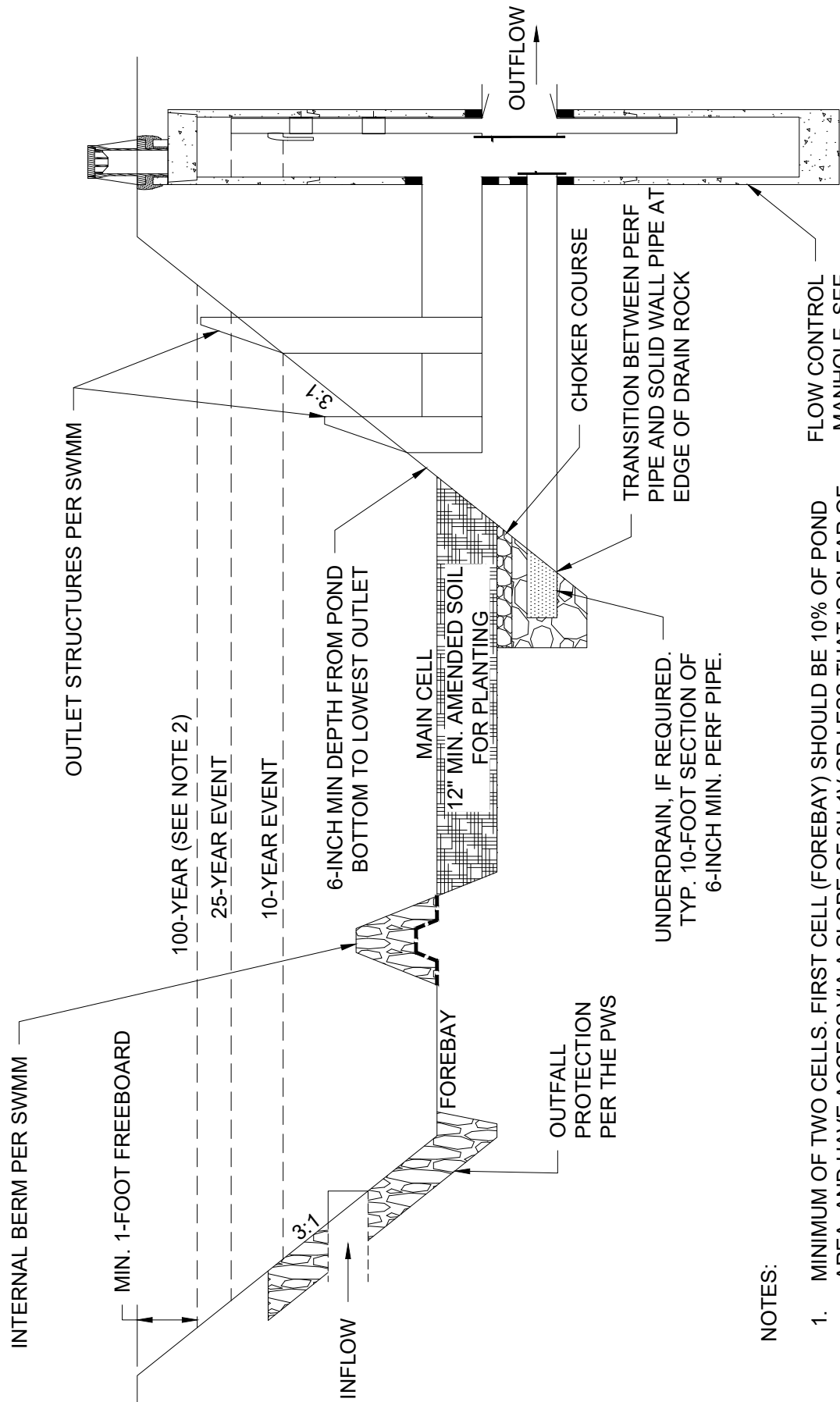


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APPR.	
DETAIL NO.	415



NOTES:

1. MINIMUM OF TWO CELLS. FIRST CELL (FOREBAY) SHOULD BE 10% OF POND AREA, AND HAVE ACCESS VIA A SLOPE OF 3H:1V OR LESS THAT IS CLEAR OF WOODY VEGETATION.
2. POND DESIGNER MUST CONSTRUCT AN EMERGENCY SPILLWAY AT THE 100-YEAR POND ELEVATION THAT IS A MINIMUM OF 1-FOOT BELOW TOP OF POND.
3. PERF PIPE MAY BE REQUIRED FOR FACILITIES WHERE WATER QUALITY EVENT CANNOT BE STORED WITHOUT OVERFLOW AND THEN DRAW DOWN WITHIN 48 HOURS.

FLOW CONTROL
MANHOLE. SEE
DETAIL 405A

TRANSITION BETWEEN PERF
PIPE AND SOLID WALL PIPE AT
EDGE OF DRAIN ROCK

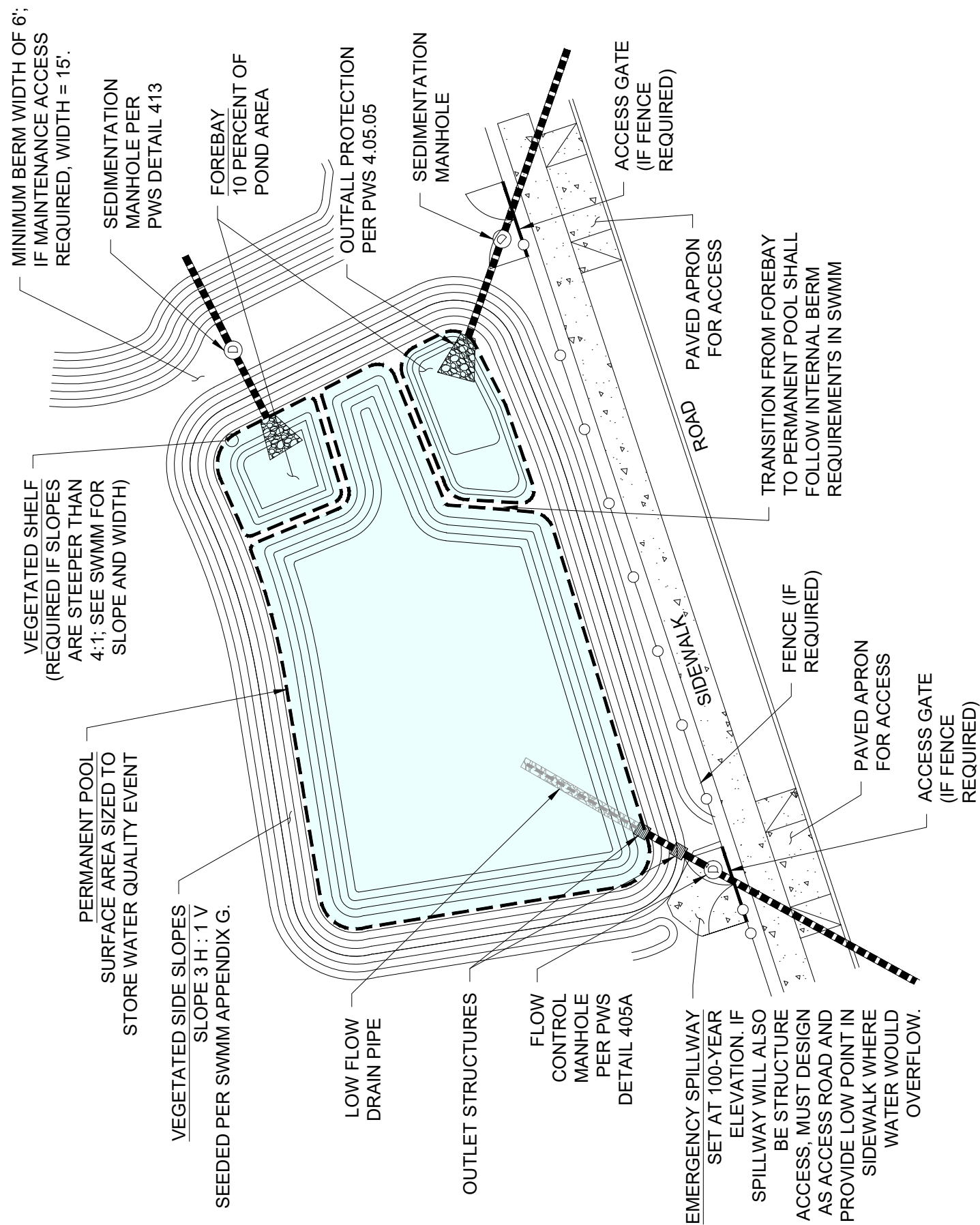
UNDERDRAIN, IF REQUIRED.
TYP. 10-FOOT SECTION OF
6-INCH MIN. PERF PIPE.

DRY POND PROFILE VIEW

**CITY OF
GRESHAM**

PUBLISHED: SWMM 2025

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DETAIL NO.	416



MINIMUM BERM WIDTH OF 6';
IF MAINTENANCE ACCESS
REQUIRED, WIDTH = 15'.

SEDIMENTATION
MANHOLE PER
PWS DETAIL 413

FOREBAY
10 PERCENT OF
POND AREA

OUTFALL PROTECTION
PER PWS 4.05.05

SEDIMENTATION
MANHOLE

ACCESS GATE
(IF FENCE
REQUIRED)

VEGETATED SHELF
(REQUIRED IF SLOPES
ARE STEEPER THAN
4:1; SEE SWMM FOR
SLOPE AND WIDTH)

PERMANENT POOL
SURFACE AREA SIZED TO
STORE WATER QUALITY EVENT

VEGETATED SIDE SLOPES
SLOPE 3 H : 1 V
SEEDED PER SWMM APPENDIX G.

LOW FLOW
DRAIN PIPE

OUTLET STRUCTURES

FLOW
CONTROL
MANHOLE
PER PWS
DETAIL 405A

EMERGENCY SPILLWAY
SET AT 100-YEAR
ELEVATION. IF
SPILLWAY WILL ALSO
BE STRUCTURE
ACCESS, MUST DESIGN
AS ACCESS ROAD AND
PROVIDE LOW POINT IN
SIDEWALK WHERE
WATER WOULD
OVERFLOW.

ROAD
PAVED APRON
FOR ACCESS

TRANSITION FROM FOREBAY
TO PERMANENT POOL SHALL
FOLLOW INTERNAL BERM
REQUIREMENTS IN SWMM

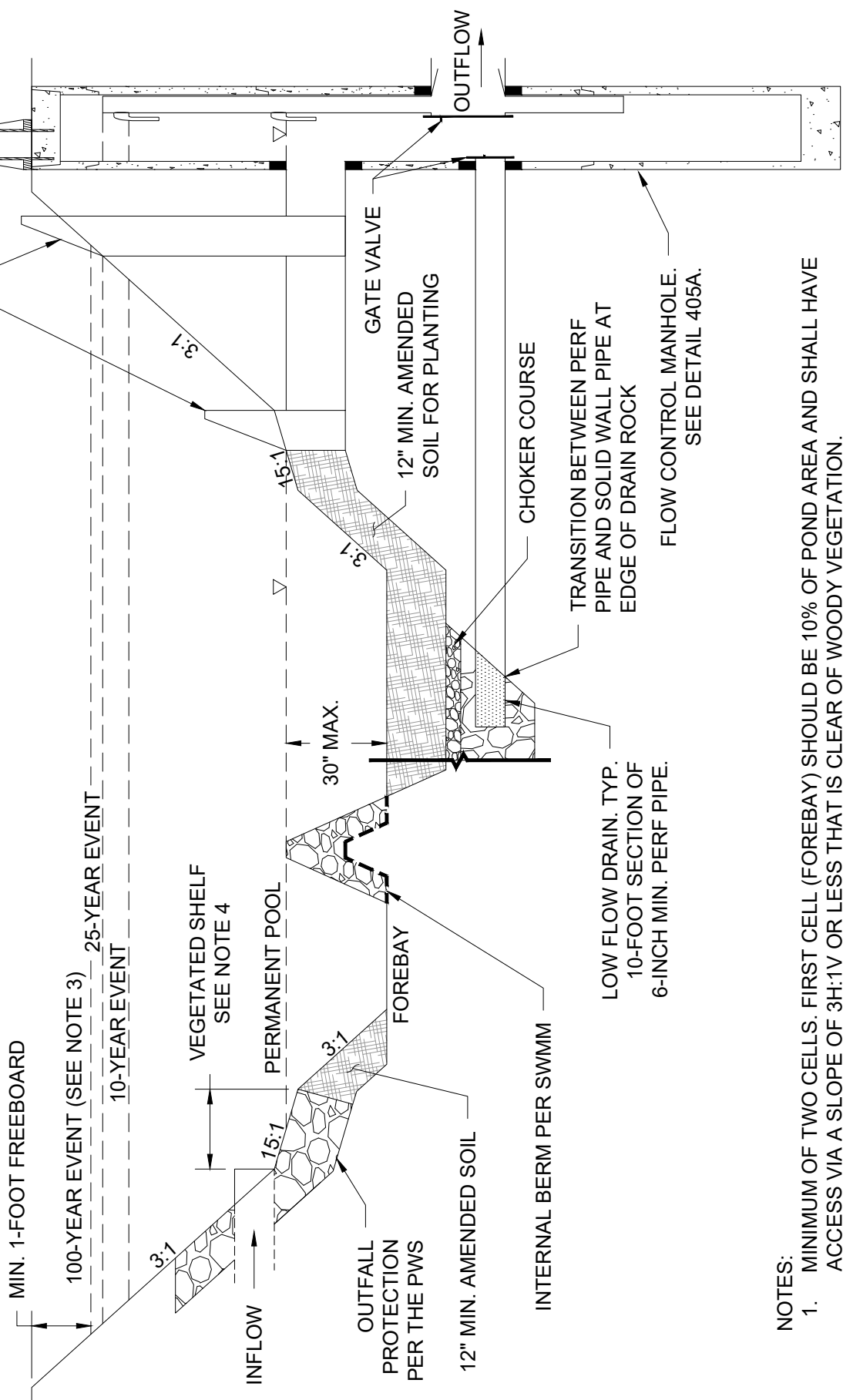
FENCE (IF
REQUIRED)

PAVED APRON
FOR ACCESS

ACCESS GATE
(IF FENCE
REQUIRED)

DRAWN	KRB
REV. DATE	DEC 2024
APPR.	
DETAIL NO.	417

OUTLET STRUCTURES
(SEE NOTE 2 AND SWMM)



NOTES:

1. MINIMUM OF TWO CELLS. FIRST CELL (FOREBAY) SHOULD BE 10% OF POND AREA AND SHALL HAVE ACCESS VIA A SLOPE OF 3H:1V OR LESS THAT IS CLEAR OF WOODY VEGETATION.
2. LOWEST OUTLET STRUCTURE SHALL BE LOCATED WITHIN VEGETATED SHELF (WHEN REQUIRED), OR AT LEVEL OF PERMANENT POOL, AND PROVIDE MAINTENANCE ACCESS THAT IS CLEAR OF WOODY VEGETATION.
3. POND DESIGNER MUST CONSTRUCT AN EMERGENCY SPILLWAY AT THE 100-YEAR POND ELEVATION THAT IS A MINIMUM OF 1-FOOT BELOW TOP OF POND.
4. VEGETATED SHELF SHOWN FOR REFERENCE. ONLY REQUIRED IF SLOPES ARE STEEPER THAN 4H:1V. SEE SWMM FOR REQUIREMENTS.

N.T.S.

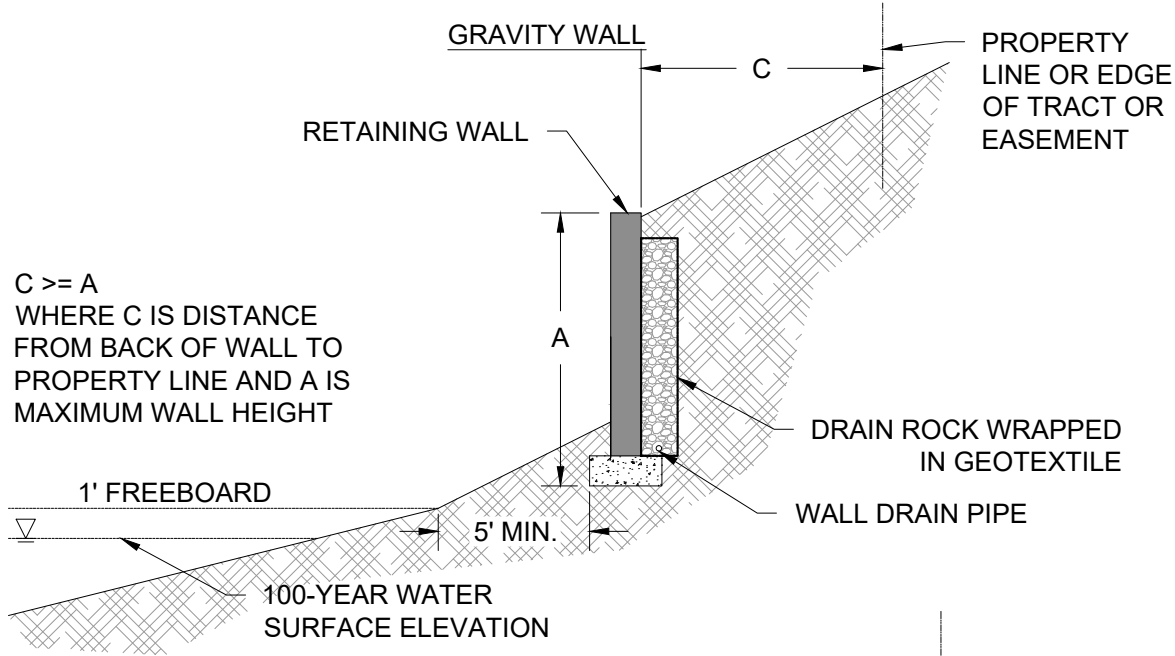
CITY OF
GRESHAM

WET POND PROFILE VIEW

PUBLISHED: SWMM 2025

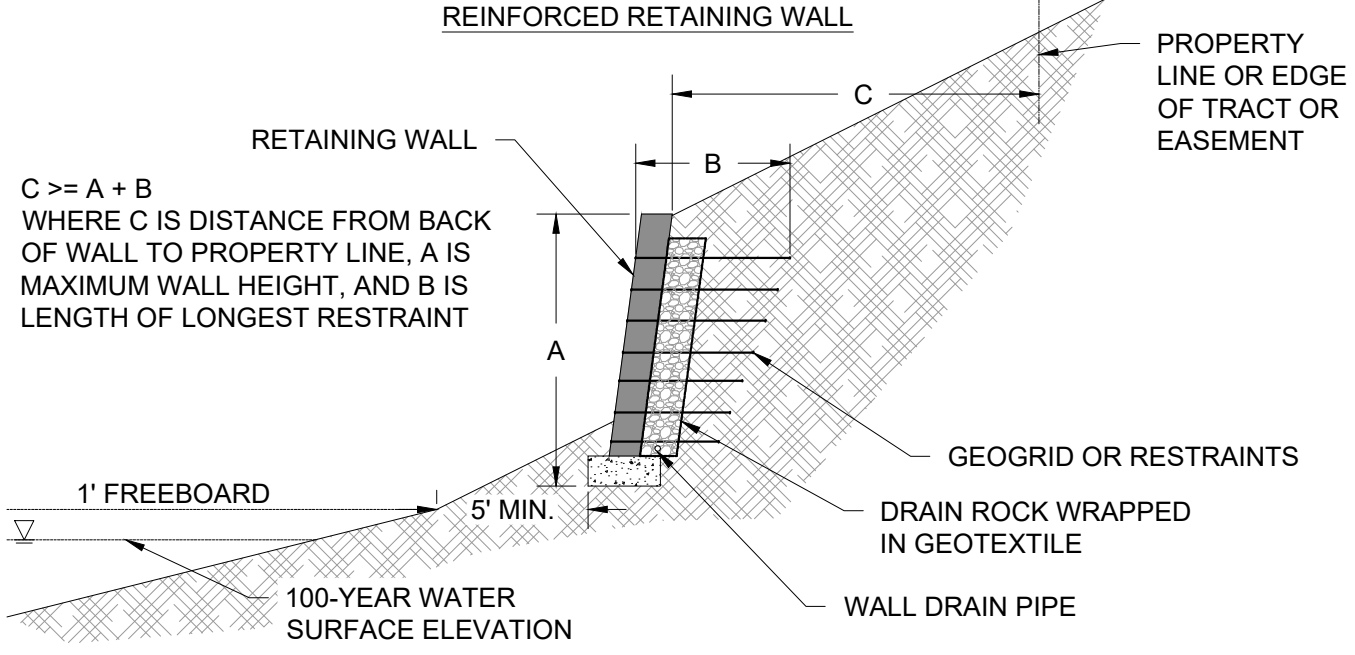
DRAWN	KRB
REV. DATE	DEC 2024
APPR.	
DETAIL NO.	418

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$C \geq A$
 WHERE C IS DISTANCE FROM BACK OF WALL TO PROPERTY LINE AND A IS MAXIMUM WALL HEIGHT

REINFORCED RETAINING WALL



$C \geq A + B$
 WHERE C IS DISTANCE FROM BACK OF WALL TO PROPERTY LINE, A IS MAXIMUM WALL HEIGHT, AND B IS LENGTH OF LONGEST RESTRAINT

1. RETAINING WALLS ARE NOT ALLOWED WITHIN THE ACTIVE POND AREA. ALL PARTS OF THE WALL MUST BE A MINIMUM DISTANCE OF 5 FEET AWAY FROM THE BOUNDARY DEFINED BY THE FREEBOARD ELEVATION.
2. GRAVITY WALLS SHALL BE SET BACK FROM THE NEAREST PROPERTY LINE OR EDGE OF TRACT OR EASEMENT BY AT LEAST THE DISTANCE EQUAL TO THE WALL HEIGHT.
3. REINFORCED RETAINING WALLS SHALL BE SET BACK FROM THE NEAREST PROPERTY LINE OR EDGE OF TRACT OR EASEMENT BY AT LEAST THE DISTANCE EQUAL TO THE MAXIMUM WALL HEIGHT PLUS THE LENGTH OF THE LONGEST RESTRAINT.
4. DRAIN ROCK WRAPPED IN GEOTEXTILE SHALL BE INCLUDED BEHIND WALLS.
5. NO PERFORATIONS FOR PRIVATE STORM LINES SHALL PASS THROUGH RETAINING WALLS.
6. STRUCTURAL DESIGN CALCULATIONS MUST BE SUBMITTED WITH EVERY RETAINING WALL PROPOSAL.
7. WALLS SHALL NOT INHIBIT MAINTENANCE ACCESS INTO THE FACILITY, PARTICULARLY THE FOREBAYS.

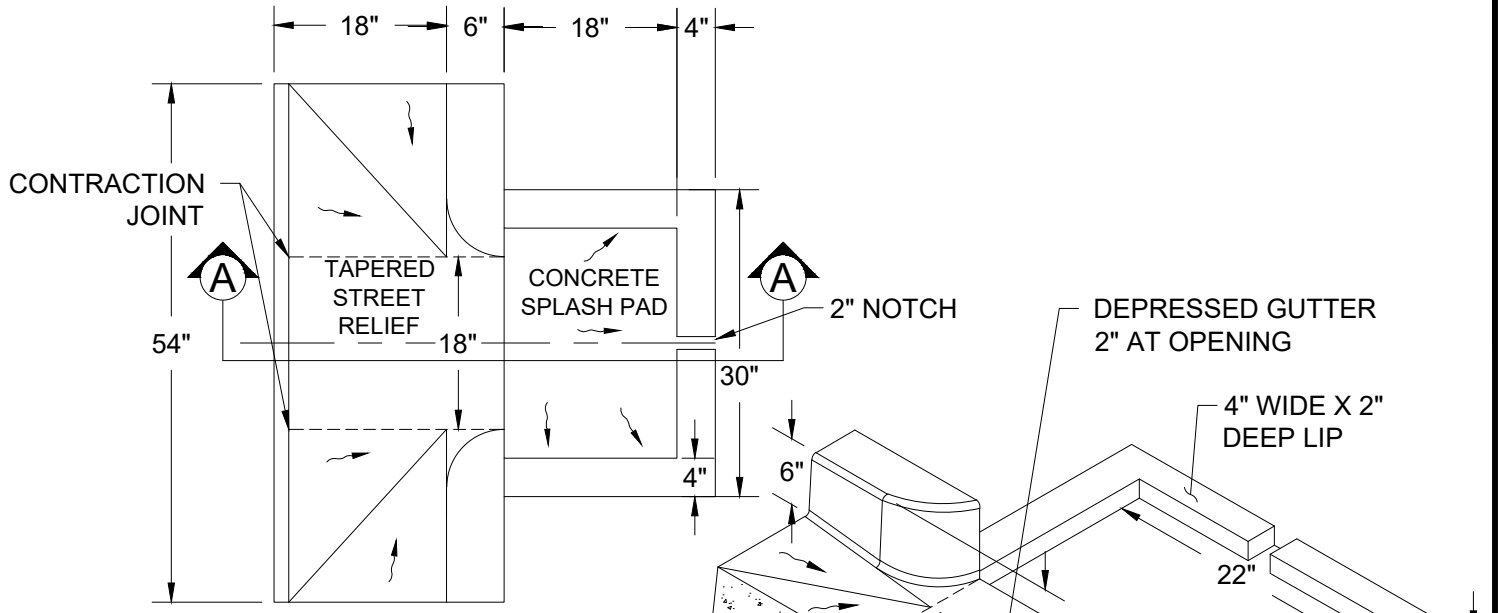
CITY OF GRESHAM

RETAINING WALLS ADJACENT TO PONDS

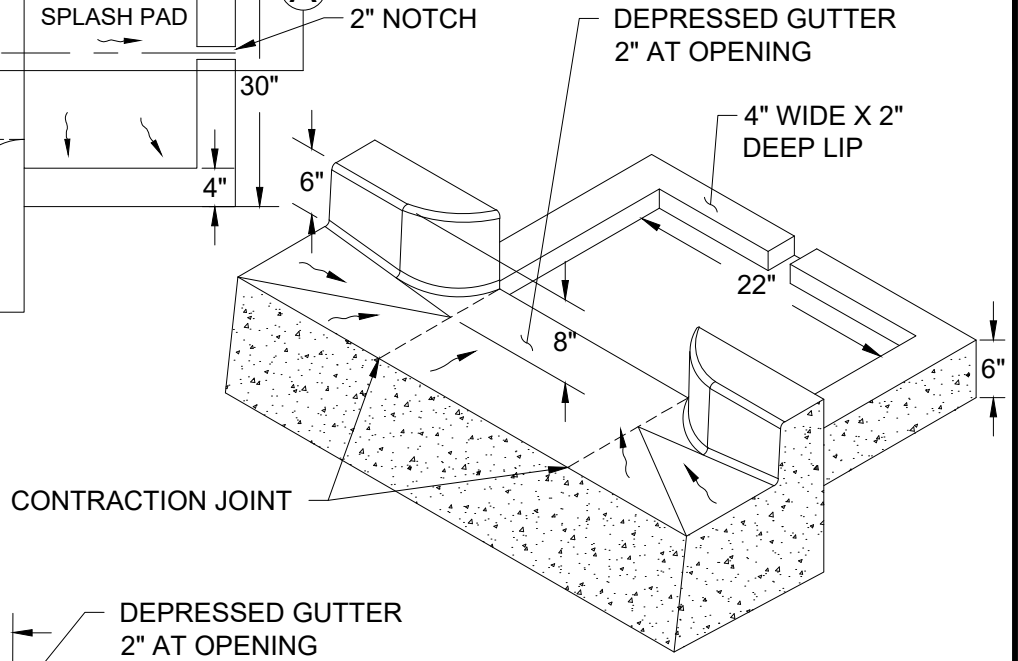
PUBLISHED: SWMM 2025

DRAWN	TFH
REV. DATE	NOV 2024
APPR.	
DETAIL NO.	419

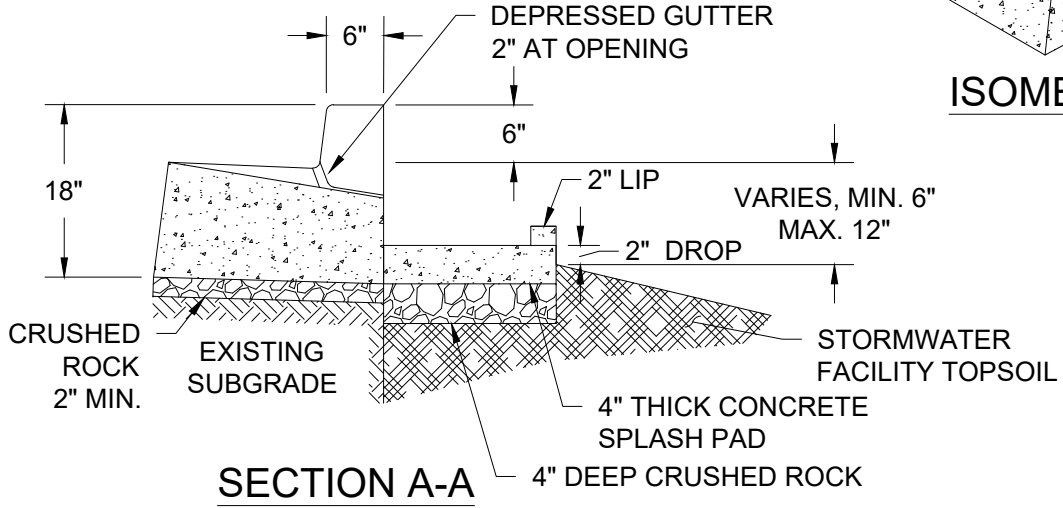
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PLAN



ISOMETRIC



SECTION A-A

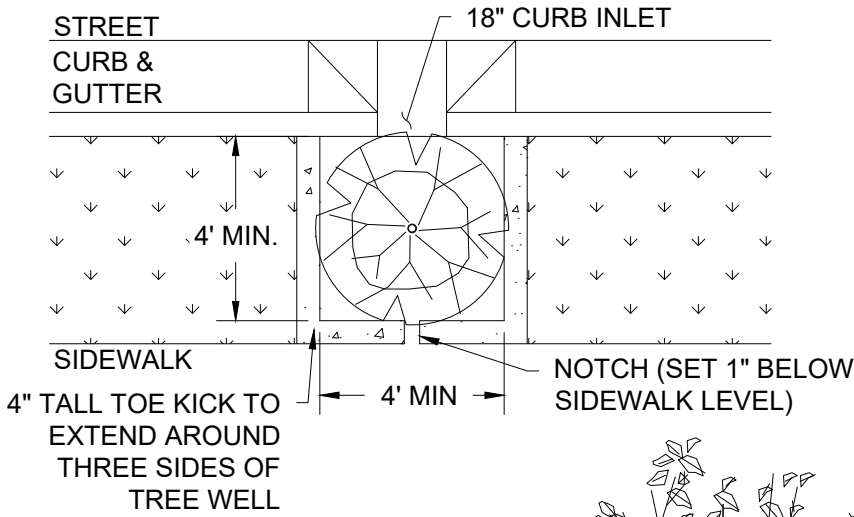
NOTES:

1. REFER TO GS-103 FOR THICKENED MONOLITHIC CURB AND GUTTER. IF PRESENT, MATCH GUTTER PAN WIDTH OF ADJACENT CURB AND GUTTER.
2. GUTTER AND SPLASH PAD SHALL BE MONOLITHIC OR TIED TOGETHER WITH #4 REBAR, 8" ON CENTER.
3. SEE CHECK DAM DETAIL GS-105 FOR DISTANCE TO TOP OF SPLASH PAD.
4. MAXIMUM DISTANCE BETWEEN INLETS SHALL BE 25 FEET.
5. INTENDED FOR USE WITH STORMWATER SWALES. SEE GS-114.

NTS

<p>CITY OF GRESHAM</p>	<p>CONCRETE SPLASH PAD WITH LIP</p>	<p>DRAWN TFH</p>
		<p>REV. DATE DEC 2024</p>
		<p>APPR.</p>
		<p>DETAIL NO. GS-104B</p>
<p>PWS VERSION: SWMM 2025</p>		

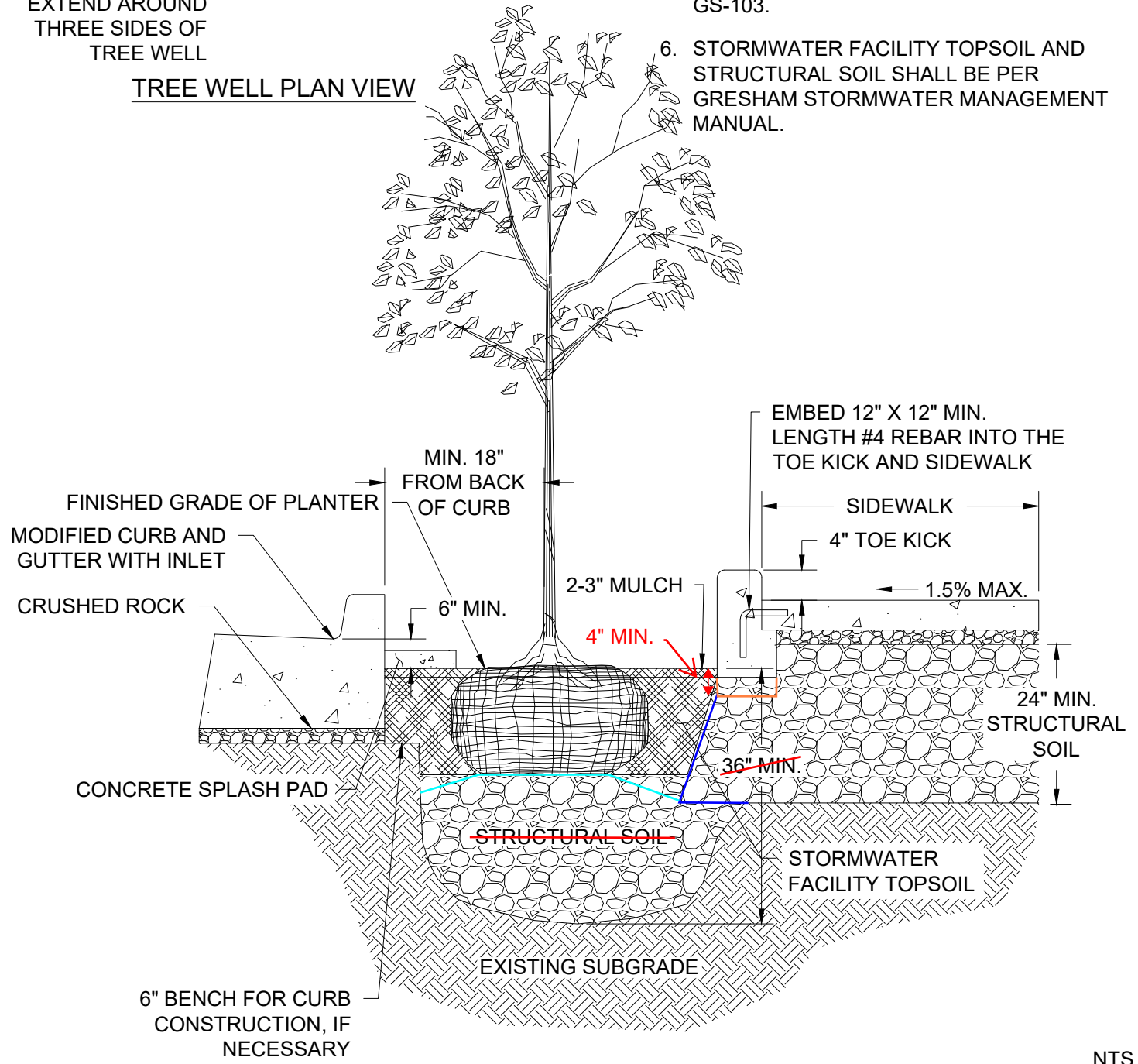
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TREE WELL PLAN VIEW

NOTES:

1. REMOVE WIRE AND BURLAP FROM ROOT BALL PRIOR TO BACKFILLING.
2. **PLANT TREE ON PEDESTAL OF NATIVE SOIL** ADJ
3. SET ONE "DRAINS TO RIVER" BUTTON INTO CURB BEFORE CONCRETE HAS DRIED.
4. SEE GS-104 FOR CURB INLET DETAILS.
5. USE MODIFIED CURB AND GUTTER PER GS-103.
6. STORMWATER FACILITY TOPSOIL AND STRUCTURAL SOIL SHALL BE PER GRESHAM STORMWATER MANAGEMENT MANUAL.



NTS

CITY OF GRESHAM

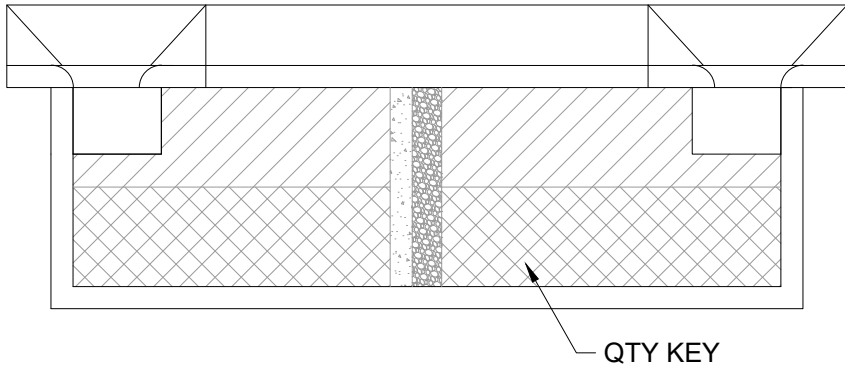
STORMWATER TREE WELL WITH STRUCTURAL SOIL

PWS VERSION: SWMM 2025

DRAWN	KRB
REV. DATE	NOV 2024
APPR.	
DETAIL NO.	GS-111

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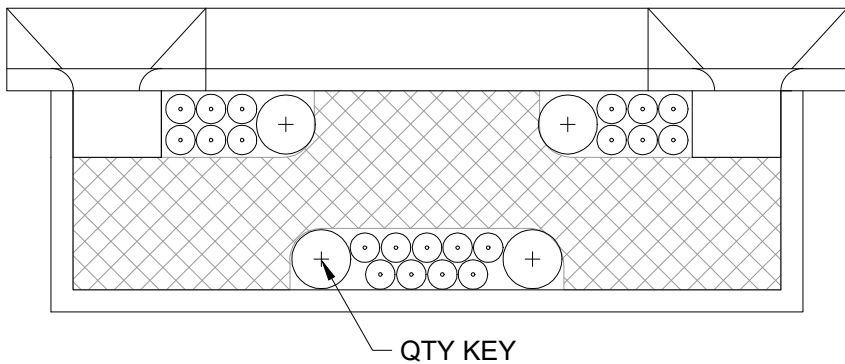
TEMPLATE 1



PLANT LEGEND 1

SYMBOL	BOTANICAL NAME COMMON NAME
	JUNCUS PATENS SPREADING RUSH
	CAREX OBNUPTA SLOUGH SEDGE

TEMPLATE 2



PLANT LEGEND 2

SYMBOL	BOTANICAL NAME COMMON NAME
	JUNCUS PATENS SPREADING RUSH
	CAREX OBNUPTA SLOUGH SEDGE
	SPIRAEA JAPONICA 'GOLD MOUND' GOLDMOUND JAPANESE SPIREA

SAMPLE PLANTING LEGEND

SYMBOL	BOTANIC NAME	COMMON NAME	SPACING	SQ. FOOT AREA = SPACING	X QTY.
	Xxxxxx xxxxx	xxxxx	X	X	X
	Xxxxxx xxxxx	xxxxx	X	X	X

INSTRUCTIONS:

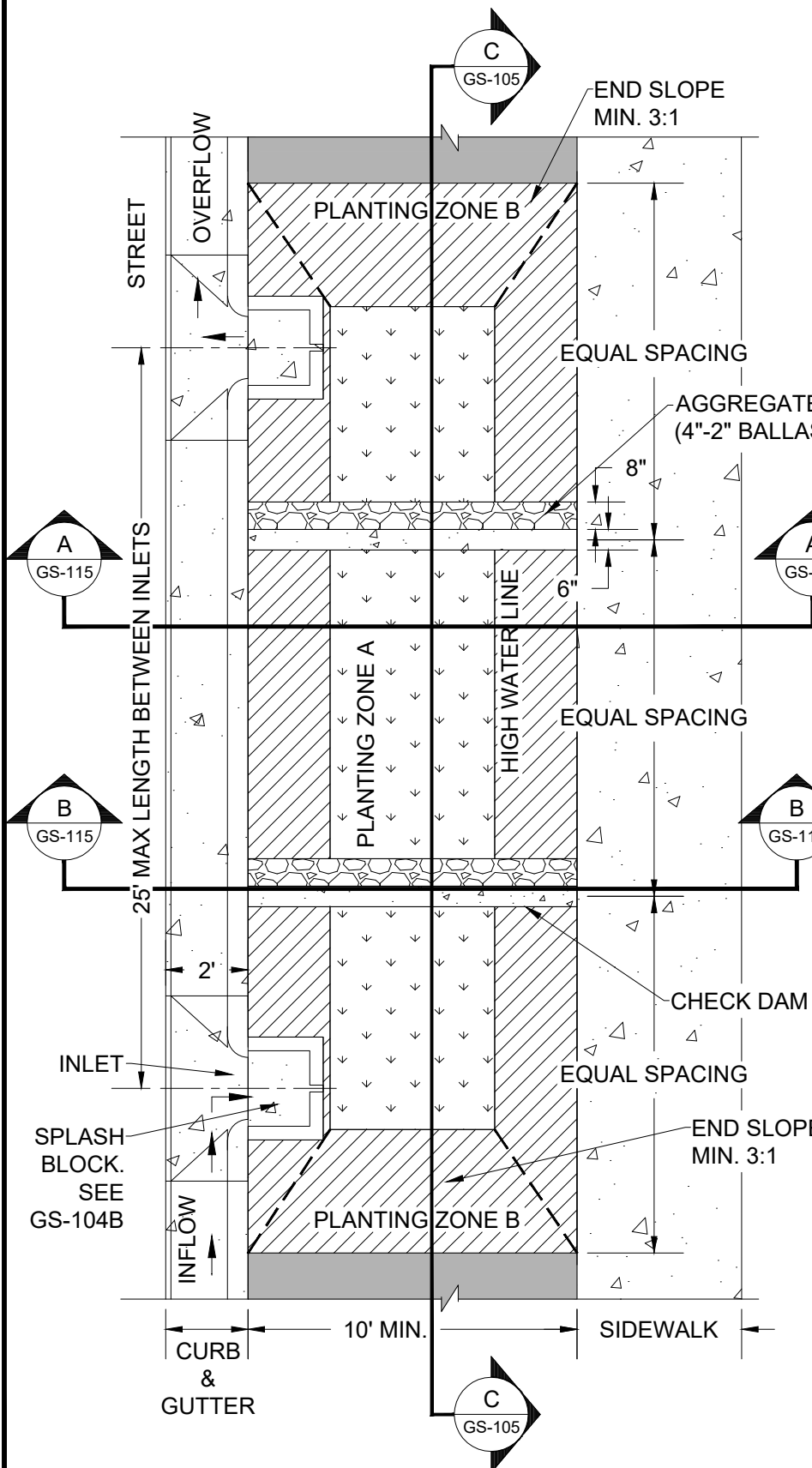
1. CHOOSE A TEMPLATE AND ALTER IT TO DESIGN. THESE ARE EXAMPLES OF APPROVED PLANTING TEMPLATES. OTHER PLANTING PLANS MAY BE APPROVED.
2. PLANT LISTS AND ON-CENTER SPACING REQUIREMENTS ARE FOUND IN THE STORMWATER MANAGEMENT MANUAL.
3. PLANTING LEGEND REQUIRED. STATE PLANT SPECIES, SPACING, AND QUANTITIES.
4. PLANTING PLANS SHALL INCLUDE LABELS FOR EACH PLANT GROUP IDENTIFYING THE PLANT SPECIES AND QUANTITY IN THE GROUP.

- DRAWING NOT TO SCALE -

ORIGINAL DRAWING AND SPECIFICATIONS FROM PORTLAND BUREAU OF ENVIRONMENTAL SERVICES

	<p>PUBLIC FACILITY LANDSCAPING TEMPLATE</p> <p>PUBLISHED: JAN 2026</p>	<p>DRAWN DRO</p>
		<p>REV. DATE APR 2018</p>
		<p>APPR.</p>
		<p>DETAIL NO. GS-113</p>

FILENAME: y:\inter-departmental\development engineering projects\public works standard\2.0 pws revision copy\details\gs_green_streets\green_street_cad\gs-114 - swmm update 2025.dwg, Plotted 1/13/2025 6:54 AM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



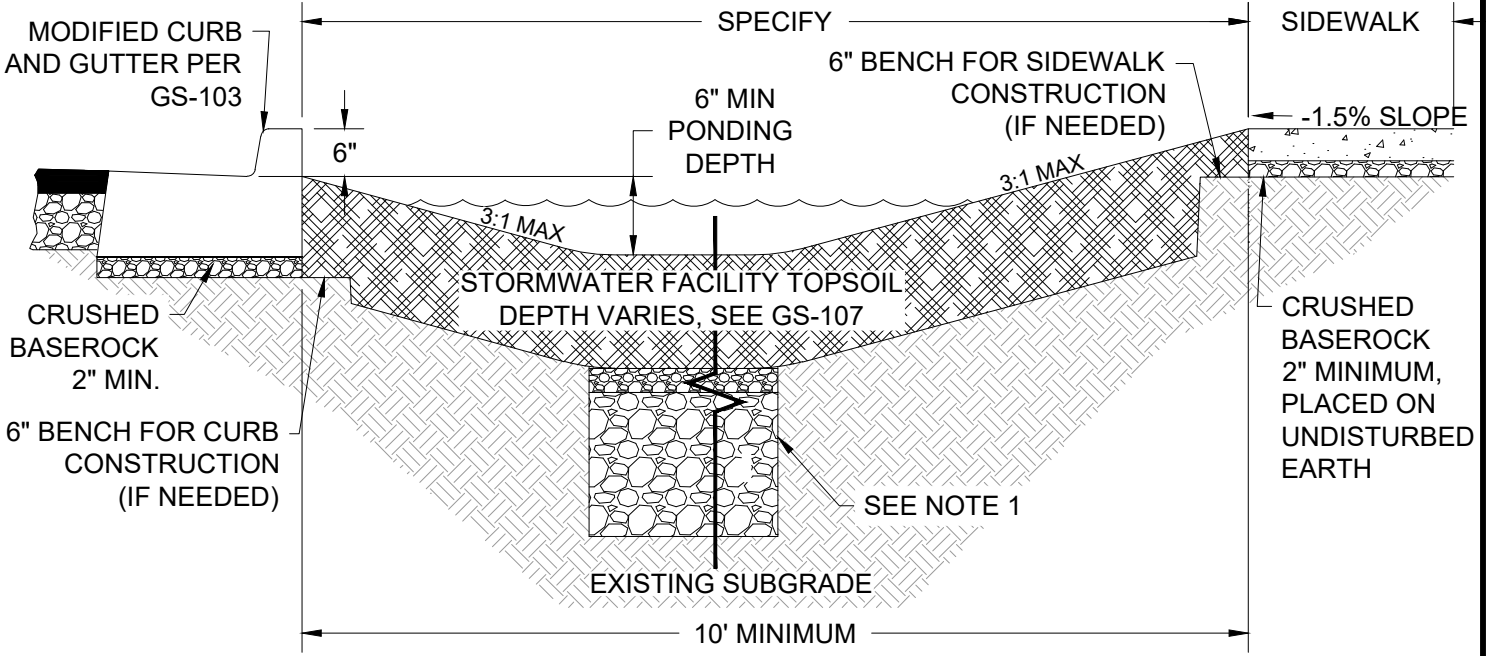
NOTES:

1. SPECIFIC FACILITY DIMENSIONS MUST BE SHOWN ON STORMWATER UTILITY PLAN.
2. LONGITUDINAL SLOPE OF SWALE SHALL MATCH ROAD, UNLESS CHECK DAMS ARE USED, SEE GS-105 FOR CHECK DAM REQUIREMENTS.
3. PROVIDE STATIONS AND ELEVATIONS AT EVERY INLET, OUTLET, AND CHECK DAM.
4. SIDEWALK ELEVATION MUST BE SET ABOVE INLET AND OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. SEE SHEET GS-104B FOR INLET DETAILS.
6. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS, SEE SHEET GS-109 FOR DETAILS.
7. SEE GRESHAM STORMWATER MANAGEMENT MANUAL FOR STORMWATER FACILITY TOPSOIL REQUIREMENTS.
8. MODIFIED CURB AND GUTTER: STANDARD DRAWING GS-103.
9. SEE GRESHAM STORMWATER MANAGEMENT MANUAL FOR PLANTING GUIDANCE.
10. IF STREET LIGHTS ARE PLACED IN FACILITY, PGE APPROVED FOUNDATION WITH 1' CONCRETE SURROUND MUST BE USED.

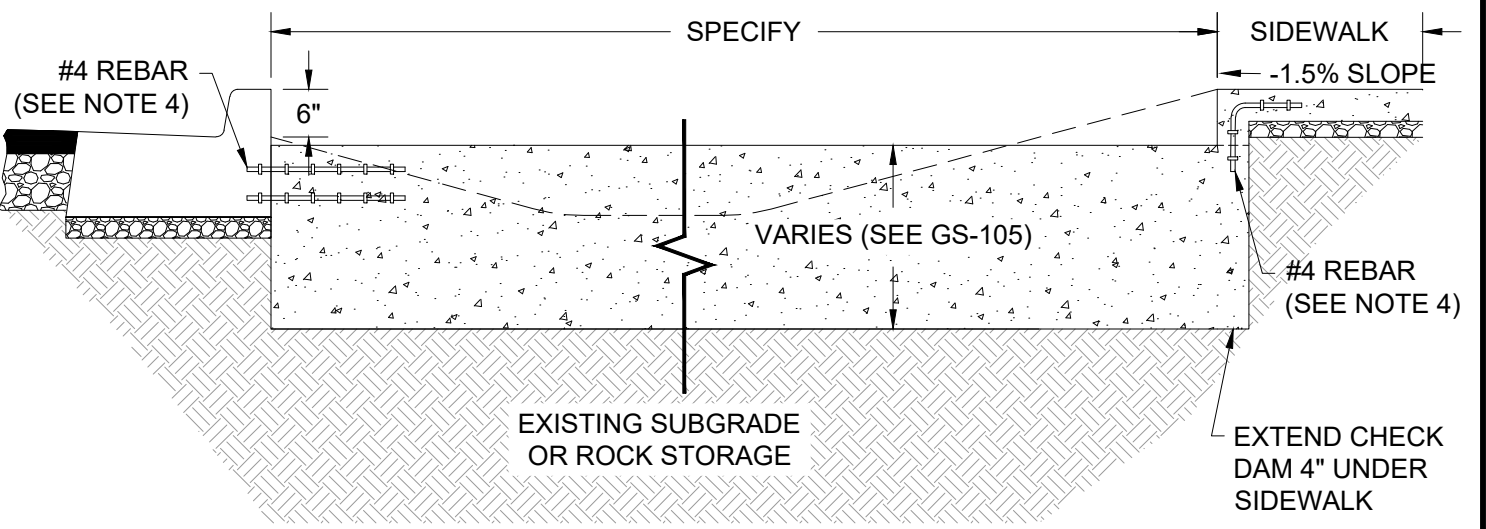
SCALE: 1"=4'-0"

<p>CITY OF GRESHAM</p>	<p>SWALE PLAN VIEW</p>	<p>DRAWN KRB</p>
		<p>REV. DATE JAN 2025</p>
		<p>APPR.</p>
		<p>DETAIL NO. GS-114</p>
<p>PWS VERSION: SWMM 2025</p>		

FILENAME: y:\inter-departmental\development engineering projects\public works standards\2.0 pws revision copy\details\gs_green streets\green street cad\gs-115 - swmm update 2025.dwg, Plotted 12/17/2024 2:13 PM, By: Kimberly Bogert, ANSI FULL BLEED A (8.50 X 11.00 INCHES)



SECTION A-A



SECTION B-B

FOR PLAN VIEW
REFER TO GS-201

NOTES:

1. SEE GS-107 TO DETERMINE WHEN AGGREGATE AND UNDERDRAINS ARE REQUIRED. WHEN REQUIRED, AGGREGATE ONLY NEEDS TO BE IN THE MIDDLE PORTION OF THE SWALE.
2. FRACTURE AND LOOSEN THE NATIVE SOIL FOLLOWING INITIAL EXCAVATION AND BEFORE INSTALLING TOPSOIL OR ROCK.
3. STORMWATER FACILITY TOPSOIL SHALL BE PER THE CITY'S STORMWATER MANAGEMENT MANUAL.
4. EMBED OR EPOXY SET A 12" MIN. LENGTH #4 REBAR BETWEEN CHECK DAM AND CURB AND/OR SIDEWALK.
5. TREES PLANTED IN SWALE SHALL BE CENTERED BETWEEN CURB AND SIDEWALK. PLACE ROOT BALL ON NATIVE SOIL AND ENSURE TOP OF ROOT BALL IS 1-2" ABOVE FINAL TOPSOIL ELEVATION.

NTS

**CITY OF
GRESHAM**

SWALE SECTION VIEW

PWS VERSION: SWMM 2025

DRAWN	KRB
REV. DATE	DEC 2024
APPR.	
DETAIL NO.	GS-115