

ITEM	LATIN NAME	COMMON NAME	TOTAL NUMBER	SPACING
A	Carex grayi	Bur sedge	5	60"
B	Carex vulpinoidea	Fox sedge	5	60"
C	Chasmanthium latifolium	River oats	4	60"

BIORETENTION PLANTING SCHEDULE BASIN #1

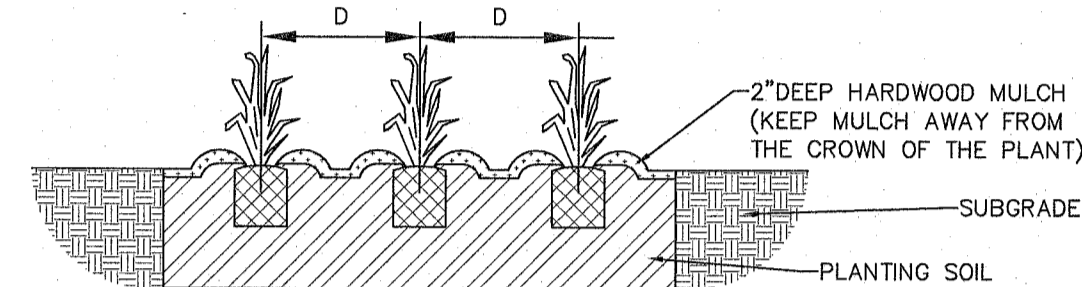
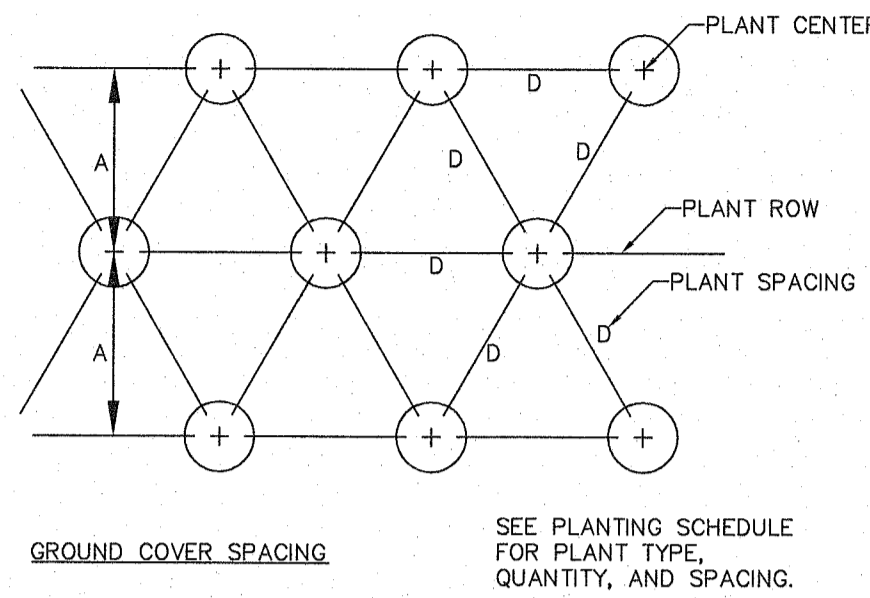
Planting, Water and Mulch Requirements for Stormwater BMPs

Water Availability	Required Planting Period	Minimum Container Size	Water Requirement First 3 Weeks*	Water Requirement After 3 Weeks*	Maximum Mulch Depth****
No ability to water after	Late Feb. - April only	2.25' x 3.75' or larger	Water each plug immediately		1.5' for plugs
Manual watering with standard sprinkler	Late Feb. - Early June Sept. - October	4.5' x 5' (quart) or larger in summer & fall	1" (60 min) every 4 days	1" (60 min) every 7 days until plants established***	1.5' for plugs 2.5' for quarts
Automatic irrigation (set to water more frequently than normal during first two months after planting)	Late Feb. - Early Oct.	2.25' x 3.75' (plug) or larger in spring 4.5' x 5' (quart) or larger in summer & fall	1" (60 min) every 4 days in spring and fall 1" (60 min) every 3 days in summer	1" (60 min) every 7 days until plants established***	1.5' for plugs 2.5' for quarts

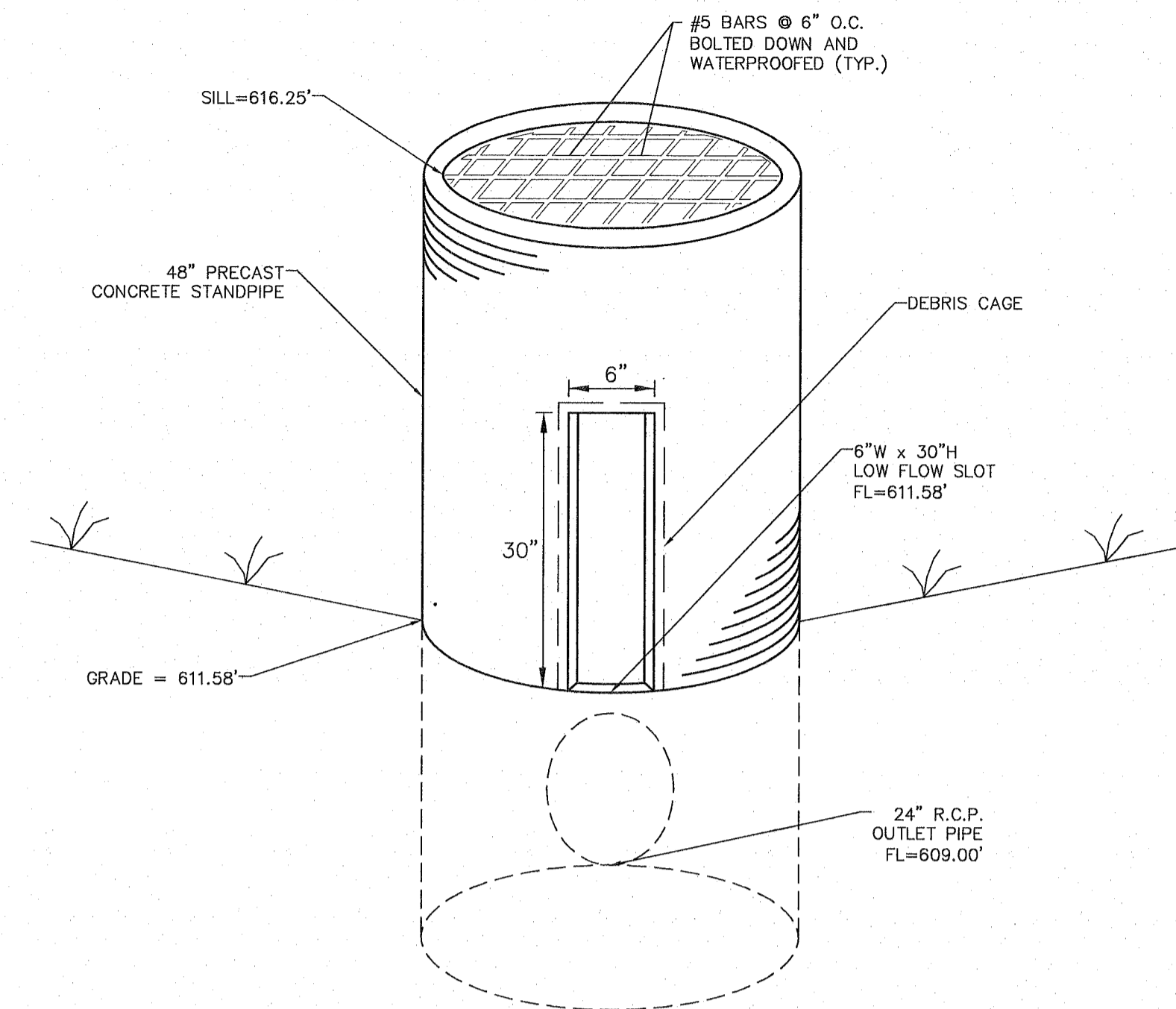
*This water amount includes natural rainfall. If you get a 1/8 inch of natural rain then you will need to add a 1/8 inch of water to meet the 1 inch requirement.
 **Requires transport of water to the planting site in large containers and pouring enough water onto each plant (after planting) to moisten the entire planting pit.
 ***Plants are established when roots have grown out of the container soil and into the native soil by 3-5 inches. This normally takes 3-4 months for most perennials and grasses and up to 6-7 months for trees and shrubs.
 ****Shredded leaf compost is recommended for use with perennials and grasses. Shredded bark mulch is recommended for tree and shrub plantings at a depth of 3 inches.

PLANTING, WATER, AND MULCH REQUIREMENTS

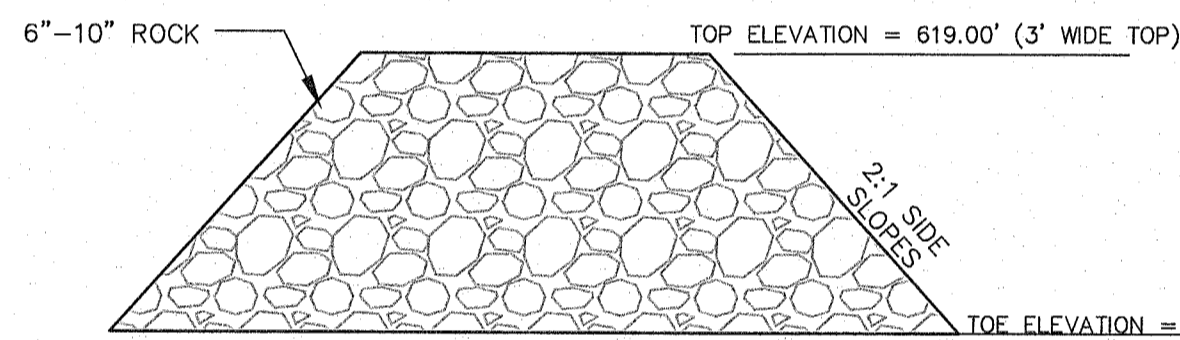
PLANT SPACING 'D'	ROW SPACING 'A'	NUMBER OF PLANTS/SQFT
60"	52.0"	0.045
30"	26.0"	0.160
24"	20.8"	0.25
18"	15.6"	0.45
15"	13.0"	0.64
12"	10.4"	1.00
10"	8.66"	1.44
8"	6.93"	2.25



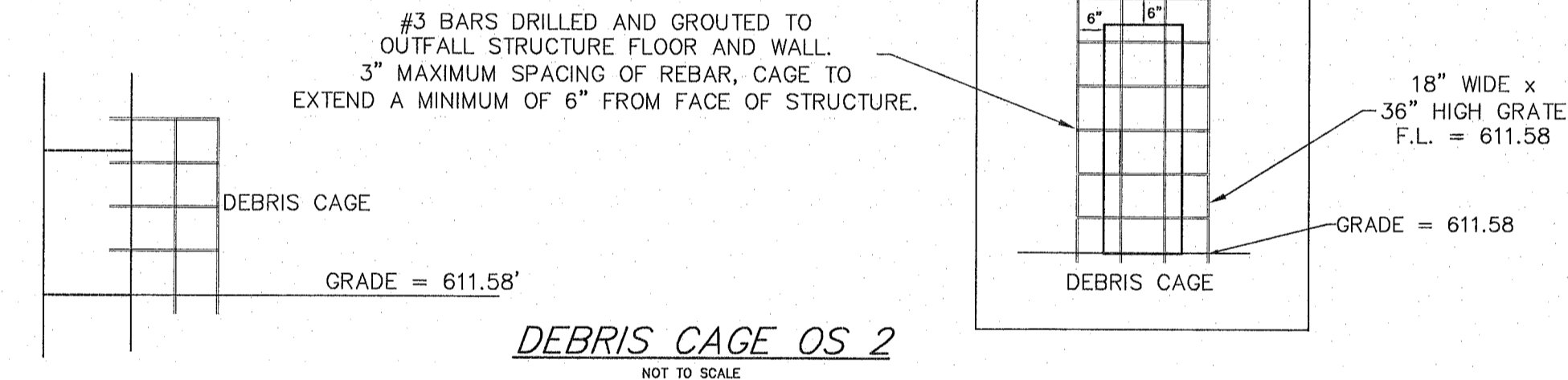
PLANT SPACING GUIDE NOT TO SCALE



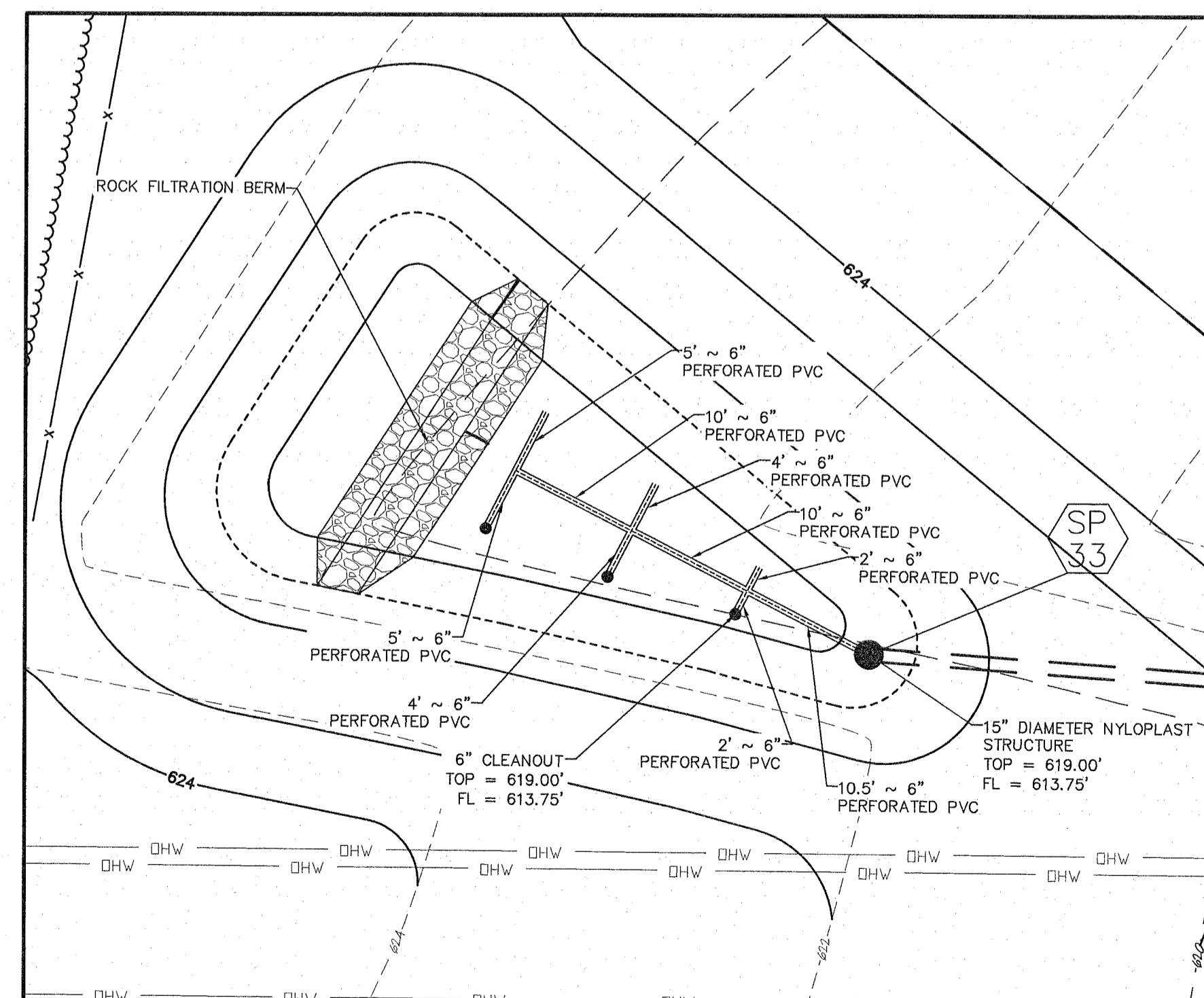
2 YR, 20 MIN HW = 614.31'
 15 YR, 20 MIN HW = 615.07'
 25 YR, 20 MIN HW = 615.45'
 100 YR, 20 MIN HW = 615.83'
 100 YR, 20 MIN LFB HW = 617.11'
BASIN #1 OUTFALL STRUCTURE OS 2
 N.T.S.



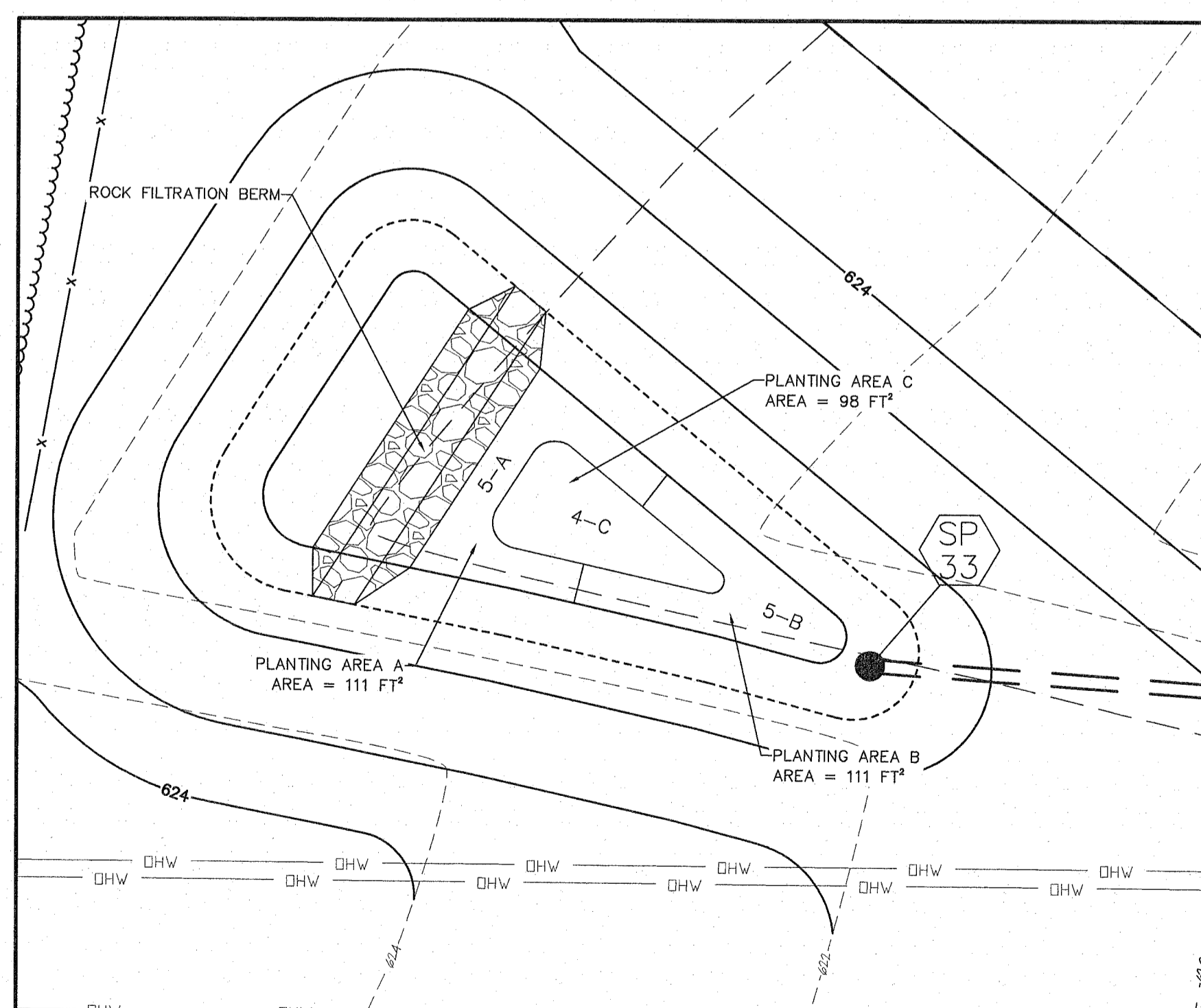
ROCK FILTRATION BERM NOT TO SCALE



DEBRIS CAGE OS 2 NOT TO SCALE



BIORETENTION #1 SITE PLAN SCALE: 1"=10'



BIORETENTION #1 PLANTING PLAN SCALE: 1"=10'

CONTRACTOR INSTALLATION NOTES:

- DURING CONSTRUCTION CONTRACTOR TO PROVIDE ANY TEMPORARY DITCHES OR PIPING IN AN EFFORT TO DIVERT UNWANTED WATERS TO ENTER BIOWASIN DURING THE INSTALLATION. PROVIDE ANY ADDITIONAL SILTATION CONTROL AS REQUIRED BY CITY.
- ONCE BASIN IS DUG OUT, TILL OR "RIP" BOTTOM OF BASIN, INSTALL FILTER FABRIC ON SLOPES OF TRENCH AND TACK IN PLACE.
- BEGIN INSTALLING 6" OF 3/4" CLEAN GRAVEL IN LOOSE LIFT, DO NOT COMPACT.
- LAY PERFORATED DRAINAGE PIPING AND OVERFLOW PIPING.
- BEGIN PLACING 12" OF 3/4" CLEAN GRAVEL IN LOOSE LIFT, DO NOT COMPACT.
- BEGIN PLACING 6" OF ASTM C-33 SAND IN LOOSE LIFT, DO NOT COMPACT.
- BEGIN PLACING 6" OF 3/8" CLEAN PEA GRAVEL IN LOOSE LIFT, DO NOT COMPACT.
- BEGIN PLACING PLANTING SOIL AT THE REQUIRED DEPTHS FOR EACH BASIN IN LIFTS OF 12"-18" LOOSELY, DO NOT COMPACT.
- FINISH GRADE BASIN SIDE SLOPES AND PLACE PLANTINGS.
- BASIN PLANTINGS TO BE WATERED AND MAINTAINED FOR 60 DAYS BY CONTRACTOR.

LIMITS OF LAND DISTURBANCE:

THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORK AREA WHEREVER POSSIBLE.

DETENTION BASIN TO BE SODDED TO THE 100 YR LOW FLOW BLOCKED ELEVATION.

CONSTRUCTION SITE RUNOFF SHALL NOT FLOW INTO THE BIOWASIN AREA. ALL STORMWATER FLOW TO THE BMP AREA SHALL BE DIVERTED, PLUGGED, OR DISCONNECTED UNTIL THE CONSTRUCTION SITE IS STABLE.

Sand Gradations per ASTM C-33 Sieve Specifications	Percent Passing
9.5-mm (3/8-in.)	100
4.75-mm (No. 4)	95 to 100
2.36-mm (No. 8)	80 to 100
1.18-mm (No. 16)	50 to 85
600-um (No. 30)	25 to 60
300-um (No. 50)	5 to 30
150-um (No. 100)	0 to 10

SAND SPECIFICATIONS:

Washed ASTM C33 Fine Aggregate Concrete Sand is utilized for stormwater management applications. In addition to the ASTM C-33 specification, sand must meet ALL of the following conditions:

- Sand must meet gradation requirements for ASTM C-33 Fine Aggregate Concrete Sand. ASHTO M-6 gradation is also applicable. (Known as Natural washed concrete sand)
- Sand must be siliceous...no limestone based products may be used. If the material is white or gray in color it is probably not acceptable.
- Sand must be clean. Natural, unwashed sand deposits may not be used. Likewise, sand that has been contaminated by improper storage or installation practices will be rejected.
- Manufactured sand or stone dust is not acceptable under any circumstances.

Planting Soil Specifications:

Sandy Loam or Loomy Sand should contain a minimum of 35 to 60 percent sand, by volume. The clay content for these soils should be less than 10 percent by volume. The soils shall be free of stones, stumps, roots, or other woody material over 1 inch in diameter. Placement of the planting soil should be in lifts of 12 to 18 inches and be placed loosely with no compaction.

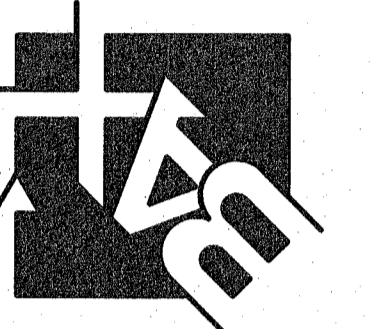
MAINTENANCE SCHEDULE:

- THE PROPERTY OWNER WILL MAINTAIN THE BIORETENTION IN GOOD WORKING ORDER AND WILL BE INSPECTED EVERY 6 MONTHS FOR THE FOLLOWING:
 - SAID AREA SHALL BE CLEANED SHORTLY AFTER THE PROJECT IS COMPLETED AND EROSION CONTROL HAS BEEN REMOVED AND VEGETATION HAS BEEN ESTABLISHED.
 - AREA SHALL BE CLEANED OF ANY WEEDS, UNDERBRUSH, WILD GROWTH, DEBRIS OR LITTER.
 - PLANTINGS WILL BE EVALUATED AND ANY DEAD PLANT SHALL BE REPLACED.
 - IF ACCUMULATED SEDIMENT HAS CLOGGED THE SURFACE PORES OF THE RAIN GARDEN, THEN DRILLING OR PUNCHING SMALL HOLES INTO THE SURFACE LAYER SHALL BE DONE TO RESTORE INFILTRATION CAPACITY OF THE SOIL.

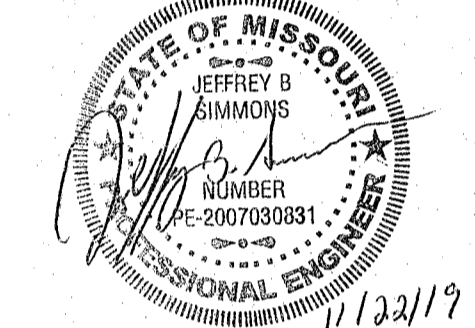
PROJECT TITLE:

WYNDGATE MEADOWS

ENGINEERING PLANNING SURVEYING
 221 Pointe West Blvd.
 St. Charles, MO 63301
 636-928-5662
 FAX 928-1718



DISCLAIMER OF RESPONSIBILITY
 I hereby certify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.



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REVISIONS
08/08/19 D.C.S.D. P.W.S.D. #2 & CLIENT COMMENTS
08/30/19 D.C.S.D. P.W.S.D. #2 & CITY COMMENTS
09/25/19 D.C.S.D. P.W.S.D. #2 & CITY COMMENTS
10/22/19 CITY COMMENTS
11/08/19 CITY COMMENTS
11/22/19 CITY COMMENTS

Developer / Owner:
 STRAQR, L.L.C.
 9645 Clayton Road
 St. Louis, MO 63124
 314-667-9400

P+Z No. #18-012166
 Approval Date: 06/27/2019

City No. #RSP-19-000010

Page No.
 24 of 25

WATER QUALITY DETAILS