

UTILITY PLAN

SCALE: 1" = 60'

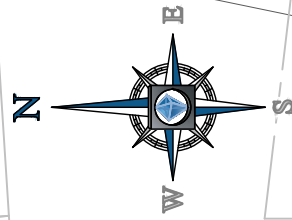


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HANOVER - PUD APPLICATION
February 25, 2019

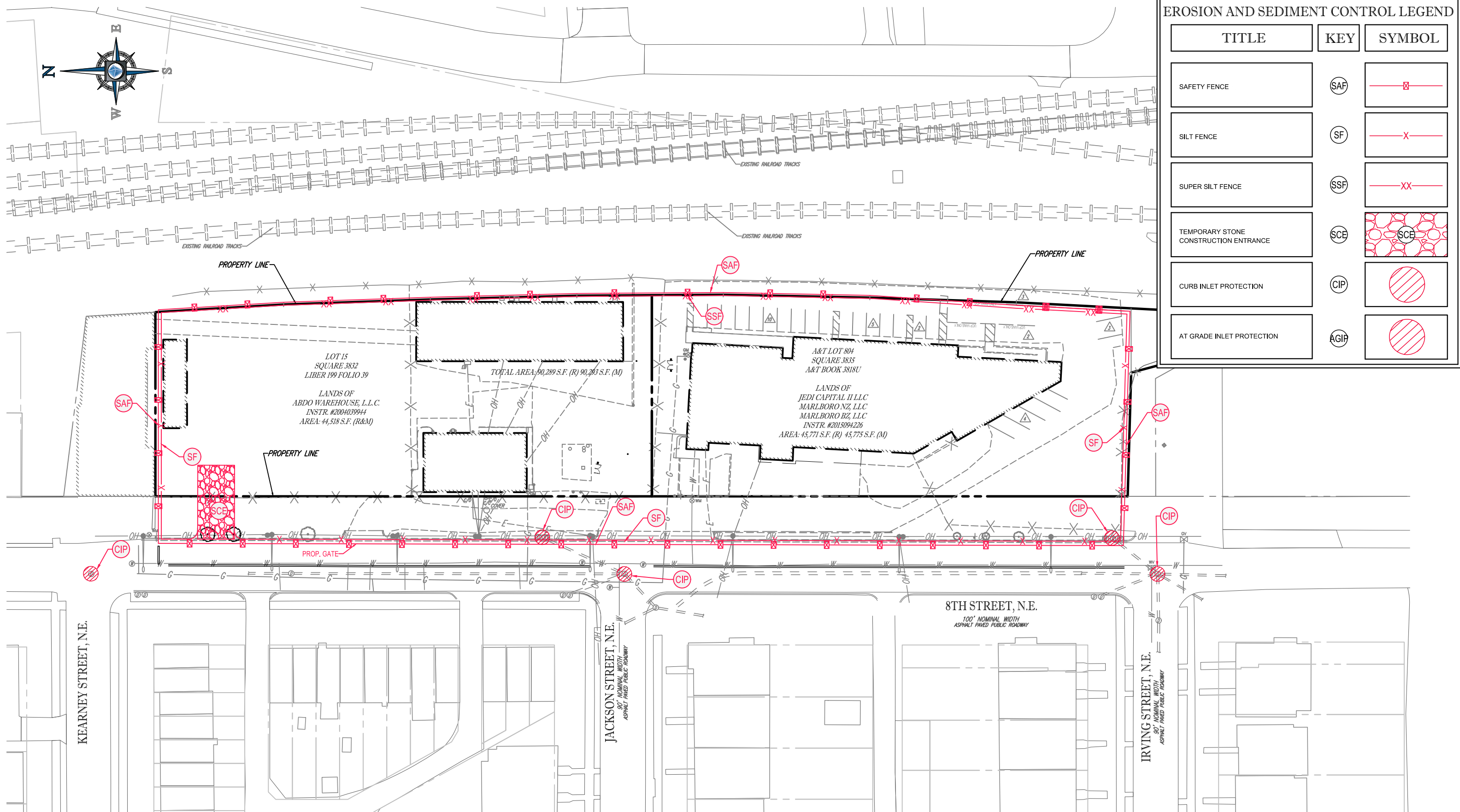


ZONING COMMISSION
District of Columbia
CASE NO.18-21
EXHIBIT NO.15A7



EROSION AND SEDIMENT CONTROL LEGEND

TITLE	KEY	SYMBOL
SAFETY FENCE	(SAF)	— X —
SILT FENCE	(SF)	— X —
SUPER SILT FENCE	(SSF)	— XX —
TEMPORARY STONE CONSTRUCTION ENTRANCE	(SCE)	(SCE) [Stone Pattern]
CURB INLET PROTECTION	(CIP)	[Diagonal Lines]
AT GRADE INLET PROTECTION	(AGIP)	[Diagonal Lines]



EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 60'



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HANOVER - PUD APPLICATION
February 25, 2019



C-601

SILT FENCE DESIGN CRITERIA

TABLE 3.1: SILT FENCE SLOPE LENGTH AND FENCE LENGTH CONSTRAINTS

SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM) (FEET)	SILT FENCE LENGTH (MAXIMUM) (FEET)
FLATTER THAN 50:1 (20:1)	UNLIMITED	UNLIMITED
> 50:1 TO 10:1 (20:1 to 10:1)	125	1,000
> 10:1 TO 5:1 (10:1 to 5:1)	100	750
> 5:1 TO 3:1 (5:1 to 3:1)	60	500
> 3:1 TO 2:1 (3:1 to 2:1)	40	250
> 2:1 (> 50%)	20	125

CONSTRUCTION SPECIFICATIONS

- FENCE POSTS MUST BE A MINIMUM OF 3/4 IN. DIAMETER AND 10 FT. MINIMUM INTO THE GROUND. WOOD POSTS MUST BE OF SOUND QUALITY HARDWOOD WITH 1-1/2 IN. MINIMUM WIDTH WHEN SQUARE OR 1-3/4 IN. MINIMUM DIAMETER WHEN ROUND. STEEL POSTS MUST BE STANDARD T OR U SECTION WEIGHING NOT LESS THAN 1.00 POUND PER LINEAR FOOT.
- FASTEN GEOTEXTILE SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION. GEOTEXTILE MUST MEET THE FOLLOWING REQUIREMENTS (GEOTEXTILE CLASS F):

PROPERTY	VALUE	TEST METHOD
TENSILE STRENGTH	50 LB/LIN (MIN)	ASTM D-4888
TENSILE MODULUS	20 LB/LIN (MIN)	ASTM D-4888
FLOW RATE	0.3 GAL/FT ² (MAX)	ASTM D-5141
FILTRATION EFFICIENCY	75% (MIN)	ASTM D-5141

- WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, OVERLAP, FOLD, AND STAPLE THEM TO PREVENT SEDIMENT BYPASS.
- INSPECT SILT FENCE AFTER EACH RAINFALL EVENT, AT LEAST DAILY DURING SUSTAINED RAINFALL EVENTS, AND MAINTAIN WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHES JOE OF THE FABRIC HEIGHT.

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT
DWG. NO 301.1

SILT FENCE DESIGN CRITERIA

TABLE 3.1: SILT FENCE SLOPE LENGTH AND FENCE LENGTH CONSTRAINTS

SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM) (FEET)	SILT FENCE LENGTH (MAXIMUM) (FEET)
FLATTER THAN 50:1 (20:1)	UNLIMITED	UNLIMITED
> 50:1 TO 10:1 (20:1 to 10:1)	125	1,000
> 10:1 TO 5:1 (10:1 to 5:1)	100	750
> 5:1 TO 3:1 (5:1 to 3:1)	60	500
> 3:1 TO 2:1 (3:1 to 2:1)	40	250
> 2:1 (> 50%)	20	125

CONSTRUCTION SPECIFICATIONS

- FENCING MUST BE AT LEAST 42 INCHES IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST DISTRICT DEPARTMENT OF TRANSPORTATION (DDOT) DETAILS FOR CHAIN LINK FENCING. THE DDOT SPECIFICATION FOR A 6-FOOT FENCE MUST BE USED, SUBSTITUTING MINIMUM 42-INCH FABRIC AND 6-FOOT LENGTH POSTS. POSTS DO NOT NEED TO BE SET IN CONCRETE.
- SECURELY FASTEN CHAIN LINK FENCE TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE INSIDE OF THE FENCE.
- SECURELY FASTEN GEOTEXTILE TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID-SECTION.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHEN TWO SECTIONS OF GEOTEXTILE FABRIC ADJOIN EACH OTHER, FOLD AND OVERLAP BY 8 INCHES.
- GEOTEXTILE MUST MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F (FROM TABLE 3.1-SEE BELOW)

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DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT
DWG. NO 301.2

SUPER SILT FENCE DESIGN CRITERIA

TABLE 3.2: SUPER SILT FENCE SLOPE LENGTH AND FENCE LENGTH CONSTRAINTS

SLOPE	SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM) (FEET)	SUPER SILT FENCE LENGTH (MAXIMUM) (FEET)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	800	1,500
20 - 33%	5:1 - 3:1	150	1,000
33 - 50%	3:1 - 2:1	100	500
> 50%	> 2:1	50	250

CONSTRUCTION SPECIFICATIONS

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DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT
DWG. NO 302.1

SUPER SILT FENCE DESIGN CRITERIA

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20 - 33%	5:1 - 3:1	150	1,000
33 - 50%	3:1 - 2:1	100	500
> 50%	> 2:1	50	250

CONSTRUCTION SPECIFICATIONS

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DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT
DWG. NO 302.2

SUMP PIT

CONSTRUCTION SPECIFICATIONS

- PLACE THE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SILE. USE A MINIMUM LENGTH OF 50 FEET (50 FEET FOR SINGLE-FAMILY RESIDENCE LOT) AND A MINIMUM WIDTH OF 10 FEET. PLACE THE SILE AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SILE UNDER THE ENTRANCE MAINTAINING POSITIVE DRAINAGE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. PROVIDE PIPE INSTALLED THROUGH THE SILE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. WHEN THE SILE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN THE SILE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SILE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MOUNTABLE BERM AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY MOUNTAIN SCOWING AND/OR CREATING. MOUNT ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS BASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT
DWG. NO 702.1

SUMP PIT

CONSTRUCTION SPECIFICATIONS

- PLACE THE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SILE. USE A MINIMUM LENGTH OF 50 FEET (50 FEET FOR SINGLE-FAMILY RESIDENCE LOT) AND A MINIMUM WIDTH OF 10 FEET. PLACE THE SILE AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
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DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT
DWG. NO 302.1

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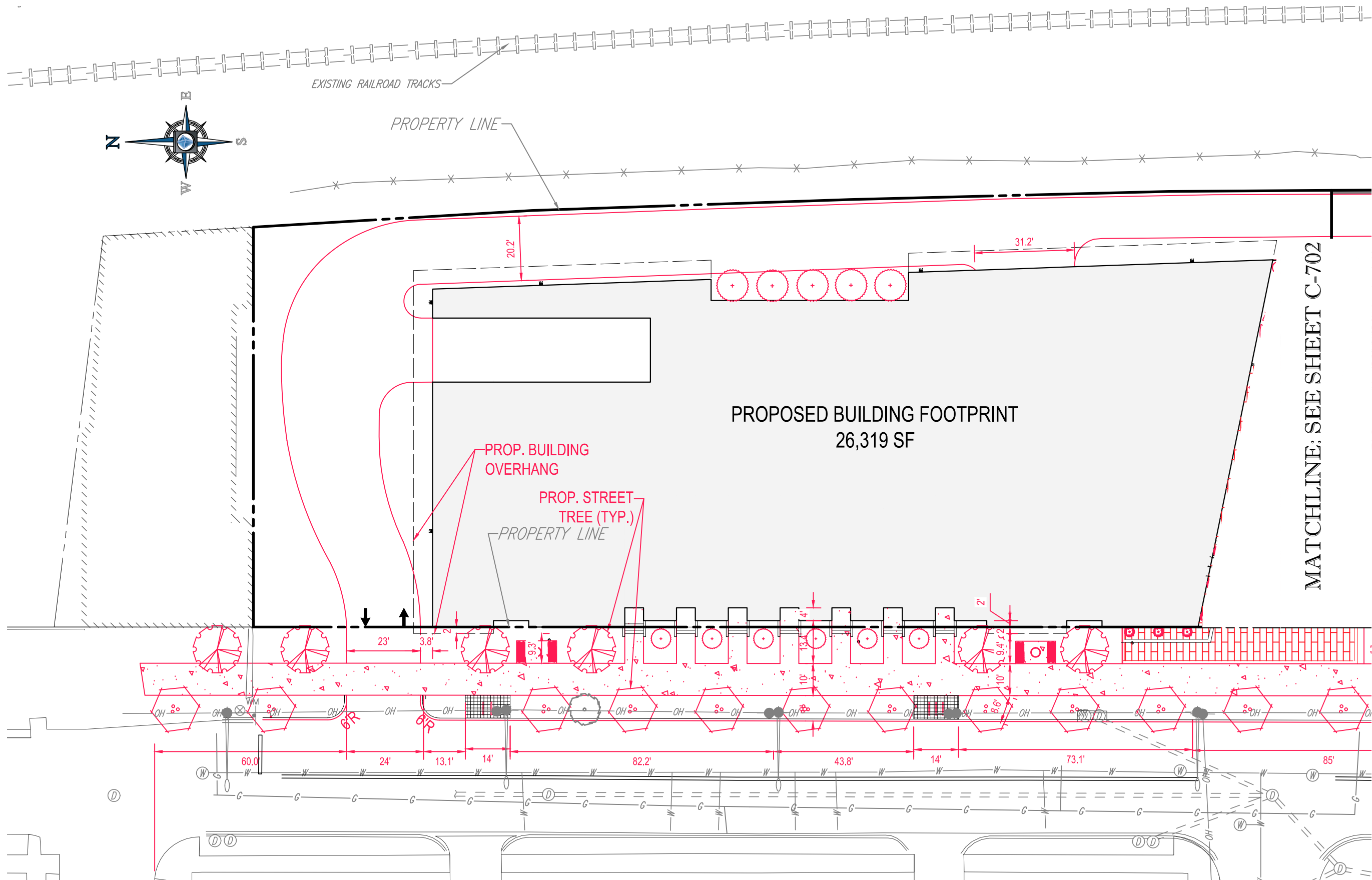
DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT
DWG. NO 302.2

STABILIZED CONSTRUCTION ENTRANCE

CONSTRUCTION SPECIFICATIONS

- PLACE THE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SILE. USE A MINIMUM LENGTH OF 50 FEET (50 FEET FOR SINGLE-FAMILY RESIDENCE LOT) AND A MINIMUM WIDTH OF 10 FEET. PLACE THE SILE AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
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DISTRICT OF COLUMBIA
DEPARTMENT OF ENERGY & ENVIRONMENT
DWG. NO 201.1



PUBLIC SPACE PLAN

SCALE: 1" = 30"

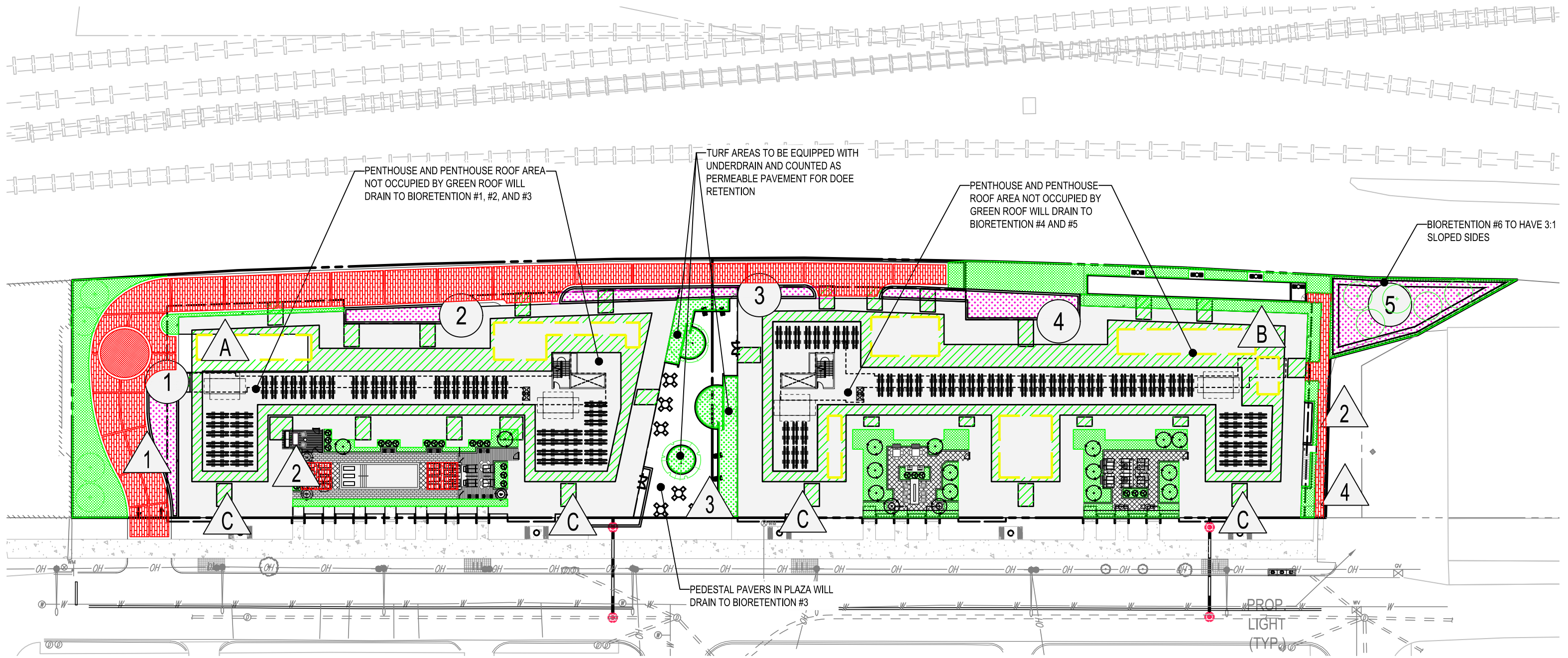


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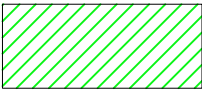
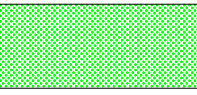

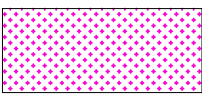


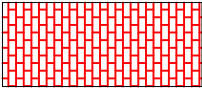


STORMWATER MANAGEMENT SUMMARY

THE VOLUME REQUIRED TO BE RETAINED ON-SITE (SWR_v) IS 7,914 CUBIC FEET. THE VOLUME REQUIREMENT FOR THE PUBLIC RIGHT OF WAY WILL BE DETERMINED ONCE STREETScape IMPROVEMENTS HAVE BEEN FINALIZED.

GREEN ROOF AREAS LOCATED ON VARIOUS LEVELS OF THE PROPOSED BUILDINGS AS WELL AS BIORETENTION, PERMEABLE PAVEMENT, AND TREE PLANTING ON THE GROUND FLOOR. SEE STORMWATER MANAGEMENT NARRATIVE ON SHEET CIV902 FOR ADDITIONAL INFORMATION AND CALCULATIONS.

THE SIZE AND DEPTH OF THE GREEN ROOF, PERMEABLE PAVEMENT, AND BIORETENTION AREAS WILL BE DETERMINED WITH FINAL CONSTRUCTION DOCUMENTS.

LEGEND

	8" GREEN ROOF (13,994 SF)		COMPACTED COVER AREA (9,478 SF ASSUMED INCLUDES PLAZA TURF, COURTYARD TURF AND GROUND COVER)		DENOTES PERMEABLE PAVEMENT
	BIORETENTION (SEE SHEET C-902 FOR BIORETENTION-SPECIFIC MEDIA SECTIONS, 4,910 SF TOTAL)		SOLAR PANEL AREA (3,400 SF TOTAL)		DENOTES GREEN ROOF AREA
	PERMEABLE PAVEMENT (8" RESERVOIR LAYER ASSUMED - 13,541 SF TOTAL)				DENOTES BIORETENTION AREA
					PROPOSED TREE (MATURE SPREAD GREATER THAN 35')

SCALE: 1" = 60'



GREEN ROOF TABLE:

GREEN ROOF#	SURFACE AREA (SF)	TOTAL CDA (SF)	PROP. IMP (SF)	MEDIA DEPTH (in.)	DRAINAGE LAYER DEPTH (IN)	LOCATION	STORAGE PROVIDED	Max SWRv	SWRv PROVIDED	NOTES
A	5,175	5,175	5,175	8	1		1617	696	696	NORTH ROOF
B	6,212	6,212	6,212	8	1		1941	836	836	SOUTH ROOF
C	2,607	2,607	2,607	8	1		815	351	351	COMBO PENTHOUSE GR
TOTAL							4,373	1,883	1,883	

MEDIA RETENTION VALUE	0.45
DRAINAGE LAYER RETENTION VALUE	0.15

PERMEABLE PAVEMENT TABLE:

FACILITY	SA (SF)	SWRv (CF)	Storage (CF)	Gravel D(ft)
1	10,809	486	2535	0.67
2	448	20	105	0.67
3	1,581	71	371	0.67
4	703	32	165	0.67
Total	13,541	609	3175	

BIORETENTION TABLE:

FACILITY	SURFACE AREA, BOT. (SF)	SURFACE AREA, TOP (SF)	TOTAL CDA (SF)	PROP. IMP (SF)	PROP. PERV (SF)	FREEBOARD (FT)	PONDING DEPTH (FT)	MEDIA DEPTH (FT)	GRAVEL DEPTH (FT)	STORAGE PROVIDED	SWRv (CF)	Max SWRv	SWRv PROVIDED
1	709	709	6,727	6,018	0	0.25	1	3.0	1	1,524	915	905	905
2	446	446	3,455	3,009	0	0.25	1	1.5	1	792	475	465	465
3	702	702	10,119	9,417	0	0.25	1.25	2.5	1	1,597	958	1,362	958
4	956	956	8,555	7,599	0	0.25	1	2.5	1	1,936	1,162	1,151	1,151
5	1,461	2,097	13,847	11,398	352	0.5	1	2.0	1	3,094	1,856	1,829	1,829
TOTAL										8,943	5,366	5,712	5,309

TREE PLANTING TABLE:

Activity	Trees	SWRv (CF)	Storage
tree planting (evergreen screening)	12	120	0

SUMMARY

SWRv REQUIRED = 7,914 CF
 SWRv PROVIDED = 7,921 CF

STORAGE REQUIRED = 13,858 CF
 STORAGE PROVIDED = 16,491 CF

SCALE: 1" = 60'



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C-902

GAR SCORESHEET

Green Area Ratio Scoresheet					
***	Address <input type="text" value="3135 8th Street, NE"/>	Square <input type="text" value="3832, 3835"/>	Lot <input type="text" value="15, 804"/>	Zone District <input type="text" value="MU-4"/>	
	Other <input type="text"/>	Lot area (sf) <input type="text" value="90,293"/>	Minimum Score <input type="text" value="0.3"/>	Multiplier	GAR Score
		SCORE: 0.307			
Landscape Elements					
		Square Feet	Factor	Total	
A Landscaped areas (select one of the following for each area)					
1	Landscaped areas with a soil depth < 24"	<input type="text" value="0"/>	0.30	-	
2	Landscaped areas with a soil depth ≥ 24"	<input type="text" value="9,478"/>	0.60	5,686.8	
3	Bioretention facilities	<input type="text" value="4,910"/>	0.40	1,964.0	
B Plantings (credit for plants in landscaped areas from Section A)					
1	Groundcovers, or other plants < 2' height	<input type="text" value="500"/>	0.20	<input type="text" value=""/>	100.0
2	Plants ≥ 2' height at maturity - calculated at 9-sf per plant	<input type="text" value="500"/>	4900	0.30	1,350.0
3	New trees with less than 40-foot canopy spread - calculated at 50 sq ft per tree	<input type="text" value="12"/>	600	0.50	300.0
4	New trees with 40-foot or greater canopy spread - calculated at 250 sq ft per tree	<input type="text" value=""/>	0	0.60	-
5	Preservation of existing tree 6" to 12" DBH - calculated at 250 sq ft per tree	<input type="text" value=""/>	0	0.70	-
6	Preservation of existing tree 12" to 18" DBH - calculated at 600 sq ft per tree	<input type="text" value=""/>	0	0.70	-
7	Preservation of existing trees 18" to 24" DBH - calculated at 1300 sq ft per tree	<input type="text" value=""/>	0	0.70	-
8	Preservation of existing trees 24" DBH or greater - calculated at 2000 sq ft per tree	<input type="text" value=""/>	0	0.80	-
9	Vegetated wall, plantings on a vertical surface	<input type="text" value=""/>	0.60	<input type="text" value=""/>	-
C Vegetated or "green" roofs					
1	Over at least 2" and less than 8" of growth medium	<input type="text" value=""/>	0.60	<input type="text" value=""/>	-
2	Over at least 8" of growth medium	<input type="text" value="13,994"/>	0.80	<input type="text" value=""/>	11,195.2
D Permeable Paving***					
1	Permeable paving over 6" to 24" of soil or gravel	<input type="text" value="13,541"/>	0.40	5,416.4	
2	Permeable paving over at least 24" of soil or gravel	<input type="text" value=""/>	0.50	-	
E Other					
1	Enhanced tree growth systems***	<input type="text" value=""/>	0.40	-	
2	Renewable energy generation	<input type="text" value="3,400"/>	0.50	1,700.0	
3	Approved water features	<input type="text" value=""/>	0.20	-	
		sub-total of sq ft = 50,923			
F Bonuses					
1	Native plant species	<input type="text" value="0"/>	0.10	-	
2	Landscaping in food cultivation	<input type="text" value=""/>	0.10	-	
3	Harvested stormwater irrigation	<input type="text" value=""/>	0.10	-	
		Green Area Ratio numerator =			27,712
*** Permeable paving and structural soil together may not qualify for more than one third of the Green Area Ratio score.					5,416
Total square footage of all permeable paving and enhanced tree growth.					

