

BUILDING B

PERKINS EASTMAN

STUDIO SHANGHA

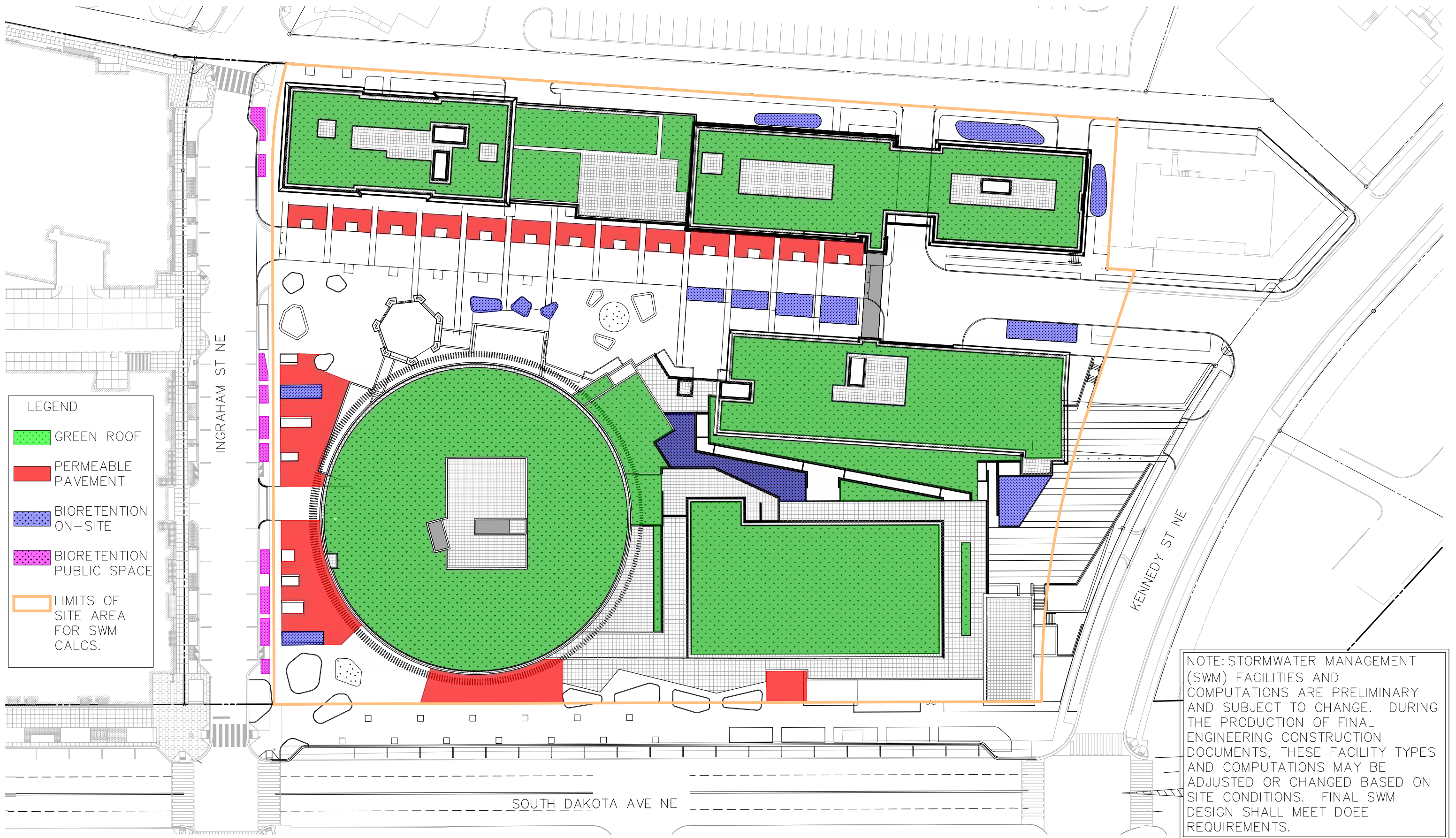
VFA CAPITOL



PROPOSED UTILITY PLAN

ART PLACE AT FORT TOTTEN
ZONING COMMISSION
District of Columbia
CASE NO.06-10D
EXHIBIT NO.44A10

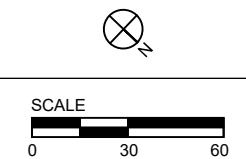
C8



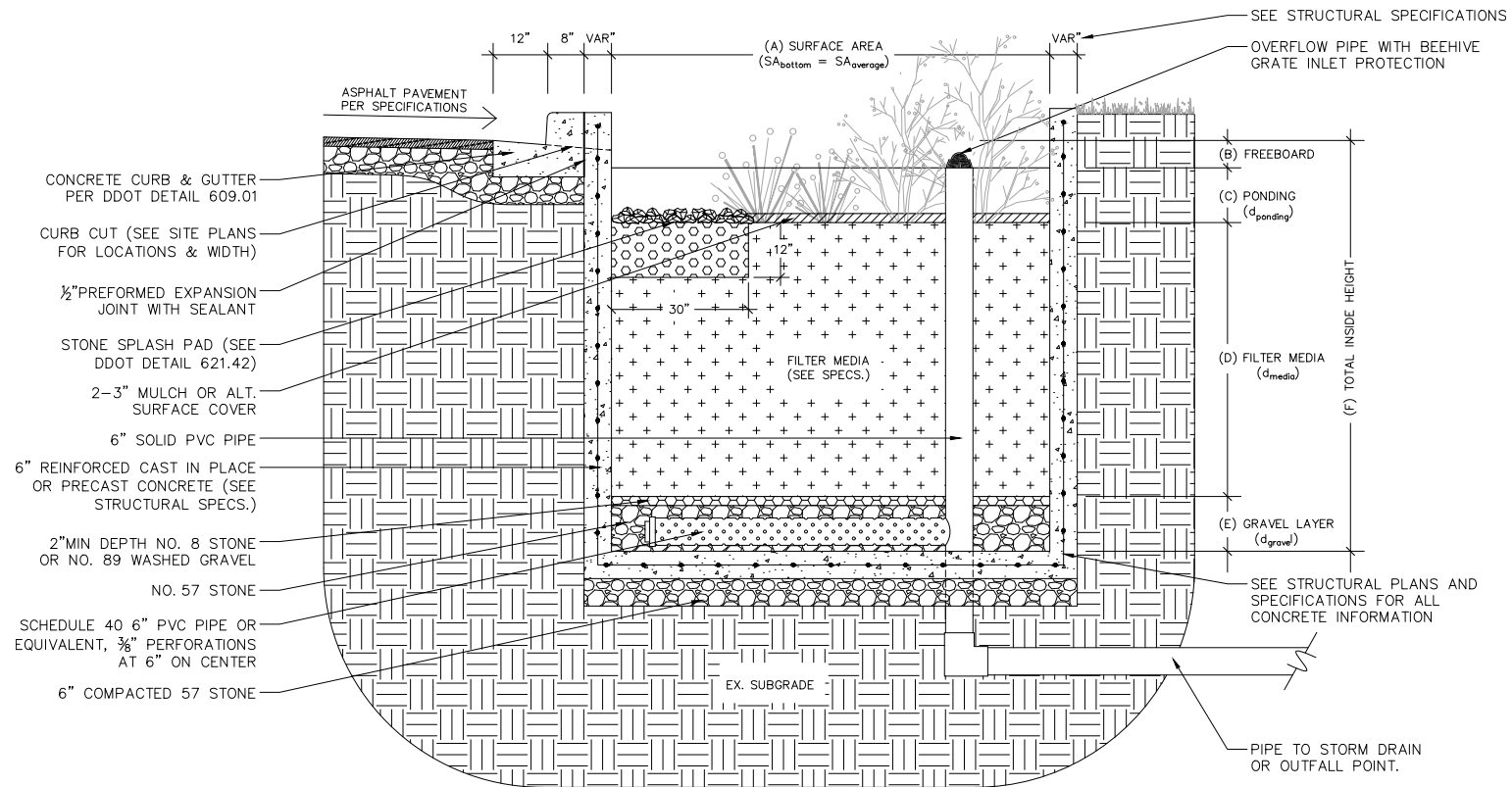
- LEGEND
- GREEN ROOF
 - PERMEABLE PAVEMENT
 - BIORETENTION ON-SITE
 - BIORETENTION PUBLIC SPACE
 - LIMITS OF SITE AREA FOR SWM CALCS.

NOTE: STORMWATER MANAGEMENT (SWM) FACILITIES AND COMPUTATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE. DURING THE PRODUCTION OF FINAL ENGINEERING CONSTRUCTION DOCUMENTS, THESE FACILITY TYPES AND COMPUTATIONS MAY BE ADJUSTED OR CHANGED BASED ON SITE CONDITIONS. FINAL SWM DESIGN SHALL MEET DOE REQUIREMENTS.

BUILDING B



STORMWATER MANAGEMENT PLAN



AMERICAN HYDROTECH, INC.

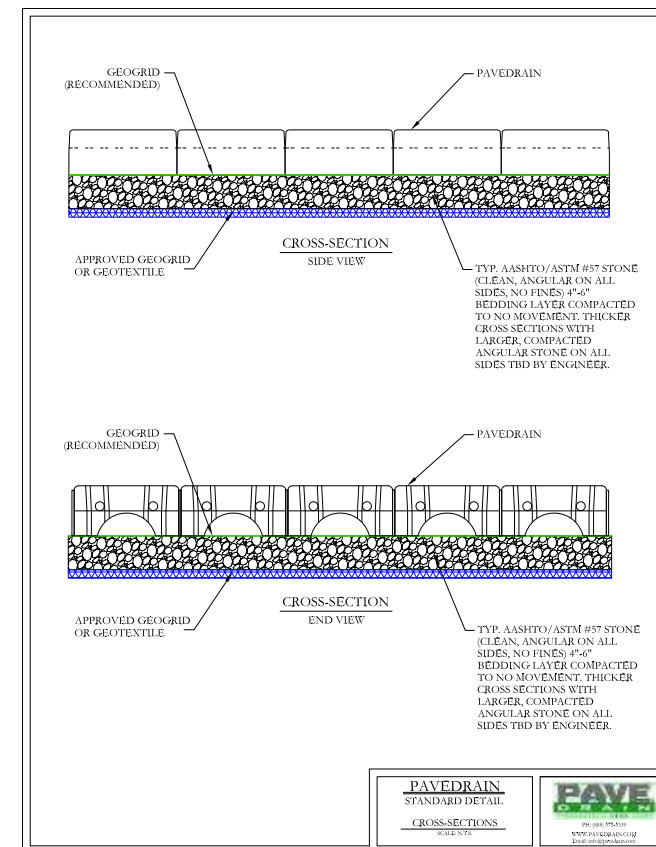
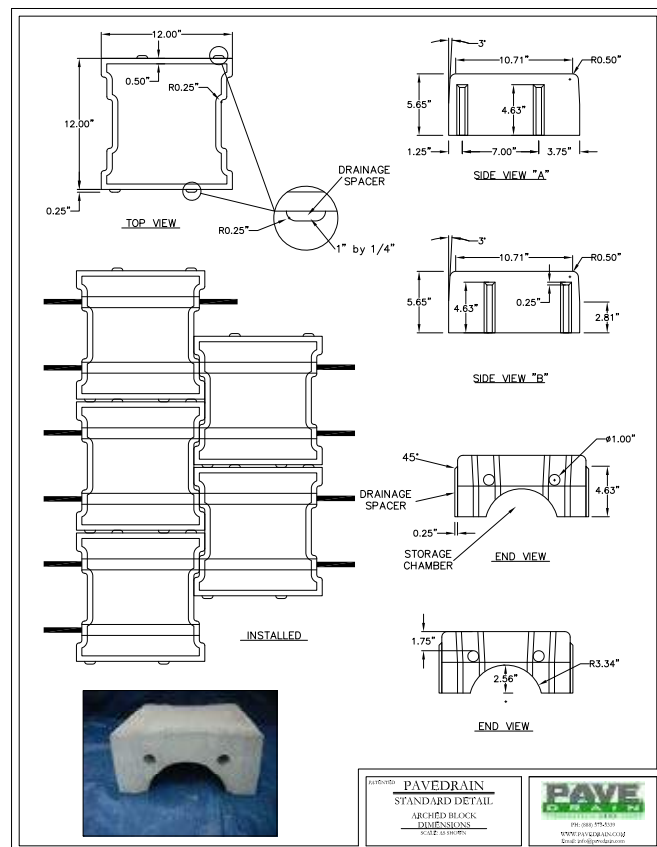
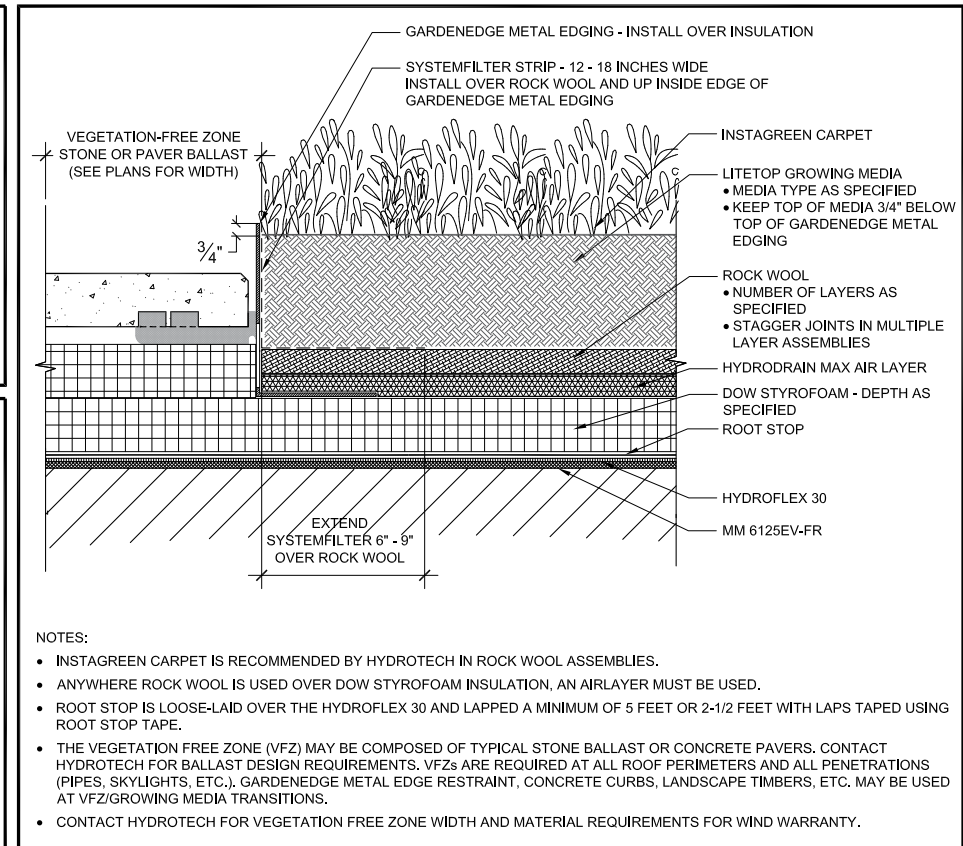
HYDROTECH

GARDEN ROOF ASSEMBLY

GARDEN ROOF@ ROCK WOOL ASSEMBLY

NO SCALE

GA-13



SWRv

Total Area =	222541	SDA 1	
Post-project Land Cover			
Major Substantial Improvement =	0	0	
Natural Cover =	0	0	
Compacted Cover =	0	0	
Impervious Cover =	129,424	0	
BMP Cover =	93,117	0	
Total Disturbed Area =	222,541	0	
SWRv =	21,141 CF		
	158,138 Gallons		
On-site Retention Achieved =	21,526 CF	101.82	
	161,018 Gallons		
SRC Eligibility =	2,880 Gallons		
Storage Volume of BMP's =	38997.891 CF		

GREEN ROOF

Contributing Drainage Areas	25000
Natural Cover	sq ft
Compacted Cover	sq ft
Impervious Cover	25000 sq ft
BMP Cover	86931 sq ft
Runoff	15064.0 ft ³
Sv = SA X [(d x η₁) + (DL x η₂)]/12	
Sv = Storage Volume	28484.4 ft ³
Green Roof Area (SA)	86931 ft ²
Media Depth (d)	4 in
Drainage Layer Depth (DL)	2 in
Media Volume of Voids (η ₁)	0.518
Drainage Layer Volume of Voids (η ₂)	0.93

Green Roof Receive 100% Retention Value

Rv = 15064.0 ft³
 Rv = 112679 gallons

BIORETENTION

Contributing Drainage Areas

Natural Cover	sq ft
Compacted Cover	sq ft
Impervious Cover	35962 sq ft
BMP Cover	4890 sq ft
Runoff	5498.0 ft ³
Sv = SA_{bottom} x [(d_{media} x η_{media}) + (d_{gravel} x η_{gravel})] + (SA_{average} x d_{ponding})	
Sv = Storage Volume	
Bottom Surface Area (SA _{bottom})	4890 ft ²
Depth of Filter Media (d _{media})	4 ft
Filter Media Effective Porosity (η _{media})	0.25
Depth of Gravel Layer (d _{gravel})	1 ft
Gravel Layer Effective Porosity (η _{gravel})	0.4
Average Surface Area (SA _{average})	4890 ft ²
Max. Ponding Depth (d _{ponding})	0.75 ft
Field verified Infiltration rates (in/hr)	0 in/hr

Sv 10513.5 ft³ 78646.

60% RV Standard BR Underdrain + < 24" filter media
 100% RV Enhanced BR Infiltrate in 72hr OR Underdrain +
 Infiltratable Volume 0 CF
 0 gallons
 Max. Rv eligible for di

RV_{Standard} 5498.0 ft³
 RV_{Enhanced} 5498.0 ft³

RV_{Standard} 41125 gallons
 RV_{Enhanced} 41125 gallons

WQTV=	8808.9 CF	Only if Site is in AWDZ
	65891 Gallons	
Remaining =	63010 Gallons	

TREE PLANTING AND PRESERVATION

	Rv (ft ³)	
# of newly planted trees	79	
# of trees preserved during construction	0	Max. Rv
Rv New Trees =	790 ft ³	
Rv Preserved Trees =	0 ft ³	
Rv New Trees =	5909.2 gallons	
Rv Preserved Trees =	0 gallons	

New Tree In order to receive retention value, the tree species planted must have an average mature spread of at least 35 feet. (ad
Existing Tree Preserved trees must be a species with an average mature spread of at least 35 feet. (ad

BIORETENTION

Contributing Drainage Areas

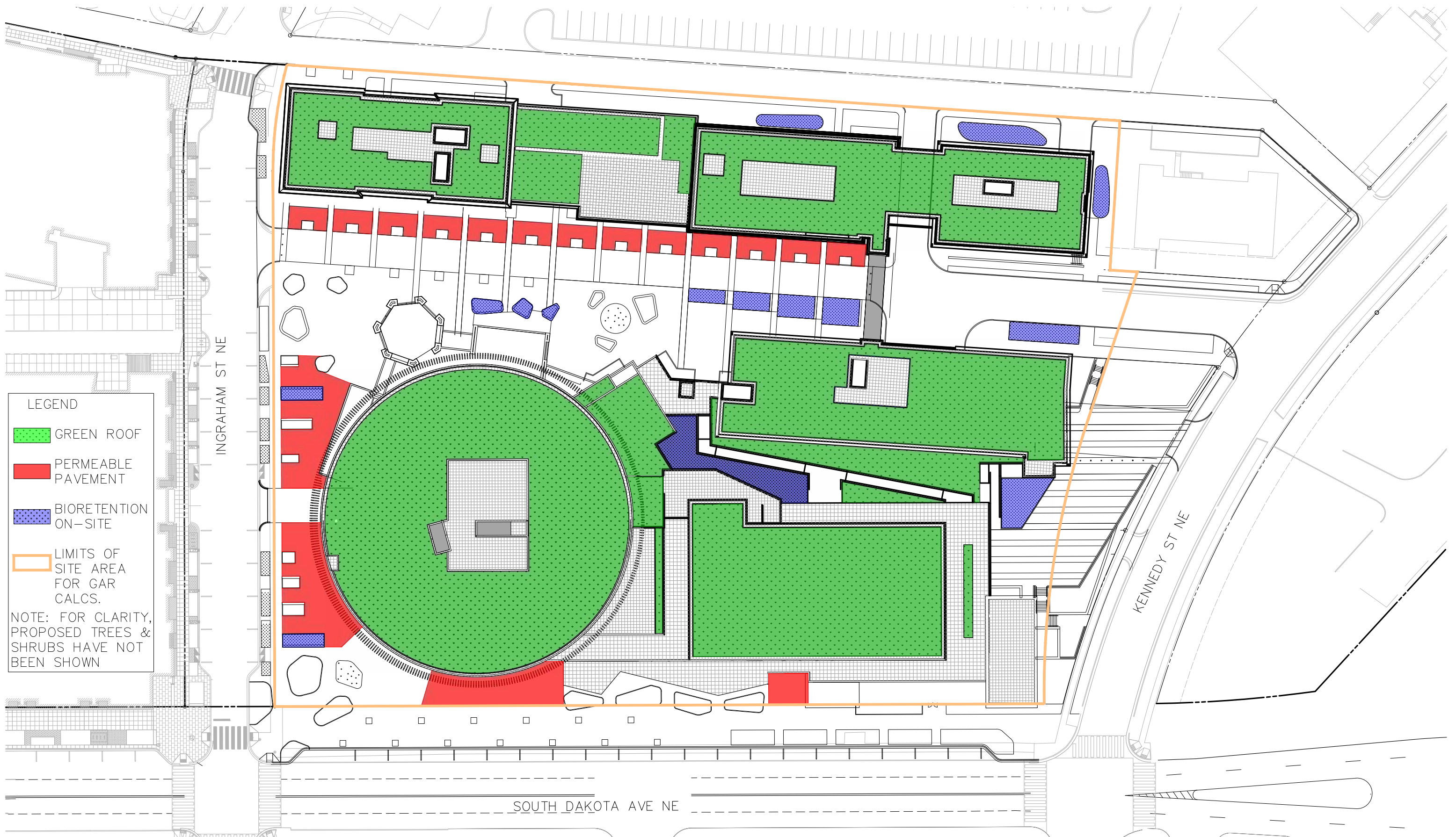
Natural Cover	sq ft
Compacted Cover	sq ft
Impervious Cover	0 sq ft
BMP Cover	1296 sq ft
Runoff	174.4 ft ³
Sv = SA_{bottom} x [(d_{media} x η_{media}) + (d_{gravel} x η_{gravel})] + (SA_{average} x d_{ponding})	
Sv = Storage Volume	
Bottom Surface Area (SA _{bottom})	1296 ft ²
Depth of Filter Media (d _{media})	4 ft
Filter Media Effective Porosity (η _{media})	0.25
Depth of Gravel Layer (d _{gravel})	1 ft
Gravel Layer Effective Porosity (η _{gravel})	0.4
Average Surface Area (SA _{average})	1296 ft ²
Max. Ponding Depth (d _{ponding})	0.75 ft
Field verified Infiltration rates (in/hr)	0 in/hr

Sv 2786.4 ft³ 20843.

60% RV Standard BR Underdrain + < 24" filter media
 100% RV Enhanced BR Infiltrate in 72hr OR Underdrain +
 Infiltratable Volume 0 CF
 0 gallons
 Max. Rv eligible for di

RV_{Standard} 174.4 ft³
 RV_{Enhanced} 174.4 ft³

RV_{Standard} 1305 gallons
 RV_{Enhanced} 1305 gallons

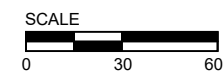


BUILDING B

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STUDIO SHANGHA

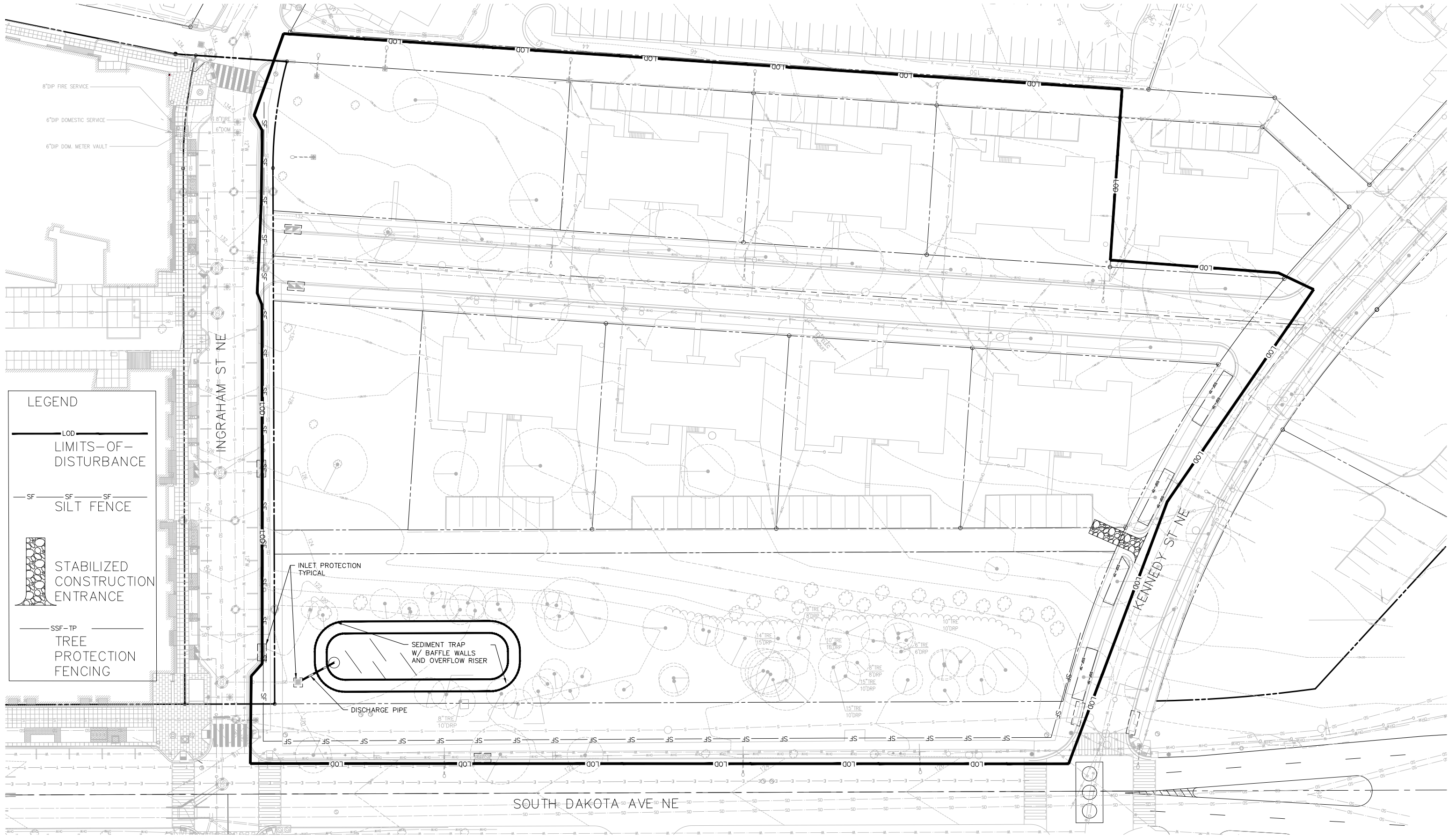
VFA CAPITOL



GREEN AREA RATIO PLAN
ART PLACE AT FORT TOTTEN

C12

Green Area Ratio Scoresheet					
***	Address	South Dakota Ave NE	Square	Lot	Zone District
			3765 & 3767	1-4,8&9 2,3,4,7	
	Other		Lot area (sf)	Minimum Score	Multiplier
			222,541	0.3	GAR Score
		Lot size (enter this value first) *			SCORE: 0.300
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"	square feet		0.30	-
2	Landscaped areas with a soil depth ≥ 24"	square feet		0.60	-
3	Bioretention facilities	square feet	4,181	0.40	1,672.4
B Plantings (credit for plants in landscaped areas from Section A)					
1	Groundcovers, or other plants < 2' height	square feet		0.20	-
2	Plants ≥ 2' height at maturity - calculated at 9-sf per plant	# of plants	1,800	16200	0.30
3	New trees with less than 40-foot canopy spread - calculated at 50 sq ft per tree	# of trees	79	3950	0.50
4	New trees with 40-foot or greater canopy spread - calculated at 250 sq ft per tree	# of trees	0	0	0.60
5	Preservation of existing tree 6" to 12" DBH - calculated at 250 sq ft per tree	# of trees	0	0	0.70
6	Preservation of existing tree 12" to 18" DBH - calculated at 600 sq ft per tree	# of trees	0	0	0.70
7	Preservation of existing trees 18" to 24" DBH - calculated at 1300 sq ft per tree	# of trees	0	0	0.70
8	Preservation of existing trees 24" DBH or greater - calculated at 2000 sq ft per tree	# of trees	0	0	0.80
9	Vegetated wall, plantings on a vertical surface	square feet		0.60	-
C Vegetated or "green" roofs					
1	Over at least 2" and less than 8" of growth medium	square feet	86,931	0.60	52,158.6
2	Over at least 8" of growth medium	square feet	1,770	0.80	1,416.0
D Permeable Paving***					
1	Permeable paving over 6" to 24" of soil or gravel	square feet	11,867	0.40	4,746.8
2	Permeable paving over at least 24" of soil or gravel	square feet		0.50	-
E Other					
1	Enhanced tree growth systems***	square feet		0.40	-
2	Renewable energy generation	square feet		0.50	-
3	Approved water features	square feet		0.20	-
F Bonuses					
1	Native plant species	square feet	0	0.10	-
2	Landscaping in food cultivation	square feet		0.10	-
3	Harvested stormwater irrigation	square feet		0.10	-
sub-total of sq ft = 124,899					
Green Area Ratio numerator =					66,829
*** Permeable paving and structural soil together may not qualify for more than one third of the Green Area Ratio score.					
Total square footage of all permeable paving and enhanced tree growth.					4,747



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SEDIMENT AND EROSION CONTROL PLAN

ART PLACE AT FORT TOTTEN

C14

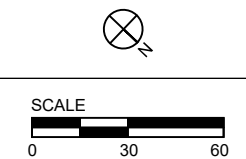


LEGEND

X TREE TO BE REMOVED

NOTE: NO HERITAGE TREES WILL BE REMOVED WITH THIS DEVELOPMENT.

BUILDING B



TREE PLAN | C15
ART PLACE AT FORT TOTTEN



RESERVED FOR DCA

NO.	DATE	ISSUE

VKA CAPITOL
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 WWW.VKACAPITOL.COM

ART PLACE AT FORT TOTTEN
 BUILDING B
 S. DAKOTA AVE. & GALLOWAY ST. NE
 WASHINGTON, D.C.

TREE REMOVAL PLAN

VKA CAPITOL REVISIONS

NO.	DATE	DESCRIPTION

DATE: 03/14/19
 DES: KUO | DWN: VEM
 SCALE: AS SHOWN
 PROJECT/FILE NO.: VC0024R
 SHEET NO.: CIV0150

PERKINS EASTMAN
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 HYATTSVILLE, MD 20781
 TEL: 301.281.1500
 FAX: 301.281.1526

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 1825 K Street NW Suite 1400
 Washington, DC 20006
 Design Architect: **Studio Shanghai**
 Unit 302, Building 24, Xietandi, 119 Ma Dang Road
 Shanghai 200021, China
 Civil Site: **VKA Capitol**
 4810 Massachusetts Avenue, NW Suite 16
 Washington, DC 20016
 Landscape: **Clinton & Associates**
 6200 Baltimore Avenue, Suite 201
 Hyattsville, MD 20781
 Structural: **Silman**
 1083 31st Street NW
 Washington, DC 20007
 Mechanical, Electrical & Plumbing: **Interface Engineering**
 2000 M Street NW Suite 270
 Washington, DC 20036
 Lighting Consultant: **Lighting Consultant Name**
 Lighting Consultant Address
 Food Service: **Food Service Consultant Name**
 Food Service Consultant Address
 Traffic Consultant: **Wells & Associates**
 1420 Spring Hill Road, Suite 610
 Tysons, VA 22102
 Envelope Consultant: **Envelope Consultant Name**
 Envelope consultant Address
 Code Consultant: **ARUP**
 1120 Connecticut Avenue NW Suite 1110
 Washington DC 20036
 Acoustical Consultant: **Acoustical Consultant Name**
 Acoustical Consultant Address

PROJECT TITLE:
ART PLACE AT FORT TOTTEN
 S. DAKOTA AVE. & GALLOWAY ST. NE,
 WASHINGTON DC
 VOLUME ONE
 PROJECT No: 76380
 DRAWING TITLE:
TREE REMOVAL PLAN
 SCALE: As indicated
CIV0150
 DATE:
 03/15/2019

