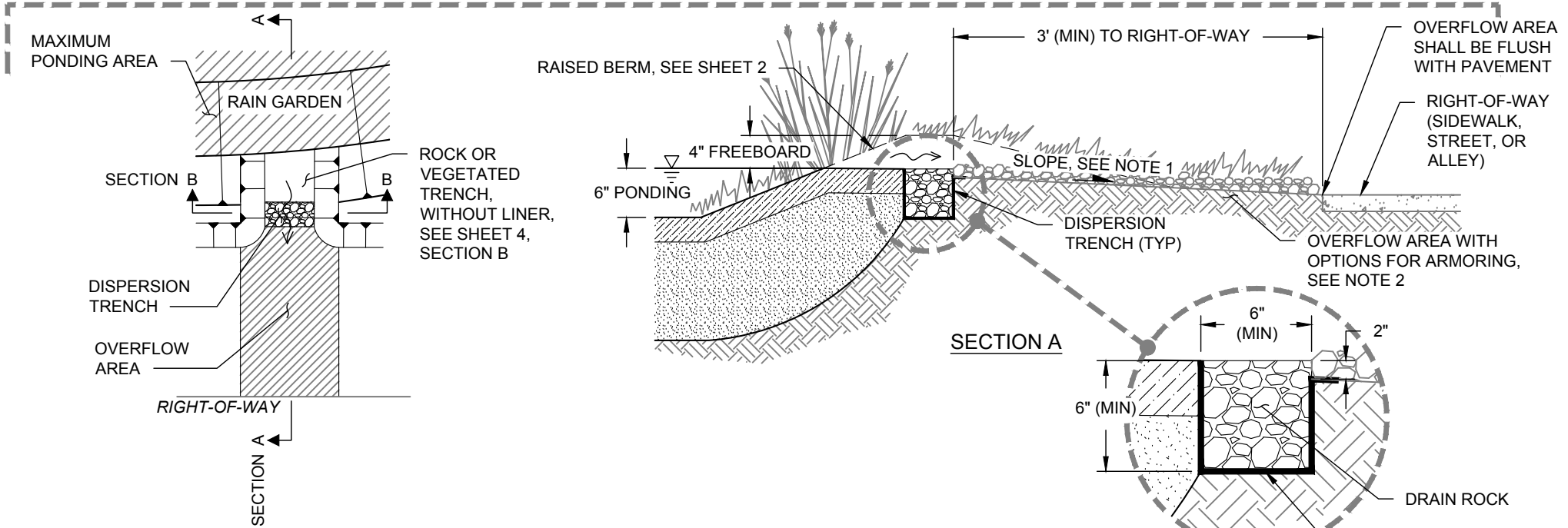
1. MINIMUM TRENCH SLOPE SHALL BE 1%. MAXIMUM SLOPE SHALL BE 4%. INSTALL CHECK DAMS PER SEATTLE STORMWATER MANUAL BMP E2.35 (VOLUME 2, FIGURE 9) FOR SLOPES GREATER THAN 4%.
2. IMPERMEABLE LINER SHALL COMPLY WITH REQUIREMENTS FOR "DITCH LINING" IN SEATTLE STANDARD SPECIFICATION 9-37.2, TABLE 4.



PATH: C:\wproj\201212-05376-000\CADD\dwgs\RainWise\_22-1017.dwg

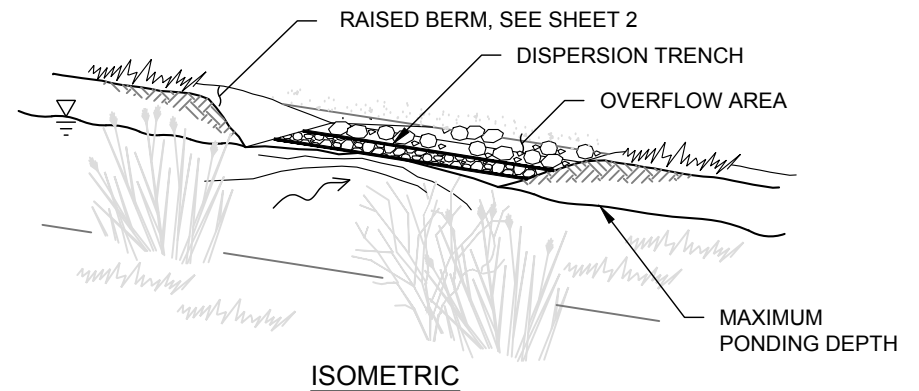
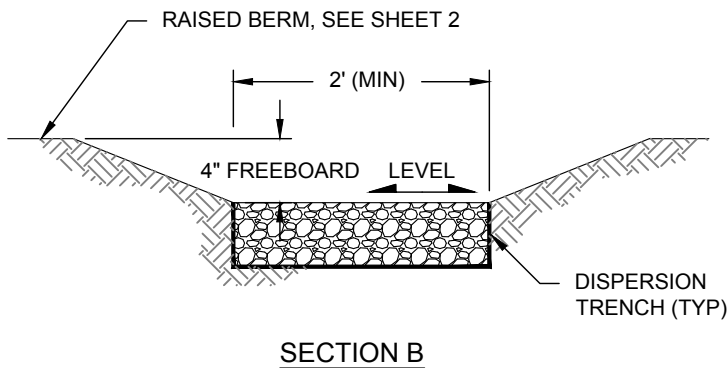


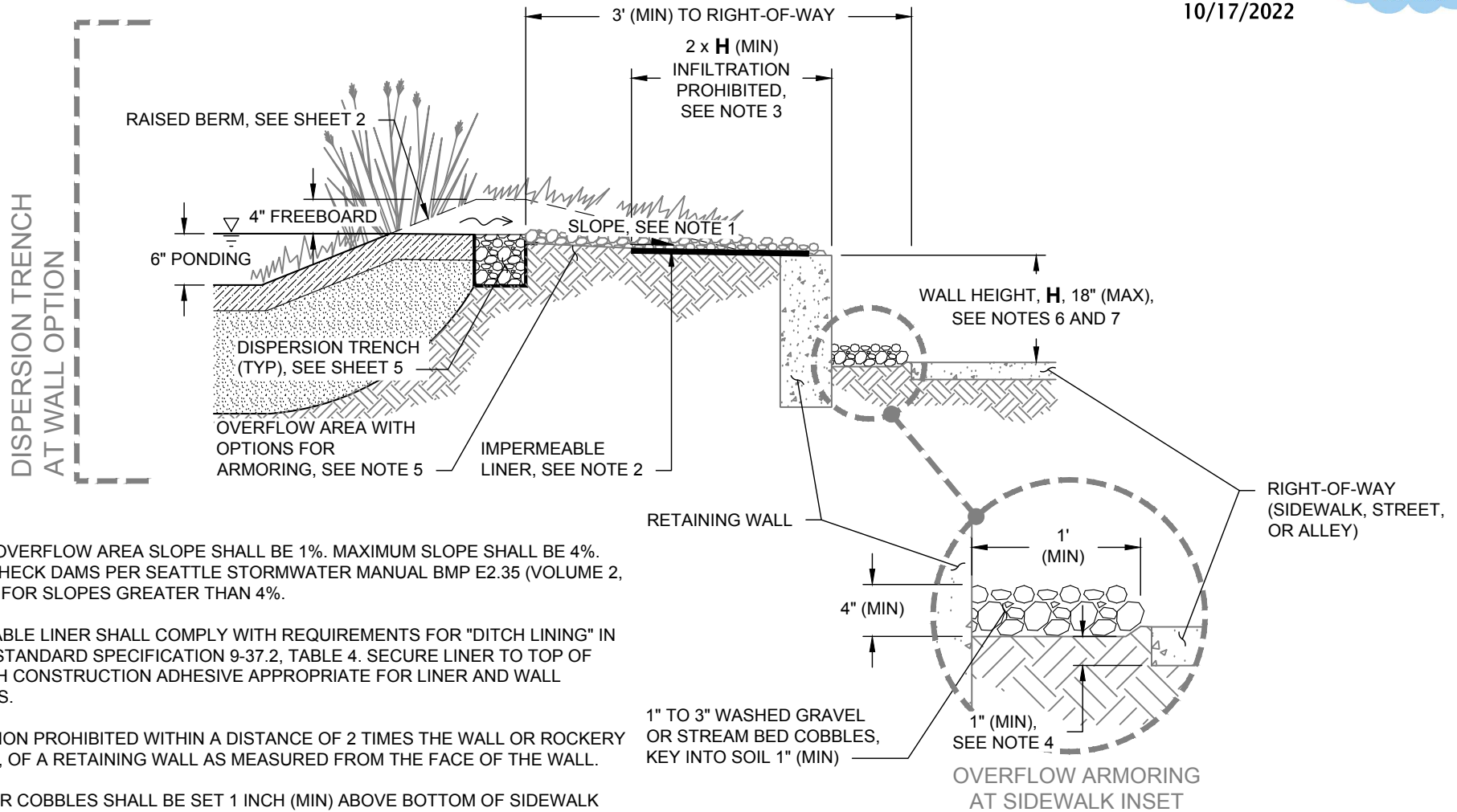
## DISPERSION TRENCH OPTION



### NOTES:

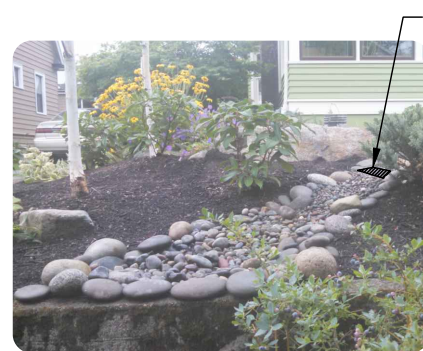
1. MINIMUM TRENCH SLOPE SHALL BE 1%. MAXIMUM SLOPE SHALL BE 4%. INSTALL CHECK DAMS PER SEATTLE STORMWATER MANUAL BMP E2.35 (VOLUME 2, FIGURE 9) FOR SLOPES GREATER THAN 4%.
2. OVERFLOW AREA SHALL BE VEGETATED OR ARMORED WITH MINIMUM 3" DEPTH 1 INCH TO 3 INCH WASHED GRAVEL OR STREAM BED COBBLES.





**NOTES:**

1. MINIMUM OVERFLOW AREA SLOPE SHALL BE 1%. MAXIMUM SLOPE SHALL BE 4%. INSTALL CHECK DAMS PER SEATTLE STORMWATER MANUAL BMP E2.35 (VOLUME 2, FIGURE 9) FOR SLOPES GREATER THAN 4%.
2. IMPERMEABLE LINER SHALL COMPLY WITH REQUIREMENTS FOR "DITCH LINING" IN SEATTLE STANDARD SPECIFICATION 9-37.2, TABLE 4. SECURE LINER TO TOP OF WALL WITH CONSTRUCTION ADHESIVE APPROPRIATE FOR LINER AND WALL MATERIALS.
3. INFILTRATION PROHIBITED WITHIN A DISTANCE OF 2 TIMES THE WALL OR ROCKERY HEIGHT, **H**, OF A RETAINING WALL AS MEASURED FROM THE FACE OF THE WALL.
4. GRAVEL OR COBBLES SHALL BE SET 1 INCH (MIN) ABOVE BOTTOM OF SIDEWALK SLAB TO AVOID UNDERMINING SIDEWALK.
5. OVERFLOW AREA SHALL BE VEGETATED OR ARMORED WITH 1 INCH TO 3 INCH WASHED GRAVEL OR STREAM BED COBBLES.
6. RETAINING WALL HEIGHT MEASURED FROM VISIBLE TOE OF WALL TO TOP OF WALL.
7. FOR DISCHARGE OVER RETAINING WALLS, MAXIMUM ALLOWABLE DROP FROM TOP OF WALL TO TOE OF WALL IS 18 INCHES.

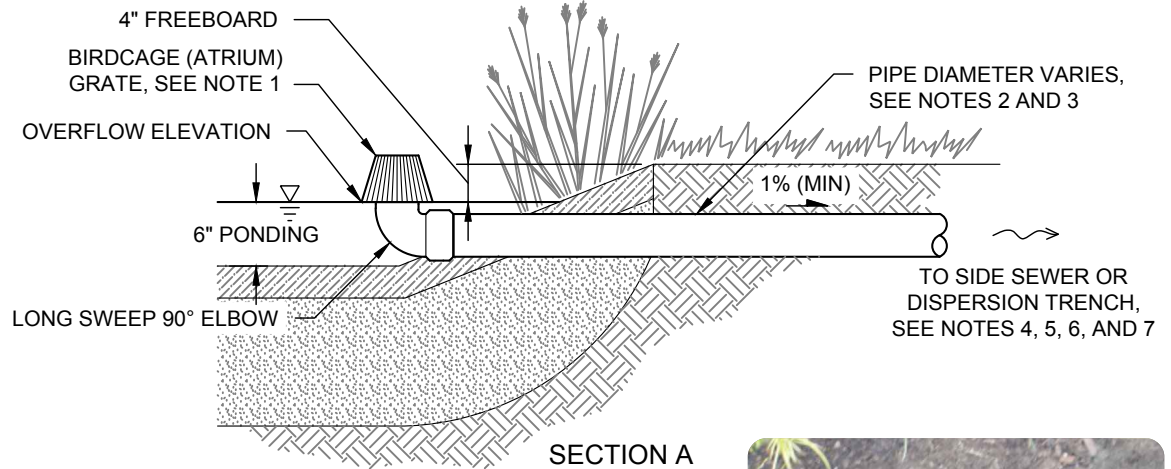
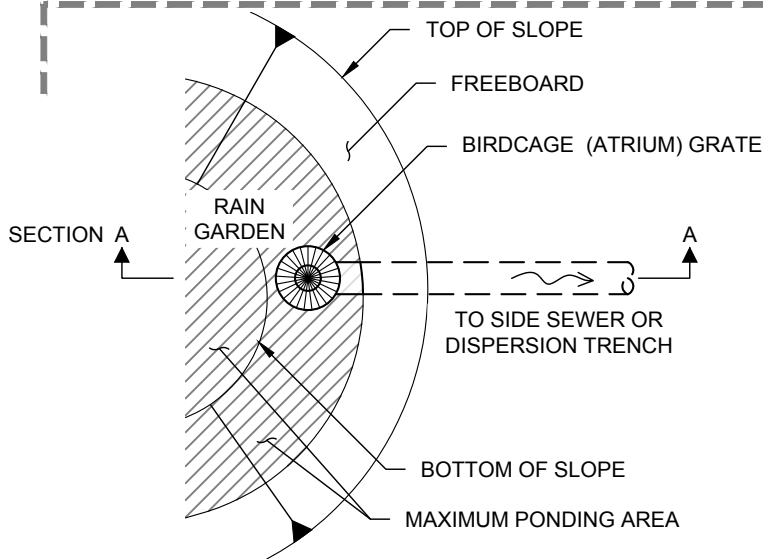


OVERFLOW AREA WITH ARMORING  
(VIEW FROM RIGHT-OF-WAY)



OVERFLOW AREA WITH ARMORING  
(VIEW FROM RAIN GARDEN)

## BIRDCAGE (ATRIUM) GRATE OVERFLOW



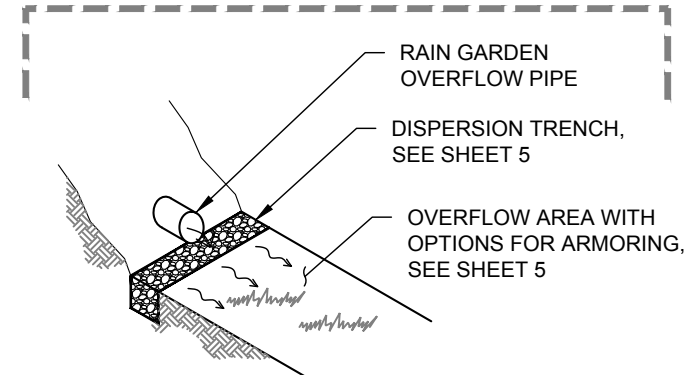
### NOTES:

1. BIRDCAGE (ATRIUM) GRATE AND ANY EXPOSED PIPES AND FITTINGS SHALL BE MADE OF UV STABILIZED MATERIAL.
2. MINIMUM PIPE DIAMETER AND ASSOCIATED FITTING SIZE VARIES BASED ON CONTRIBUTING AREA AS FOLLOWS:
  - UP TO 2,300 SQUARE FEET: 4 INCH DIAMETER PIPE AND 4 INCH BIRDCAGE (ATRIUM) GRATE
  - 2,300 TO 5,000 SQUARE FEET: 4 INCH DIAMETER PIPE AND 6 INCH BIRDCAGE (ATRIUM) GRATE
 INSTALL 6"x4" REDUCER ON OVERFLOW PIPE IF USING 6 INCH BIRDCAGE GRATE ON 4 INCH OVERFLOW PIPE.
3. ALL PIPES MUST MEET THE GENERAL PIPING REQUIREMENTS ON REFERENCE SHEET B. PIPE MATERIAL MUST BE APPROPRIATE FOR THE LOCATION AND ALL PIPE CONNECTIONS MUST BE SECURED.
4. CONNECTIONS TO SIDE SEWER MAY REQUIRE A SEPARATE SIDE SEWER PERMIT AND INSPECTION.
5. ALL CONNECTIONS TO A SIDE SEWER SHALL COMPLY WITH REQUIREMENTS FOR DESIGN AND CONSTRUCTION OF DRAINAGE WATER DISCHARGES IN DIRECTOR'S RULES 4-2011 AND 5-2011 AND SIDE SEWER INSTALLATION REQUIREMENTS IN SEATTLE STANDARD PLAN NO. 283.
6. SIDE SEWER FUNCTION MUST BE CONFIRMED FOR ABOVE GROUND OR BELOW GROUND DISCHARGE TO A SIDE SEWER. TESTING OR VIDEO SCOPING OF SIDE SEWER MAY BE REQUIRED TO CONFIRM FUNCTIONING SIDE SEWER.
7. A PRE-INSPECTION SHOULD BE REQUESTED WHEN A PIPED SUBSURFACE OVERFLOW IS PLANNED.

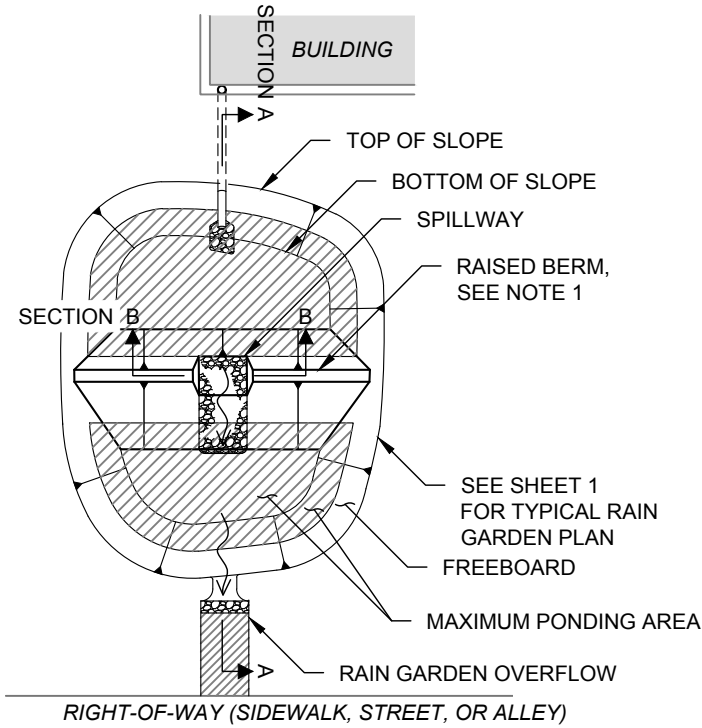


BIRDCAGE OVERFLOW

## DISPERSION TRENCH OPTION

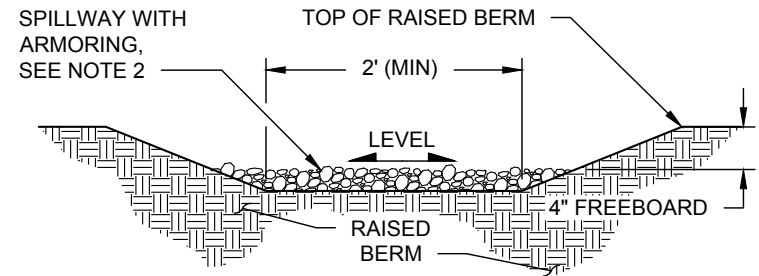


TERRACED RAIN GARDEN PLAN



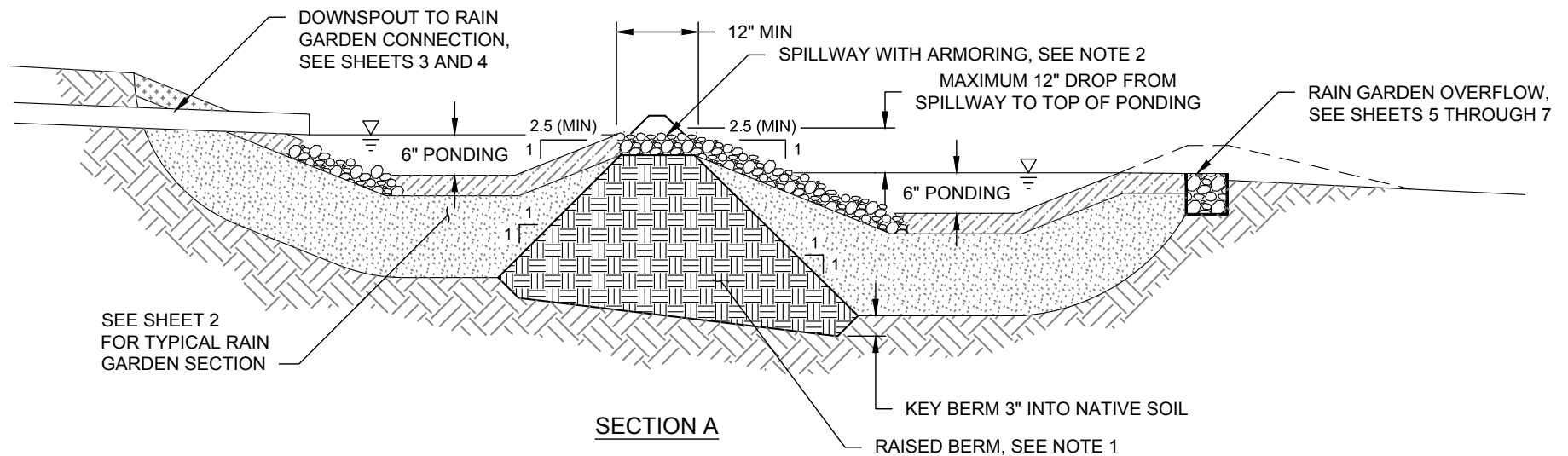
**NOTES:**

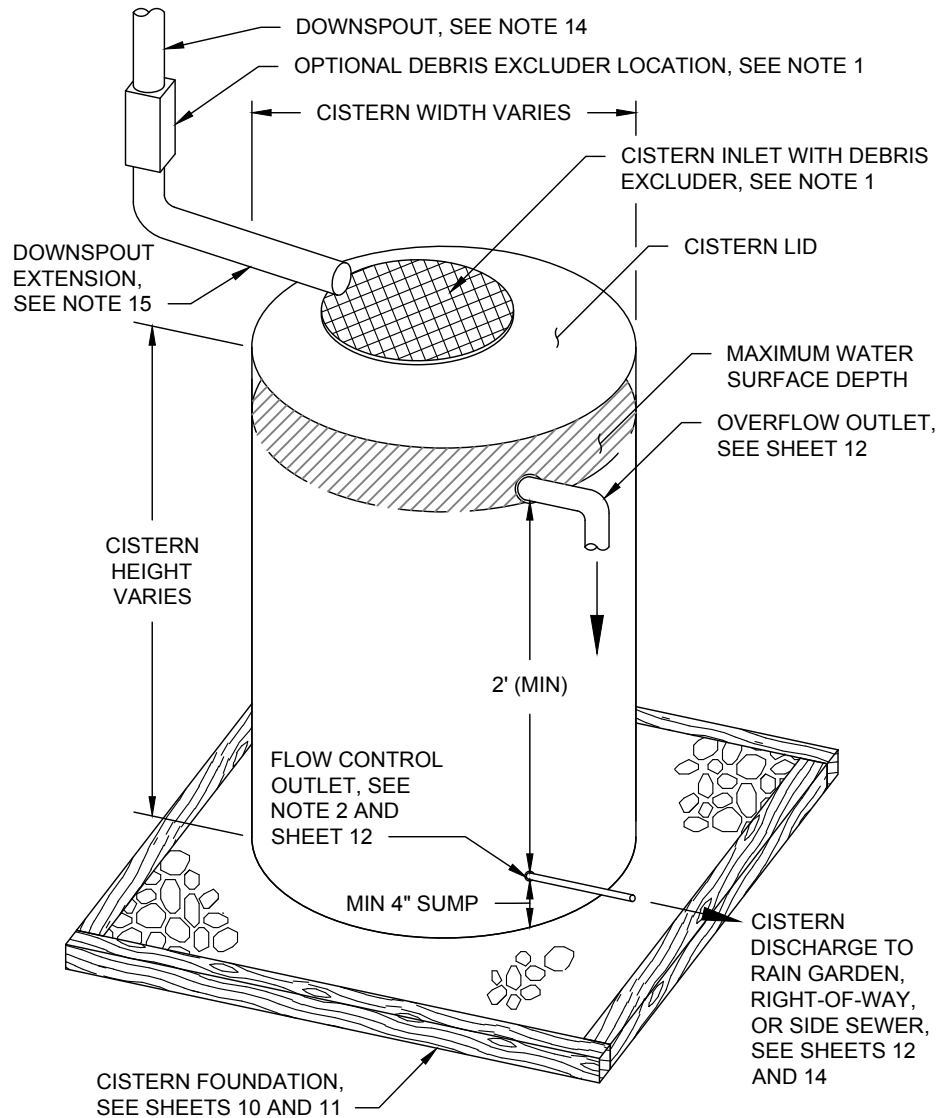
1. RAISED BERM SHALL BE FIRM, UNDISTURBED, NON-YIELDING NATIVE SOIL OR DISTURBED SITE SOILS COMPACTED WITH 12 POUND HAND TAMPER IN 3 INCH LIFTS. IF SITE SOILS ARE SANDY, CONSIDER IMPORTING DENSER, NON-PERMISSIVE SOILS FOR RAISED BERM.
2. ARMOR SPILLWAY WITH 3" DEPTH 1 INCH TO 3 INCH WASHED GRAVEL OR STREAM BED COBBLES.



**SECTION B**

TERRACED RAIN GARDEN SECTION





## GENERAL NOTES:

1. CISTERNS SHALL MEET ALL REQUIREMENTS ON REFERENCE SHEET B AND SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS.
2. ALL CISTERN ENTRANCE LOCATIONS SHALL BE SECURED AS TO BE CHILDPROOF AND TAMPER RESISTANT. A SCREW-ON CISTERN LID MEETS THIS REQUIREMENT.
3. CISTERNS WITH HEIGHT GREATER THAN THE NARROWEST DIMENSION (LENGTH, WIDTH, DIAMETER) SHALL BE RESTRAINED, AT INSPECTOR'S DISCRETION, TO PREVENT OVERTURNING.
4. SYSTEM MUST BE DESIGNED TO PROVIDE ACCESS TO CISTERN AND CISTERN FITTINGS FOR CLEANING AND REMOVAL OF SEDIMENT AND ALGAE. ACCESS SHALL BE THROUGH REMOVABLE LID OR 6 INCH (MINIMUM) INSPECTION PORT. CLEANOUT SHALL BE PROVIDED AT BOTTOM OF TANK (VIA BOTTOM BULKHEAD FITTING).
5. CISTERNS OVER 6.5 FEET TALL OR WITH STORAGE CAPACITY GREATER THAN 1,100 GALLONS REQUIRE CONSULTATION AND PRE-INSPECTION WITH RAINWISE INSPECTOR.
6. ALL CISTERN PIPING MATERIALS SHALL BE RIGID. 12 LINEAR INCHES OF 2 INCH (MAXIMUM) DIAMETER FLEXIBLE PIPE MAY BE USED TO CONNECT TERMINUS OF FLOW CONTROL OUTLET TO OVERFLOW PIPING.
7. OVERFLOW AND LOW FLOW PIPE CONFIGURATIONS (FITTINGS AND PIPE LENGTH) MAY VARY BY CISTERN, SEE SHEET 12. PIPE SUPPORT TO BE PROVIDED PER REFERENCE SHEET B.
8. PLASTIC CISTERNS MUST BE UV STABILIZED. ALL CISTERNS MUST BE NON-COLLAPSIBLE, WATERTIGHT, AND OF DURABLE MATERIAL TO PROVIDE A LONG SERVICE LIFE.
9. TO PREVENT FREEZING DAMAGE, ALL EXPOSED PIPE MUST BE FREE DRAINING.
10. PROVIDE WATER TIGHT FITTINGS AT ALL CISTERN CONNECTIONS.
11. LOCATE CISTERNS TO AVOID OBSTRUCTION OF UTILITIES, WINDOWS, OR OTHER SITE FEATURES THAT REQUIRE ACCESS.
12. SEE REFERENCE SHEET D FOR CISTERN SETBACK REQUIREMENTS.
13. SEE SHEET 13 FOR DESIGN REQUIREMENTS FOR CISTERNS IN SERIES.
14. INSTALL A REMOVABLE CAP ON ALL BELOW GROUND DOWNSPOUTS CUT FOR PROJECT INSTALLATION. SEE SHEET 3 FOR AN EXAMPLE.
15. MINIMUM PIPE DIAMETER AND ASSOCIATED FITTING SIZE VARIES BASED ON CONTRIBUTING AREA AS FOLLOWS:
  - UP TO 2,000 SQUARE FEET: 3 INCH DIAMETER
  - 2,000 TO 5,000 SQUARE FEET: 4 INCH DIAMETER

## NOTES:

1. PROVIDE DEBRIS EXCLUDER WITH 1/16 INCH MAXIMUM MESH SCREEN SIZE AT CISTERN INLET. PROVIDE 3-INCH VERTICAL GAP BETWEEN DOWNSPOUT AND CISTERN INLET. DEBRIS EXCLUDER SHALL BE MAINTAINABLE AND LOCATED TO PROVIDE MAINTENANCE ACCESS. DEBRIS EXCLUDER AT CISTERN INLET MAY BE SUPPLEMENTED WITH A DOWNSPOUT FILTER OR DIVERTER TO REDUCE MAINTENANCE NEED.
2. FLOW CONTROL OUTLET SHALL INCLUDE A UNIFORM DIAMETER INSPECTABLE AND CLEANABLE ORIFICE SIZED AS SPECIFIED IN THE RAINWISE REBATE CALCULATOR. NO ADDITIONAL VALVES OR FLOW RESTRICTOR PERMITTED DOWNSTREAM OF FLOW CONTROL OUTLET. SEE SHEET 15 FOR AN EXAMPLE CONFIGURATION.

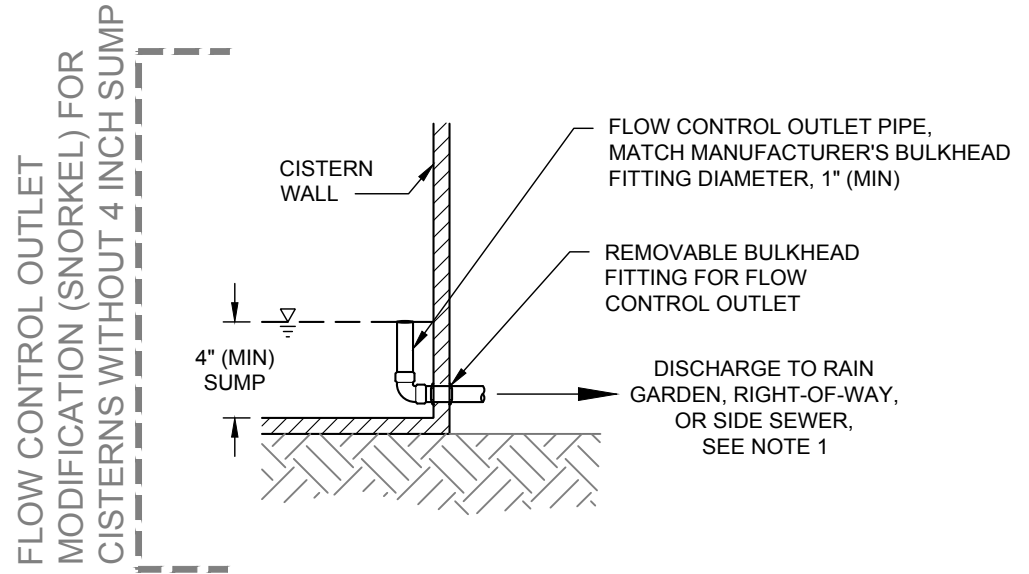
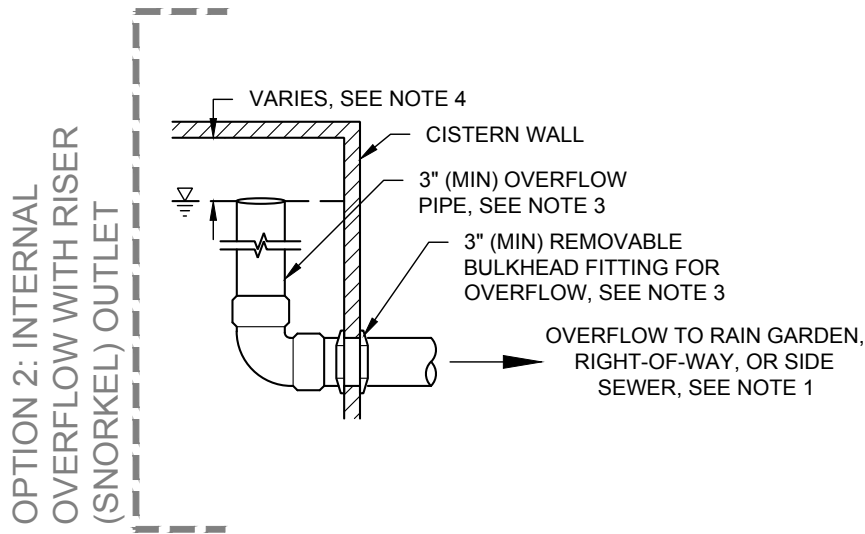
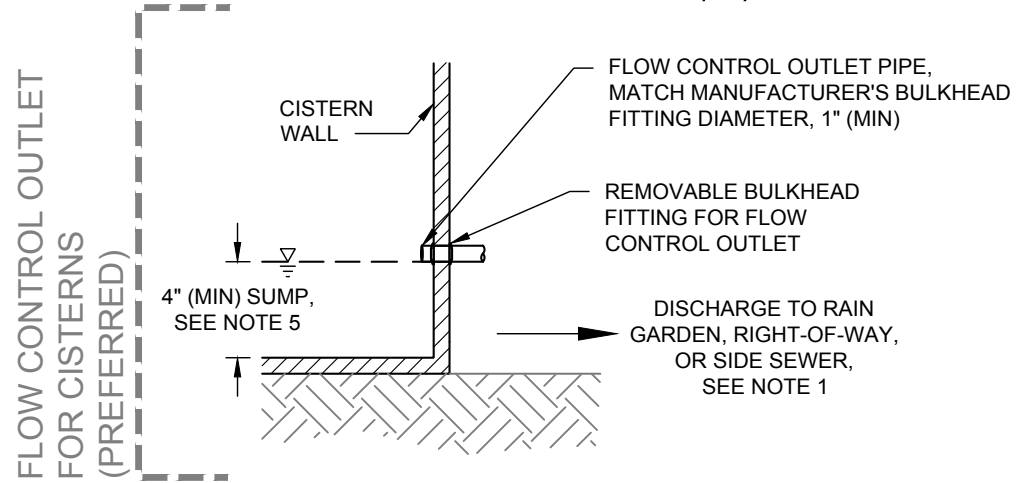
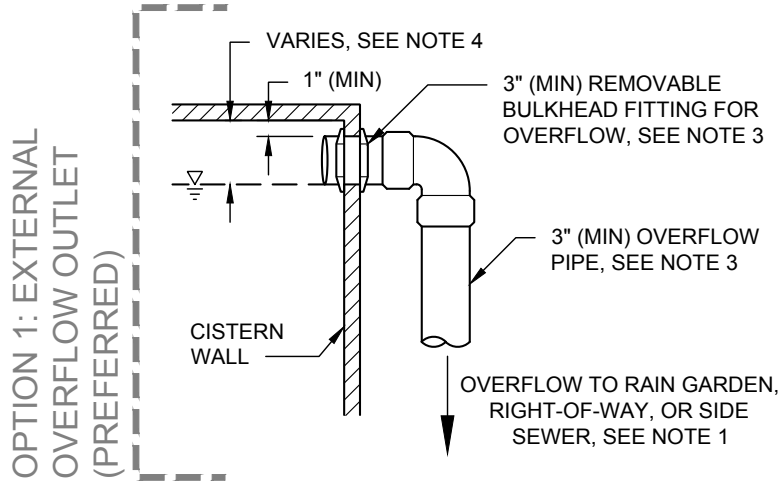


*IN PROGRESS*





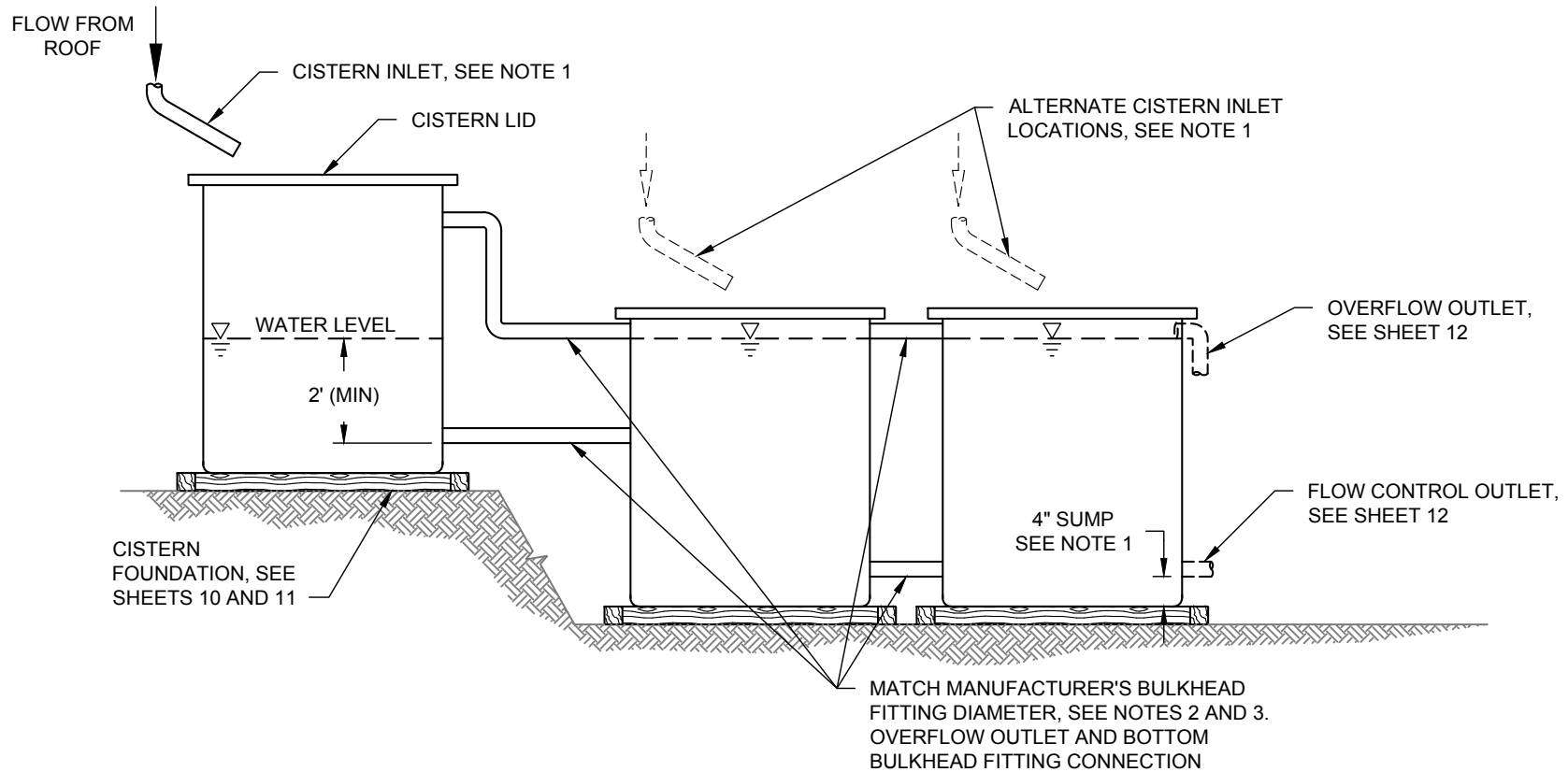
*IN PROGRESS*



**NOTES:**

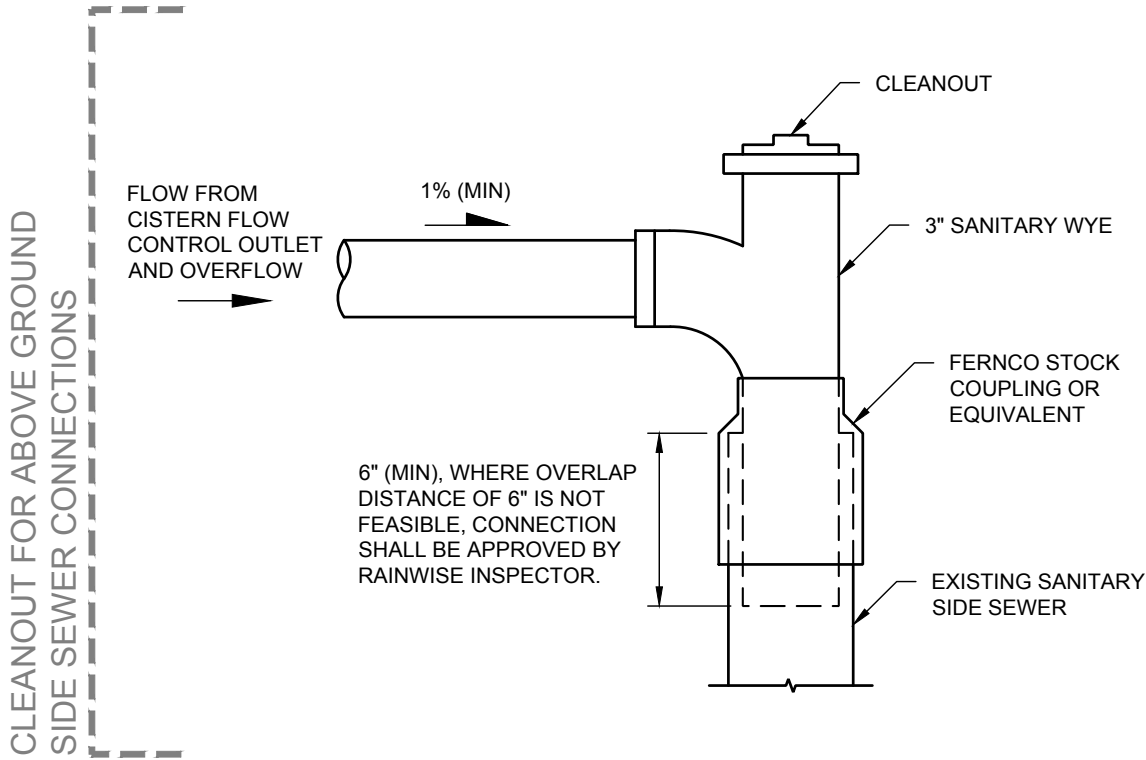
1. CONNECTIONS TO SIDE SEWER MAY REQUIRE A SEPARATE SIDE SEWER PERMIT AND INSPECTION, SEE SHEET 14.
2. MINIMUM PIPE DIAMETER AND ASSOCIATED FITTING SIZE VARIES BASED ON CONTRIBUTING AREA AS FOLLOWS:
  - UP TO 2,000 SQUARE FEET: 3 INCH DIAMETER
  - 2,000 TO 5,000 SQUARE FEET: 4 INCH DIAMETER

3. CLEARANCE AT TOP OF OVERFLOW VARIES BASED ON OVERFLOW PIPE DIAMETER AS FOLLOWS:
  - 3 INCH PIPE DIAMETER: PROVIDE 4 INCHES CLEARANCE
  - 4 INCH PIPE DIAMETER: PROVIDE 5 INCHES CLEARANCE
4. SEE SHEET 15 FOR A CISTERN FLOW CONTROL OUTLET CONFIGURATION WITHOUT A SNORKEL.
5. PROVIDE MODIFIED FLOW CONTROL OUTLET (SNORKEL) FOR CISTERNS MANUFACTURED WITH SUMPS LESS THAN 4 INCHES, DETAIL THIS SHEET.



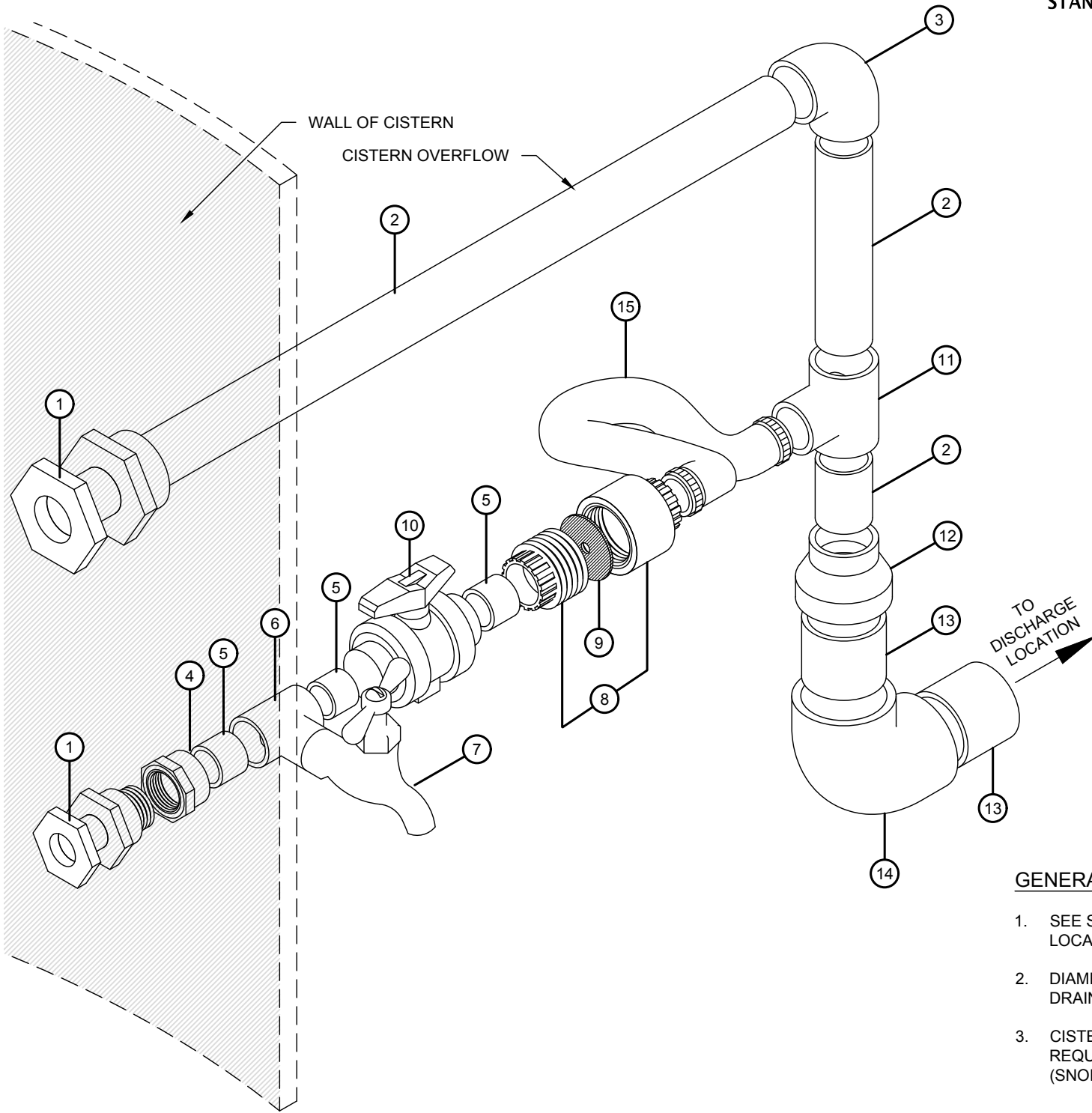
**NOTES:**

1. CISTERN INLET(S) MAY BE CONNECTED TO ANY CISTERN IN THE SERIES PROVIDED A 4 INCH SUMP IS INCLUDED AT THE INLET AND OUTLET CISTERN.
2. OVERFLOW OUTLET AND BOTTOM BULKHEAD FITTING CONNECTION SHALL BE PROVIDED FOR EACH CISTERN IN SERIES.
3. ALL CONNECTING PIPES SHALL BE RIGID AND PROPERLY SUPPORTED, SEE SHEET B. ALL CONNECTING PIPES SHALL BE ACCESSIBLE FOR MAINTENANCE, AND FREE DRAINING. NO CONNECTING PIPE SHALL BE LOWER THAN THE FLOW CONTROL OUTLET PIPE.



**GENERAL NOTES:**

1. CISTERN MAY DISCHARGE TO THE FOLLOWING LOCATIONS:
  - ABOVE GROUND TO SIDE SEWER (DETAIL THIS SHEET), A SEATTLE SIDE SEWER PERMIT MAY BE REQUIRED
  - BELOW GROUND TO SIDE SEWER PER SEATTLE SIDE SEWER PERMIT
  - ABOVE OR BELOW GROUND TO RAIN GARDEN
  - ABOVE OR BELOW GROUND TO DISPERSION TRENCH
 SEE SHEET B FOR SIDE SEWER REQUIREMENTS.
2. SIDE SEWER FUNCTION MUST BE CONFIRMED FOR DISCHARGE TO A SIDE SEWER. TESTING OR VIDEO SCOPING OF SIDE SEWER MAY BE REQUIRED TO CONFIRM FUNCTIONING SIDE SEWER.
3. ALL CONNECTIONS TO A SIDE SEWER SHALL COMPLY WITH REQUIREMENTS FOR DESIGN AND CONSTRUCTION OF DRAINAGE WATER DISCHARGES IN DIRECTOR'S RULES 4-2011 AND 5-2011 AND SIDE SEWER INSTALLATION REQUIREMENTS IN SEATTLE STANDARD PLAN NO. 283.
4. CISTERN DISCHARGE TO A RAIN GARDEN MAY BE INSTALLED IN A SIMILAR MANNER TO DETAILS ON SHEETS 3 AND 4.
5. CISTERN DISCHARGE TO A DISPERSION TRENCH MAY BE INSTALLED IN A SIMILAR MANNER TO DETAILS ON SHEETS 5 AND 6.
6. CISTERN DISCHARGE DESIGN AND MATERIALS SHALL MEET THE GENERAL REQUIREMENTS ON REFERENCE SHEET B.



- ① REMOVABLE BULKHEAD FITTING
- ② 3" (TYP) SCH 40 PVC PIPE
- ③ 3" (TYP) SCH 40 PVC SLP x SLP ELBOW
- ④ 1-1/2" FPT x 1-1/2" SLP ADAPTER
- ⑤ 1-1/2" SCH 40 PVC PIPE
- ⑥ 1-1/2" x 1-1/2" x 1/2" SLP-SLP-FPT TEE
- ⑦ 1/2" x 3/4" BRASS MPT x MHT HOSE BIB (OPTIONAL)
- ⑧ 1-1/2" SCH 80 PVC UNION SLP-SLP
- ⑨ 1-1/2" x 1/4" BLACK NEOPRENE WASHER WITH HOLE. HOLE SHALL BE SIZED AS REQUIRED IN THE RAINWISE REBATE CALCULATOR.
- ⑩ 1-1/2" SLP BALL VALVE SCH 40
- ⑪ 3" (TYP) x 3" (TYP) x 1-1/2" SLP REDUCING TEE
- ⑫ 4" x 3" PVC H-H COUPLING, AS NEEDED
- ⑬ 3" OR 4" SCH 40 PVC PIPE
- ⑭ 3" OR 4" SCH 40 PVC ELBOW
- ⑮ 1-1/2" FLEXIBLE HOSE OR TUBING

**GENERAL NOTES:**

1. SEE SHEET 14 FOR CISTERN OUTLETS DISCHARGE LOCATIONS.
2. DIAMETER OF PIPE VARIES BASED ON ROOF AREA DRAINAGE, SEE SHEET 12.
3. CISTERNS WITH A SUMP DEPTH LESS THAN 4 INCHES REQUIRE A FLOW CONTROL OUTLET MODIFICATION (SNORKEL), SEE SHEET 12.