TREE BOX FILTER LOCATION O

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
O-0	4' x 6' sq. Tree Box Filter Sta. 6+99; 17.32+' Right	11.1	10.27		7.60 (O-3)				
O-1	4'-0" Connector Manhole Station 7+27; 11.00' Right	10.78		7.37 (6" RD) (O-9)(O-10)(O-12)	4.75+ (V-2)				
O-2	6'-0" Overflow Catch Basin with Overflow Weir set Elev. 8.20 Sta. 7+15; 11.00' Right	10.48			4.96 (discharge after weir) 6.40 (12")				
O-3	4'-0" dia. Junction Manhole Sta. 7+06.31; 22.79' Right	10.80		7.35 (O-0) 6.50 (4" from wall drain adjacent to Noyes Building) 6.30 (O-2)	6.30 (O-4)				
O-4	4' x 6' Outlet Control Manhole Sta. 6+67; 22.00 Right	11.12 11.18		6.25 (O-2) (O-3)	6.20 TO STORAGE				8.20
O-5	4' x 6' Outlet Control Manhole Station 6+65; 20' right	11.21 to 11.25		6.2 (12") 5.7 (4" UD)	5.60 (O-6)				
O-6	New 4'-0" dia. Manhole Sta. 6+67; 12' Right	10.88		5.27 (O-7) 5.54 (O-5) (P-4)	5.22 (O-1)				
O-7	4'-0" Diameter Manhole Sta. 6+36; 15' Right	10.87		5.45 (B-5) (O-8)	5.40 (O-6)				
O-8	4'-0" Diameter Manhole			UD UD RD					
O-9	4'-0" Diameter Catch Basin				(O-1)				
O-10	4'-0" Diameter Catch Basin			(O-11)	(O-1)				
O-11	4'-0" Diameter Catch Basin				(O-10)				
O-12	2'-0" Square Catch Basin				(O-1)				
Underground storage Sta. 6+94 to 7.18; 20' to 23' Right						8.20	6.20	11.40 to 11.20	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
O-0 to O-3	4	7	0.0362	0.25	
O-2 to O-3	12	5	0.0100	0.05	
O-3 to O-4	12	6	0.0050	0.03	
O-5 TO O-6	12	10	0.0100	0.06	
O-6 to O-1	12	68	0.0100	0.68	
O-7 to O-6	12	32	0.0100	0.32	
B-5 to O-7	12	31			Set slope in field.
O-1 to V-2				0.00	
RD to O-8				0.00	
O-9 to O-1	12	10			Set slope in field.
O-10 to O-1				0.00	
O-11 to O-10				0.00	
O-12 to O-1				0.00	

NOTES:

1. 4" underdrain from underground storage to connect to downstream side of O-5; 4" underdrain from Filterra® to connect to O-3.
2. From area of underground storage prior to pouring lightweight concrete.
3. Install 4" PVC Backwater Valves in O-3 on discharge from 4" tree box underdrain and O-5 on discharge from underground storage.
4. Relocate water service to clear tree box filter.
5. Centerline grade at bottom of excavation for concrete Station 6+25 = Elev. 3.36; Station 7+25 = Elev. 5.13.

TREE BOX FILTER LOCATION P

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
P-0	4' x 6' Tree Box Filter Sta. 7+00.5+; 17.50' Left	11.25	10.41		7.75				
P-1	4'-0" Overflow Catch Basin Sta. 7+09.5; 11.16' Left	10.65			6.50				
P-2	4'-0" dia. Junction Manhole Sta. 7.09; 28' Left	11.43		7.53 (P-0) 6.42 (P-1)	6.32				
P-3	4' x 6' Outlet Control Manhole Sta. 6+72.5; 26.5' Left	11.46 11.40		5.50 (4" UD) 5.9 (12")	5.44				8.00
Underground Storage Sta. 6+75 to 6+99; 26.5' to 29.5' Left						8.00	6.00	11.84 to 11.90	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
P-0 to P-2	4	15	0.009	0.13	
P-1 to P-2	12	13	0.005	0.08	
P-2 to Underground Storage	12	4	0.01	0.04	
P-3 to O-6	12	29	0.005	0.15	

NOTES:

1. 4" underdrain from underground storage to connect to downstream side of P-4.
2. Form area of underground storage prior to pouring lightweight concrete.
3. Install 4" PVC Backwater Valve in P-4 on discharge from 4" underdrain.

TREE BOX FILTER LOCATION R

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
R-0	4' x 6' Filterra® Sta. 3+10; 21.5' Right	9.75	8.91	--	6.25 (R-2)				
R-1	4'-0" Overflow Catch Basin Sta. 3+00; 18.16' Right	8.77		--	5.83 (R-2)				
R-2	New Manhole Sta. 3+20; 23' Right	10.18		5.66 (R-0) 4.70 (R-2)	4.58				
R-3	4' x 6' Outlet Control Structure Sta. 3+57.50; 22.50' Right	10.21 10.13		4.0 (4") 5.02 (4" UD)* 4.5 (12")	3.97 (R-5)				6.50
R-4	New replacing 4'-0" dia. Manhole	9.94		3.80 (R-4) 3.88 (12")	3.70				
R-5	4'-0" dia. Catch Basin								
R-6	4'-0" dia. Catch Basin								
Underground Storage Sta. 3+30 to 3+54; 20' to 23' Right						6.50	4.50	9.70 to 10.40	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
R-0 to R-2	4	6	0.1176	0.71	
R-1 to R-2	12	14	0.0100	0.14	
R-2 to Underground Storage	12	2	0.0200	0.04	
R-3 to R-4	12	63	0.0050	0.32	
R-5 to R-3	6	3	0.0100	0.03	
R-6 to R-1				0.00	

*4" Underdrain from sheet drain adjacent to wall of Noyes Building.

NOTES:

1. Underdrain from underground storage to connect to downstream side of R-3.
2. Underground storage will project through the bottom of lightweight fill. Special provisions required.
3. Install PVC Backwater Valves in R-3 on discharge from underdrains.
4. Install the 4" underdrain from the tree box filter to R-2.
5. Centerline grade at bottom of excavation for concrete Station 3+25 = Elev. 5.70+; Station 2+75 = 4.36+.
6. R-4 will be installed on existing 12" storm drain; test pit required to verify invert elevation.

TREE BOX FILTER LOCATION Q

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
Q-0	Filterra® Sta. 5+23; 17' Left	11.29	10.45		7.79 (Q-2)				
Q-1	4'-0" Overflow Catch Basin Sta. 5+31.5; 11.16' Left	10.66			6.53 (Q-2)				
Q-2	4'-0" dia. Junction Manhole Sta. 5+31.5; 26' Left	11.87		6.42 (12") 7.66 (4")	6.32 TO STORAGE				
Q-3	4' x 6' Outlet Control Manhole Sta. 4+98.5; 27' Left	11.82 to 11.88		6.20 (12") 5.70 (4")	5.70 (Q-4)				8.20
Q-4	4'-0" Dia. Manhole	10.90		5.49 (Q-3)	3.45 +/-				
Underground Storage Sta. 5+25 to 5+01; 25.5' to 28.5' Right				5.67 (Q-2)	(Q-3)	8.20	6.20	11.92 to 11.86	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
Q-0 to Q-2	4	8	0.0163	0.130	
Q-1 to Q-2	12	11	0.0100	0.110	
Q-2 to Storage	12	6	0.0100	0.060	
Q-3 to Q-4	12	18	0.0100	0.180	

NOTES:

1. 4" underdrain from underground storage to connect to downstream side of Q-3.
2. Underground storage is within lightweight concrete. Special provisions apply.
3. Install PVC backwater valves in discharge from underdrains.
4. Centerline grade at bottom of excavation for concrete Sta. 5+00 = Elev. 2.50+; Sta. 5+50 = Elev. 2.87+.
5. 4" Underdrain from Filterra® to connect to Q-2.

TREE BOX FILTER LOCATION S

	Description	Rim	Inlet Apron at Gutter	Invert In Elev.	Invert Out Elev.	Top of Storage Elev.	Bottom of Storage Elev.	Ground Surface (Range in Elevation)	Overflow Weir Elevation
S-0	4' x 6' Filterra® Sta. 2+94; 14.5' Left	9.53	8.69	--	6.03 (S-3)				
S-2	4'-0" dia. Overflow Catch Basin Sta. 2+70; 11.16' Left	8.57		--	5.07 (S-3)				
S-3	4'-0" square Junction Manhole Sta. 2+88; 29.5' Left	11.85		4.9 (12") 5.93 (4")	4.53 TO STORAGE				
S-4	4' x 6' Control Manhole Sta. 3+17; 30.50' Left	11.86 11.92		4.47 (12") 3.97 (4")	3.97				6.47
S-5	=R5 Sta. 3+24; 9' Right	9.91		3.8 (S-4)	3.70				
S-6									
S-7	New Manhole (City)								
Underground Storage 2+90.5 to 3+14.5; 29' to 32' Left						6.47	4.47	12.00 to 11.80	

New Storm Drain	Pipe Diameter (in.)	Length (ft)	Slope (ft/ft)	Grade Difference (ft)	Notes
S-0 to S-3	6	12	0.0080	0.10	
S-2 to S-3	12	24	0.0050	0.120	
S-4 to S-5	12	15	0.0050	0.08	
S-6 to S-5	12	63			
S-5 to S-7	12	79			

NOTES:

1. 4" underdrain from below storage is to connect to the downstream face of S-4.
2. Underground storage will project through the lightweight fill. Special provisions are required.
3. Install PVC Backwater Valves in S-4 on discharge from underdrains.
4. Centerline grade at bottom of excavation for concrete Sta. 2+75 = Elev. 5.70+; Sta. 3+25 = Elev. 4.36+.
5. 4" underdrain from Filterra® to connect to S-3.

THE PROPOSED STORM DRAIN SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL STANDARDS USING ONE OF THE FOLLOWING PIPE MATERIALS:

- **REINFORCED CONCRETE PIPE (RCP) WITH A MINIMUM STRENGTH OF CLASS III**
- **PVC RING TYPE SEWER PIPE (SDR 35 OR EQUIVALENT, MINIMUM PS-46 RATING**
- **P.V.C. RING TYPE SEWER PIPE MEETING ASTM F 789 OR EQUAL TO SDR 35**
- **DUCTILE IRON PIPE (DIP)**
- **ADS N-12 HP TRIPLE-WALL PIPE MEETING A MINIMUM PS-46**
- **ADS SANITITE HP MEETING A MINIMUM PS-46**

ALL JOINTS SHALL BE WATERTIGHT (SILT TIGHT JOINTS ARE NOT PERMITTED. CONTRACTORS SHALL REFER TO THE TECHNICAL SPECIFICATIONS FOR THE PROJECT FOR ADDITIONAL INFORMATION INCLUDING ANY SPECIAL PIPE CLASSES.

ANY PIPELINE WITH LESS THAN 2 FEET OF COVER SHALL BE DUCTILE IRON PIPE

REV	DATE	DESCRIPTION
2	02.17.16	FINAL SITE PLANS WITH CONDITIONS OF APPROVAL
1	11.14.14	FINAL LEVEL III SUBMISSION TO CITY OF PORTLAND

REVISIONS

STATE OF MAINE — STEPHEN R. BUSHEY — No. 7429 — LICENSED PROFESSIONAL ENGINEER

P.E. STEPHEN R. BUSHEY
LIC. # 7429

PROJECT: midtown, PORTLAND, MAINE

SHEET TITLE: PROPOSED STORM DRAIN SCHEDULES

CLIENT: FEDEQ DV001, LLC

FST 100 YEARS
FAY, SPOFFORD & THORNDIKE
ENGINEERS · PLANNERS · SCIENTISTS
778 MAIN ST, SUITE 8, SOUTH PORTLAND, ME 04106

DRAWN:	LA	DATE:	OCTOBER 2014
DESIGNED:	BEK	SCALE:	N.T.S.
CHECKED:	SRB	JOB NO.	195350127
FILE NAME:	3062-GRADE SCHED		
SHEET	C-3.13		